



Request for Proposal (RFP)  
For  
“Automatic Vehicle Location (AVL) & Passenger Information  
System”

RFP No. 17-90164-AVL  
Ventura County Transportation Commission  
950 County Square Drive, Suite 207  
Ventura, CA 93003

**Proposals must be submitted  
No later than 2:00 PM  
May 2, 2017**

**LATE PROPOSALS WILL BE REJECTED**  
*There will not be a public opening for this RFP*

For further information regarding this  
RFP contact Aaron Bonfilio  
Via Email: [abonfilio@goventura.org](mailto:abonfilio@goventura.org)

Issued: March 3, 2017

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### **Table of Contents**

1.0 INTRODUCTION / BACKGROUND .....	8
1.1 Project Objectives .....	8
1.2 Agency Overview .....	9
1.3 Project Overview .....	10
1.4 Project Description.....	10
1.5 Optional Technologies .....	11
1.6 Cost Proposal, Agreement Term, and Payment Method .....	11
1.7 Special Considerations .....	12
2.0 PROPOSER BACKGROUND / QUALIFICATIONS .....	13
3.0 INSTRUCTIONS TO PROPOSERS .....	14
3.1 Issuing Office .....	15
3.2 Restrictions on Communications .....	15
3.3 Submission of Questions .....	15
3.4 Pre-Proposal Conference .....	15
3.5 Tentative Schedule for Evaluation, Selection, and Award.....	16
3.6 Conflicts or Ambiguities .....	16
3.7 Public Disclosure of Information Contained in Proposals .....	16
3.8 Adequacy and Completeness of Proposals.....	17
3.9 Commission Not Liable for Pre-Contractual Costs.....	17
3.10 Independent Price Determination .....	17
3.11 Revision to the Request for Proposals.....	17
4.0 SELECTION CRITERIA .....	18
4.1 Technical Evaluation and Scoring .....	19
4.2 Final Results and Contract Award .....	21
4.3 Award Protests.....	21
5.0 PROPOSAL FORMAT.....	22
5.1 Proposal Submission .....	22
5.1.1 Transmittal Letter .....	22
5.1.2 Table of Contents.....	23
5.1.3 Executive Summary .....	23
5.1.4 Section 1-Project Understanding / Proposer Solution .....	23
5.1.5 Section 2- System Description.....	23
5.1.6 Section 3-Firm / Team Overview.....	24
5.1.7 Section 4-Implementation Plan / Project Management .....	24
5.1.8 Section 5 -Quality Assurance Plan.....	25
5.1.9 Section 6-Training .....	25
5.1.10 Section 7- Commission / Operator Actions under the Project .....	26

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

5.1.11 Section 8- Experience .....	26
5.1.12 Section 9 - Financial Statement.....	26
5.1.13 Section 10 – Pricing / Cost / Payment.....	27
5.1.14 Proposal Appendix.....	27
5.1.15 Exceptions to this Request for Proposals .....	28
5.1.16 Required Certifications.....	28
5.2 Product Demonstration .....	28
6.0 ADMINISTRATIVE/CONTRACTUAL REQUIREMENTS.....	30
6.1 Prime Contractor.....	30
6.2 News Releases.....	30
6.3 Contract Documents .....	30
6.4 Form of Cost Proposals .....	30
6.5 Receipt of Bids .....	30
6.6 Discrepancies .....	31
6.7 Appeal Procedures.....	31
6.8 Addenda.....	31
6.9 Receiving Proposals .....	31
6.10 Withdrawal of Proposals.....	32
6.11 Evaluation of Proposals.....	32
6.12 Award or Rejection of Proposals .....	32
6.13 Pre-Contractual Expenses .....	32
6.14 Payment .....	32
6.15 Delays.....	33
6.16 Conditional Acceptance .....	34
6.17 Insurance Requirements.....	34
6.17.1 Proof of Insurance .....	36
6.18 Liquidated Damages.....	36
6.19 Performance and Payment Bond.....	36
6.20 Milestone Retainage .....	37
6.21 Prohibited Interests .....	37
6.23 Warranties .....	38
6.24 Federal Contracting Requirements.....	38
6.25 Ownership of Materials and Service Data .....	38
6.26 Inspection and Approval of Work .....	38
6.27 Patent / Copyright Infringement .....	38
6.28 Retention of Records .....	38
6.29 Liabilities against Procuring Agency.....	38
6.30 Omission.....	39

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

6.31 Priority.....	39
6.32 Repairs after Non-Acceptance .....	39
6.33 Disputes .....	40
6.34 Option of Obtaining Services Outside of the Contract .....	40
6.35 Federal Changes.....	40
6.36 Federal Transit Administration (FTA) Terms.....	40
7.0 CONCEPT OF OPERATIONS .....	42
7.1 The General Public as System Benefactor .....	43
7.2 Fixed Route Operations .....	43
7.3 Fleet Inventory .....	43
7.4 Transit Centers and Bus Stop Inventory .....	44
8.0 FUNCTIONAL REQUIREMENTS.....	45
8.1 General Requirements .....	45
8.2 Automatic Vehicle Location (AVL) .....	45
8.2.1 GPS Receiver .....	47
8.2.2 Vehicle Logic Unit (VLU) .....	49
8.2.3 Map Requirements.....	50
8.2.4 Mobile Data Terminal (MDT) .....	52
8.2.5 Covert Emergency Alarm (Silent Alarm) .....	53
8.2.6 Real-Time Monitor (RTM) Editor.....	54
8.3 Computer Aided Dispatch (CAD) Functions .....	54
8.3.1 General Requirements .....	55
8.3.2 Vehicle Status .....	56
8.3.3 Daily Schedule Selection.....	57
8.3.4 Service Performance .....	57
8.3.5 Route Guidance .....	57
8.3.6 Turn-Back Monitoring .....	58
8.3.7 Data Messaging .....	58
8.3.8 Vehicle Operator Changes.....	58
8.4 Cellular Communications Network .....	59
8.5 Passenger Information System (PIS).....	59
8.5.1 Predictive Bus Arrival and Departure Algorithms.....	60
8.5.2 Changeable Message Signs (CMS) .....	61
8.5.3 CMS Audible Component .....	62
8.5.4 Bus Stop Signage.....	63
8.5.5 Customer Website / Customer Communication Devices .....	63
8.5.6 Customer Trip Planner.....	64



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

8.6 Information Technology Architecture .....	65
8.6.1 Server Site .....	65
8.6.2 Ownership of Data.....	66
8.6.3 Activity Logging.....	66
8.6.4 Access Security.....	66
8.6.5 Data Backups .....	67
8.6.6 Data Archival and Restore .....	67
8.6.7 Scheduled Maintenance.....	67
8.6.8 Version Tracking Requirements .....	67
8.6.9 System Administration Functions .....	68
8.6.10 Disaster Recovery Procedures .....	68
8.6.11 Continuity of Services.....	68
9.0 OPTIONAL TECHNOLOGIES REQUIREMENTS .....	69
9.1 Automated Voice Annunciation (AVA) [Optional Technologies].....	69
9.2 Automatic Passenger Counters (APC) [Optional Technologies] .....	72
9.3 Farebox Integration [Optional Technologies] .....	74
9.4 Headsign Integration [Optional Technologies] .....	75
9.5 Single-point Log-on Integration [Optional Technologies] .....	76
10.0 ADDITIONAL REQUIREMENTS .....	76
10.1 AVL Analytics.....	76
10.2 Reports.....	76
10.2.1 Dispatch Activity Reports .....	78
10.2.2 Schedule Deviation Reports (Fixed Route) .....	78
10.2.3 Customized Reports .....	78
10.2.4 Data Summarization.....	79
10.2.5 Report Filtering.....	79
10.2.6 Drill-Down Capability.....	79
10.2.7 Report Response Times.....	79
10.3 Transit Analytics (Dashboard).....	79
10.4 Training .....	79
10.4.1 Training Plan .....	80
10.4.2 Training Facilities .....	81
10.4.3 Scheduling and Preparation for Training .....	81
10.4.4 Timing for Training .....	81
10.4.5 Training Materials.....	81
10.4.6 Maintenance Training .....	82

## **Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

10.4.7 Dispatcher / Driver Training .....	82
10.4.8 System Administrator / Customer Service Training .....	83
10.4.9 Manual Quantities .....	83
10.4.10 Supplemental Training .....	83
10.4.11 Bus-In-A-Box .....	84
10.5 Testing .....	84
10.5.1 Acceptance Test Plan .....	84
10.5.2 Testing Requirements .....	85
10.5.3 Test Procedures .....	85
10.5.4 Function Testing .....	86
10.5.5 Cellular Communications Coverage Test .....	87
10.5.6 30-Day Rolling Operational Test .....	87
10.5.7 Test Records and Reports .....	87
10.5.8 System Acceptance .....	88
10.6 Documentation .....	88
10.6.1 General Manual Requirements .....	88
10.6.2 Maintenance Service Manual .....	88
10.7 Design / Implementation .....	89
10.7.1 Work Standards and Requirements .....	89
10.7.2 Commission Participation .....	90
10.7.3 Kick-Off Meeting .....	90
10.7.4 System Design .....	90
10.7.5 Preliminary Design Review .....	91
10.7.6 Design Plan General Requirements .....	91
10.7.7 Design Documentation .....	91
10.7.8 Final Design Review .....	92
10.7.9 Installation .....	92
10.7.10 Obsolescence .....	95
10.7.11 Environmental .....	95
10.7.12 System Scalability .....	95
10.8 Project Management .....	95
10.8.1 Project Staffing .....	96
10.8.2 Project Schedule .....	96
10.8.3 Weekly Status Meetings .....	96
10.8.4 Monthly Status Reports .....	96

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

10.8.5 Formal Correspondence .....	97
10.8.6 Punch List .....	97
10.8.7 Deliverables .....	97
10.8.8 Asset Management .....	98
10.8.9 Quality Assurance Plan .....	98
10.8.10 Invoicing .....	99
10.8.11 Project Closeout .....	99
10.9 Warranty / Maintenance .....	100
10.9.1 Installation Warranty .....	100
10.9.2 Extended Service / Warranty Period .....	101
10.9.3 Availability and Mean-Time-Between-Failure (MTBF) Targets .....	101
10.9.4 Chargeable and Non-Chargeable Failures .....	101
10.9.5 Diagnostics .....	102
10.9.6 Maintainability .....	102
10.9.7 Repair and Replacement of Faulty Components .....	103
10.9.8 On-Call Support .....	103
10.9.9 Local and Escalated Support .....	104
10.10 Spare Components .....	104
10.11 Schedule Requirements .....	105
APPENDIX .....	106
Required Submittals (RFP Checklist) .....	107
Attachment A - Acknowledgement of Receipt Form .....	108
Attachment B - Table of Compliance .....	109
Attachment C - Price Summary Forms .....	165
Attachment D - Milestone Payment Schedule .....	182
Attachment E - Certification of Restrictions on Lobbying .....	184
Attachment F - Disadvantaged Business Enterprise .....	185
Attachment G - Certification of Primary Participant Regarding Debarment, Suspension, and other Responsibility Matters .....	187
Attachment H - Mail-In Reference Questionnaire .....	188
Attachment I - Bid Form .....	192
Attachment J - Federally Required & Other Model Contract Clauses .....	193
Attachment K – Resolution 91-05 VCTC Contract Protest Procedures .....	217
Attachment L - Defined Terms / Acronyms .....	221
Attachment M - Operators Fleet and System Composition Schedule .....	226

## **1.0 INTRODUCTION / BACKGROUND**

Thank you for your interest in contracting opportunities with the Ventura County Transportation Commission (Commission). The Commission is requesting proposals from qualified Proposers to furnish a commercial, off-the-shelf (COTS) Automatic Vehicle Location (AVL) and Passenger Information System (hereafter "System") for use on the fixed route vehicles operated by the Ventura County Transit Operators (Operators), in a phased deployment. The Commission is also interested in maintenance warranties for the products and programs delivered under this RFP. Pricing for other (optional) add-on capabilities is also being requested at this time.

The purpose of this RFP is to establish a contract to provide and implement a System that increases availability of transit information and dissemination; and improves the Operator's overall dispatching, operational efficiency, cost effectiveness, and security of its transit services. This RFP defines the hardware features, functional requirements, and other capabilities desired for the System and are the benchmarks for its design, verification, and validation. The Commission seeks a System that has advanced vehicle technologies, customer information systems, and operations scheduling and dispatching functionality. The System shall be complete in every respect inclusive of all design, components, and recommendations for auxiliary equipment, and required maintenance or licensing.

The System will be available via the Internet, personal communication devices and passenger information signs bus stops and Transit Centers. The System is a critical component of the Commission's strategic marketing plans, with two specific goals related to the System: 1) Real-time Information via Changeable Message Signs (CMS') and Bus Stop Signage to significantly increase passenger confidence and knowledge of bus operations; and 2) once the System is fully functional, leverage the Internet and personal communication devices to make the real-time vehicle information available to our customers at any time.

This Request for Proposal (RFP) describes the project, requirements, selection process and the information that must be included in the proposal. Failure to submit information in accordance with the RFP submittal requirements may be cause for disqualification.

### **1.1 Project Objectives**

The primary objective of this Project is to improve the Customer Experience. To that end, the Commission recognizes that it needs to upgrade and add new ITS technologies to achieve our objectives; which are:

- |   |
|---|
| ✓ Make public transit more attractive to the general population |
| ✓ Maximize passenger movements and streamline trip planning     |
| ✓ Increase awareness of ITS benefits                            |
| ✓ Reduce operational costs                                      |

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- |                                 |
|---------------------------------|
| ✓ Reduce emission / energy use  |
| ✓ Improve transit system safety |

At various points in this RFP the Proposer will see how the Commission expects ITS capabilities to help solve the aforementioned objectives.

Also, these objectives align with the Federal Transit Administrations (FTA) goals of:

- ✓ Identify best practices and technologies to increase transit ridership
- ✓ Identify and overcome barriers to the adoption of ridership enhancement techniques
- ✓ Identify methods and technologies to improve transit operating efficiencies
- ✓ Identify solutions to improve transit safety, and
- ✓ Facilitate development of technologies to improve energy efficiency and reduce transit vehicle emissions

The Commission has also established the following internal goals for this Project:

- ✓ Accountability: Ensure that the Operators are providing timely delivery of transit services in accordance with their published timetables (improve schedule adherence and timed transfers).
- ✓ Real Time Passenger Information: Provide real-time transit information to customers via electronic message boards at stops and / or other in-vehicle passenger information systems, the Internet, and text messaging, passenger alerts, and subscriptions.
- ✓ Data Management: Increase the availability of data for the Operators' operations for the purposes of enhanced transit management and service planning.
- ✓ Improve Transit Management: More efficiently manage the public transportation system provided by the Operators.
- ✓ Safety: Increase the safety and security of the Operators' public transportation system. Improve safety on-board vehicles by allowing quick location and response to incidents and emergencies.
- ✓ Productivity: As a result of improved schedule adherence and passenger information, increase ridership of the Operators' fixed-route transit system.

### **1.2 Agency Overview**

The Ventura County Transportation Commission is the regional transportation planning agency for Ventura County. Within Ventura County there are nine distinctly branded fixed route transit services operated by variety of public agencies, including the Cities of Simi Valley, Thousand Oaks, Moorpark, Camarillo, Ojai, Fillmore and Santa Paula, and the County of Ventura, as well as, the Gold Coast Transit District and the Commission. The combined fixed route fleet of Ventura county's transit Operators is 140 vehicles, organized into nine (9) systems, operated out of seven (7) yard/maintenance facilities. Each system has a range of routes and fares, and differing hours of service and fleet composition. For more information regarding each of the Operators, see *Operators Fleet and System Composition Schedule*, (Attachment M) Across the

nine fixed route systems, approximately 40 bus stops are currently equipped with real-time changeable message signs (CMS).

### ***1.3 Project Overview***

The System shall be built on a proven and secure operating system, database, and application software and must include a graphical user interfaces (GUI) that provides access to fleet and passenger information for Operator staff and via the Internet for the general public. The applications shall follow accepted industry human engineering design standards for ease of readability, understandability, appropriate use of menu-driven operations, user customization and intuitive operation. The System should have a future upgrade path and must be supportable for the entire term of the Agreement. The Proposer / Contractor (used interchangeably) shall ensure that the risk of obsolescence to the hardware is minimized through the selection of standardized parts and readily-available peripheral hardware. The Commission is also interested in maintenance warranties for the products and programs delivered under this RFP beyond the standard two-years. This RFP includes several optional technologies that may or may not be selected by the Commission for deployment depending on funding availability and other factors.

### ***1.4 Project Description***

The Proposer shall supply a complete System with all hardware, software, and services necessary to accomplish the supply, installation, testing, documentation, training, and startup, including fixed-end equipment and equipment on-board vehicles. The System shall meet all specified requirements and have the capacity to serve present and future operational needs, within the constraints established by commercially available systems. Proposers are urged to maximize the potential realization of the requirements / specifications while minimizing custom development.

Data transmissions to and from on-board vehicle equipment shall rely upon commercial cellular data communications carriers and / or yard wireless network and should be included in pricing. The selected communications network shall be capable of providing reliable signal coverage in the most rural parts of Ventura county, (as well as in Santa Barbara county to the north and Los Angeles county to the south) for the purposes of transmitting location, status and messages between Operator vehicles and the System.

Initially, with the Proposer's help, scheduling information for the Operators' fixed-route routes shall be entered directly into the System which shall support on-time performance tracking and reporting. However, it is also desirable that the System permit route scheduling data to be obtained (imported or linked) from the Operators' scheduling software or GTFS feed. In all cases, the scheduling data shall be accessible via the Proposer-provided data exchange that should be described in the proposal.

## **1.5 Optional Technologies**

Upon execution of one or more task orders, the Proposer may also be directed to furnish and install other optional technologies that are of interest to the Operators and for which unit pricing is being requested at this time. They include:

- ✓ Integrated Automatic Passenger Counters (APC) and/or Integration with existing APC
- ✓ Integrated Automatic Voice Annunciators (AVA) and/or Integration with existing AVA
- ✓ Integration with existing Headsigns
- ✓ Integration with existing fareboxes
- ✓ Single point logon integrator for systems including headsigns, fareboxes, AVA, and APC
- ✓ Integrated Fixed Route Scheduling Software and/or Integration with existing Scheduling Software

For a list of specific Optional Technologies applicable to each Operator, see *Operators Fleet and System Composition Schedule* (Attachment M).

Finally, to ensure continuous and productive operation of the System, the Commission is requiring all Proposers to submit pricing for:

- ✓ Extended service / maintenance warranty
- ✓ Extended system training
- ✓ Additional fleet installations priced per vehicle unit

## **1.6 Cost Proposal, Agreement Term, and Payment Method**

### **Cost Proposal**

The Commission is seeking “end-to-end” pricing for the installation, implementation and deployment of the System, including two years of service/maintenance warranty coverage (Installation Warranty). In addition Proposers should offer annual pricing for extended service/maintenance warranty for three additional years (Extended Warranty). Optional Technologies as identified in this solicitation shall be exercised by the Commission (and/or individual Operators) at its sole discretion based on availability of funding, cost, and technical merit of the Proposer's solution. The contract awarded will be subject to negotiation and costs may be subject to audit and certification by the Commission and / or the Federal Transit Administration (FTA).

### **Duration of Agreement**

The Commission intends to enter into a contract with the selected Proposer for an initial five (5) year term, following the System design, installation, testing and acceptance. The Proposer who is awarded a contract for this Project will be authorized to perform work pursuant to task orders issued in accordance with the terms of the Commission's Contract. The initial Task Order will consist of the full, but phased deployment of the System. The Commission anticipates that the System will be “off the shelf” and require minimal testing. Following System Acceptance, a two-



year warranty period shall commence, and then an extended warranty period for three years, priced annually. .

### **Payment**

The Proposer will be paid by the following method: Fixed fees for completion of services and deliverables in accordance with the Commission's Milestone Payment Schedule (Attachment D) related to service installation, testing and deployment, and fixed fees for service/maintenance warranty periods. In their response, the Proposer shall include a task loaded cost table in alignment with the Commission's Payment Schedule. Progress payments shall be invoiced by the Proposer in arrears, and no more often than monthly, based upon services or deliverables provided, unless otherwise stated in the Payment Schedule. Proposers may include a modified Payment Schedule for the Commission's consideration.

## ***1.7 Special Considerations***

### **Special Reporting Requirements**

This Project is approximately 80% funded with a pending Federal Grant and any / or all applicable reporting requirements must be met by the Proposer.

### **Project Evaluation**

All federally-funded ITS projects are required to undergo an evaluation to assess the costs and benefits of the Project to help planners and decision-makers make better-informed decisions regarding future ITS deployments. The Proposer shall cooperate with Commission staff or its representative during any such evaluation.



## **2.0 PROPOSER BACKGROUND / QUALIFICATIONS**

Proposer's eligibility to respond to this RFP is based on Proposer's ability to meet the Commission's requirements. The Commission, in its sole discretion, reserves the right to determine whether any Proposer meets the minimum eligibility standards, to determine whether a proposal is responsive, and to select a proposal which best serves the Commission's stated objectives.

If Proposer cannot meet all qualification requirements as stated herein, Proposer's proposal shall be rejected without further consideration. The Commission reserves the right to reject all proposals.

Proposers must provide narrative responses to the following questions, including any necessary documentation:

- ✓ Each Proposer should specify the number of years the Proposer has been in the public sector business.
- ✓ Each Proposer shall provide evidence of a minimum of three (3) years experience in providing Automatic Vehicle Location / Passenger Information Systems substantially similar to that being sought in this RFP. Responses from any entity without such experience will not be considered.
- ✓ Has the Proposer's company or product being proposed ever been purchased by another company or acquired because of a merger or acquisition?
  - ✓ If yes, provide details regarding the name of the companies involved, specific products affected and when such merger or acquisition(s) took place.
- ✓ Each Proposer should provide a brief statement of the company's background demonstrating longevity and financial stability.
- ✓ Each Proposer should include the company's past three (3) years of audited Financial Statements.
- ✓ If Proposer is a subsidiary, provide financial statements for parent organization as well as separate financial statements for the proposing subsidiary.
- ✓ Each Proposer should provide an organizational chart of the management team showing all personnel that will be involved in performing the requirements of this Project.
- ✓ Has the company had a workforce reduction during the past 3 years?
  - ✓ If so, provide details regarding workforce reductions: percentage or workforce, areas affected, senior management team changes, etc.
- ✓ Each Proposer will provide resumes of proposed project team demonstrating recent project management and engineering engagements.
  - ✓ Proposer will provide a statement that proposed project team members will not be removed from the Commission's Project without permission from the Commission for the duration of the Project.
- ✓ Each Proposer shall provide a minimum of three (3) references from similar contracts executed in the past three (3) years. (Mail-in Reference Questionnaire, Attachment H)

### 3.0 INSTRUCTIONS TO PROPOSERS

Before submitting a Proposal, each Proposer shall carefully consider the amount and character of the work to be done as well as the difficulties involved in its proper execution. Proposers should include in their Proposals all costs necessary to implement the specified System (the Commission does not want to see surprise costs, either initial or recurring). A cost not specifically itemized in the proposal shall not be incurred unless specifically agreed upon by the Commission in writing.

All proposals must be precise, detailed, and to the point to the requirements in this document. **The Commission may in its sole discretion and on a case-by-case basis, evaluate included alternatives to the specification. Any included alternatives must be clearly specified as such, and the Commission reserves the right to reject Proposals that do not comply with this instruction.**

Specific expectations and instructions to Proposers:

- ✓ Proposer should carefully read and review this RFP. However, the final description of the services and / or items to be provided to the Commission under this RFP is subject to negotiations with the successful Proposer.
- ✓ Proposer shall submit a letter of transmittal that includes the Proposers understanding of the scope of work and general objectives to which the proposal addresses.
- ✓ Proposer shall, as part of the submittal, include a timetable for completing all tasks / services covered in this RFP
- ✓ Proposer should include complete and detailed cost/price information and reference the completion of Commission's specified cost proposal and bid forms in the attachments.
- ✓ Proposer shall provide a System architecture for all technologies exercised now or in the future by the Commission.
- ✓ Proposer shall provide a System architecture for all supporting hardware, software, operating systems, databases, redundancies, environments, Disaster Recovery, and Security (Hosted, On-Premises Managed Services, Operator supported model).
- ✓ Proposer shall provide complete installation of their proposed System.
- ✓ Proposer shall provide training of all necessary Operator employees in quantities of hours.
- ✓ Proposer shall provide annual support and maintenance of all features associated with its System.
- ✓ Work shall be scheduled and conducted in a professional cooperative manner and be performed by qualified and trained persons.
- ✓ Each Proposer shall include, as part of the submittal, sample data and reports.
- ✓ Each Proposer will provide a description of their help desk services and how they service and troubleshoot problems for their current clients.

### ***3.1 Issuing Office***

This RFP is issued by the Commission Transit Department. Unless otherwise specified, the Transit Department Designated Purchasing Agent is the sole point of contact for the Commission and Operators for purposes of this RFP and subsequent responses.

### ***3.2 Restrictions on Communications***

From the issue date of this RFP until a Proposer is selected and a contract executed, Proposer's are not allowed to communicate with any person involved with the development of this RFP or any person involved in proposal reviews regarding this RFP except the Designated Commission Purchasing Agent. Violation of this provision may result in the rejection of a Proposer's proposal.

### ***3.3 Submission of Questions***

The Purchasing Agent is the only contact for this solicitation. Commission or Operator staff will not respond to inquiries by Proposer's or their representatives regarding any aspect of this RFP. Written questions regarding the RFP, the Commission's Standard Terms and Conditions, or the RFP instructions to Proposers must be submitted to:

VCTC Transit Department  
Attn: Aaron Bonfilio  
Ventura County Transportation Commission  
950 County Square Drive, Suite 207  
Ventura CA 93003  
E-mail: [abonfilio@goventura.org](mailto:abonfilio@goventura.org)

Questions must be in writing, submitted by email as specified in Section 3.5, Tentative Schedule for Evaluation, Selection and Award to be considered. The questions and the responses will be posted, via an addendum to the RFP, at [www.goventura.org](http://www.goventura.org). Any addendums to the RFP will be made part of the resulting contract. All responses concerning this RFP will be posted at least fourteen (14) days prior to the proposal due date or can be obtained by contacting the Purchasing Officer, or his designee. It is the responsibility of proposers to check the Commission's Website for questions and responses related to this RFP.

### ***3.4 Pre-Proposal Conference***

There will be a mandatory Pre-Proposal Conference at the **VENTURA COUNTY GOVERNMENT CENTER – PACIFIC ROOM (located at 800 S. Victoria Avenue, Ventura, CA 93003)**. The Pre-proposal meeting is scheduled for March 20, 2017 from 10-11AM. It is anticipated that three to four representative buses will be on display and available for walk-through, beginning at 10:30AM. Entry to the Pacific Room is through the Cafeteria located adjacent to the Hall of Justice.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Any and all costs associated with attending this conference will be at the expense of the Proposer. No "call-in capability" will be provided.

A summary of the questions and answers from the pre-proposal meeting will be posted on the Commission's Website within five business days after the pre-proposal meeting. The names and phone numbers of potential proposers that signed-in and attended the pre-proposal meeting will be posted on the same Website to assist prime contractors and potential subcontractors in partnering on this contracting opportunity. **Attendance of the pre-proposal meeting is mandatory for prime Contractors.**

### ***3.5 Tentative Schedule for Evaluation, Selection, and Award***

**The closing date of this RFP is May 2, 2 PM PST.** The Commission anticipates the process for nominating and selecting a Contractor and awarding the contract will be per the following schedule:

Advertise and RFP Release	March 3, 2017
<b>Pre-Proposal Conference</b>	<b>March 20, 2017 (10 – 11AM)</b>
Last Day to Submit Questions Regarding RFP	April 7, 2017
Answers to Questions Posted	April 17, 2017
<b>Proposal Due Date</b>	<b>May 2, 2017</b>
Proposal Evaluations	May 3-16, 2017
Oral Interviews Short-listed Proposers	May 30, 2017
Best and Final Offer (BAFO)	June 1-9, 2017
Notice of Intent to Award and Begin Negotiations	July 7, 2017
<b>VCTC Commission Approval of Contract</b>	<b>September 1, 2017</b>
Notice to Proceed	September 5, 2017

The Commission does not guarantee the above schedule and reserves the right to modify the schedule as necessary. Any modifications will be posted on the Commission's Website at [www.goventura.org](http://www.goventura.org).

### ***3.6 Conflicts or Ambiguities***

Proposers must notify the Commission's Purchasing Agent immediately if conflicts or ambiguities are found in the RFP prior to the specified question due date.

### ***3.7 Public Disclosure of Information Contained in Proposals***

To the extent permitted by law, proposals, except for the names of the Proposers, shall remain confidential until the Letter of Intent to Award has been issued. Thereafter, all proposals submitted in response to this request shall be deemed public record. In the event that a Proposer desires to claim portions of its proposal as exempt from disclosure, **it is incumbent upon the Proposer to clearly identify those portions as confidential.** Although the California Public Records Act

recognizes that certain confidential trade secret information may be protected from disclosure, the Commission may not be in a position to establish that the information that a prospective bidder submits is a trade secret. If a request is made for information marked "Trade Secret" or "Business Secret," and the requester takes legal action seeking release of the materials it believes does not constitute trade secret information, by submitting a proposal, Proposer agrees to indemnify, defend and hold harmless the Commission, its agents and employees, from any judgment, fines, penalties, and award of attorneys' fees awarded against the Commission in favor of the party requesting the information, and any and all costs connected with that defense. This obligation to indemnify survives the Commission's award of the contract.

### ***3.8 Adequacy and Completeness of Proposals***

Failure to respond to the information specified in Section 5.0 (Proposal Format) of this RFP may result in rejection of your proposal as non-responsive.

### ***3.9 Commission Not Liable for Pre-Contractual Costs***

The Commission shall not be liable for any pre-contractual expenses incurred by Proposer in the preparation of its proposal. Proposer shall not include any such expenses as part of its proposal. Pre-contractual expenses are defined as expenses incurred by Proposer in:

- ✓ Preparing its proposal in response to this RFP
- ✓ Preparing the proposed system in response to this RFP
- ✓ Submitting that proposal to the Commission
- ✓ Negotiating with the Commission staff on any matter related to this proposal
- ✓ Any other expenses incurred by Proposer prior to date of award, if any

### ***3.10 Independent Price Determination***

A proposal will not be considered for award if the price in the proposal was not arrived at independently, without collusion, consultation, communication, or agreement as to any matter related to such proposal with any other Proposer, competitor, or public officer.

### ***3.11 Revision to the Request for Proposals***

The Commission reserves the right to revise the RFP prior to the date that proposals are due. Any changes, additions, or deletions to the RFP will be in the form of written addenda. All addenda will be posted at the Commission's Website at [www.goventura.org](http://www.goventura.org) at least seven days prior to the deadline for proposals. It is the responsibility of the Proposer to check the Website for any revisions related to this RFP.

## 4.0 SELECTION CRITERIA

Proposals will be evaluated, negotiated, selected and any award made in accordance with the criteria and procedures described below. The approach and procedures are those which are applicable to a competitive negotiated procurement whereby proposals are first evaluated to determine Proposer responsiveness, solutions and responsibility, and then scored for technical merit and overall best value. Price will be evaluated once the technical merits have been evaluated.

**Selection is based on Best Value.** The Commission will make the award to the Proposer whose proposal is most advantageous to the Commission. Accordingly, the Commission may not necessarily make an award to the Proposer with the highest technical ranking nor award to the Proposer with the lowest Price Proposal if doing so would not be in the overall best interest of the Commission.

Proposals will not be publicly opened. Each submitted proposal will initially be screened for responsiveness by the Commission. The following are the minimum requirements that must be met for a proposal to be considered responsive. (**Note:** All requirements must be met; therefore, they are not listed by any particular order of importance):

- ✓ The Proposer has followed the proposal requirements, the submittal requirements, and other instructions of this RFP, and included sufficient information and detail such that the proposal can be evaluated. Any deficiencies in this regard must be determined by the Commission to be a defect that the Commission will waive or the proposal may be disqualified.

Any proposal that the Commission finds cannot meet these requirements, and may not be made to meet these requirements within timelines set by the Commission, may be determined by the Commission to be non-responsive, and will not be considered for further evaluation. Proposers of any proposals that have been determined by the Commission to be non-responsive will be notified in writing that they were not short-listed for further consideration.

The Commission will establish a Selection Team for this Project which will include representatives from the Commission and Operators, and when deemed in the Commission's best interest, representatives of other public agencies, the general public, or individuals with experience and expertise in the related disciplines, including the Commission's consultants. The Commission reserves the right to independently score the proposals.

Responsive proposals will be distributed to the Selection Team. Final determination of a Proposer's responsiveness will be made upon the basis of initial information submitted in the proposal, any information submitted upon request by the Commission and information resulting from the Commission's inquiry of Proposer's references and its own knowledge of the Proposer.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

To the extent permitted by law, cost estimates and evaluations related to costs will be kept strictly confidential throughout the evaluation, negotiation and selection process. Only the members of the Selection Team and Commission officials, employees and agents having a legitimate interest will be provided access to the cost proposals and cost evaluation results during this period.

Commission staff will verify the references supplied by Proposers to determine the Proposer's record of producing a quality product on similar projects, adherence to budget and schedule, overall experience and technical competence in performing work of a similar nature, and quality of key personnel. References will only be verified for responsive (short listed or selected) Proposers.

All responsive Proposers may be invited to participate in an oral interview / product demonstration with the Selection Team to further discuss the content of their proposal, demonstrate their product and respond to questions by Commission staff and the Selection Team concerning their proposal. If interviews are not held, the points allotted to "Oral Presentation" shall be withheld from the overall Proposal Evaluation Form.

The final ranking of proposals will be determined through a combination of independent examination of proposals, interviews (if utilized), cost effectiveness, and other appropriate evaluation factors (e.g., reference checks). Proposals will be ranked based on relative point totals assigned by Selection Team members ("evaluators"). Each evaluator will independently score the proposals following a Suggested Scoring System. The point assignments will be weighted and each evaluator's weighted scores will be converted to ranks, with the highest weighted score ranked one, the next highest score ranked two, and so on. All Selection Team members' ranks will be combined and the highest combined rank score shall be the top-ranked firm.

### ***4.1 Technical Evaluation and Scoring***

Proposals are evaluated using a point method of award with predetermined criteria for each element. (**Note:** Some evaluated elements may be weighted higher than others.) A detailed scoring evaluation will be conducted for those proposals that have passed the initial evaluation. The scoring evaluation will be accomplished in a consistent, uniform manner for all proposals. Members of the team will score each proposal according to the pre-established evaluation criteria and weights for relative importance.

Proposals will be evaluated by the Selection Team and scored in accordance with the criteria outlined below:

(CONTINUED)

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Evaluation Criteria	(a) Weight	(b) Score	(a) x (b) Weighted Score
<b>QUALIFICATIONS AND EXPERIENCE OF PROJECT TEAM</b> <ul style="list-style-type: none"> <li>✓ Demonstrated successful performance on similar or related projects.</li> <li>✓ Experience, technical competence and role of sub-Proposers, including prior working relationship with prime (if applicable).</li> <li>✓ Relevant experience of the Project Manager and key personnel in example projects.</li> <li>✓ Senior staff availability and time commitment of key personnel on this project.</li> <li>✓ Organization logic, quality and cost control measures in place.</li> <li>✓ Overall financial stability and evidence of corporate resources committed to the Project.</li> <li>✓ Other on-going project commitments and priorities.</li> </ul>	10		
<b>SYSTEM FUNCTIONALITY / TECHNICAL SOLUTION</b> <ul style="list-style-type: none"> <li>✓ Completeness of Solution – How close does the Proposer meet the requirements as expressed in the Table of Compliance?</li> <li>✓ Scalability - Ability for expansion, growth and overall functional capabilities of the System. Current technology to allow for cost-effective expansion as needs change.</li> <li>✓ Passenger Information System – Method and flexibility of the predictive arrival predictions, Trip planner, Web (ability to transmit and ease of use for customers).</li> <li>✓ Mapping – capabilities and accuracy of maps / overlays.</li> <li>✓ Changeable Message Signs – capabilities, types and varieties of displays.</li> <li>✓ Personal Communication Devices – Ability to transmit schedules, arrival information and alerts to cell phones, tablets, wearables, etc.</li> <li>✓ Technology Solution.</li> <li>✓ Architecture - reliability, redundancy, environments, Disaster Recovery, Security, etc.</li> <li>✓ Reporting Capabilities – ability to meet reporting needs as described.</li> <li>✓ Optional Solutions –APC, AVA, Headsign &amp; Farebox Integration</li> </ul>	30		
<b>PROPOSED METHODOLOGY / APPROACH TO WORK</b> <ul style="list-style-type: none"> <li>✓ Demonstrated knowledge of the work required.</li> <li>✓ Approach and proposed methodology to project scope, including training and schedule.</li> <li>✓ Technical merit of proposed solution (logic, advantages, proven approach).</li> <li>✓ Use of components and software proven in service on similar projects.</li> <li>✓ System flexibility and upgradeability.</li> <li>✓ Innovative approaches to service delivery and on-going operational support.</li> </ul>	15		
<b>TRAINING AND SUPPORT</b> <ul style="list-style-type: none"> <li>✓ Work Plan – thoroughness of the training facilitators proposed training plan.</li> <li>✓ Acceptable Schedule – evaluate facilitators schedule as it matches Team needs.</li> <li>✓ Support available for solution beyond Pilot.</li> <li>✓ Thoroughness of Training Plan.</li> </ul>	10		
<b>ORAL PRESENTATION</b> <ul style="list-style-type: none"> <li>✓ Demonstrated knowledge of the work required.</li> <li>✓ Appropriateness of responses to questions.</li> <li>✓ Competence of key team members and evidence of team approach.</li> <li>✓ Quality of product and services as seen in the product demonstration.</li> </ul>	5		
<b>QUALITY OF WRITTEN PROPOSAL</b> <ul style="list-style-type: none"> <li>✓ Completeness of proposal and compliance with RFP instructions.</li> <li>✓ Explanation of the project or services required.</li> <li>✓ Logic, clarity and specificity of work plan.</li> <li>✓ Evidence of willingness to exceed project requirements.</li> <li>✓ Nature and extent of exceptions taken to contract terms, conditions or specifications.</li> </ul>	5		
<b>COST / COST EFFECTIVENESS</b> <ul style="list-style-type: none"> <li>✓ Total Implementation Costs</li> <li>✓ Five year total cost service/maintenance warranty expense .</li> <li>✓ Cost effectiveness will be evaluated with the maximum points granted to the lowest priced proposal. *</li> </ul>	25		
<b>TOTAL:</b>	100		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### ***Cost Proposal Evaluation***

Cost effectiveness will be evaluated with the maximum points granted to the lowest priced proposal. All proposals will be rated based on their cost relative to the lowest-priced cost proposal. The basis for the ranking of the costs shall be as follows:

#### **Lowest Cost Proposal / Cost Proposal being evaluated**

Example:

§ Lowest cost proposal= \$200,000

§ Lowest cost proposal percentage=  $\$200,000 / \$200,000 = 1.0$

§ Lowest cost proposal weighted points=  $1.0 \times 25 = 25$

§ Proposal being evaluated = \$250,000

§ Percentage award for proposal being evaluated=  $\$200,000 / \$250,000 = .80$

§ Proposal being evaluated weighted points=  $.80 \times 25 = 20$

The proposal selected shall provide a cost-effective approach that meets the Commission's stated requirements; however, **the lowest price proposal will not necessarily be selected.**

### ***4.2 Final Results and Contract Award***

The scores from the technical evaluation, product demonstration and cost proposal evaluation will be summed, and the proposals will be ranked by final total score. Final contract award will be made after recommendation by the Selection Team. The Commission will select the responsive and responsible Proposer with the highest total number of points to proceed to contract negotiations. In the event that the top two proposals are scored evenly, the Commission's Executive Director shall select a proposal. Contract award will be contingent upon successful negotiation of a contract acceptable to the Commission and receipt of evidence of the Contractor's ability to meet the Commission's insurance, indemnification, and bond requirements and the other requirements in this Proposal.

The Commission may elect to enter negotiations with one or more Proposers and require each Proposer to submit a Best and Final Offer (BAFO) in order for the Commission to arrive at a final determination.

After final negotiation of a proposed Agreement that is deemed fair and reasonable, Commission staff will recommend to the Commissioners that the Commission enter into the proposed Agreement. Final authority to approve the Agreement rests with the Commission. Contract Award is subject to FTA Grant approval and funding availability.

### ***4.3 Award Protests***

After award notification, Proposers wishing to file a protest must do so in writing in accordance with Attachment K - Resolution 91-05: VCTC Contract Protest Procedure.

## 5.0 PROPOSAL FORMAT

### 5.1 Proposal Submission

Proposals must be received by the time and date specified below. Proposals must be submitted by carrier/courier, (e.g. in-person, by US mail, FedEx, UPS, etc). **Do not fax or e-mail your proposals.** Seven (7) hard copies, including one (1) clearly marked signed Original, and one (1) disk or USB device containing a copy of the complete proposal in PDF format shall be submitted no later than **2 PM PST, MAY 2, 2017**, as described in Section 3.5 to be considered for contract award. Postmarks will not be accepted in lieu of this requirement. Proposals and / or modifications received subsequent to the hour and date specified above or transmitted by facsimile or e-mail are not acceptable and will not be considered. Late submittals will not be accepted and will be returned unopened to Proposer. Proposals should be addressed as follows:

Ventura County Transportation Commission  
*ATTN: VCTC PURCHASING AGENT*  
950 County Square Drive, Suite 207  
Ventura, CA 93003

**All Proposals must be sealed and clearly marked with the RFP-17-90164-AVL and Title of the RFP.** The proposal must be submitted in two distinct parts, technical and cost. The cost proposal must be submitted in a separately sealed envelope clearly marked "CONFIDENTIAL COST PROPOSAL." The technical and cost proposals may be submitted in the same package.

The proposal should be concise, well organized, and demonstrate the proposer's qualifications and experience applicable to the Project. Each section of the proposal will be clearly identified with appropriate headings. Proposals will include a table of contents and all pages numbered. Proposals hard copies will be bound using 3-ring binders. Failure to follow these instructions may result in disqualification. Proposals should be prepared simply and economically, providing a straightforward, concise description of the capabilities and solutions of the Proposer. Emphasis should be on completeness and clarity of content.

The Proposer must ensure that adequate and accurate responses are provided. It is the responsibility of the Proposer to provide complete answers to each requirement even if that results in redundant, duplicated material within the proposal. The Commission's Selection Team is not required to search for the answers in other sections of the proposal response.

The proposals shall contain the following information in the order it is presented below. Failure to do so, may result in proposals as deemed non-responsive.

#### 5.1.1 Transmittal Letter

A cover letter should contain a brief summary of the Proposer's team, its experience, the proposal content, the name, title, phone number, e-mail address and physical address of the team contact.

***The transmittal letter shall also acknowledge the Proposer's receipt of any RFP addenda.***

The cover letter must include a statement that the price in the proposal was arrived at independently, without collusion, consultation, communication, or agreement as to any matter related to the proposal with any other Proposer, competitor, or public officer. Proposer must acknowledge that prices are firm for a period of 180 days. The cover letter shall be signed by the person authorized to negotiate a contract for proposed services with the Commission on behalf of the submitting Proposer.

### **5.1.2 Table of Contents**

Proposal Table of Contents must provide page number references for the sections, any appendices, and forms, and certifications required of this solicitation.

### **5.1.3 Executive Summary**

Include a 2-4 page overview of the entire proposal describing the most important elements of the Proposer's solutions and project approach.

### **5.1.4 Section 1-Project Understanding / Proposer Solution**

Based on information contained in this RFP, as well as information obtained in any subsequent addenda, pre-proposal meetings, and other materials available from the Commission, the Proposer shall describe their solution, plan, approach, and technical architectures for accomplishing the work requested. The information provided shall be in enough detail to enable the Commission to ascertain that the Proposer understands the technologies, functional requirements, related software, maintenance and warranty needs, timelines and effort to satisfy the RFP requirements. The Proposer should indicate, in written narrative, how the solutions / product(s) and services proposed will help the Commission / Operators reach its objective of improving the quality of transportation services to its customers.

### **5.1.5 Section 2- System Description**

Proposers should fully describe the System being offered as part of this submission. Capabilities and features should be described in the context of its application to the Commission's requirements and the benefits gained from the Proposer's solutions and / or products. Proposers must list all components or modules necessary to fully implement the project, including any third party solutions, services / products necessary to complete the total installation including the optional technologies.

Technical description of the proposed systems that includes:

- ✓ A direct response to the specifications and functions requested in this RFP;
- ✓ Diagrams that illustrate how system components interact and exchange data are encouraged;
- ✓ A description of additional functional capabilities of the proposed system not identified in the RFP;

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ A description of system components and how they interact / integrate;
- ✓ A description of how the System will be Hosted, architected, and managed (hardware, software, databases, etc.); and
- ✓ A Table of Compliance (Attachment B) that indicates the compliance of the proposed system with the technical specifications, including compliance with Optional Technologies. Responses shall be, "Fully Complies," "Does Not Comply, or Partially Complies." The Proposer may explain those sections that it marks as "Partially Complies" or "Does Not Comply";

**Alternative Approach.** Where the Proposer wishes to propose alternative approaches to meeting the requirements, these should be thoroughly explained, including the alternative methodology to be employed to meet the functional requirements and any benefit provided to the Commission by the alternative methodology.

In addition, Proposer should describe the features of their warranty and maintenance plan that will be provided in accordance with the requirements contained within as well as a description of the maintenance requirements.

### **5.1.6 Section 3-Firm / Team Overview**

Provide a team organization chart that identifies the roles of the Proposer's key personnel. If applicable, clearly delineate the responsibilities of the prime contractor and subcontractor(s). Specify the extent of the time commitment of key personnel for the duration of the project. Provide an indication of the overall level of effort for the Project, including a breakdown of staffing hours by key personnel. Describe the experience of the Proposer's project team in detail, including the team's Project Manager, engineer, and other key staff members, on projects of similar size, capacity, and dollar value. For each similar project, include the client's name and telephone number. Resumes for key personnel should be included in an Appendix (limit resumes to relevant information only). **No changes in team composition will be allowed without the prior written approval of the Commission.**

### **5.1.7 Section 4-Implementation Plan / Project Management**

Proposers should fully describe the proposed implementation plan of their response to this RFP, detailing all major milestones in the process. A clearly stated, proposed timeframe, including the following project milestones or stages: 1) fleet installations and dispatch tracking and reporting functionality; 2) installation and implementation of Passenger Information System (such as bus stop signage, by computer or personal communication device; and, if applicable, 3) implementation of Optional Technologies. The key milestones, or stages, from notice-to-proceed (NTP) through live testing and final acceptance should be developed as an integral part of this section.

Project Management and Staffing – Describe how the Proposer will manage the project, ensure completion of the scope of work described in the Proposal following the developed timeline milestones, and accomplish the required objectives. This plan must include the proposed

management team, staffing plan, including information on its sources of craft labor and its training capabilities. Discuss how and what lines of communication will be implemented to maintain the project schedule.

Proposer should include a Microsoft Project "Project Plan" that includes the various tasks; activities (resource loaded) required to complete this Project. Specifically, include in the Proposer's plan a detailed schedule showing tasks and milestones for the system design, system testing and acceptance, training, documentation for dispatch, operators and maintenance, and a phased deployment. The Proposer will describe how they will use the plan to ensure that the schedule will be met and how the Project's many elements will be documented and tracked.

If the Proposer intends to subcontract portions of the work, Proposer will provide a complete list of potential subcontractors, their qualifications, addresses and the names and phone numbers of contact points within their organization and a description of the work to be subcontracted.

### **5.1.8 Section 5 -Quality Assurance Plan**

Proposers should describe in detail their management strategies for overall quality assurance in the POC, general implementation, testing, and operation of the System components. At a minimum, Proposers should address:

- ✓ Testing / Acceptance: an outline of the procedure for factory, system and burn-in testing; describe how testing will be performed for central components and for components at Commission locations; and describe how the Commission will be involved in acceptance testing.
- ✓ Warranty, Maintenance, Support, and Upgrades: Describe any initial and extended warranties that apply, or may be available, for hardware / software and / or services used in response to this RFP. Describe the Proposers' technical support during the Project, focusing on the implementation period as well as long-term. Describe procedures for rendering support, including the availability of technicians to provide repairs. Technical support policies and pricing must be explained in detail.
- ✓ Quality Control: Describe steps and methods employed by the Proposer to ensure that quality of the services and work products of the proposed system are realized.

### **5.1.9 Section 6-Training**

Proposers should provide a detailed schedule and outline for the necessary training of Commission / Operator staff as defined herein. This section should identify the training course content, documentation / training materials, the number and type of training courses that will be required and the length of the training sessions, etc. Proposers should indicate when the training should be provided in the context of the overall implementation time schedule. Qualifications of the staff providing the training shall be listed.

### **5.1.10 Section 7- Commission / Operator Actions under the Project**

The Commission understands that successful implementation of this Project requires a partnership between the Commission, Operators and the Proposer. Proposer will identify the type of personnel needed to facilitate the proposer identified contributions from the Commission/Operator.

### **5.1.11 Section 8- Experience**

Proposers should provide a corporate profile indicating their qualifications to provide the required System and support necessary to achieve the Commission's goals for the Project. Proposers must submit a list of other systems of a similar size to the Commission's where the proposed system(s) have been installed successfully; preference is for public transit agencies. A separate list of the Proposers' last three (3) installations, along with a project contact, address, telephone number, and e-mail address must be provided.

The Commission has created a Mail-In Reference Questionnaire which will be used by the Short-Listed Proposers at the appropriate time. Please refer to the Questionnaire for specific instructions in Attachment H.

### **5.1.12 Section 9 - Financial Statement**

The Commission wants to understand the financial condition of the Proposer. Identify any conditions (e.g., bankruptcy, pending litigation, planned office closures, impending merger) that may impede Proposer's ability to complete the project. Audited financial statements for past three (3) fiscal years, a Dun & Bradstreet report or a one-page summary from a CPA firm shall be submitted as an Appendix to the Proposer's proposal.

Please provide the following information:

- ✓ Legal name and address of Proposer
- ✓ Number of years Proposer has been in business
- ✓ Legal form of company (partnership, corporation, joint venture, etc.). (If joint venture, identify the members of the joint venture and provide all information required within this section for each member. If a corporation, certify that the corporation is in good standing with the Secretary of State)
- ✓ If Proposer is wholly-owned subsidiary of a "parent company," provide the legal name and form of the parent company
- ✓ Tax Identification Number
- ✓ Data Universal Numbering System (DUNS) Number
- ✓ Central Contractor Registration (CCN) Number
- ✓ Address(es) of office(s) that will work on this Project
- ✓ If DBE certified, identify certifying agency, as well as gender and ethnicity
- ✓ Name, title, address, e-mail address, and telephone number of the person to contact concerning the proposal



- ✓ State whether the Proposer has filed bankruptcy in the last ten (10) years
- ✓ Subcontractor letters of commitment are required and must be submitted for each subcontractor listed in the proposal

### **5.1.13 Section 10 – Pricing / Cost / Payment**

The price proposal consists of the forms in Attachment C. The Proposer shall detail the incremental and recurring costs for all items (i.e., project components and deliverables) as listed below:

- ✓ Unit costs for hardware. Any exception must be explained.
- ✓ Costs must be broken down, total capital cost as well as operation and maintenance costs for the next 5-years.
- ✓ The estimated annual cost of operations and maintenance should be listed and described. The cost shall include and detail all anticipated sources of recurring costs, including, but not limited to: cellular airtime, royalties, software license fees, technical support, training, rentals or anticipated replacements.
- ✓ Estimates of non-provider costs, (the Commission wants no surprise costs)

**As part of the price proposal, the Proposer must also include a payment schedule based on milestones and deliverables related to the installation and deployment of the System for the Commission consideration and negotiations (Attachment D).**

If the costs exceed the funds available for this Project, the Commission shall, at its sole discretion, remove some components from the requirements and /or Technologies Options that would not otherwise affect the functionality of the systems.

Even though the method of payment to the Proposer will be a fixed price, a detailed cost breakdown shall be provided that includes an estimate of the number of staff hours and hourly rates for each professional and administrative staff person who will be committed to this project, including fringe and overhead rates, all other direct costs, such as travel and subsistence, materials, reproduction, etc., and the cost for subconsultant services, if applicable. This information will be used to determine the reasonableness of the Proposer's cost estimate and for pre-award audit purposes when appropriate. Labor rates and escalation will also be used to negotiate any change orders throughout the term of the contract.

**The cost proposal must be submitted in a separately sealed envelope clearly marked "CONFIDENTIAL COST PROPOSAL." The technical and cost proposals may be submitted in the same package.**

### **5.1.14 Proposal Appendix**

The Proposer may include other materials considered relevant to the proposal. However, this is not an invitation to submit large amounts of extraneous materials. Appendices should be relevant

and brief. Materials included in the appendices will not be evaluated. Do not submit more than 3 appendices, and the total number of pages combined should not exceed 10.

### **5.1.15 Exceptions to this Request for Proposals**

The Proposer shall certify whether it takes any exception(s) to the requirements of this RFP or the standard contract provisions outlined in Section 6 below, and if so, shall list those items to which exceptions are requested and –as appropriate– provide proposed alternate language. It is not the Commission’s intent to make substantial changes to the standard contract provisions. Failure to take exceptions to the RFP or standard contract provisions within the proposal will be deemed a waiver of any objection. Exceptions will be considered during the proposal evaluation process.

All Proposers shall also be required to complete and submit the Table of Compliance, Attachment B, which covers each of the requirements in the RFP. If the Proposer does not comply with any of the requirements, the specific requirement must be identified and explained. Failure to take exception in the manner set forth above will be deemed a waiver of any objection. Exceptions will be considered during the proposal evaluation process.

### **5.1.16 Required Certifications**

As part of the proposal package, Proposers must submit all of the signed certifications as found in the Appendix. The proposal and any required certifications shall be signed by an individual or individuals authorized to execute legal documents on behalf of the Proposer.

## **5.2 Product Demonstration**

Short-listed Proposers may be invited to demonstrate their proposed System in Ventura, California. Demonstrations will be limited to this specific Project and the Proposer’s proposal. Proposer’s will have two hours for the demonstration to present and for follow-up and / or additional questions by the Commission. At the appropriate time, the Commission will inform the Proposers as to the actual specifics of the demonstration, however, the demonstration will generally be evaluated on the following:

- ✓ Demonstration of your System: 1) real time Passenger Information System and trip planning; 2) CAD; 3) Reports; 4) Management Capabilities; 5) System Administration functions. (Anything the Commission/Operators can do with the System out of the box)
- ✓ Functional and architectural overview of products (AVL / CAD / Passenger Information System)
- ✓ Description of your technology solution, Hosted, On-Premises Managed Services, Commission supported model and what's included, what's not (architecture, failover, database redundancy, Disaster Recovery, etc.)
- ✓ Architected data transfers (bulk or wireless)



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Outline the typical implementation and installation steps to be taken and expected time frames and any implications for the Commission that you might be aware of
- ✓ Project Management / engineering approach
- ✓ Training Plan, timelines, etc.
- ✓ Maintenance / Warranty
- ✓ Product support process, escalations procedures, etc.
- ✓ Functional and architectural overviews of your Optional Technologies: (APC, AVA, Headsign and farebox Integration capabilities; Single-point Log-on.)

The demonstration should be a live, working system (no PowerPoint) that meets the requirements. The cost to assemble and develop the proposed System and attend the product demonstration will be the responsibility of the Proposer.

## **6.0 ADMINISTRATIVE/CONTRACTUAL REQUIREMENTS**

The following sections outline standard administrative procedures and contractual provisions that the Commission will require in the ultimate contract for the System. For the purposes of this Section 6, the entity that is selected to perform the work contemplated by this RFP is referred to as "Proposer" or "Contractor."

### **6.1 Prime Contractor**

Proposer will be the sole point of contact for the contract. The Proposer will be completely responsible for all actions and work performed by its subcontractors. All terms, conditions, and requirements of the contract will apply without qualification to any services and work performed by any subcontractor of the Proposer.

### **6.2 News Releases**

The Commission is the only entity authorized to issue news releases relating to this RFP, its evaluation, award, or any contract and performance there under.

### **6.3 Contract Documents**

All terms and conditions included in this solicitation will be incorporated into any resultant contract.

It is the intent of the Commission to award a firm fixed price contract for this procurement.

The Commission is exempt from Federal Excise and Transportation Taxes. The Commission will furnish necessary exemption certificate upon request. Any sales tax, use tax, imposts, revenues, excise or other taxes, which are now or which may hereafter be imposed by Congress, by a state or any political subdivision hereof and applicable to the sale or the material delivered as a result of the selected Proposer's proposal and which, by the terms of the tax law, must be passed directly to the Commission, will be paid by the Commission.

### **6.4 Form of Cost Proposals**

Cost proposals shall include the **Cost Proposal Form (Attachment C) and Bid Form (Attachment I)**, furnished to Proposers. Cost proposals that do not include the Cost Proposal and Bid Forms will be considered non-responsive and **WILL BE REJECTED**. The only acceptable method of modifying a cost proposal is by letter, if it is received by the person assigned to open cost proposals prior to the time set for opening of cost proposals

### **6.5 Receipt of Bids**

Bids must be received by the time and date specified in Section 3.5. Proposals must be submitted manually, and as specified in Section 5.1.

The Commission reserves the right to reject any or all bids, and to cancel the requirements at any time prior to bid opening and return all bids unopened.

## **6.6 Discrepancies**

If a Proposer becomes aware of any discrepancy, ambiguity, conflicts, error or omission in the RFP, it shall be reported immediately to the Commission staff, who will determine the necessity for clarification.

## **6.7 Appeal Procedures**

Requests for approved equals, and clarifications of specifications must be submitted to the Commission in the form of a question regarding the RFP, and submitted no later than April 7, 2017 (as specified Section 3.5 Tentative Schedule for Evaluation, Selection, and Award).

Alternatively, proposers may submit a formal protest of specifications. Protests must be received by the Commission in writing, pursuant to Attachment K - Resolution 91-05 VCTC Contract Protest Procedure.

Any request for an approved equal or protest of the specifications must be fully supported with technical data, test results, or other pertinent information as evident that the substitute offered is equal to or better than the specification requirements. The burden of proof as to the equality, substitutability, and the compatibility of proposed alternates or equals shall be upon the Proposer, who shall furnish all necessary information at no cost to the Commission. The Commission shall be the sole judge as to the quality, substitutability and compatibility of the proposed alternates or equals.

## **6.8 Addenda**

Clarification or any other notice of a change in the proposal documents will be issued only by the Commission Purchasing Agent and only in the form of written addenda posted to the Commission webpage, [www.goventura.org](http://www.goventura.org). Each addendum will be numbered and dated. Oral statements or any instructions in any form, other than addenda as described above, shall have no consideration.

Each addenda received during the proposal process shall be acknowledged in the designated space on the **Bid Form** (Attachment I) with the information therein requested. If none are received, the words "**no addenda received**" shall be written in the said space.

## **6.9 Receiving Proposals**

Proposals received will be kept unopened until the time fixed for the proposal opening. The person whose duty it is to open the proposals will determine when the time stated above has arrived and no proposal received thereafter will be considered.

### ***6.10 Withdrawal of Proposals***

Proposals may be withdrawn only by signature of the Proposer, provided the request is received by the person whose duty it is to open proposals prior to the time fixed for proposal opening. Each proposal opened will be considered to be a valid offer, and may not be withdrawn for a period of one hundred eighty (180) calendar days following opening of proposals, unless the Proposer is given written notice that the proposal is unacceptable.

### ***6.11 Evaluation of Proposals***

Proposals will be evaluated as stated in Section 4 above.

### ***6.12 Award or Rejection of Proposals***

Award will be made based on the Best Value method of scoring as described in Section 4.1.1.

Discount for prompt payment of less than fifteen (15) days offered by the Proposer will not be used in the evaluation or award process.

The Commission reserves the right to REJECT ANY OR ALL proposals or any item or part thereof, or to waive any informality or irregularity in proposal when it is in the best interest of the Commission to do so.

The Commission also reserves the right to award its total requirements to one Proposer or to apportion those requirements among several Proposers, as the Commission may deem it to be in its best interest.

### ***6.13 Pre-Contractual Expenses***

Proposers are responsible for all pre-contractual expenses. Pre-contractual expenses are defined as expenses incurred by the Proposer in 1) preparing the proposal in response to this RFP; 2) submitting that proposal to the Commission; 3) negotiating with the Commission any matter related to this proposal; or 4) any other expenses incurred by the Proposer prior to date of award.

### ***6.14 Payment***

#### **Payment Schedule and Invoicing**

Payment for equipment, material, and services shall be made 30 days after receipt of an Acceptable Invoice.

An Acceptable Invoice includes:

- ✓ Proper and complete billing (including support) is received by Commission.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Acceptance by the Commission of the equipment, materials and / or services in accordance with the Scope of Work.
- ✓ Contractual agreements set forth between the Commission and the Contractor.

**Advance payments by the Commission are prohibited.**

### **Prime Contractor and Subcontractor Payments (if applicable)**

Proposer agrees to pay each subcontractor under this contract for satisfactory performance of its contract no later than 10 days from receipt of each payment the prime contractor receives from the Commission. The Proposer agrees further to return retainage payments to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Commission.

## **6.15 Delays**

### **Unavoidable Delays**

If services under the contract should be unavoidably delayed, the Commission's Executive Director shall extend the time for completion of the contract for the number of days of excusable delay in the determination of the Executive Director. A delay is unavoidable only if the delay was not reasonably expected to occur in connection with or during the Contractor's performance, and was not caused directly or substantially by acts, omissions, negligence or mistakes of the Contractor, the Contractor's subs, or their agents, and was substantial and in fact caused the Contractor to miss delivery dates, and could not adequately have been guarded against by contractual or legal means. Delays beyond control of the Commission / Operators or caused by the Commission / Operators will be sufficient justification for delay of services and Contractor will be allowed a day for day extension.

### **Notification of Delays**

The Contractor shall notify the Purchasing Agent as soon as the Contractor has, or should have, knowledge that an event has occurred which will delay delivery or installation of the System. Within five (5) calendar days, the Contractor shall confirm such notice in writing, furnishing as much detail as available.

### **Request for Extension**

The Contractor agrees to supply, as soon as such data are available, any reasonable proofs that are required by the Commission's Executive Director to make a decision on any request for extension. The Commission's Executive Director shall examine the request and any documents supplied by the Contractor and shall determine, in the Executive Director's sole discretion, if the Contractor is entitled to an extension and the duration of such extension. The Commission's Executive Director shall notify the Contractor of his decision in writing. It is expressly understood and agreed that the Contractor shall not be entitled to damages or compensation and shall not be reimbursed for losses on account of delays resulting from any cause under this provision.

## **6.16 Conditional Acceptance**

The Commission reserves the right to allow partial payments based on the conditional acceptance of the System under the condition that the Proposer will rectify cited deficiencies within an agreed upon time frame.

## **6.17 Insurance Requirements**

During the performance of the contract executed pursuant to this RFP, and at Contractor's sole expense, Contractor shall procure and maintain the following insurance and shall not of its own initiative cause such insurance to be cancelled or materially changed during the course of herein contract..

Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, or employees.

### **Minimum Scope and limit of Insurance - Coverage shall be at least as broad as:**

1. **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis for bodily injury and property damage, including products-completed operations, personal injury and advertising injury, with limits no less than **\$1,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** Insurance Services Office Form Number CA 0001 covering, Code 1 (any auto), or if Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
3. **Workers' Compensation** insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease.  
***(Not required if Contractor provides written verification it has no employees)***
4. **Professional Liability** (Errors and Omissions) Insurance appropriate to the Contractor's profession, with limit no less than **\$1,000,000** per occurrence or claim, \$2,000,000 aggregate.

If the Contractor maintains higher limits than the minimums shown above, the Commission requires and shall be entitled to coverage for the higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Commission.

### **Other Insurance Provisions:**

**The insurance policies are to contain, or be endorsed to contain, the following provisions:**

#### ***Additional Insured Status***

**The Commission, the Operators, and their officers, officials, employees, and volunteers are to be covered as additional insureds** on the auto policy with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10, 11 85 or both CG 20 10 and CG 20 37 forms if later revisions used).

### ***Primary Coverage***

For any claims related to the contract, the **Contractor's insurance coverage shall be primary** insurance as respects the Commission, the Operators, and their officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the Commission, the Operators, or their officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

### ***Notice of Cancellation***

Each insurance policy required above shall state that **coverage shall not be canceled, except with notice to the Commission and Operators.**

### ***Waiver of Subrogation***

Contractor hereby grants to Commission and Operators a waiver of any right to subrogation which any insurer of said Contractor may acquire against the Commission by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Commission and Operators have received a waiver of subrogation endorsement from the insurer.

### ***Deductibles and Self-Insured Retentions***

Contractor shall disclose to and obtain the approval of Commission for the self-insured retentions and deductibles before beginning any of the services or work called for by any term of the Contract. Further, if the Contractor's insurance policy includes a self-insured retention that must be paid by a named insured as a precondition of the insurer's liability, or which has the effect of providing that payments of the self-insured retention by others, including additional insureds or insurers do not serve to satisfy the self-insured retention, such provisions must be modified by special endorsement so as to not apply to the additional insured coverage required by the contract so as to not prevent any of the parties to the contract from satisfying or paying the self-insured retention required to be paid as a precondition to the insurer's liability. Additionally, the certificates of insurance must note whether the policy does or does not include any self-insured retention and also must disclose the deductible.

### ***Acceptability of Insurers***

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the Commission.

### ***Claims Made Policies***

If any of the required policies provide coverage on a claims-made basis:

1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided **for at least five (5) years after completion of the contract of work.**
3. If coverage is canceled or non-renewed, and not **replaced with another claims-made policy form with a Retroactive Date** prior to the contract effective date, the Contractor must purchase "extended reporting" coverage for a minimum of **five (5) years** after completion of contract work.



***Subcontractors***

Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that Commission and Operators are an additional insured on insurance required from subcontractors.

***Special Risks or Circumstances***

Commission reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

**6.17.1 Proof of Insurance**

Prior to the Commission's issuance of a contract, the Contractor must furnish to the Commission a **Certificate of Insurance** which shall certify the Contractor's insurance policy adequately covers the above listed requirements. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. Documents may be delivered or mailed to said office by the provider. Language on the certificate and applicable endorsements shall confirm the following:

- ✓ The required parties are designated as an additional insured on the Comprehensive Liability and Automobile Liability Insurance described hereinabove.
- ✓ The coverage shall be primary as to any other insurance with respect to performance hereunder.
- ✓ Thirty (30) days written notice of cancellation or material change to Commission.

**6.18 Liquidated Damages**

The Commission and Proposer recognize that liquidated damages requirements are appropriate if parties to a contract may reasonably expect to incur damages in the form of increased costs resulting from the late completion of the contract. Therefore, the Commission will impose a charge of **\$100.00** per day, per vehicle, each day after scheduled completion.

**6.19 Performance and Payment Bond**

In addition any federal bonding requirements that may exist for construction activities as outlined in Attachment J. the Proposer may be required to obtain performance and payment bonds when necessary to protect the Commission's interest.

- ✓ The following situations may warrant a performance bond:
  - ✓ The Commission property or funds are to be provided to the Proposer for use in performing the contract or as partial compensation (as in retention of salvaged material).
  - ✓ A Proposer sells assets to or merges with another concern, and the Commission, after recognizing the latter concern as the successor in interest, desires assurance that it is financially capable.
  - ✓ Substantial progress payments are made before delivery of end items starts.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Contracts are for dismantling, demolition, or removal of improvements.
- ✓ When it is determined that a performance bond is required, the Proposer shall be required to obtain performance bonds as follows:
  - ✓ The penal amount of performance bonds shall be 100 percent of the original contract price, unless the Commission determines that a lesser amount would be adequate for the protection of the Commission.
  - ✓ The Commission may require additional performance bond protection when a contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The Commission may secure additional protection by directing the Proposer to increase the penal amount of the existing bond or to obtain an additional bond.
- ✓ A payment bond is required only when the Proposer uses a subcontractor for this project.
- ✓ When it is determined that a payment bond is required, the Proposer shall be required to obtain payment bonds as follows:
  - ✓ The penal amount of payment bonds shall equal to the subcontractors interest in this project as stated by the subcontractors.

The Proposer may be required to obtain an advance payment bond if the contract contains an advance payment provision and a performance bond is not furnished. The Commission shall determine the amount of the advance payment bond necessary to protect the Commission.

Within 90 days after Final Acceptance of the contract those obligations deposited as a performance bond, will be returned, less any amount owed to the Commission as a result of this contract. Obligations deposited as the payment bond, shall be held for a period of one (1) year from the date of acceptance of the contract for settlement of any claims.

### **6.20 Milestone Retainage**

Retainage for Project Milestones has been set at 10%.

### **6.21 Prohibited Interests**

#### **Prohibited Interest**

The parties hereto covenant and agree that, to their knowledge, no board member, officer, or employee of the Commission, during his tenure or for one (1) year thereafter has any interest, whether contractual, non-contractual, financial or otherwise, in this transaction, or in the business of the contracting party other than the Commission, and that, if any such interest comes to the knowledge of either party at any time, a full and complete disclosure of all such information will be made in writing to the other parties, even if such interest would not be considered a conflict of interest under Article 4 of Chapter 1 of Division 4 of Title 1 (commencing with Section 1090) or Article 1 of Chapter 7 of Title 9 (commencing with Section 87100) of the Government Code of the State of California.

#### **Interest of Members of / or Delegates to Congress**

No member of or delegate to the Congress of the United States shall be admitted to any share of or part of this contract or to any benefit arising therefrom.

### **6.23 Warranties**

In addition to any standard warranties, the Contractor will provide the Commission with warranties for the work contemplated under this RFP in accordance with the warranty requirements outlined in Section 10.9 of this RFP.

### **6.24 Federal Contracting Requirements**

The Contractor shall accept and comply with all applicable federal contracting requirements outlined in Attachment J. Furthermore, the Contractor shall accept any additional federal contract provisions that the Commission is made aware of or determines are required in connection with the Project.

### **6.25 Ownership of Materials and Service Data**

**All data, procedures, descriptions, presentations and recommendations accumulated by the Proposer under the contract resulting from this RFP will be owned by the Commission. The Proposer may not release, distribute, or otherwise utilize any such data without the written approval of the Commission.**

### **6.26 Inspection and Approval of Work**

The Proposer will permit the Commission's Project Manager or a duly authorized representative to inspect and audit all work, material and other data and records connected with the contract.

### **6.27 Patent / Copyright Infringement**

At the time of Proposer's bid submittal, the Proposer warrants that all products and services being proposed are free and clear of any and all patent infringements, copyrights, etc.

### **6.28 Retention of Records**

The Proposer will be required to maintain accounting records and other evidence pertaining to the costs incurred for a period of three (3) years beyond contract expiration and shall make the records available at their office at all reasonable times.

### **6.29 Liabilities against Procuring Agency**

The Contractor shall indemnify, keep and save harmless the Commission and Operators, its agents, officials, and employees against all injuries, deaths, losses, damages, claims, suits, liabilities, judgments, costs, and expenses, which may accrue against the Commission arising out

of or resulting from the Contractors acts or omissions, including acts or omissions of its employees, servants and agents.

### **6.30 Omission**

Notwithstanding the provision of drawings, technical specifications, or other data by the Commission, the Contractor shall have the responsibility of supplying all drawings and details required to make the project complete and ready for service even though such details may not be specifically mentioned in the drawings and specifications.

### **6.31 Priority**

In the event of any deviation between the description of the equipment in the Technical Specifications and other parts of this document, the specifications shall govern.

### **6.32 Repairs after Non-Acceptance**

The Commission may require the Contractor, or its designated representative to perform the repairs after non-acceptance or the work may be done by the Commission's personnel with reimbursement by the Contractor.

#### **Repairs by Contractor**

- ✓ If the Commission requires the Contractor to perform repairs after non-acceptance of the equipment, the Contractor's representative must begin work within five (5) working days after receiving written notification from the Commission of failure of acceptance tests. The Commission shall make the equipment available to complete repairs timely with the Contractor repair schedule.
- ✓ The Contractor shall provide, at its own expense, all spare parts, tools, and space required to complete the repairs.

#### **Repairs by Commission**

- ✓ Parts Used: If the Commission decides to perform the repairs after non-acceptance of the equipment, it shall correct or repair the defect and any related defects using Contractor-specified parts available from its own stock or those supplied by the Contractor specifically for this repair. Reports of all repairs covered by this procedure shall be submitted by the Commission to the Contractor for reimbursement or replacement of parts. The Contractor shall provide forms for these parts.
- ✓ Contractor Supplied Parts: If the Contractor supplies parts for repairs being performed by the Commission after non-acceptance of the equipment, these parts shall be shipped prepaid to the Commission from any source selected by the Contractor within 10 working days after receipt of the request for said parts.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Return of Defective Components: The Contractor may request that parts covered by this provision be returned to the manufacturing plant. The total cost for this action shall be paid by the Contractor.
- ✓ Reimbursement for Labor: The Commission shall be reimbursed by the Contractor for labor. The amount shall be determined by multiplying the number of man-hours actually required to correct the defect by a per hour, per technician straight wage rate.
- ✓ Reimbursement for Parts: The Commission shall be reimbursed by the Contractor for defective parts that must be replaced to correct the defect. The reimbursement shall include taxes where applicable and 25 percent handling costs.

### **6.33 Disputes**

Protests dealing with restrictive specifications or alleged improprieties in the solicitation must be filed pursuant to *Resolution 91-05: VCTC Contract Protest Procedures (as defined in Attachment K of this solicitation)*.

The protest will contain a statement describing the reasons for the protest and any supporting documentation. Additional materials in support of the initial protest will only be considered if filed within the time limit specified in the paragraph above. The protest will also indicate the ruling or relief desired from the Commission.

### **6.34 Option of Obtaining Services Outside of the Contract**

The Commission reserves the right to contract separately for other services within the scope of this project if in the best interest of the Commission.

### **6.35 Federal Changes**

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement (Form FTA MA(23) October 1, 2016) between Purchaser and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

### **6.36 Federal Transit Administration (FTA) Terms**

The preceding provisions include, in part, certain Standard Terms and Conditions required by the Department of Transportation, DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or

## **Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

refuse to comply with any Ventura County Transportation Commission requests which would cause the Commission to be in violation of the FTA terms and conditions.

## 7.0 CONCEPT OF OPERATIONS

In summary, the Commission prefers an “out-of-the-box” System Hosted and served from a central data center and accessible from any Internet capable desktop within the Commission and/or Operator workstations. The Operators intend to utilize the System on fixed route buses for vehicle tracking and passenger information and all other Proposers capabilities.

The Commission expects that the Proposer's solutions will aid in achieving the Commission's objectives as follows:

### Fixed-Route Software to Meet the Commission Goals

Commission Goal	Technology Capability
Make public transit more attractive to the general population.	✓ By providing quality service information (planned or real-time) to customers.
Maximize passenger movements.	✓ By optimizing scheduling for vehicles and staff, The Operators can improve transit efficiency and passenger transfers.
Reduce operational costs.	✓ By informing the fixed-route scheduling process, better scheduling should be possible using the same, or fewer resources.

By use of both digital map-based and tabular displays, the Operators' Dispatchers shall be able to track their fixed-route vehicles. The capability to exchange status information between Vehicles and Dispatch will result in reduced voice traffic levels and clearer information. When performing customer service, staff shall be able to monitor all bus locations and status in real time rather than by printed schedule.

With the use of an MDT, the bus should have the ability to track its own location versus schedule, and advise the Driver and Dispatch when a variance exists. In addition, the System shall generate logs and data that record the fixed-route operations, shall have the capability to generate reports documenting fixed-route operations, and allow transit planners to utilize data on which to plan new service and tailor service to best meet planning and scheduling objectives.

Also, the Commission is eager to deploy a robust Passenger Information System that will enable the Commission's fixed route riders to ascertain next bus arrival predictions at the Operators' bus stops and at the Transit Centers, utilizing large multiline external display(s) shall show the estimated arrival and departure time for each route that stops at that Transit Center, as well as

interior displays (e.g. for installation in an enclosed lobby) that depict the system map with arrival information. The Passenger Information System will also simultaneously broadcast fixed-route vehicle location and arrival times via the Internet accessible by smart phone, and SMS text message.

### ***7.1 The General Public as System Benefactor***

The primary beneficiaries of the Proposer's ITS solution is the general public. The Commission has identified as a strategic goal to better serve the needs of the transit dependent population, while also attracting new "choice" riders. The Commission has further committed to improve the "ease" of understanding and use of transit, to improve the customer experience, and to build awareness of the transit services provided by the Operators. The Proposer's new AVL and Passenger Information System is a critical component of the Commission's capital and strategic marketing plans, with specific customer objectives of providing real-time information of arrivals and departures via Information Displays at the Transit Centers and via the Internet to significantly increase the passenger's confidence with using transit.

### ***7.2 Fixed Route Operations***

Once the current AVL equipment has been replaced on the Operators' fixed route fleet by the Proposer and by use of both digital map-based and text displays, the Operators' Dispatchers shall be able to track their fixed-route vehicles. When performing customer service, staff shall be able to monitor all bus locations and status in order to provide real-time information to customer calls.

The fixed-route management System shall generate logs and data that record the fixed-route operations and generate the corresponding reports documenting fixed-route operations. The Operators' Transit Planners should provide accurate data on which to plan new service and tailor service to best meet the planning and scheduling objectives.

When equipped with an MDT, the bus will have the ability to track its own location and advise the Driver and / or Dispatch when a variance exists, the buses will more closely adhere to the Operators' scheduled service.

Data shall be made available for downloading at the end of the shift / work day. This will result in a wealth of data for the Operators to plan for new service and tailor existing service to best meet our mission.

### ***7.3 Fleet Inventory***

The Commission is purchasing the System for use by the Operators, including the Commission which operates two transit systems, the VCTC Intercity and the Valley Express. The cumulative Operator fleet consists of a total of 140 vehicles, organized into nine (9) fixed route systems, operated out of seven (7) maintenance facilities. For specific fleet information, including make, model, year, etc. see *Operators Fleet and System Composition Schedule*, (Attachment M).



## ***7.4 Transit Centers and Bus Stop Inventory***

The Commission has deployed wayside Changeable Message Signs (CMS) which display arrival information at forty (40) bus stop locations across the Operators' nine (9) systems. In many locations, a CMS displays arrival information related to one or more Operator. Due to the age of the deployed system, some CMS are out of service or function intermittently. It is the Commission's desire to procure replacement signage, as well as additional signs at locations to be determined for a total of sixty (60) bus stop locations. Due to ridership demands, some existing CMS locations will be removed permanently while other unequipped (to-be-determined) locations will receive new CMS. Commission and Operators' staff are in the process of identifying CMS inventories and future prioritization. Commission staff will release the current and desired CMS Stop Inventories via addenda under separate cover.

## **8.0 FUNCTIONAL REQUIREMENTS**

This section describes the technical and functional requirements for the various components of the desired System. It defines what the Systems acquired from the Proposer are expected to do, and how the Commission users will interact and use them. Proposers are asked to read the specifications and, in their response, use Table of Compliance in the Appendix to indicate where they comply, partially comply or do not comply with the requirements.

To the highest degree possible, the systems delivered as part of this Project must be in compliance with the National ITS Architecture as well as other nationally relevant standards such as the National Transportation Communications for ITS Protocol (NTCIP) and the Transit Communications Interface Profiles (TCIP). Where possible, communications protocols and formats should be industry-practice, open and non-proprietary.

### ***8.1 General Requirements***

The Commission seeks to install three major elements and their associated components and functionality as the System: AVL, a Passenger Information System, and CAD along with supporting technology infrastructure, including additional Optional Technologies.

The Proposer shall provide and support all hardware associated with the operation of the System and all hardware and equipment that is acquired by the Commission from the Proposer for Project, excluding consumable material (material that needs continuous replenishment), shall be certified to have a five-year minimum service life, with ten-year service life being preferred. All equipment, supplies and materials furnished under the Agreement shall also be new, field proven and meet or exceed applicable ISO, IEEE and ANSI standards.

Where applicable, the Proposer shall source commercially-available, off-the-shelf components that are easily accessible, modular, and easily removable to facilitate ease in maintaining and / or replacing the equipment. Materials and products that have been previously used for development work, purchased systems or items that have been salvaged or rebuilt shall not be permitted to be used in connection with the Agreement or Project without the prior written approval by the Commission, or unless otherwise specified in the RFP. All equipment provided by the Proposer should be multi-sourced and readily available to the Commission. Proof of purchase in the form of dated invoice and shipping waybills should be retained and furnished to the Commission upon request.

### ***8.2 Automatic Vehicle Location (AVL)***

The following table represents the Commission's concepts of how the Proposer's AVL solution will meet the Objectives:

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### **AVL Capabilities to Meet the Commission Goals**

<b>Commission Objective</b>	<b>Technology Capability</b>
Make public transit more attractive to the general population.	✓ By providing real-time, accurate updates on vehicle location through customer service and real-time passenger information signs.
Maximize passenger movements.	✓ By better tracking vehicles and identifying vehicles that are off route or schedule. ✓ By enabling transfer requests among fixed-route vehicles. ✓ By providing more complete and accurate data for trip planning and scheduling purposes.
Reduce operational costs.	✓ By improving the efficiency of passenger transfers. ✓ By automating the collection of operational data, including NTD required service data.
Reduce emission / energy costs.	✓ By collecting better schedule and route adherence data, and better tracking paratransit vehicles to improve more efficient scheduling and trip planning.
Improve transit system safety.	✓ By automatically locating and reporting vehicle locations to the dispatch center. ✓ Through the emergency alarm function of the MDT which lets vehicle operators alert the dispatch center of incidents on the bus without making passengers aware an alarm has been issued.

In summary, and when the complete ITS technologies have been deployed the Commission seeks to have a System provide the following AVL capabilities:

✓ Single Log-on and log-off using their employee identification number, the route to be driven and the run number for that route. Optional Integration with Head Sign, Farebox, and AVA is desired.
✓ View the time of day.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

✓ View the route schedule.
✓ View their schedule adherence.
✓ Capability to view and adjust Automated Passenger Count data.
✓ Ability to play “canned” announcements regarding rules and passenger instructions.
✓ Make transfer requests to other fixed-route vehicles.
✓ Allow for onboard emergency notification and tracking.
✓ Receive and respond to staff schedule messages from a personnel scheduler regarding shift duration, overtime or schedule changes.
✓ Allow for transfer requests directly between two fixed-route vehicles.

The System shall include a Global Positioning System (GPS) based Automatic Vehicle Location (AVL) function.

The AVL function shall provide tracking and reporting of the locations of AVL equipped vehicles with a positional accuracy of 10 feet or less, regardless of whether the vehicles are moving, on-route, off-route, have no assigned route; or whether or not the vehicles are logged into the System. This required level of accuracy shall not be adversely impacted by GPS errors resulting from selective availability and from other reception errors.

All vehicle movement on AVL maps and displays shall be based upon actual vehicle location reports and shall not be simulated.

The AVL implementation shall provide both Drivers and Dispatchers with accurate and timely position data and schedule and route adherence data, while minimizing the use of radio communications for the transmission of vehicle location data.

Onboard calculation and display of schedule and route adherence, with only schedule and route deviation and occasional and on-demand schedule / route adherence reporting to the System Server shall be provided.

Based on the requirement that a vehicle schedule and route adherence is calculated on-board, vehicle locations shall be reported to the System whenever the schedule or route adherence thresholds are exceeded, whenever any communications request or other data is being transmitted and at least every 30 seconds if no other data transmissions or communications requests are initiated from the vehicle.

### **8.2.1 GPS Receiver**

The System shall include a Differential Global Positioning System (GPS). The Proposer shall install a GPS receiver and antenna on each vehicle to provide location data to the AVL System. The GPS receiver and antenna shall be new unless otherwise approved by the Commission. The Proposer shall state the specified accuracy of the GPS receiver in the proposal, and provide full GPS engineering specifications in the System Design Document. The GPS receiver shall be packaged in a Vehicle Logic Unit (VLU) unless otherwise specified by Proposer and

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

approved by the Commission. Synchronization of the GPS receiver to the System is imperative to the proper functioning of the System and Proposer shall specify how the GPS location, time, and other pertinent data are calculated for the System operation. The use of odometer readouts from vehicle telemetry is at the discretion of the Proposer.

The Operators' current fixed route fleet has one or more GPS antennae installed. The Commission believes that the functions of the antenna can be integrated into a single antenna for all on-board systems. Proposers are encouraged to provide design and pricing which leverages the existing antenna however pricing for complete stand-alone equipment is required, as well.

The following GPS receiver requirements apply to all vehicles for the Operators. The GPS receiver shall be integrated with the VLU / MDT on-board the vehicles.

- ✓ The MDT shall integrate with the GPS receiver, mobile data communications radio modem, bulk data transfer system interface, covert alarm switch, voice radio and an SAE J-1708 or J-1939 interface to support integration with other future in-vehicle technologies.
- ✓ GPS receivers shall report latitude, longitude, speed, time, direction of travel and whether the GPS position is classified as "good" given the current Horizontal Dilution of Precision (HDOP).
- ✓ The GPS receivers shall be parallel tracking receivers, capable of simultaneously tracking at least four GPS satellites in the best available geometry, while also serially tracking the four next best satellites and upcoming (rising) satellites.
- ✓ Onboard GPS receivers must be capable of providing position accuracy within 10 feet at least 95 percent of the time.
- ✓ The GPS receiver shall have a cold start solution time of two minutes or less and a re-acquisition time of 15 seconds or less.
- ✓ The GPS equipment shall include multi-path rejection capabilities to help eliminate spurious signals caused by reflections off of buildings or other structures.
- ✓ Velocity measurements provided by the GPS equipment shall be accurate to within 0.3 feet per second.
- ✓ If the GPS antenna is not contained in the MDT, the GPS antenna shall be a low-profile unit housed in a rugged and weather tight enclosure. The GPS antenna shall be securely mounted on the exterior of the vehicle, clear of obstructions and interference-generating devices. GPS antenna location shall be determined in collaboration with Operator staff.
- ✓ If the GPS antenna is not contained in the MDT, the antenna, mounting and sealants shall provide protection from the environment, including moisture, snow, heat (20° F to +115° F), wind, debris, etc.
- ✓ The GPS receivers shall be capable of integrating with on board systems to report required information electronically.

### **8.2.1.1 Vehicle Location Reporting**

The System shall generate a location message consisting of the current GPS status and last known vehicle location, time, heading, and speed. The current GPS status shall reflect the latest condition of the GPS receiver when the location message was generated. If the GPS receiver cannot acquire a location due to blockage of the satellite signal (such as under an overpass, in a tunnel, or possible tall building effect) the location message shall indicate the occurrence of a "Communication Exception". The last known GPS location, time, heading, and speed shall always be included in the location message even if the GPS status is reported as an exception.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Reporting of vehicle locations based upon on-board Global Positioning System (GPS) equipment shall be provided by the System. In addition, any data sources used to back up the GPS equipment when the GPS signal cannot be received shall also be supported.
- ✓ Location data shall always be reported as part of all data messages.
- ✓ Regardless of the reporting scheme used, vehicles shall report their location at least once every 30 seconds or at a rate designated by the System Administrator within the range of 5 through 30 seconds. After the initial transmission of an Emergency Alarm, vehicles in an Emergency Alarm state shall report their location at a rapid polling interval designated by the System Administrator with the range of 5 through 30 seconds.
- ✓ There will likely be locations of momentary GPS signal blockage and / or distortion, such as in a downtown area. Accordingly, the selected Proposer shall investigate to become aware of the GPS satellite coverage throughout the Operators' service area.
- ✓ In the event of loss of GPS derived vehicle position information, vehicle location shall be determined with dead reckoning techniques utilizing the existing vehicle odometer or other means and technologies which provide position accuracy equivalent to GPS tracking.
- ✓ When dead reckoning is utilized an event shall be recorded.

### **8.2.1.2 Handling Communication Exceptions**

If the vehicle attempts to send a location message while out of cellular coverage area, (dead zones) the System report shall not be dropped by the vehicle logic unit (VLU) until the vehicle returns to the coverage area (i.e., the System report shall be queued for transmission once back in the coverage area). When a vehicle enters a "blackout" area interpreted as no data coverage, the System shall buffer in memory for up to the previous 24 hours all data communications to include all GPS location information.

### **8.2.2 Vehicle Logic Unit (VLU)**

The Proposer's design shall utilize an automotive-grade Vehicle Logic Unit (VLU) that has, at a minimum, the following specifications:

- ✓ The System shall include a single Vehicle Logic Unit (VLU) central processing device and data storage device installed onboard for all vehicles and powered by the vehicle's electrical system.
- ✓ The VLU shall be AVA, APC, Headsign, Farebox, etc., ready. **[Optional Technologies]**
- ✓ The VLU shall interface to send/change messages displayed on Headsigns and interior vehicle CMS **[Optional Technologies]**
- ✓ The System shall begin gathering AVL location data when the ignition is turned on and continue reporting until the ignition is turned off (based on a programmable time period, i.e., 30 minutes, etc.)
- ✓ The VLU shall integrate with the onboard equipment on each vehicle that provides route / destination announcements and vehicle informational signs with both audible and textual messages, fare collection and automated passenger counting (if installed). **[Optional Technologies]**
- ✓ The VLU shall interface to capture, record, and transmit vehicle Automated Passenger Counter (APC) data if installed, and passenger fare payment information. **[Optional Technologies]**
- ✓ A Global Positioning System (GPS) receiver shall be integrated into the VLU used to provide time and location data for AVL functions.
- ✓ For all wireless communications including bulk data uploads and downloads, the VLU shall communicate using cellular connection provided by the Proposer.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ The VLU shall provide the interface / transmission of data to and from all subsystems such as passenger informational sign content, public address, passenger counter data, and farebox systems.
- ✓ The VLU shall meet environmental and vibration standards as defined by MIL-STD-810F and SAE J1455-06.
- ✓ The VLU shall meet electromagnetic immunity standards of SAE J1113 / 13 and protect against surge, and reverse polarity.
- ✓ The VLU shall be capable of real time updates to and from the vehicle.
- ✓ Provide GTFS-Realtime feed(s) for live Trip, Service and Vehicle Position updates to Google and applicable third party software
- ✓ Provided interfaces shall include USB, RS232, RS485, J1708, J1939, Ethernet, discrete inputs and outputs, odometer, spare I/O pins, audio inputs and outputs.
- ✓ The VLU shall allow for future expansion and interoperability with add on modems to include USB interfaces.
- ✓ Allow for easy access to System setup and configuration both remotely and onboard through non-proprietary interfaces such as RDP and USB. On-board access should be in the same location on every bus for standardization of configuration or locations documented for Operators' staff.
- ✓ System configuration settings related specifically to a vehicle shall be stored in a vehicle configuration module such that the VLU unit can be swapped out and vehicle information not lost.

### **8.2.3 Map Requirements**

The geographical base map supported within the System shall cover the entirety of Ventura County, the northwestern portion of Los Angeles County, including Santa Clarita, San Fernando Valley/Woodland Hills/Warner Center, and southern Santa Barbara County, including Santa Barbara/Carpinteria/Goleta. The standards for display of the AVL base map as well as map overlays for the bus routes, bus stops, time points, etc., shall be proposed by the Proposer and approved by the Commission.

The Commission currently uses ARC GIS, as well as Google Earth/Maps to plot stops and determine longitude and latitude coordinates. In addition, Operators use software such as INIT for routing and scheduling, and some have static GTFS data available. It is the expectation of the Commission for Proposers to either create or utilize existing Operators' GTFS data.

The Proposer shall be responsible for the import and initialization of the AVL map using the Operators' provided data as well as all refinements, updates, format conversions, and other processing and handling of the map data supplied to them by the map service or from the Operators as necessary. Maps shall display on the Operators' application screens as well as on customer-facing Web pages, terminal display solutions, and tablet and smartphone apps that provide predicted bus arrival and departure times, vehicle status and location information in graphical form.

- ✓ All functions necessary for successfully incorporating map data shall be provided as part of System.
- ✓ The displayed map shall be capable of supporting a variety of map attributes that shall include, but not be limited to, all streets, highways, prominent geographical features (e.g., rivers, major bodies of water, mountains), important landmarks (bridges, airports, transit centers, Vehicle Maintenance



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Facilities, important buildings, etc.), routes, bus stops, time points, and transfer points. The major bodies of water shall be displayed as areas of solid blue or cyan on the geographical map display.

- ✓ The System shall include mechanisms to allow for periodic independent updates by the Commission to built-in maps in the software and on-board systems.
- ✓ Selective updates of the base map and to any selected overlays shall be possible without re-importing the entire map and all overlays and without loss of prior map.
- ✓ Where minor data entries are required, such entries, and corrections shall be stored (e.g., as a script) for reapplication in subsequent imports.
- ✓ The Proposer shall provide the GIS editing license (if necessary) for any built-in maps as part of the proposed solution for maintenance of AVL maps.
- ✓ GIS functionality shall include the ability to define service-based zones (e.g., Americans with Disabilities Act (ADA) complementary demand response service area, fare zones).
- ✓ The System shall have full geocoding capability, allowing the System to locate the address on the map when an address is entered and provide Operator-specific trip (planning routing) between two addresses.
- ✓ The street segments database shall be sufficiently complete to assure a geocoding success rate of 90 percent or better.
- ✓ The Commission shall be able to develop additional overlay map layers that can include polygons (e.g., municipal boundaries, fare zones), lines (e.g., route traces) and points (e.g., landmarks, transfer locations, time points, stops), with the color, shape and thickness being selectable.
- ✓ The System shall be capable of defining an unlimited number of bus stops, routes and nodes.
- ✓ The System shall permit the user to define bus stops using a variety of methods, including direct entry of GPS determined coordinates, and setting the stop location with a mouse click.
- ✓ The System shall accurately align vehicle locations with the streets and routes on which the vehicles are operating. There shall be no visible offsetting of vehicle positions from the displayed streets and routes.
- ✓ The System shall be capable of allowing stops to be properly positioned at intersections.
- ✓ The System shall be capable of allowing the user to assign stop amenities (e.g., bench, shelter, etc.) to each stop and other supplemental data.
- ✓ The System shall also have the ability to import stop data from an external system in Excel (KML) or comma separated value (CSV) file format.
- ✓ The System shall also have the ability to import stop data from INIT scheduling software ***[Optional Technologies, Gold Coast Transit District]***.
- ✓ The System shall allow any number of trip patterns to be defined as distinct bus stop sequences, including the designation of selected stops in each trip pattern as schedule time points and whether a trip pattern is inbound or outbound.
- ✓ The System shall be capable of generating a list of turning movements for an entire trip pattern.
- ✓ The System shall display route traces.
- ✓ Display vehicle Estimated Time of Arrival (ETA) at a specified destination location as part of the vehicle label. Vehicle ETA shall be available for next bus arrival signs, SMS text, website, web enabled smart devices (phones/tablets) and iOS and Android apps.
- ✓ Position deviation of a fixed route vehicle from on-route, on-time position as determined by vehicle on-board position measurements shall initiate a System event and shall automatically increase the vehicle polling rate to a rapid rate selectable by the System Administrator within a range of 15 to 30 seconds.
- ✓ The System shall be able to display fixed routes, and clearly mark each route when more than one travels on the same street segments.
- ✓ The locations of all AVL-equipped vehicles shall be indicated by special symbols that are overlaid on the geographical map display. A vehicle identifier shall be displayed adjacent to, or within each

vehicle symbol. These vehicle identifiers shall uniquely identify each vehicle by their Operator name, vehicle number, fixed-route block number, or driver number.

- ✓ When multiple vehicles are located too close together to be displayed without overlapping at the selected zoom level, the System shall provide a means for the user to see the individual vehicle identities for the overlapped vehicles.
- ✓ Vehicles reporting an Emergency Alarm shall always be visible on the geographical map display regardless of the user's current filtering criteria and data partition assignments.
- ✓ The System shall be capable of printing maps to peripheral devices (e.g., printers, plotters) directly attached to the workstation or available over a Local Area Network (LAN) or Virtual Private Network (VPN).

### **8.2.4 Mobile Data Terminal (MDT)**

The Proposer will specify the use of Mobile Data Terminals (MDTs) as a component of the AVL and Passenger Information System operation. The Proposer shall specify a "ruggedized" MDT product that is specifically designed for transit. MDTs should be securely mounted on rigid Proposer-provided support brackets. The MDT can serve many of the same functions that would otherwise be performed by the VLU. The MDT's primary function would be to provide additional contact interface between the Drivers and Dispatch.

**(Approved Alternative:** Bidders may propose consumer-grade tablets, and necessary accessories which meet the requirements herein as an approved alternative.)

While in service, either on route, or before or after scheduled runs, the Driver and / or vehicle shall have the capability to perform each of the following:

- ✓ MDT shall be ruggedized, designed for transit.
- ✓ The MDT shall integrate with the GPS receiver, bulk data transfer system interface, covert alarm switch, and an SAE J-1708 or J-1939 interface to support integration with other future in-vehicle technologies.
- ✓ The MDT and AVL system shall automatically engage when the vehicle is started, and shut down a programmable amount of time after the vehicle is turned off.
- ✓ The MDT shall store the most recent location received from the GPS receiver, so that if the GPS receiver is not able to report the location the "last known good" location will remain available.
- ✓ Electrical power for MDTs and all other on-board components shall be drawn from vehicle unconditioned nominal 12V DC power supply. All data inputs and outputs shall be designed to absorb "routine" intermittent low voltage, over-voltage and reverse polarity conditions, and to use inexpensive and easily replaceable components to open circuits in the event of "extraordinary" conditions (e.g., through the use of fuses, transorbs, optical isolation).
- ✓ The Proposer shall include a solution that facilitates a "Single Log-on", whereby an input device serves as the primary Driver interface and eliminates the need to log on to disperse systems.

#### **[Optional Technologies]**

- ✓ The MDT shall incorporate a color graphical screen capable of displaying fonts of variable size and can change colors between day and night or has automatic brightness controls.
- ✓ The MDT shall be equipped with appropriate functional buttons capable of controlling applicable other onboard systems (e.g. fare boxes, head signs, card readers) and will include a numeric keypad.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ The MDT display shall be readable by the Driver from the seated position under the full range of ambient illumination conditions, through the incorporation of such measures as driver-operated brightness / contrast control, anti-glare coating and adjustable orientation mounting.
- ✓ MDT application software shall be operated using either at least eight programmable function keys or touch screen programmable buttons.
- ✓ The MDT shall be capable of, but not limited to, displaying the following onboard information and interface to onboard systems during operation of the vehicle:
  - ✓ Logon
  - ✓ Emergency Alarm
  - ✓ Data Messaging
  - ✓ Transfer Notification
  - ✓ Schedule Adherence
  - ✓ Head Sign Control **[Optional Technologies]**
  - ✓ Farebox Control **[Optional Technologies]**
  - ✓ Maintenance Needed
  - ✓ Stop Announcement **[Optional Technologies]**
  - ✓ Trip / Schedule Display Control
  - ✓ Route Guidance
- ✓ MDTs and all other on-board components shall be designed to operate within the following environmental specifications:
  - ✓ Ambient humidity from 5% to 80%, non-condensing.
  - ✓ Temperatures from 20° F to +120° F.
  - ✓ Vibration and shock forces associated with transit vehicles.
  - ✓ MDTs and all other on-board components shall be shielded to avoid radiating electromagnetic interference.
  - ✓ MDTs and all other on-board components shall be housed in enclosures which cannot be opened with standard hand tools.
- ✓ All Operator actions performed via the MDT that is processed entirely by the System on-board equipment shall be completed in three second.
- ✓ The System shall support en-route changes of the assigned Drivers for cases such as mechanical breakdowns and Driver substitutions.
- ✓ The System shall collect lift / ramp data indicating when the lift / ramp on a vehicle is raised and lowered. The data collected shall enable generation of statistics for lift / ramp usage by location and the time it takes to board / de-board passengers using the lift / ramp.
- ✓ The System shall provide for automatic control of all destination signs in fixed route vehicles. The destination signs shall be automatically updated by the System at Driver logon and at predefined points along each route (e.g., at the end of a trip). The points at which destination sign messages shall be automatically changed shall be definable by the Operator Group System Administrator **[Optional Technologies]**.
- ✓ The MDT shall not be usable by the Driver when the vehicle is in motion above 5 MPH and above.
- ✓ The MDT shall be equipped with a navigation assistance element that allows Driver to visually see a route on a map for fixed route vehicles (detours, training, etc.).

### **8.2.5 Covert Emergency Alarm (Silent Alarm)**

- ✓ The Proposer shall provide a Covert Emergency Alarm (CEA) which will activate a silent alarm when an Operator presses an existing button located in an inconspicuous location of the Driver's area.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ The CEA shall be a recessed push button located on the Driver's left side instrument panel.
- ✓ Emergency Alarms shall have the highest priority of all data messages and Dispatch map displays.
- ✓ A CEA event indication shall not be noticeable to passengers on any vehicle.
- ✓ When Dispatch receives a CEA the following events shall occur, in sequence:
  - ✓ An audio alarm shall be triggered and a visual alarm shall be displayed in a separate window on the AVL of each Dispatcher
  - ✓ When a Dispatcher responds to the Emergency Alarm, an incident report shall be generated.
  - ✓ An Emergency Alarm acknowledgment message shall be sent to the vehicle.
- ✓ The Dispatcher shall have the ability to downgrade an Emergency Alarm if conditions warrant.

### **8.2.6 Real-Time Monitor (RTM) Editor**

The RTM shall include a password-protected editor that allows Operator Group System Administrators with valid login and password to manage route and stop configurations, including the ability to:

- ✓ Configure vehicle attributes such as restricting displayed vehicles by route (for public-facing information displays)
- ✓ Create and edit stops and routes with ease using drawing tools such as polygons, lines, and points
- ✓ Annotate vehicle, route, stop, and landmark information
- ✓ Configure scheduled arrival and departure times for vehicle schedule adherence tracking
- ✓ Import existing route schedule parameters from GTFS data
- ✓ Import existing route schedule parameters from INIT's scheduling application **[Optional Technologies, Gold Coast Transit District]**.
- ✓ Customize map appearance, color scheme, and image editor
- ✓ Adjust map extent and frame and support for zoom and pan functions
- ✓ Support for copy, paste, and screen capture functions

### **8.3 Computer Aided Dispatch (CAD) Functions**

While the primary objective of the Project is for an AVL and Passenger Information System, the following table represents the Commission's concepts of how the Proposer's CAD solutions will meet the Objectives:

**CAD Technology Capabilities to Meet the Commission Goals**

Commission Objectives	Technology Capability
Make public transit more attractive to the general population.	✓ By providing service. more reliable, up to schedule.
Maximize passenger movements.	✓ By generating more accurate schedule adherence information for planning.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	✓ By improving the accuracy of schedule information and trip planning.
Reduce operational costs.	✓ By helping dispatchers and drivers make effective adjustments. ✓ By reducing spare vehicles needed.
Improve transit system safety.	✓ By improving operational effectiveness and efficiencies via ITS technology – utilizing real-time data.

In summary, and when the complete ITS technologies have been deployed the Commission seeks to have a System provide the following CAD capabilities for the Operator fixed-route Dispatchers:

✓ View Operators and vehicle information.
✓ View vehicle locations.
✓ View route schedules.
✓ Track schedule adherence of vehicles.
✓ Manage and log emergency events.

### **8.3.1 General Requirements**

The Dispatcher shall have the capability to perform each of the following but not limited to:

- ✓ Dispatchers shall be able to zoom in to a map level that allows at least four vehicles lined-up within a 200-foot distance to be clearly distinguished, without overlap of the vehicle symbols. The map textual information such as street names, vehicle identities, route names, and landmark names displayed at the various zoom levels shall be clearly readable. Route and street names shall be repeated along lengthy routes and streets.
- ✓ Vehicle status information conveyed to the Dispatchers shall include, but not be limited to, the following attributes:
  - ✓ Schedule status (early, on-schedule, or late)
  - ✓ Silent Emergency Alarm conditions
  - ✓ Route status (on or off-route)
  - ✓ Non-scheduled - logged on (e.g., fill-in, trip, special event vehicles)
  - ✓ Not logged on
  - ✓ Vehicle Driver name, number, run, or route
  - ✓ Direction of travel
  - ✓ Estimated time of arrival calculated by the System for a selected vehicle at a selected destination
- ✓ Dispatchers shall be able to quickly and easily configure their map view to show only the attributes that are desired
- ✓ The Dispatcher shall be able to manually turn on or off the available layers of the map

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ A Dispatcher shall be able to restrict the display of AVL-equipped vehicles on the geographical map to any combination of the following criteria:
  - ✓ All bus vehicles on all routes
  - ✓ Buses on selected routes
  - ✓ A single bus vehicle
- ✓ Provide Dispatchers with the capability to filter within the queues to tailor information as operationally required by each Dispatcher.
- ✓ Provide Dispatchers with schedule information by block and / or run including real time status.
- ✓ Provide Dispatchers with pull-in and pull-out status from Garages, and lunch/layover locations including alarms for late and missed pull-ins and pull-outs.
- ✓ Provide Dispatchers with roster information for logging in / out Operators and changing assignments.
- ✓ Provide capability for Dispatchers to log in Operators with selectable requirement for Operator acknowledgement.
- ✓ Provide Dispatchers with maintenance information of real time vehicle monitoring status including query capability for vehicle historical status (if option exercised).
- ✓ Provide Dispatchers capability to perform service adjustments for individual time points and stops.
- ✓ Allow Dispatchers capability to add new services (i.e., overloads).
- ✓ Allow Dispatchers to temporarily change times within a schedule (i.e., offsets, detours, etc.).
- ✓ Provide Dispatchers capability to cancel an entire block of service.
- ✓ Provide Dispatchers with communication history for reviewing most recent data communications with ability to create incident reports from the history list.

### **8.3.2 Vehicle Status**

The System shall verify that fixed-route Drivers log on in time to support a defined schedule and to verify that all currently scheduled blocks are serviced by a logged-on vehicle throughout the service day. The System shall issue an alarm message to the appropriate Dispatcher(s) if a block scheduled for service remains open (i.e., without a logged-on vehicle) for more than a Dispatcher-adjustable time period. This time period shall initially be set to 2 minutes and shall be adjustable from one minute to at least 15 minutes. The Dispatcher(s) shall also be notified when Drivers log on to open blocks.

- ✓ Logon to indicate the start of a shift. The logon process shall allow the Dispatcher to use the System to indicate the time and identify the Driver.
- ✓ Accept base schedules for routes, runs, and Driver.
- ✓ See Driver assignments to routes and runs.
- ✓ Display current bus status for all buses, and highlight those buses reporting some irregular status (e.g. ahead of schedule, behind schedule, off-route).
- ✓ Hear distinct audible alarm and / or see flashing on-screen icon if status received from bus is one of a set defined as emergency (e.g. covert alarm).
- ✓ Add buses to and delete buses from service.
- ✓ Deploy route detours sending predefined detours as text messages through the bus MDT.
- ✓ Playback a sequence for a specified vehicle on a specified route at a specified time, in chronological order and review the path of the vehicle and its time at each reported location on its run. The Dispatcher shall be able to control the speed of playback.



### **8.3.3 Daily Schedule Selection**

The schedule of trips for each service day shall be automatically selected by the System based upon the date, day of the week, and any special schedules applicable to particular days. In general, schedules include weekday, Saturday, and Sunday schedules. In addition, special (exception) schedules are generated for school closures and early-outs, special events, and holidays. Holidays and other special dates may be defined by the Operators in real-time.

### **8.3.4 Service Performance**

The System shall provide Dispatchers the ability to quickly monitor the current fixed-route service performance. In addition to basic identifying information, such as vehicle IDs, Driver numbers, route numbers, block numbers, etc.; the following specific types of information shall be presented:

- ✓ The System shall monitor off route status – for each vehicle off route, the distance off route, the time that the vehicle went off route and the next scheduled time point shall be displayed
- ✓ The System shall monitor off schedule status – for each vehicle that is off schedule, the schedule deviation and the next scheduled time point shall be displayed
- ✓ The System shall monitor late pull outs – for each block with a late pull out, the scheduled pull out time, and the associated vehicle status, if logged in, shall be displayed
- ✓ The System shall monitor late pull ins – for each block that is late pulling in, the scheduled pull in time, and the associated vehicle status, if logged in, shall be displayed
- ✓ The System shall accurately monitor the schedule adherence of all fixed route revenue vehicles that are operating on defined schedules. Fill-in vehicles (extra vehicles placed on a route) and special event / service vehicles that are without defined schedules shall not be monitored for schedule adherence.
- ✓ Schedule adherence shall be calculated at each defined time point and accurately estimated between defined time points. The time delay between the receipt of a vehicle's position and the availability of the calculated / estimated schedule adherence status shall not exceed five seconds. Schedule deviations beyond pre-defined, System Administrator-adjustable thresholds shall produce an event.
- ✓ Schedule adherence to defined time points (i.e., those in official published schedules) shall be based on the scheduled departure time at each time point, with the exception of those specific stops that have both arrival and departure times (e.g., layovers) and the end of a trip. The number of time points shall range from 2 to 100 time points per route per direction. Time point departures shall be determined by the System to an accuracy of  $\pm 5$  seconds, regardless of whether the vehicle stops at the time point or passes the time point without stopping.
- ✓ The System shall provide the Dispatcher the projected recovery time based on the next terminal departure.
- ✓ A vehicle's schedule adherence status shall be available for presentation to the Driver and to Dispatchers, and for generation of schedule adherence deviation events.

### **8.3.5 Route Guidance**

- ✓ The System shall have the capability of providing detour options to the Dispatcher and to the Driver



via the MDT.

### **8.3.6 Turn-Back Monitoring**

- ✓ The System shall detect and adjust for turn-backs within a fixed route vehicle's assigned block. The System shall issue a turn-back event when a vehicle has turned around before the end of a current trip and proceeds along the route in the opposite direction for a subsequent trip within the same block.
- ✓ Following a turn-back, the System shall automatically determine which trip the vehicle has jumped to within the System assigned block based on the current time, the vehicle's new geographic location, the vehicle's direction, and the vehicle's schedule.
- ✓ After a turn-back adjustment, the System shall resume schedule and route adherence monitoring and automated voice announcements (if applicable) for the vehicle based on the new trip assignment. All turn-backs shall produce events.

### **8.3.7 Data Messaging**

- ✓ The System shall enable Dispatchers to send data messages to one or more selected vehicles and routes using any of the selection methods specified. Custom, free-form data messages and a set of canned data messages shall be supported. Pre-defined data messages shall be configurable by authorized Dispatchers and shall be available for rapid selection.
- ✓ Re-Route Notices
  - ✓ The System shall provide a means for Dispatchers to issue re-route notices that describe detours and other short-term route changes to active vehicles based on their route assignments.
  - ✓ Once defined, re-route notices shall be automatically delivered to all vehicles that log onto the affected routes throughout the service day. Re-route notices shall remain in effect until they are removed by a user, or until a user-specified expiration date has passed, rather than have the notices expire at the end of each service day.
- ✓ Capability to assign priority levels for display ordering and filtering of message types within the message queues.

### **8.3.8 Vehicle Operator Changes**

The System shall support en-route changes of the assigned Operators for cases such as mechanical breakdowns and Operator substitutions.

### **8.4 Cellular Communications Network**

Data transmissions to and from on-board vehicle equipment and fixed-end equipment (e.g., Passenger Information Displays) such as required to transmit location, status and messages between field devices and the server, shall rely upon commercial cellular data communications. It is the responsibility of the Proposer to prove that the commercial network being proposed will provide adequate coverage of the Operators' entire service area. (Note: Communications costs should be included in the Proposer's unit pricing but should be accounted for separately as a line item. It is the Proposer's responsibility to provide the basis for the commercial carrier's airtime charges and fees).

- ✓ All equipment, labor and software required to transfer bulk data to / from the vehicles shall be provided by the Proposer.

### **8.5 Passenger Information System (PIS)**

The following table represents the Commission's concepts of how the Proposer's PIS solution will meet our Objectives:

**PIS Capabilities to Meet the Commission Objectives**

<b>Commission Objective</b>	<b>Technology Capability</b>
Make public transit more attractive to the general population.	<ul style="list-style-type: none"><li>✓ Providing accurate real-time passenger information to passengers increases their confidence in the service and the reliability can make it a more attractive alternative.</li><li>✓ Provide origin to destination trip planning interface and corresponding transit information to passengers</li></ul>
Maximize passenger movements.	<ul style="list-style-type: none"><li>✓ Providing accurate real-time passenger information to passengers increases their confidence in the service and the reliability can make it a more attractive alternative.</li><li>✓ Provide origin to destination trip planning interface and corresponding transit information to passengers</li></ul>
Increase awareness of ITS benefits	<ul style="list-style-type: none"><li>✓ Providing real-time passenger information informs passengers that the Commission is tracking and monitoring bus performance.</li></ul>

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

In summary, and when the complete ITS technologies have been deployed the Commission seeks to have a System that provide the following PIS capabilities for the riding public via real-time information:

✓ Display estimated fixed-route bus arrival time based on bus location.
✓ Display time of day.
✓ Display emergency messages.
✓ Display operational status of Operator fixed-route buses.
✓ Display of bus detours and any information about booster (additional) vehicles.

The Commission seeks to deploy a real-time Passenger Information System. In the simplest of terms, the Commission desires to provide vehicle arrival and departure information to our customers, through electronic signage at Transit Centers, bus stops, via the Internet and on smart-phones, tablets and cell phones. When this service is available, patrons will be able to access the information through the Providers' Websites, App or as a link/api from the Operators' Website.

The PIS has the following requirements.

- ✓ The Passenger Information System shall use GPS information, historic traffic patterns and vehicle schedules to determine a best estimate for all bus arrival and / or departure times.
- ✓ The Passenger Information System shall be able to accurately identify vehicle locations for in-service vehicles.
- ✓ The Passenger Information System shall be able to generate live maps for selected Operator routes that display accurate vehicle information, including route names, street and landmark names, vehicle location and estimated arrival time at bus stops.
- ✓ The Passenger Information System shall be updated whenever new routes or schedules are created using the fixed-route management tool; the management tool must be directly accessible by Commission / Operator staffs for schedule changes.

### **8.5.1 Predictive Bus Arrival and Departure Algorithms**

At the core of the PIS shall be a robust predictive real-time bus arrival and departure time function. The Proposer shall devise one or more predictive algorithm(s) that continually track, compile and recalculate predicted bus arrival / departure times based on vehicle location, heading (i.e., direction), speed, and other factors such as known causes of recurrent traffic delays along the route. The System shall monitor each bus on each route independently and calculate arrival times at each stop along the route which the System shall make available to the PIS for immediate broadcast, including as a GTFS Realtime feed. The arrival and departure algorithm(s) shall consider real-time conditions and historic average arrival and departure data to improve accuracy in the predictive function.

Arrival predictions shall be presented in an easy-to-understand format with minimal latency in the data that is transmitted for consumption over the internet that can be consumed via:

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ System User Interface
- ✓ Customer Website and smart-phone applications (iOS and Android)
- ✓ GTFS-realtime feed accepted by Google
- ✓ Automatic Stop Annunciation Systems
- ✓ Mobile Data Terminals
- ✓ Changeable Message Signs

Fill-in buses (extra buses placed on a route) and special event / service buses that are without defined schedules shall not be monitored for schedule adherence. Schedule adherence shall be calculated for each defined time point and accurately estimated between defined time points.

### **8.5.2 Changeable Message Signs (CMS)**

The Commission seeks 40 to 60 Changeable Message Signs at locations to be determined by the Commission. The CMS' would display real-time bus arrival / departure times. Specific information to be displayed on the CMS signs will be determined by the Commission and the Proposer during System Design.

At minimum, the CMS' would display real-time bus arrival and departure times and passenger information based on Predictive Bus Arrival and Departure Algorithms that is a required component of the System.

For CMS locations serving more than one Operator and/or route, the information displayed on the CMS will rotate between Operators and routes on a configurable interval (e.g., every 5 seconds), or, alternatively, be displayed using CMS "Terminal Displays" which have multiple lines, described below. All CMS shall also have the ability to blank out or display user defined announcement messages entered by the System Administrator via a Web-based sign controller interface. Specifically, the CMS display:

Terminal Display CMS Requirements:

- ✓ CMS with multiple lines that simultaneously display, in real time, the estimated arrival / departure time of the next bus on up to ten routes as a countdown in minutes.

All CMS Requirements:

- ✓ During times when some routes are not in operation, the CMS shall display the message "No Service At This Time" next to any route not in service.
- ✓ CMS' shall be either an LCD screen or large LED screen capable of displaying between one and at least eight lines.
- ✓ CMS' shall be constructed and rated for outdoor installation in a hardened environment such as those common to a roadside or transit installations.
- ✓ CMS controllers shall be securely affixed to the back side of the display with keyed entry.
- ✓ CMS' shall have brightness control.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ CMS' shall produce message that conform to ADA requirements for character legibility and accessibility. At minimum, ADA compliant 3-inch characters (one line) or 2-inch characters (two line) shall be supported.
- ✓ CMS' shall be designed for operating outdoors and /or indoors in a minimum temperature range 20° F to 120° F.
- ✓ CMS' shall use a local power supply (115V).
- ✓ CMSs must be protected using vandal-resistant enclosures.
- ✓ The front face of the CMS shall provide high contrast, low sunlight reflection in all weather and site conditions.
- ✓ CMS displays shall be legible when sunlight is shining directly on the display face or when the sun is directly behind the display.
- ✓ All internal CMS components shall be removable and replaceable by a single technician with basic hand tools.
- ✓ CMS controllers shall be capable of being configured both remotely via wireless data connection, and locally using a portable computer via a USB, an Ethernet, or an RS-232 connection.
- ✓ Each CMS controller shall be connected to photoelectric sensor(s) sufficient to automatically adjust CMS output to address the requirements for legibility under varying ambient illumination conditions.
- ✓ The CMS controller shall have a time of day clock and calendar. The time and date shall be in sync with the system time at the Commission.
- ✓ The CMS controller shall be configurable with a unique name for the display.
- ✓ Next vehicle arrival prediction messages shall be generated automatically by the CMS controller, incorporating the arrival time prediction data as it is received from the server prediction software.
- ✓ The format of the message template shall be "(route #) (route /destination name) (countdown minutes)", or an alternative format approved by the Commission.
- ✓ When the CMS receives a message from the application indicating that current prediction data is not available, the CMS shall display an alternate message approved by the Commission.
- ✓ Hold times for each message display and the blanking interval between message displays shall be variable in 0.1 second increments.
- ✓ The CMS shall include ongoing self-diagnostics and shall send an alarm message to the software in the event that a diagnostic fault is detected.

Proposer must describe the communications infrastructure requirements (e.g., wired Ethernet connections, wireless cellular data communications, etc.). Proposer must also describe the sizes of the signs, power requirements, pre-set timing options, and display options. Proposer should provide sample views of LED and LCD signs.

### **8.5.3 CMS Audible Component**

The Changeable Message Signs (CMS) shall also be able to broadcast bus arrival and departure times in audible format consistent with the Automatic Stop Annunciation System requirements. The Proposer shall determine the best method for supporting ADA audible functions for CMS signs, which options may include wireless feed from the server or text-to-speech conversion performed by the sign controller.

- ✓ The CMS shall include a manually-activated audio announcement system, which shall read out the sign text once successively in English and Spanish after a pushbutton has been pressed.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Audio sign messages shall be constructed in real-time by the CMS in a manner that avoids the need to send audio data over the radio system, using either prerecorded announcements or text-to-speech generation of quality acceptable to the Commission.
- ✓ The audio announcement system shall be made through speakers built-in to the CMS enclosure or installed nearby.
- ✓ The pushbutton must be mounted no higher than 48 inches and no lower than 15 inches from the finished floor of the CMS.
- ✓ An unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint).
- ✓ The pushbutton must be operable with one hand; not require tight grasping, pinching, or twisting of the wrist.
- ✓ The pushbutton shall emit a brief low volume sound every few seconds (e.g., “chirp”) to guide the visually impaired to the pushbutton location.
- ✓ The audio volume shall be automatically adjusted based on the current ambient sound level in front of the CMS to ensure that it is only loud enough to be understandable within a five foot radius from the sign.

### **8.5.4 Bus Stop Signage**

The Proposer shall provide a method for allowing patrons to determine next arrivals at each bus stop, regardless of location. For example, a decal affixed to existing bus stop signs may provide a unique identifying stop number and a SMS “text-to” number to allow patrons to request notifications of next arrival predictions in real-time.

### **8.5.5 Customer Website / Customer Communication Devices**

The Commission expects that the PIS will be broadcast via the Internet, generate Web-based maps for all and/or selected Operators and/or routes, and display accurate vehicle information, including route names, street and landmark names, vehicle location and estimated arrival / departure times. The Commission expects that its customers will be able to access route information through both the Provider's Website and mobile apps (iOS and Android), as well as the Operators' Website(s) using an API.

To the extent possible, all information should be available in a form which facilitates access by and delivery to current consumer communication devices and provides a means to easily incorporate future devices and communication services. Real-time information must also be accessed through any computer that has Internet access and be available in GTFS-real-time feed format. In addition, the System should allow for customer registration and identification of information they would like “pushed” to their devices as either information or alerts.

The Commission's preference is to integrate the PIS into the Commission's main Website, and by similar design to the Operator Websites. A customized Commission-specific web platform, or mobile App is desired. The Proposer / Commission Website/App shall provide, at a minimum, the following features:

- ✓ The System shall allow a person using a personal computer, or web-based personal mobile device to visit a publicly accessible Web address to select a route, direction and stop, and in response



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- receive the current predicted arrival time from the prediction software at the initiating device.
- ✓ The System shall provide support for mobile access, using simplified version of the Proposer Website specifically designed for handheld devices, and/or mobile applications (e.g. iOS, Android apps).
- ✓ The Proposer shall provide all Web pages, data feeds and scripts needed to enable this Web service on the Commission/Operators Website.
- ✓ The response Web page shall be continuously updated (whenever a new predicted arrival time is determined), until the user closes the web page.
- ✓ The System shall provide the ability to display route, stops and real-time location of a vehicle on a route on a web-based/app map display.
- ✓ The Web-based/app interface shall allow users to select the routes and stops of their choice for which they want to see real-time vehicle information.
- ✓ The Web-based/app interface shall provide the ability to zoom in / out and pan the map.
- ✓ The map display shall be automatically formatted to fit the screen size of the customer device (i.e. mobile device and personal computer).
- ✓ The vehicles shall be shown using a distinct icon and also indicate the direction of movement of the vehicle.
- ✓ Clicking on a vehicle icon must show the current status of the vehicle (early / late / on-time).
- ✓ Clicking on a stop icon shall display arrival times for the next three buses for each route passing by that stop.
- ✓ The System shall provide the Commission the ability to publish any service alerts on the Web page/App/GTFS Realtime feed showing real-time vehicle location display.
- ✓ The System shall provide real-time information alerts to Operators' customers based on their preferences. Customers shall be able to subscribe or unsubscribe to this service as desired. Also, the System shall allow customers to configure their preferences for the content and time interval for receiving real-time information alerts.
- ✓ The System shall automatically notify customers of the real-time status of buses at a specific stop on a requested route and direction. The notification will be made in the form of an email, App notification or SMS message.

### **8.5.6 Customer Trip Planner**

The Proposer shall provide a solution for customers to plan trips via the Internet or smart phone via an online Trip Planner. The Commission prefers Google Transit and would value the Proposer's assistance in getting the Operators set-up for its use (i.e. development of updated GTFS is not available). If an integrated Google Transit planner is not an option, then the Proposer may provide alternatives, such as their solution.

Regardless of which solution is used, the Trip Planner should allow customers to enter their starting point and destination, make some choices about their trip (address, nearby stops, routes, landmarks, etc.), and receive an itinerary based scheduled service and real time departures using the Operators' data. The Trip Planner should plan the best trips for the day, time, and options specified by the customer. Changing any of the criteria may result in completely different trips. The Trip Planner should include applicable fare and transfer information.



The Commission prefers that the Trip Planner include an accessible version that can be used by customers with disabilities in order to be ADA compliant.

## ***8.6 Information Technology Architecture***

### **8.6.1 Server Site**

The Proposer's System must be an "out-of-the-box" application from a data center; and accessible from any Internet capable desktop within the Commission / Operators and the System must have the capacity to both import and export data on a regular and automated basis either through the Proposer's API or defined database access protocol. The System should be entirely Hosted at the Proposer's Data Center. Proposer is entirely responsible for the Proposer's applications, databases, patches, updates, environments, etc.

A Service Level Agreement between the Proposer and the Commission shall identify the expected performance levels for System availability, scheduled maintenance, and repair during a system outage event, to ensure that critical System maintenance (backups, database maintenance, archiving) occurs. Disaster Recovery procedures that shall be implemented to ensure data security during a disaster shall be incorporated into the Service Level Agreement. The servers that host the data shall be maintained at a facility selected by the Proposer and approved by the Commission. The Proposer shall provide all data, cellular communications and network infrastructure as part of ongoing annual costs associated with ownership of the system.

Specific Commission requirements are:

- ✓ Proposer shall provide and justify their solution architecture.
- ✓ Proposer shall meet planned uptime requirements of 99.9%.
- ✓ Proposer shall provide a System architecture for all technologies, including the Optional Technologies
- ✓ Proposer shall provide a System architecture for all supporting hardware, software, operating systems, databases, redundancies, environments, Disaster Recovery, and Security, etc.
- ✓ A backup system shall be available to the Commission in the event of failure of the central server.
- ✓ The Commission shall be informed at least thirty (30) days in advance in writing of upgrades that require updated software or higher speed Internet connectivity required by the end-users, Commission, Operators, Dispatch, etc.
- ✓ The Proposer shall monitor and insure Internet connectivity to the services.
- ✓ The system shall be available 24 hours a day, seven days a week.
- ✓ Secure access to the full system functionality shall be available to Commission staff remotely from any computer that meets the Proposer's stated requirements.
- ✓ Remote access to the system shall be secure and protected by password or other equivalent-or-improved security measure.
- ✓ The Commission's data shall be securely stored by the Proposer and accessible only by authorized individuals.
- ✓ The Commission's data shall be securely backed up on a daily basis, and backups shall be stored in a secure facility remote from the primary Host site.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ The Proposer may not retain data if the Commission requests its destruction, deletion or transfer.
- ✓ The Proposer shall relinquish all of the Commission's data to the Commission upon request.
- ✓ The Proposer's Hosted site must be protected by current virus protection, internet security, and other security software against catastrophic failure and malicious attacks.

Proposer-initiated software updates, such as those related to future client project upgrades, should be extended to the Commission to the extent the updates would add benefit to the Project and are supportable within the technical requirements for Project. If the Commission requests new feature sets be added beyond those included in the initial feature set approved by the Commission for Project, the Proposer shall identify whether the requested software enhancements can be accommodated under the normal maintenance agreement or if said changes would require a change order.

### **8.6.2 Ownership of Data**

All data collected by the Hosted System shall remain the property of the Commission. Access to all real-time and archived vehicle location data must also be available to third party application providers for potential future external development purposes. Proposer should indicate which method(s) would be used (XML, RSS, JSON, SQL, GTFS, etc.). Data generated by the Commission shall be available to the Commission at all times. The Commission will provide to the Proposer all bus-stop, vehicle, route, schedule, rider, transfer information and any other data relevant to its operations at Notice to Proceed.

### **8.6.3 Activity Logging**

- ✓ The System shall log all user actions.
- ✓ The activity log shall be real-time and accessible on-line.
- ✓ Each user logon and logoff shall be recorded in the historical event log.
- ✓ The recorded data shall include the date and time that the logon / logoff was executed, the name of the workstation, and the identification of the user. All functions performed by all users shall be stored in the historical event log.

### **8.6.4 Access Security**

- ✓ Access to the System shall be strictly limited to designated and authorized System Administrators.
- ✓ Users without proper minimum authorization shall be denied access to all System functions and data, as well as all System resources such as servers, printers, workstations, etc.
- ✓ Each user shall have a unique username that is assigned by the System Administrator.
- ✓ A function shall be provided for users to log off.
- ✓ Access to System functions and capabilities shall be based upon each user's authorization level and not the physical workstation being used.
- ✓ A minimum of four user-access levels shall be supported by the System. The term "user" alone shall refer to all levels except when it is clear from the context that another meaning is intended. The minimum user-access levels shall be:

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Information User — these users shall have only read-only access to System historical data via the information server resources, but shall have no access to System functions.
- ✓ Customer Service User – these users shall have all the rights of an Information User plus read-only access to selected Dispatcher functions (e.g., AVL functions).
- ✓ Dispatcher — these users shall have all of the rights of a Customer Service user plus full access to specific System functions as determined by the System Administrator.
- ✓ System Administrator — these users shall have unrestricted access to System functions and shall have special privileges required to administer overall access security and to maintain the System. A secure method shall be provided for the System Administrator to change passwords and user identifications and establish functional partitions.
- ✓ Operator Groups — to simplify user administration, categorization of users: Information, Customer Service, Dispatcher and System Admin by Operator name is desired.

### **8.6.5 Data Backups**

Capability shall be provided by the Proposer to backup the System data on a regular basis, which may occur at a minimum nightly. If there is a catastrophic failure that results in the loss of data, the Proposer shall provide a means to retrieve the corrupted data without disruption to System operations. The Commission's data shall be retained for a minimum of one (1) year on the Proposer's server(s) and then archived in a format agreed upon with the Commission. Commission users shall be able to generate queries from the restored data. The Commission may request that the Proposer restore route or stop data from one of its daily backups in the event that undesired changes are accidentally made.

### **8.6.6 Data Archival and Restore**

The System shall provide an information storage function (data warehouse) that collects and stores all operational data for the purpose of later retrieval and analysis. Enough online data storage shall be provided to keep at least two (2) years of historical data. The historical data shall be accessible by included standard System applications and tools.

### **8.6.7 Scheduled Maintenance**

All software maintenance that could impact user access shall be performed outside of the Operators' revenue service hours and updates shall be downloaded in batches to minimize downtime and maximize data transfer rates. The Proposer shall perform scheduled maintenance on its databases, Web applications and field elements in accordance with an approved maintenance schedule.

### **8.6.8 Version Tracking Requirements**

The System shall maintain records of all versions of the back-end files and executables that are either received from the server or created and that are successfully loaded and running on the vehicle or device. Reports and a graphical interface (screen) shall be made available to verify the versions and the download status of all features / applications of the System. Failure in the

transmission of any data to a vehicle or device including external interfaces shall result in a failure message been logged and reported to the System Administrator.

### **8.6.9 System Administration Functions**

Access to the following System functions shall be restricted to System Administrators.

- ✓ Fixed-Route Data Retrieval
- ✓ Schedule and Route Maintenance
- ✓ AVL Map Retrieval and Maintenance
- ✓ Destination Sign Data Maintenance
- ✓ In-Vehicle Announcement Data Maintenance, if utilized.
- ✓ All parameters in the System that users may need to modify shall be adjustable by authorized System Administrators.
- ✓ System Administrators shall be able to define data partitions that specify, via selection criteria or other means, a subset of all System data, including events that Users are permitted to access.

### **8.6.10 Disaster Recovery Procedures**

The Proposer shall develop Disaster Recovery Procedures for the Commission's review and approval. The System shall be designed and operated such that the System can quickly and efficiently recover from a disaster. As part of the Field Performance Test, the Proposer shall implement its Disaster Recovery solution and shall test the System accordingly.

### **8.6.11 Continuity of Services**

Upon the Commission's written notice, the Proposer shall furnish transition services during the last 90 days of the term of the Agreement. The Proposer shall develop with the successor contractor or the Commission, a Transition Plan describing the nature and extent of transition services required. The Transition Plan and dates for transferring responsibilities for each division of work shall be submitted within 30 days of notice from the Commission. Upon completion of Commission review, both parties will meet and resolve any additional requirements / differences. The Proposer shall provide sufficient experienced personnel in each division of work during the entire transition period to ensure that the services are maintained at the level of proficiency required by the Agreement. The Proposer shall allow the successor to conduct on-site interviews with the employees.

## 9.0 OPTIONAL TECHNOLOGIES REQUIREMENTS

Following are optional technologies the Commission wishes to consider. Most of the contents of these technologies share the base System requirements/components. These options are not in the base System cost because the Commission has not made a decision yet whether to proceed with any or all these optional items. For these items, the costs applicable to the optional systems shall be separately identified in the Proposer's Cost Proposal (Attachment form C-I). Such items shall be individually selectable. Implementation by the Commission or the Operators may be at time of contract award, a later date (or not at all), and authorized under individually negotiated Task Orders. **Purchase of desired optional technologies is not guaranteed.**

### **9.1 Automated Voice Annunciation (AVA) [Optional Technologies]**

As an option, the Proposer may specify the use of an Automated Voice Annunciation (AVA) system in accordance with Americans with Disabilities Act (ADA) requirements. The AVA system shall integrate to the existing public announcement (PA) system on-board the vehicle.

The proposed system must provide accurate, clear, audible and visual announcements of routes, major intersections, destinations and transfer points and special messages. This system must fully comply with the Americans with Disabilities Act (ADA) requirements to ensure that passengers with physical and/or hearing impairments shall receive consistent and accurate information while riding in Commission / Operator buses.

In addition, a portion of the Operators have AVA systems. Proposers are encouraged to provide solutions that integrate with existing Operator AVA systems, such as by offering single log-on capability.

Proposers will provide separate pricing for AVA systems, and/or AVA system integration, by Operator fleet. For Operator-specific fleet compositions see the *Operators Fleet and Systems Composition Schedule* (Attachment M).

The following table represents the Commission's concepts of how the Proposer's Passenger Information System solution will meet our Objectives:

**AVA Technology Capabilities to Meet the Commission Objectives**

Commission Objectives	Technology Capability
Make public transit more attractive to the general population.	✓ By helping the Commission achieve compliance with the ADA, the AVA assists riders, who are blind, cognitively impaired, or hearing impaired, as well as commuters and tourists reach their destinations.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Maximize passenger movements.	✓ By helping riders with disabilities to use accessible fixed-route bus systems instead of relying on paratransit service.
Increase awareness of ITS benefits	✓ By providing clear announcements, AVA provides passengers with more information and improves the rider experience through ITS.

In summary, and when the complete ITS technologies have been deployed the Commission seeks to have a System that provides the following AVA capabilities for the riding public and for Operator operations:

✓ Provide stop and directional information along route.
✓ Inform Operator to stop at next location based on the "stop requested" option.
✓ Announce stop locations both visually and audibly.
✓ Provide Operator staff the ability to edit, access and modify route and stop information independently for schedule changes.
✓ Automatically manage destination signs.

The annunciation system shall include visual display systems to be installed on-board the vehicle such that the auditory announcement can be simultaneously displayed visually.

The following system functionality is desired of the AVA:

- ✓ Some Operators have interior (Destination Message Signs) DMS' installed on the fixed route fleet. The Proposer shall install new interior DMS. However, the Proposer may propose the use of any existing interior DMS if it can ensure that the proposed AVA system can integrate with the existing DMS to provide desired visual AVA features.
- ✓ The DMS shall display the "stop requested" message when stop requested or the wheelchair area stop request is activated by a customer.
- ✓ If stop request signal is received while another message is being displayed on the DMS, the AVA system shall show stop requested message after current message is completed.
- ✓ The AVA shall provide text announcements for configurable duration, which will be set using the central recording software.
- ✓ The AVA shall make an exterior announcement of the current route number and destination when doors open at a stop. At other locations (e.g., major intersections), the controller shall make preset location-based interior announcements.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ The Operator shall have the capability of overriding the automatic initiation of visual announcements and instead manually select from a menu of predefined messages for display to passengers. The override shall be reported as an event.
- ✓ Interior signs shall display stop requested, bus stop arrival, major intersections and landmarks, date / time information, and other preformatted messages.
- ✓ The interior sign system data files shall be updatable remotely..
- ✓ The AVA shall provide announcements to passengers on-board fixed-route revenue vehicles. This function shall support next stop announcements as well as annunciation of major intersections, key transfer points, promotional information, public service information, Vehicle Operator initiated messages and advertising.
- ✓ Next stop, major intersection and key transfer point announcement capacity shall be sufficient to support all of the routes in the service area and all of the trips made by each vehicle during a service day, plus a 50% spare capacity for other types of announcements.
- ✓ The AVA shall use the vehicle location information from the AVL system to trigger the appropriate announcements on-board the vehicle whenever the vehicle enters a “trigger zone.” A trigger zone is a user-defined area that is located just prior to each stop location. For example, the trigger zone may begin 800 feet before a stop as well as at selected other announcement locations.
- ✓ Trigger zones shall be pre-defined by the software for AVA trigger management and downloaded to the controller.
- ✓ Trigger zones shall be configurable by stop to accommodate for differences in operations, including but not limited to, the direction of approach and size of stop.
- ✓ Time-based announcements / displays shall be programmed to be made on-board the vehicle at specific times of the day or at a set frequency within specified time periods, on specific days of the week.
- ✓ Location-based announcements / displays shall be programmed to be made on-board the vehicle when that vehicle passes any designated location(s).
- ✓ In the event that a vehicle is operating off-route, the automated announcements / displays shall not be made. Once the route is reacquired, the System shall automatically determine and announce the next valid bus stop or other designated location.
- ✓ The Operator shall have the ability to manually trigger the activation of any pre-recorded announcements if needed.
- ✓ The DMS shall display the current date / time when not displaying a triggered announcement.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Dispatch shall have the ability to send a free form announcement message to one bus, a group of buses, to the AVA interior DMS.
- ✓ The AVA shall have the capability to create and schedule public service or advertising messages.
- ✓ Audio levels shall be controllable by the Operator within a usable audio range. The Operator shall have the capability of overriding the automatic initiation of audio announcements and instead manually select from a menu of predefined messages for announcements to passengers. The override shall be reported as an event.
- ✓ The volume of the internal announcements shall be automatically adjusted according to the noise level on the vehicle at the time, and the vehicle operator shall not be able to lower the announcement volume.
- ✓ The AVA shall provide the capability to adjust external speaker volume levels based on time and location settings.
- ✓ The AVA shall provide the capability to adjust the minimum and maximum volume levels separately for interior and exterior announcements.
- ✓ The AVA announcements and PA volume level controls shall also allow the Operator to separately adjust the volumes for the Operator and handset speakers.
- ✓ Operator-initiated announcements / displays (e.g., safety-related announcements) shall be programmed to be made at the Operator's discretion.
- ✓ Operator use of the on-board PA system shall override any automated announcements.
- ✓ Dispatchers shall be able to activate the announcements simultaneously on a group of buses.

### ***9.2 Automatic Passenger Counters (APC) [Optional Technologies]***

The following table represents the Commission's concepts of how the Proposer's APC solution will meet our Objectives:

**APC Technology Capabilities to Meet the Commission Objectives**

Commission Objectives	Technology Capability
Make public transit more attractive to the general population.	✓ By improving facility planning through the use of more comprehensive passenger counts at stops.
Maximize passenger movements.	✓ By optimizing service through the use of

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	<p>comprehensive and accurate passenger counts, Commission can better understand ridership.</p> <p>✓ By adapting routes to observed passenger demand.</p>
Reduce operational costs.	<p>✓ By reducing resources needed to passenger counting.</p>

In addition, a portion of the Operators have APC systems. For Operator-specific fleet compositions see the *Operators Fleet and Systems Composition Schedule* (Attachment M).

Proposers are should provide solutions that implement new or integrate with Operator APC systems. In summary, and when the complete ITS technologies have been deployed the Commission/Operators seeks a System that provide the following APC capabilities:

✓ Collect passenger load, boarding and alighting data for route and schedule planning.
✓ Review boarding and alighting data for facilities planning.
✓ Collect passenger count data to validate National Transit Database reporting.
✓ Plan bus stop amenities based on passenger boarding's by stop.
✓ Manage passenger loads using APC data to determine when Operator alters vehicles stops or when additional vehicles should be put into service.

The Proposer shall provide pricing for the option of adding integrated Automatic Passenger Counting (APC) system and capabilities to the Operators (or integrating with existing APC systems). The hardware used for new APC systems shall be proposed by the Proposer, but shall satisfy at minimum the following requirements:

- ✓ Ability to accurately detect passengers boarding and alighting and eliminate false positive counts of passengers loitering near the boarding zone.
- ✓ Support for multiple entries, and for wider entry common to certain vehicle designs.
- ✓ Support for wheelchair boarding counts.
- ✓ Ability to detect whether the vehicle door is open or closed (the APC shall only count passengers when the door is open).
- ✓ The APC solution shall be designed for the transit industry and not adapted for its intended purpose.
- ✓ Sensors shall operate automatically and without the need for manual intervention.
- ✓ Data shall automatically be compiled by the APC and integrated to the VLU and / or MDT in real-time.
- ✓ APC data shall be time-stamped for ease in associating the counts to validating farebox data.
- ✓ APC data shall be stored along with stop records.
- ✓ The APC shall meet or exceeds the relevant SAE specifications for vibration, humidity, electrical tolerance, and particulate matter.
- ✓ The APC for all doorways shall be connected to a single APC controller.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ The APC shall be able to separately count successive passengers that are walking as close together as is practicable, either one behind the other or side by side.
- ✓ The APC shall not register as multiple passengers the passage of a single passenger that reaches into or out of the doorway passage, or is swinging their arms, while passing through the sensor beams.
- ✓ The APC shall not separately count objects carried by passengers, such as shopping bags or umbrellas.
- ✓ The APC controller shall be interfaced with a wheelchair / ramp sensor with the number of wheelchair / ramps cycles recorded for each stop.
- ✓ The APC will have sufficient on-board memory capacity to allow for storage of at least 72 hours of APC data.
- ✓ The APC subsystem shall provide a backup method (for use when the WLAN subsystem is temporarily unavailable) for bi-directional data transfer.
- ✓ Be accepted by NTD for reporting purposes.

### ***9.3 Farebox Integration [Optional Technologies]***

The following table represents the Commission's concepts of how the Proposer's Farebox Integration solution will meet our Objectives:

**Farebox Integration Technology Capabilities to Meet the Commission Objectives**

Commission Objectives	Technology Capability
Make public transit more attractive to the general population.	✓ By improving facility planning through the use of more comprehensive passenger fare data by stops.
Maximize passenger movements.	<ul style="list-style-type: none"><li>✓ By optimizing service through the use of comprehensive and accurate passenger faring information, including transfer use analysis.</li><li>✓ By adapting fare policies based on ridership and stop-level data.</li></ul>
Reduce operational costs.	✓ By automating control of farebox logs and assignments using AVL technology.

Proposers are should provide solutions that integrate with existing Operator Farebox systems, provided by Genfare (GFI), including Cardquest readers and Odyssey Fareboxes. In summary, and when the complete ITS technologies have been deployed the Commission/Operators seeks a System that provide the following Farebox capabilities:

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

✓ Collect passenger faring data, including cash, pass and transfer usage by stop for route and schedule planning.
✓ Automatically control farebox settings using directional data provided by AVL system.
✓ Provide location-based reporting of passenger fare revenue data

The Proposer shall provide pricing for the option of integrating with existing GFI Odyssey and GFI Cardquest Farebox Equipment:

- ✓ Ability to accurately detect passengers fares by route, heading, time, and stop location.
- ✓ Ability to automate run, route, fareset and trip login activity using pre-programmed data and AVL technology.
- ✓ Ability to detect and report farebox connectivity/health.

### ***9.4 Headsign Integration [Optional Technologies]***

The following table represents the Commission's concepts of how the Headsign Integration solution will meet our Objectives:

**Farebox Integration Technology Capabilities to Meet the Commission Objectives**

Commission Objectives	Technology Capability
Make public transit more attractive to the general population.	✓ By improving the accuracy of Headsign changes
Maximize passenger movements.	✓ By improving the timeliness and increasing the possibilities for Headsign changes.
Reduce operational costs.	✓ By automating control of headsign login and assignments using AVL technology.

Proposers should provide an optional solution that integrates with existing Operator headsign systems, provided multiple vendors. In summary, and when the complete ITS technologies have been deployed the Commission/Operators seeks a System that provide the following Headsign capabilities:

✓ Automatically control headsigns using directional data provided by AVL system.
✓ Integrate with CEA to display exterior Emergency messages

## ***9.5 Single-point Log-on Integration [Optional Technologies]***

Utilizing the above identified integrated technologies, Proposers should provide an optional solution that automates and streamlines the driver logon function required of multiple technology systems, including farebox, Headsign, AVA, and the System.

## **10.0 ADDITIONAL REQUIREMENTS**

### ***10.1 AVL Analytics***

The Proposer shall provide a variety of fixed route management tools that allow users to analyze, monitor and diagnose routes and their operations. At a minimum, the System shall support the following features:

- ✓ Analysis of vehicle activity including schedule adherence and on-time performance
- ✓ Historical playback of time-elapsd route activity using rewind, fast forward, pause, and play controls
- ✓ Analysis of stop times by route, block, run and trip
- ✓ Analysis of passenger loads by route, block, run and trip (with optional APC integration)
- ✓ Analysis of route performance including run times, average vehicle speeds, and relative spacing between buses on the route
- ✓ Analysis of Driver run performance including, late pull-out/pull-in to Garage and schedule adherence
- ✓ Extensive report generation and query capabilities, including export functions

### ***10.2 Reports***

**Data Base Capabilities to Meet the Commission Goals**

<b>Commission Goal</b>	<b>Technology Capability</b>
Maximize passenger movements.	✓ By optimizing service through comprehensive and accurate data.
Reduce operational costs.	✓ By reducing the time needed to perform data collection and analysis.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

In summary, and when the complete ITS technologies have been deployed the Commission seeks to have a System that provide the following capabilities for Schedulers and Administration via the servers database:

✓	Use standard reports to generate route, vehicle, revenue, mileage, ridership, NTD and other reports.
✓	Analyze ridership, boarding's and alighting's for schedule adjustments and route planning.
✓	Track schedule adherence.
✓	View historical data over periods of time.

Relevant and accurate reports are an important component for the success of the Operators' operations. Various operational reports shall be provided as part of the System which will allow the Operators to monitor system performance and to reconcile the daily, weekly, and monthly service activities. All data generated in the System shall be retrievable through reports and screens. Reports and screens shall be made available through the database on an ad-hoc basis and shall have various selection and sort criteria. All reports and screens shall have the capability to be printed and saved in PDF format, html format, xml format, csv format, Excel, and other ASCII-compatible formats.

The System shall begin gathering location data when the vehicle leaves the yard and continue reporting until the vehicle returns to the yard.

Query features shall be available to filter reports based on time interval, hour, day, week, month, year and YTD and there should be the capability to compare specified data for given time intervals, dates, weeks, months, years or YTD. It is desired that the System shall have the ability to drill down all high-level reports to the next level to the details.

The following examples represent the types of reports the Commission would like to receive in order to better manage operations and maintenance as well as the riding public's usage.

- ✓ **Schedule Adherence Report:** Measures driver on-time performance in relation to Paddles and published schedules.
- ✓ **Average Arrival Times Report:** Measures statistical mean of arrival times for user-defined parameters such as stop, route, vehicle, Driver, reporting period, etc.
- ✓ **Idle Report:** Measures periods of excessive inactivity based on vehicle engine diagnostic data.
- ✓ **Detailed Trip Log:** Records passenger activity (if APC option is exercised) by stop and arrival and departure times, based on user-defined parameters including stop, route, vehicle, direction, etc.
- ✓ **Miles and Hours Report:** Summarizes vehicle service hours and service mileage for revenue and non-revenue service (based on NTD definitions).
- ✓ **Shift Report:** Records the timestamp for Driver login and logout from AVL / MDT / VLU System.
- ✓ **Exception Reports:** Measure the frequency of occurrences for exceptions to user-defined parameters such as speed limits (by segment or global), route adherence, etc.
- ✓ **Ridership Reports:** Include statistical averages for ridership by route during defined time periods, drill-down of daily boarding's and alighting's by route and time of day for single day or range of dates. (Option-requires Automatic Passenger Counters)

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ **Passenger Web/App Activity Reports:** Provide a record of activity (e.g., number of “hits”, type of information requested, etc) associated with the Contractor-furnished Customer Website and Apps for the Operators’ Passenger Information System.
- ✓ **Performance Reports:** Reports shall be made available on the System that display summarized and detailed data on the status of operation, including a description of any failure (e.g., AVL downtime).

A final list of required reports and exact report formats shall be proposed by the Contractor during System Design, and approved by the Commission. All reports shall be customizable.

The following examples represent a more specific list of reports that the Commission would be interested in having. The Proposer should provide a list of the can reports available out-of-the-box. Sample reports should be included in the Proposer’s proposal.

### **10.2.1 Dispatch Activity Reports**

The System shall produce daily, weekly, and monthly reports of any Emergency Alarm Activity.

### **10.2.2 Schedule Deviation Reports (Fixed Route)**

- ✓ The System shall produce reports showing daily, weekly, and monthly schedule deviation.
- ✓ These reports shall summarize the schedule deviations including non-revenue activity that occurred during the time periods covered by the reports. The following statistics shall be produced for the fixed-route fleet, for each bus route, run and for each Driver:
  - ✓ Total number of early runs (i.e., runs that were early departing from any time point).
  - ✓ Average number of minutes early.
  - ✓ Total number of late runs (i.e., run that were late departing from any time point by more than a user-specified threshold).
  - ✓ Average number of minutes late.
- ✓ The report output shall be configurable to allow the user to filter certain types of specific schedule deviations. The types of deviations that can be filtered shall include early times on selected routes and at selected stops, where early times are acceptable.
- ✓ The daily reports should provide the above statistics broken down on an hourly basis along with daily totals. The weekly reports should provide the above statistics broken down on a daily basis along with weekly totals. The monthly report should provide the above statistics broken down on a daily basis along with weekly and monthly totals.
- ✓ National Transit Database (NTD) annual reports in accordance with federal transit administration rules.

### **10.2.3 Customized Reports**

Additionally, after the deployment and implementation of the System, there may arise the need to create additional reports, and the Contractor shall support such additions and / or modifications as part of the Maintenance and Warranty Agreement. The selected Proposer shall provide, in addition to all of its standard reports, pricing for up to 50 additional and customizable



reports as requested by the Commission.

#### **10.2.4 Data Summarization**

For efficient report generation it is required that data be summarized. Contractor shall use effective data storage techniques for the management of data. Data shall be summarized in order to ensure that summary reports are generated within seconds of a report generation request. Users of the AVL and Passenger Information System shall experience no delays in generating reports or accessing the System for data.

#### **10.2.5 Report Filtering**

Query features shall be available to filter reports based on time interval, hour, day, week, month, year and YTD (both calendar year and fiscal year). Ability shall be provided to compare specified data for given time intervals, types of days (weekdays, Saturday, Sunday), dates, weeks, months, years or YTD. System shall also have the ability to generate Descriptive Statistics reports.

#### **10.2.6 Drill-Down Capability**

The System shall have the ability to drill down all high-level reports to the next level and to the details. Report designs shall be presented and finalized during the design review process.

#### **10.2.7 Report Response Times**

Requests for reports shall be acknowledged within 10 seconds with an indication that the report is being processed.

### ***10.3 Transit Analytics (Dashboard)***

The Commission seeks as part of this proposal; business intelligence capabilities via dashboards which will enhance the reports outlined above and provide Commission leadership information based on Key Performance Indicator's (KPI's). The Commission seeks a Commercial-Off-The-Shelf (COTS) solution to meet this requirement. The objective is to use KPI's and dashboards to show areas of operations needing improvement.

### ***10.4 Training***

The Proposer shall provide a comprehensive training program that prepares Operator staff for operation, administration, elementary troubleshooting, maintenance and System Administration of the System components provided by the Proposer. Training may be conducted by the Proposer, the Proposer's sub-Proposers, third-party software suppliers, and / or original equipment manufacturers (OEMs). The Proposer's training program shall include formal and informal instruction, models, manuals, diagrams and component manuals and catalogs as required. Where

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

practical and useful, training should be hands on and should use actual system software and screens on a work station and actual equipment on the fleets. All training materials and manuals shall be produced in hard copies sufficient to provide one copy for each person being trained and one (1) reproducible set of documentation and one copy on approved electronic media. Unless otherwise noted by the Commission, the Proposer shall be solely responsible for supplying all of the items necessary to complete the training requirements, and the Proposer shall indicate in the proposal the cost of materials and time assumed for training.

The Proposer shall provide experienced and qualified instructors to conduct all training sessions. The Proposer is responsible for ensuring that the instructors teaching these training courses are not only familiar with the information, but are able to utilize proper methods of instruction, training aids, audiovisuals and other materials to provide for effective training.

The Proposer is responsible for providing all training aids, audiovisual equipment and visual aids for conducting the training courses. The user interface components of the training equipment shall be identical to the installed equipment.

The Proposer shall submit the training curricula for review and approval by the Commission. No training shall occur until training materials have been approved by the Commission. The curricula shall meet all training requirements and indicate course content, training time requirements, and who should attend.

The Proposer shall provide additional training at no additional cost if major modifications are made to the system after the initial training due to system upgrades or changes made under warranty, or delays in system deployment after the initial training exceeding three (3) months for which the Proposer is responsible.

Formal training shall include both classroom and practical work, and shall be augmented by informal follow-ups as needed. Practical training on equipment shall be the focus of all training classes.

Due to the number of staff and geographic service areas associated with the nine (9) fixed-route systems, there shall be a minimum of at least three (3) train-the-trainer classroom training sessions for the staffs to attend.

### **10.4.1 Training Plan**

The Proposer should describe their overall user training approach. The Proposer will provide a Training Plan identifying the estimated minimum number of training days and hours that will be provided as a part of the base package.

The Proposer shall submit a Training Plan detailing the following:

- ✓ Overall description of the training program

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Breakdown of total number of hours devoted to training: hours of classroom training, number of classes, anticipated number of students, hours developing training materials, etc.
- ✓ Proposed training delivery schedule
- ✓ Purpose of each training class
- ✓ Who should attend class
- ✓ Anticipated duration of the class (hours / days)
- ✓ Training materials, including manuals, guides and other supporting items, and techniques to be used
- ✓ Facility / equipment requirements

The Proposer shall assume that Commission staff do not have any specific knowledge of the System; however the Proposer can assume that staff are generally qualified for the function for which they are being trained in (e.g., Driver, Dispatcher, maintenance, System Administration, etc.).

### **10.4.2 Training Facilities**

The Commission will make every attempt to furnish classroom facilities or meeting space for all trainings. The classroom locations will include at a minimum one in western Ventura County and one in eastern Ventura County.

### **10.4.3 Scheduling and Preparation for Training**

The Commission will identify a person that the Proposer shall notify to coordinate the training sessions. The Proposer shall notify this individual of the dates or range of dates it would like to hold training at the Commission's offices and shall coordinate with the Commission to arrange the training space and ensure computer hardware and software are installed and the space configured for training.

### **10.4.4 Timing for Training**

The Proposer shall conduct training in a timely manner that is appropriate to the overall System deployment schedule. Training for Dispatchers and Operators shall be provided prior to the start of Functional Testing so that these trained personnel may participate in the testing. These courses shall be scheduled to accommodate the work schedules of Commission staff.

### **10.4.5 Training Materials**

Draft copies of all training materials shall be submitted to the Commission for review, comment and approval, prior to final printing of quantities required for training. The Commission shall have the right to require additional interim drafts at no additional cost should draft training materials submitted not be of adequate quality or have missing or incorrect information.

At the completion of all training courses an electronic copy of each course outline, lesson plans, training aids and notebooks shall be delivered to the Commission. All manuals and training must be approved before the Commission will grant Final Acceptance.

For the System users, the Proposer shall provide a User Manual which documents use of all functions of the software. For maintenance workers, the Proposer shall provide an Installation / Maintenance Manual and corresponding training materials, documenting (1) how the system components were installed; (2) how to install and configure spare components; and (3) the procedures for preventative maintenance, inspection, fault diagnosis, component replacement and warranty administration on each system component. The Installation / Maintenance Manual shall clearly indicate preventative maintenance procedures the Commission must perform to validate the warranty.

The Proposer shall provide the following materials to support System training:

### **Training Aids**

The Proposer shall provide training aids such as mock-ups, scale models, overhead transparencies, videotaped demonstrations, and simulations as are necessary for successful training.

### **Instructor Guide**

Instructor Guide's are important elements for the Commission. They will prove to be very valuable at a later time when the contract has been completed and the Proposer's personnel are no longer available to train Commission staff. The Proposer shall provide an Instructor Guide that generally includes:

- ✓ Training agenda
- ✓ Training objectives
- ✓ Training resources and facilities required, including work stations, power and communications requirements
- ✓ Detailed lesson plans
- ✓ A description of training aids and items to aid in on the job performance (e.g., where applicable, pocket guides or reference sheets)
- ✓ Instructions for using any audio-visual support equipment or materials (if applicable).

## **10.4.6 Maintenance Training**

The Proposer shall provide maintenance training. The instructor shall be experienced and qualified in the maintenance of the System begin proposed. The Proposer's trainer shall instruct Commission staff who will maintain / replace the equipment. This maintenance training shall include troubleshooting and diagnostics of all known potential issues problems for the equipment as well as standard remove and replace. Such training does not alleviate the Proposer from maintenance and warranty requirements.

## **10.4.7 Dispatcher / Driver Training**

Training shall familiarize the Commission's Operator and Dispatch personnel with an overview of the System design concepts and features. It shall include hands-on training using the actual

hardware and software being delivered to the Commission. Training materials for this course shall include the System's User Manual. This training is for personnel who require a detailed understanding of the operations of the System and how to access information and reports from the System on items such as vehicle status, schedule and route adherence, on-time performance, etc., including Commission Planning staff.

#### **10.4.8 System Administrator / Customer Service Training**

The Proposer shall provide training for System Administrators and Customer Service Personnel focusing on the functional capabilities of the System and in the operation of the System User Interface screens and reports. This training shall provide a thorough understanding of the Real-Time Monitoring interface for Customer Service staff and the various data files for route and stop development, the analytics tools available in the System, and how to access all of the functional requirements of the System through the Web-based User interface.

#### **10.4.9 Manual Quantities**

Hard copies of manuals shall be provided to the Commission in sufficient quantities as determined by the Commission. The Proposer shall also submit 1 CD-ROM, DVD-ROM, USB or other approved electronic media containing soft copies of all of the manuals created by the Proposer. Each CD-ROM, DVD-ROM or other approved electronic media shall be clearly labeled and contain an indexed booklet listing the contents. The Proposer shall be responsible for producing any additional quantity of the manuals for the Proposer's use sufficient to fulfill the Proposer's requirements.

#### **10.4.10 Supplemental Training**

The Commission requires that the Proposer provide follow-up training(s) approximately 90 days after Final Acceptance. Follow-up training on system operation may take place remotely, such as through a "webinar" or other web-based workshop environment. Remote training can only be done for Commission/Operators' staff who have already received hands-on training.

The Proposer shall provide extended, duplicate, or additional training for the System as deemed necessary by the Commission if any of the following occurrences take place:

- ✓ Major modifications to either the System hardware or software made after completion of the scheduled training courses that were necessary to meet the requirements; or
- ✓ Delays in placing the System into revenue service for which the Proposer is responsible and which result in more than six months elapsing between completion of one or more training courses and the placing of the System into revenue service.

Supplemental training shall be supplied at no cost to the Commission and should be factored into the Proposers Cost Proposal. The Commission will determine the time, location, and extent of any supplemental training in consultation with the Proposer.

### **10.4.11 Bus-In-A-Box**

To assist in Driver and Dispatcher training and to conserve operating costs, the Commission seeks a Bus-In-A-Box tool to aid in personnel training. A Bus-In-A-Box is a self contained, portable suitcase style unit that can be carried and placed in any vehicle (like a car) or in a training room. The Bus-In-A-Box creates a mobile station that gives flexibility to training as well as system development as it makes available all standard bus functions.

## **10.5 Testing**

Unless otherwise stated, the Proposer is responsible for all test logistics (e.g., arranging for vehicles and drivers, and providing other testing services) and coordination activities. The selected Proposer shall:

- ✓ Be responsible for successfully completing all tests required.
- ✓ Furnish all test instruments and any other materials, equipment and personnel needed to perform the tests.
- ✓ Be fully responsible for the replacement of all equipment damaged as a result of the tests, and shall bear all associated costs.
- ✓ Maintain comprehensive records of all tests.
- ✓ Notify the Commission in writing, no less than 14 days prior to each test activity.
- ✓ Provide test plans, procedures, records and reports to the Commission for approval.

The Commission reserves the right to:

- ✓ Witness any and all tests and inspections required by these Specifications.
- ✓ Inspect test records at any time.
- ✓ Perform additional testing, beyond that specified herein, of any equipment or material at any time to determine conformance with the contract requirements. This additional testing by the Commission is not to be considered as a replacement for any testing required of the Proposer or a manufacturer producing materials for the contract.

### **10.5.1 Acceptance Test Plan**

The Proposer shall submit an Acceptance Test Plan that define testing and acceptance at the Commission. The Plan shall be submitted to the Commission at least three weeks prior to formal approval of the Plan. The Plan shall:

- ✓ Describe how each testable specification requirement will be demonstrated, including the testing methodology
- ✓ Describe what result constitutes a successful test
- ✓ Identify the role and responsibility of the Proposer and Commission's representatives during each test

The Plan shall include a list of all of the required tests per subsystem that are to be performed in order to meet the Commission's requirements. This list shall be organized to include:



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Scope and Purpose: Clearly state the scope, case, and conditions of the procedure tests.
- ✓ Pre-requisites: Describe test environment and the pre-requisites, including access, availability, and equipment configuration for each group of functions.
- ✓ Tools: List test equipment and tools, with calibration data for each item.
- ✓ Personnel: List test participants and roles.
- ✓ Procedure: Contain enumerated step-by-step procedures. Procedures shall include regression test and Pass Fail Criteria.
- ✓ Drawings: Include detailed drawings depicting test setup. Drawings shall include list of equipment, parts and material used and tested.
- ✓ Test Data Form: The form will include space to record the tools with calibration date, environmental condition during the test (i.e. rainy, cloudy, temperature, etc.), test measurement, pass / fail criteria and space to record the pass / fail outcome and the signature of the test engineer and a test witness.
- ✓ Test Exception Form: The form shall be used to record the identifier of the defect report / problem report(s) generated as a result of faults / problems detected during the test. All the troubleshooting techniques and corrective actions shall be documented on this form.

The Commission, in its sole discretion, shall grant System Acceptance once it deems that all of the required work of the Project is complete and the following conditions have been met:

- ✓ Proposer, in the Commission's sole determination, has substantially passed and has been given conditional approval of the 30-day Rolling Operational Test; and
- ✓ A "punch list" of items not yet in compliance has been delivered by the Proposer and has been verified by the Commission and approved as being complete.

### **10.5.2 Testing Requirements**

All materials furnished and all work performed under the contract shall be inspected and tested. The testing shall be conducted in various stages as detailed in the Test Plan in order to validate the System integrity, reliability, functionality and compliance to the Commission's requirements. System components shall not be shipped until all required inspections and tests have been completed, all deficiencies have been corrected to the satisfaction of the Commission, and the hardware and software has been approved for shipment by the Commission. Should any inspections or tests indicate that specific hardware, software, or documentation does not meet the Commission's requirements; the appropriate items shall be replaced, upgraded, or added by the Proposer at no cost to the Commission and as necessary to correct the noted deficiencies. After correction of a deficiency, all necessary retests shall be performed to verify the effectiveness of the corrective action.

### **10.5.3 Test Procedures**

Test procedures that are based upon, and consistent with, the approved Test Plan shall be provided by the Proposer to ensure that all System testing is comprehensive and verifies all the features of the devices, software functions and reports to be tested. The step-by-step activities associated with each test shall be listed in the test procedures. The test procedures shall be modular to allow individual test segments to be repeated as necessary. Test procedures shall be



submitted to the Commission in advance to allow sufficient time for review and approval of the test procedures before the start of testing. The following information shall be included in the test procedures:

- ✓ Test schedule
- ✓ Responsibilities of Commission/Operators and Proposer personnel
- ✓ Record-keeping procedures and forms
- ✓ Procedures for monitoring, correcting, and retesting variances
- ✓ Procedures for controlling and documenting all changes made to the System after the start of testing
- ✓ A list of individual tests to be performed, the purpose of each test segment
- ✓ Identification of special hardware, software, tools, and test equipment to be used during the test
- ✓ Copies of any certified test data (e.g., environmental data) to be used in lieu of testing
- ✓ Detailed, step-by-step procedures to be followed
- ✓ All inputs, expected results and measurements for successful sign-off for the full implementation tests

#### **10.5.4 Function Testing**

Functionality tests shall completely verify that all the specified and Proposer-proposed features and functions of the System have been properly designed and implemented. The following items, as a minimum, shall be included in the Function Tests:

- ✓ Inspection of all equipment for conformance to drawings, specifications, and applicable standards, and for satisfactory appearance
- ✓ Testing of the proper functioning of all hardware by thoroughly exercising all devices, both individually and collectively
- ✓ Testing of the proper functioning of all software and firmware features and functions, including test cases with normal and exception data
- ✓ Testing of the proper functioning of all data communication features and facilities and all communications control functions
- ✓ Testing of all AVL on-board functions, and of optional add-on equipment, using actual vehicle equipment items supplied as part of the Project
- ✓ Input and output signals from devices supplied by others or already installed on the vehicles shall be simulated if the Commission cannot provide actual devices for testing
- ✓ Testing of AVL functions using a mobile test vehicle and appropriate test map and database information for the routes that will be traversed
- ✓ Verification of all data transfers to the appropriate databases
- ✓ Testing of all user interface functions
- ✓ Simulation of hardware failures and failover of each AVL and Passenger Information device that has a backup unit
- ✓ Verification that spare capacity and ultimate sizing requirements have been met, including all expansion requirements
- ✓ Verification of the accuracy of the system performance monitoring software
- ✓ Verification that the processor loading and system response time requirements have been met while exercising all Proposer-supplied software and performing functions
- ✓ Verification of device and system recovery from AC power failures
- ✓ Verification of the accuracy of hardware and software documentation via random checks

- ✓ Testing of the System User Interface, real-time monitor (RTM), and Customer Websites and Apps
- ✓ Testing of all software and database maintenance functions
- ✓ Verification of all reports provided by the system
- ✓ Testing of data exchanges between devices supplied by others or already installed on the vehicles (e.g., GFI farebox, AVA, APC, etc.), if utilized.
- ✓ Tests of data exchanges that are not required in real time (e.g., exporting reports/data)
- ✓ Verify the System stability and availability is free of problems caused by interactions between software and hardware while the System is operating as an integrated whole

### **10.5.5 Cellular Communications Coverage Test**

The Proposer shall supply a complete set of coverage maps, including the most remote portions of Ventura County, western Los Angeles county, including Woodland Hills/Warner Center/Chatsworth, and southern Santa Barbara county including Goleta/Santa Barbara/Carpinteria for the Operators' operations, for full data communications to and from Operators' vehicles. The Proposer is responsible for the coverage criteria necessary to provide reliable service for Operator operations.

### **10.5.6 30-Day Rolling Operational Test**

The purpose of the Operational Test is to ensure that the System, as installed in the field, works properly as a fully integrated System. Prior to the start of the 30-day Rolling Operational (acceptance) Test, all outstanding testing variances must be corrected and all hardware and software documentation must be received and approved by the Commission. All training of the Dispatchers, Drivers, Operator staff, and other users, must also be completed, before the Commission will enter into Operational testing. Once the System has been fully integrated into Operator operations, the Proposer can commence Operational Acceptance testing of the entire System. During this test, no adjustments, modifications, or substitutions shall be made to the System by the Proposer, except with the approval of the Commission.

The Commission's desire is that no "down time" be experienced during Operational testing, which is intended to verify the ability of the System to satisfy the integrity, reliability, accuracy, availability and Mean-Time Between Failures (MTBF) targets. During this time the System will be used for everyday business. If there is a failure of the System during this time, the Proposer will be responsible for identifying the failure, correcting the problem, and detailing what they have done to keep this problem from occurring again. This effort will continue until such time that the System has run without incident for 30 consecutive days.

### **10.5.7 Test Records and Reports**

After the completion of each phase of testing, the Proposer shall submit to the Commission for review and approval a Test Report that documents the results of the testing. The Test Report shall include the results of the test, any anomalies identified, and the corrective action and any re-tests necessary to successfully complete each testing phase. The Proposer shall be responsible for

completing all corrective actions identified on a timely basis. The Commission reserves the right to withhold Acceptance, pending completion of the required corrective actions.

Test report submittals shall be organized to include the following headings and information:

- ✓ Purpose / Introduction: Defines the scope of the submittal.
- ✓ Summary of the Test Results: Including measurements, results, problem areas, workarounds, troubleshooting, exceptions, etc.
- ✓ Open Items: Identify any open items requiring resolution. Include the corrective action to resolve the open items.
- ✓ Completed Test Records: Completed, signed, and dated test sheets, as well as a defect / problem report for each fault / problem found during the testing.

### **10.5.8 System Acceptance**

The Commission shall issue a written notice of System Acceptance, upon satisfaction of the conditions listed in the Acceptance Test Plan and the 30-Day Rolling Operational Test. The occurrence of System Acceptance shall not relieve the Proposer of any of its continuing obligations under the Agreement.

## **10.6 Documentation**

### **10.6.1 General Manual Requirements**

All text and data in the quantities requested shall be printed on 8-1/2" x 11" sheets. Foldouts should not exceed 11" x 17". Paper used in manuals shall be of a heavy weight, sufficient to withstand the rigors of a maintenance and operating environment. Manuals shall be housed in durable, three ring binders with sufficient excess capacity for revisions and additions.

Each manual shall contain a title sheet, table of contents, list of illustrations, list of reference drawings (if applicable) and a parts list (if applicable). All manuals with over twenty five pages shall have an index.

All manuals shall be produced in an approved Microsoft software product or approved equivalent. Acceptable softcopy formats are Microsoft Office 2003 Suite or higher. Soft copies of manuals may be provided in unsecured Portable Document Format (pdf).

The Proposer, as part of their response, shall provide samples / examples of their training and maintenance documentation, quick / reference guides, etc.

### **10.6.2 Maintenance Service Manual**

The Proposer shall provide a Maintenance Service Manual for use by technical personnel

assigned to the maintenance of any component installed as parts of the System and for any third party products and / exercised options. Separate volumes shall be provided for vehicle on-board and fixed-end devices, such as CMS signs. This manual shall include but not be limited to the following sections: General description and system overview; theory of operation; Driver instructions; mechanical functions; removal, installation; test and troubleshooting procedures; preventive and corrective maintenance procedures and schedules; diagrams; schematics; layouts, and parts lists required to service each piece of hardware supplied under this Agreement. A list of all error codes with description of meaning and a step by step guide to troubleshooting shall be included in the troubleshooting section. Standard service manuals for commercial products used for the equipment will be acceptable if they contain sufficient information to service the equipment. Large-size logic diagrams and mechanical assembly diagrams do not have to be reduced or incorporated into the manuals if these drawings are provided with the manuals. Actual equipment maintenance images with call-outs needs to be provided where there is no other maintenance documentation.

Proposer will be responsible for maintenance and warranty support.

### ***10.7 Design / Implementation***

The Contractor is required to develop and maintain a detailed Project Schedule that incorporates the major milestones in the Scope of Work. The Proposer's sequencing of tasks should be flexible enough to accommodate modifications in scope or changes in the timelines such as early completions or delays that would normally be expected in a multi-stage deployment.

The Contractor shall submit an Implementation Plan for approval by the Commission that shall be the master document from which all elements of the System shall be installed. The Installation Plan shall include and define, at a minimum, the following items:

- ✓ The proposed installation schedule, detailing phases and / or installation segments. Once the baseline schedule is approved by the Commission, monthly updates identifying all schedule changes and work progress in the form of percentage completions shall be submitted to the Commission for review.
- ✓ The minimum resource allocation requirement for any installation phase or segment.
- ✓ How the Contractor will manage delivery and staging of the AVL and Passenger Information System equipment that is to be installed.
- ✓ The order in which equipment items are to be installed, with estimated durations.
- ✓ Any special or unique installation requirements.

#### **10.7.1 Work Standards and Requirements**

The Contractor shall provide project management and oversight of all work performed. The Contractor shall install the equipment to the highest standards, using experienced and knowledgeable personnel. All installation work shall be scheduled so as not to disrupt or delay Commission operations. The Contractor shall make every effort to schedule the work around peak times. In the event that extensive installation and testing work will be required, some work

may have to be accomplished during night hours.

All System equipment installations shall be performed to an approved set of plans, which has previously been submitted and approved by the Commission or their representative.

### **10.7.2 Commission Participation**

The Commission intends to actively participate in this Project. This participation will include providing data required by the Proposer, reviewing and approving designs, monitoring the Proposer's progress and schedule, attending progress review meetings, and participating in system testing. Any portion of these activities may be handled by Commission / Operator staff or consultants as directed by the Commission. The Proposer's Project Plan shall identify clearly any Commission responsibilities or tasks that staff or its consultants will be required to perform and the durations for those activities.

### **10.7.3 Kick-Off Meeting**

The Commission will hold a "kick-off" meeting with the Contractor within ten (10) days from the Notice to Proceed (NTP) at which time the Proposer shall be prepared to present and discuss the general Implementation Plan and receive comments from the Commission. Proposer shall ensure any sub-Proposers and their appropriate personnel are present at the meeting. The administrative and technical aspects, preliminary the Project Schedule, assumptions, etc., of the Project will be discussed at the kick-off meeting. Prior to the kick-off meeting, the Contractor will provide an agenda to all potential meeting participants.

The Proposer shall submit a Final Implementation Plan within ten (10) days from the kick-off meeting that explains its proposed methodology to completing the Project scope and its approach to work, design, implementation, testing, training documentation and on-going support. The Implementation Plan shall be in sufficient detail to demonstrate the Proposer's clear understanding of the Project.

### **10.7.4 System Design**

The Contractor shall provide a preliminary and final design document for each fleet type and installation location. Similar sites may be covered by the same installation design if approved by the Commission. The Commission shall have the right to approve, disapprove, change, add or delete any items within installation designs before authorizing installation to commence.

The Contractor shall perform, document and submit for the Commission's approval, a pre-installation inspection and test of each installation site noting the existing condition of any structures, wiring, fixtures and finishes that may be affected by the installation both for the on-board technologies and for the Passenger Information System components.

The Contractor shall perform, document and submit for the Commission's approval, a post-installation inspection and test of each installation site noting the condition of the structures, wiring, fixtures and finishes.

The Contractor shall provide a Project Plan that incorporates an **Installation Plan, Training Plan and Test Plan**.

### **10.7.5 Preliminary Design Review**

The Design Plan shall be submitted to the Commission as a Preliminary Design Review (PDR) package. The PDR package shall consist of individual submittals for each subsystem or discrete sections of a combined submittal containing all subsystems. The PDR package shall be submitted no later than 30 days after the NTP date.

The PDR package shall be organized to include the following headings and information:

- ✓ Purpose and Scope of the PDR package: A brief description and introduction of the package.
- ✓ Reference Material: List of relevant references and standards.
- ✓ Specification Compliance Matrix Table: Acknowledging and referencing the selected Proposer's conformance to each technical requirement clause of every subsystem Specification Section. The selected Proposer shall submit explanatory or mitigating evidence as well as alternative design recommendations for each clause that the proposed implementation is determined to be non-compliant or complies with exception.
- ✓ Subsystem Description: Subsystem description, interface information, all performance, functionality and operational description, etc.
- ✓ Interface Requirements: Proposer shall identify all required interfaces with other communications and non-communications subsystems.

### **10.7.6 Design Plan General Requirements**

The Design Plan shall include all materials, equipment, assembly and installation required to carry out the work required to make the System suitable for the purpose for which it is intended, whether or not such materials, equipment, assembly and installation are specifically indicated in the minimum requirements of these specifications.

### **10.7.7 Design Documentation**

Prior to installation, the Contractor shall submit "typical" installation drawings or shop drawings detailing the design that shall be used for on-board and fixed-end equipment installation work. Separate shop drawings shall be provided for each vehicle type / model, and for the fixed-end site work as applicable (such as for CMS sign installations). If measurements differ from vehicle to vehicle (or from site to site), these variations shall be noted. For the server equipment in Contractor's Host site, equipment / cabinet layout schematics shall be provided to the



Commission for reference. All documents should have updated and visible version and revision numbers.

### **10.7.8 Final Design Review**

Toward the end of the design process, the Contractor shall arrange for a final design review meeting with the Commission that shall include an update of all of the design activity to date. All major sub-contractor and key personnel shall attend the meeting. Any unapproved modifications and implementation efforts conducted before the approval of the System Design Document will be at the Contractor's own risk.

- ✓ Final Design Review (FDR) package shall be one complete submittal sufficient to provide all the required details for overall system integration and operation. Design review requirements defined within the individual subsystem specification sections, shall be consolidated and submitted as a single package. The FDR package shall be submitted to the Commission no later than 60 days after the NTP date.
- ✓ The Final Design Review submittal package shall not be submitted until the Commission has approved all individual PDR submittals. The FDR Submittal Package shall be organized to include the following final design information:
  - ✓ Approved and updated versions of all previously submitted design review materials.
  - ✓ Updated product submittals for all, materials and components for which product submittals were not previously submitted and approved.
  - ✓ Complete Drawing index.
  - ✓ Complete list of items to be serialized.
  - ✓ Complete cable identification and equipment labels.
  - ✓ Complete wiring diagrams for all equipment to be installed, modified, upgraded, or interfaced to under this contract.
  - ✓ Top level mechanical drawings, if applicable.
  - ✓ Grounding details.
  - ✓ Power panel schedule and distribution.

### **10.7.9 Installation**

The Contractor shall supply all personnel, tools, materials and equipment required to perform installation of the System. The Contractor is also responsible for procurement, installation, terminating and testing all equipment furnished for Project.

Where the Contractor is providing components manufactured by a third-party supplier, the Contractor shall ensure that all such components are installed in accordance with the original equipment manufacturers (OEM) installation guidelines. In addition, the Contractor shall arrange for OEM / supplier on-site and remote support as is necessary to ensure the proper operation of its equipment at no additional cost to the Commission.

All installations shall be performed outside of the operating hours or coordinated to limit impact to Operator operations. The exceptions are with prior agreement and on equipment that the Commission identifies as not in use. All installations shall be complete before the equipment is



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

needed by the Commission and all installations shall be performed in accordance to all Federal, State and Local laws and regulations. The Contractor is also responsible for restoring the condition of any affected structures, wiring, fixtures and finishes at the installation sites.

The installation work includes but is not limited to:

- ✓ Furnish and install all wiring and connectors for on-board and fixed-end equipment and connections to power and communications enclosures and external systems integration. This includes the proper termination of all power and communication cables and wiring (copper or fiber optic) to connect the individual components into a fully operational System that complies with applicable standards and specifications.
- ✓ Furnish and install all hardware, equipment, brackets, computer enclosures, pull boxes, junction boxes, conduits, power and communications infrastructure, and other such items as required to support System proper functioning.
- ✓ Furnish environmental control devices, such as Universal Power Supplies, as required.
- ✓ Furnish and install all electronics and other devices in their respective cabinets as required to provide a fully operational System.
- ✓ Furnish and install System equipment, including, but not limited to, GPS antennas and receivers, AVL components, communications devices, vehicle logic units, etc.
- ✓ As a Commission option, furnish and install Automated Passenger Counter (APC) equipment, as specified.
- ✓ As a Commission option, furnish and install Automated Voice Annunciation (AVA) System equipment, as specified.
- ✓ Furnish and install Mobile Data Terminals (MDT), in the quantity and configuration directed by the Commission.
- ✓ Furnish and install Passenger Information Displays, in the quantity and configuration directed by the Commission.
- ✓ Furnish and install Changeable Message Sign (CMS) System, with optional add-on audio equipment, solar electric power systems, and cellular communications equipment, in the quantity and configuration directed by the Commission.
- ✓ Validate all cable and wire terminations via a test process to ensure that the cable is connected to the correct location on each end and that the cable / wire are properly terminated.
- ✓ Test the full communications networks to validate proper functioning.
- ✓ Power up and provide a field check out / installation acceptance test of all Systems, to be witnessed and approved by the Commission. Track progress toward completion of all installation requirements using a "punch list".
- ✓ Calibration and testing of the System, as further described in full accordance with OEM supplier guidelines.

### **10.7.9.1 Modern OEM Products**

- ✓ The Contractor shall supply modern, unmodified, OEM products of computer and communication equipment required for its System.
- ✓ All OEM products utilized shall be from authorized distributors. Evidence that products were obtained by the selected Proposer from authorized distributors shall be provided to the Commission upon request.
- ✓ The equipment shall be delivered with the latest firmware, patches, and software updates available at the time of delivery.

#### **10.7.9.2 Work Standards**

The Contractor shall adhere to all applicable installation standards, laws, ordinances, and codes as required by the latest editions of the NEC, IEEE, OSHA, or other governing sources. All installations shall meet such requirements. The Contractor shall be responsible for all costs associated with any permits, plan reviews and inspections. It shall also be the Contractor's responsibility to procure all documentation required to install and adhere to the proper installation standards, laws, ordinances or codes.

#### **10.7.9.3 Equipment Removal, Relocation and Restoration Plan**

The Design Plan shall include a submittal detailing a plan for all the equipment and facilities requiring removal, restoration and /or relocation required under the resultant contract to include:

- ✓ All the items (by subsystem and location) requiring restoration, rebuild and / or upgrades to its original condition or better.
- ✓ All the items (by subsystem and location) requiring removal.
- ✓ All the items (by subsystem and location) requiring salvage and packaging to keep original condition or better.
- ✓ A plan for temporary relocation and offsite storage.

#### **10.7.9.4 Equipment List**

The Contractor shall submit a table / list of manufacturer, model and part numbers for all proposed equipment and materials to be used for individual subsystems. Include the expected lead-time for each item while identifying the ones with lead-times greater than 30 days. The list / table shall be grouped for each subsystem with functional descriptions of equipment or material included. Quantities and locations shall be included.

#### **10.7 9.5 As-Built Documents**

At the completion of installation, the Contractor shall provide an As-Built Document (ABD) to the Commission. The ABD shall include (1) an inventory of all components supplied including supplier, model number, serial number and installation location; (2) an inventory of all spare parts supplied including supplier, model number, serial number and storage location; (3) all reference and user manuals for system components supplied by third parties; (4) all warranties documentation; (5) a diagram indicating all interconnections between components; (6) the version number of all software; and (7) software installation media if solution is not centralized.

The ABD must be approved before the Commission will grant Final System Acceptance.

#### **10.7.9.6 Bill of Materials (BOM)**

The Proposer shall include the BOM in the proposal for all equipment and hardware supplied under the Agreement to meet the specifications of this Scope of Work. Each component shall also include the second source for manufacture. During the design phase the BOM shall be finalized and all changes there after shall be subject to approval of the Commission.

### **10.7.10 Obsolescence**

All equipment shall be of the latest design and shall incorporate standard commercial products currently in production. It is desirable for the peripheral hardware to be supplied from the same manufacturer, and maintained by the Contractor. The intent is to increase compatibility and reduce maintainability problems. The Contractor shall offer an extended warranty and maintenance support for up to (5) years after Project Acceptance. The Contractor shall ensure that the risk of obsolescence to the hardware is minimized through the selection of standardized parts and readily-available peripheral hardware and cellular service agreements.

### **10.7.11 Environmental**

All equipment and hardware to be supplied shall be constructed to meet the MIL 810 Standards for harsh operational conditions found in the transit environment. All Contractor-provided on-board and wayside equipment shall operate properly under these minimum environmental conditions encountered on-board the vehicles including conditions pertaining to temperature, humidity, dust / dirt, power variations, shock, vibration, altitude, and electro-magnetic or radio frequency interference (EMI / RFI). In addition to the climatic conditions, the equipment will also be subjected to harsh environmental factors normally found in the operation of a transit vehicle, transit maintenance yard, or route, including, but not limited to: car, truck and bus emissions; industrial exhausts; industrial cleaners; gasoline and car lubricants. All equipment housings shall be waterproof and dust-proof. The Contractor is responsible for ensuring that the proposed System works accurately and reliably in such an environment including providing the necessary equipment and climate controls to ensure proper functioning.

### **10.7.12 System Scalability**

The System shall initially support the functions specified herein with the quantities of vehicles shown in Attachment M. However, the System shall be easily scalable through 5 years from contract effective date to support additional vehicles without replacement of initially installed components, including both hardware and software components.

## ***10.8 Project Management***

The Commission intends to actively participate in this project. This participation will include providing data required by the Proposer, reviewing and approving design documents, monitoring the Proposer's progress and schedule, attending progress review meetings, and participating in system testing. Any portion of these activities may be handled by Commission staff or consultants, as directed by the Commission. The Proposer's activity schedule shall identify clearly any Commission responsibilities or tasks that Commission staff or its consultants will be required to perform and the durations for said activities.

### **10.8.1 Project Staffing**

It is the Proposer's responsibility to maintain and assign a sufficient number of competent and qualified professionals and other technical personnel to satisfy the requirements and schedules specified in the Scope of Work or proposed by the Proposer.

### **10.8.2 Project Schedule**

The Proposer shall prepare a project schedule in Microsoft Project format (Office 2003 or later release) that lists all tasks related to the design, development, testing, installation and deployment of the POC and subsequently, the complete System. The schedule should be in sufficient detail to demonstrate a clear understanding of the Project. It should identify all milestones starting with the Notice to Proceed through the date of Final System Acceptance. It should depict the expected sequence and durations of all tasks and subtasks, including submittal dates and resources responsible for each task. The project schedule will be reviewed by the Commission and if accepted shall be considered "baselined". If revisions are requested, the Proposer shall address the Commission's comments, and re-issue the schedule. Once baselined, the Schedule will become the basis for all subsequent schedule changes and updates for the duration of the Project.

### **10.8.3 Weekly Status Meetings**

The Proposer's Project Manager shall attend regular progress meetings throughout the installation phases of the Project. Regular Progress Meetings shall initially be scheduled to occur weekly, but are expected to become less frequent as the Project progresses. The Proposer's Project Manager and any subcontractors shall ensure that the appropriate personnel are present at these meetings, who can represent the Proposer's interests and provide the required Project status and information. The Proposer's Project Manager will prepare and distribute an agenda at least 24 hours prior to each meeting. The meeting agenda will consist of those items pertaining to the installation and schedule for the previous and current week's installation efforts. All issues recorded during the installation activity for the prior week shall be discussed and any conflicts resolved. A "punch list" shall be maintained for any outstanding work items related to the Project installation, and the Proposer's Project Manager should be prepared to discuss the punch list at these meetings. The Proposer's Project Manager shall identify and communicate any issues regarding System installation and operation on a timely basis. The Progress Reports may be combined with the "punch list".

### **10.8.4 Monthly Status Reports**

The Proposer shall submit with its monthly invoice a Project Status Report that includes a brief narrative highlighting the progress made during the prior month. The status report shall provide a listing of all deliverables that were completed during the reporting period, any problems or scheduling delays encountered, and shall include a 'look ahead' for work planned in the upcoming month. The percentage of work completed for each active work task shall be reported. In addition, the Proposer shall support supplemental reporting requirements of the

Federal Transit Administration.

### **10.8.5 Formal Correspondence**

Neither party shall be entitled to rely on any information unless it is in writing and received from the other party's designated representative. Submittals may be transmitted as an enclosure to a transmittal letter or via email.

### **10.8.6 Punch List**

The Proposer shall maintain a "punch list" for the Commission. The "punch list" shall have each action item numbered and indicating the date generated, item description, person assigned to item, date resolved and ongoing notes on resolution. The "punch list" shall be revised and resubmitted to the Commission on a weekly basis. The "punch list" may be combined with the monthly Progress Reports.

### **10.8.7 Deliverables**

Draft copies of all documentation, plan, materials, etc., shall be submitted to the Commission for review, comment and approval, prior to final printing. The Commission shall have the right to require additional interim drafts at no additional cost should draft documentation submitted not be of adequate quality or have missing or incorrect information. Unless otherwise directed by the Commission, the Proposer shall supply a minimum of one (1) hard copy of final documentation for each deliverable with one copy on approved electronic media.

The Commission's written approval will be required for designated submittals. The Commission will approve or reject such submittals, providing an explanation of any reasons for rejection. Such approval or rejection will ordinarily be provided within 14 calendar days of the submittal unless prior to the expiration of the 14-day review period, The Commission will provide the Proposer with written notification (email is acceptable) that the review period for a particular submittal will be extended and stating the time in which it will be completed. In any instance where the Commission does not provide approval, rejection or written notification of an extended review period within the 14-day period, the submittal shall be deemed approved. In the event that the review period expires on a non-working day, the review period shall be extended through the next working day. The Commission's right to extend the review period is intended to allow flexibility in special circumstances where the nature of the submittal requires more involved review, and not as a diminution of the Commission's obligation to promptly review the Proposer's deliverables.

The Proposer shall deliver a draft and final version of the following documents as described in this RFP to the Commission:

- ✓ Implementation Plan
- ✓ Implementation Schedule

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Staffing Plan
- ✓ Asset List
- ✓ Design Document
- ✓ Test Plan / Procedures
- ✓ Training Plan / Materials
- ✓ Maintenance Manuals / Documentation
- ✓ Drivers Manual
- ✓ Dispatchers Manual
- ✓ As-Built Documents
- ✓ Functional (software usage) Documentation
- ✓ Quality Assurance Plan
- ✓ Final Acceptance Test Report

The Proposer shall provide and deliver the following documentation to the Commission:

- ✓ Monthly Progress Reports and Schedule Updates
- ✓ Meeting and Conference Call Minutes/Summaries
- ✓ "Punch List"
- ✓ Asset List

### **10.8.8 Asset Management**

During installation, the Proposer shall maintain a list of all equipment and software installed at the Commission/Operator facilities. The list shall contain:

- ✓ Product description and manufacturer
- ✓ Quantity installed and quantity as spares
- ✓ Serial numbers, where available
- ✓ Installation or storage locations, including tracking of fleet vehicle number
- ✓ Status of equipment (e.g. installed, spare, awaiting repair, etc.)
- ✓ Item value if over \$2,500.00
- ✓ Replacement status of each part and reason for replacement

The Proposer shall update the asset list whenever equipment or software is installed, replaced or removed. The updated list shall be provided to the Commission. At the completion of installation, the Asset List may be replaced by the As-Built Document.

### **10.8.9 Quality Assurance Plan**

The Proposer shall provide a Quality Assurance / Quality Control Plan in accordance with the Federal Transit Administration Quality Assurance and Quality Control Guidelines.

All materials and equipment shall be new and not used and / or remanufactured in nature. The new materials / equipment shall not have had a shelf life or be of such age where it would adversely affect the performance of the equipment. Any retrofit or post-delivery change to one item of one type of equipment shall be made identically to all units.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

All proposed equipment must be of the latest engineering change level available with modifications installed for all known operational problems. The Proposer shall retrofit all new problem solutions (i.e. engineering changes) to the installed equipment during the warranty period following the participating provider's approval.

The quality assurance process shall ensure adequate quality throughout all areas of the performance of this Project. The quality control process shall ensure accurate problem description and recording, assignment of personnel, tracking of progress for corrections / revisions, and disposition of the problem throughout the design, testing, and implementation phases of the Project.

The workmanship of the Proposer shall be of the best quality and to the highest standard of commercially acceptable practice for the class of work. On-board equipment shall be designed to provide a usable life of not less than ten (10) years.

The QA / QC Program shall provide for the prevention and ready detection of discrepancies and for timely and positive corrective action. The Proposer shall make objective evidence of quality conformance readily available to the Commission. The QA / QC Program shall include effective control of purchased materials and subcontracted work.

The Proposer shall maintain records or data essential to providing objective evidence of quality until the expiration of the guarantee / warranty period and they shall be made available to the Commission upon request. Examples of quality-related data include: inspection and test results, records of sub-contractor quality programs, cost records pertinent to acceptance of nonconforming material, support for change order documentation, design reviews and walkthroughs, and the results of internal and Proposer audits.

### **10.8.10 Invoicing**

The Proposer shall submit invoices to the Commission according to the Fixed Price Payment Schedule. The payment schedule is based on milestones and deliverables. Each invoice shall be accompanied by a progress report, updated as of the date of the invoice, the current Implementation Plan and the current master "punch list".

### **10.8.11 Project Closeout**

Project Completion shall be deemed to have occurred when all obligations under the Agreement have been successfully performed by the Proposer, all retentions owed to the Proposer have been released by the Commission, and, when the Commission has delivered a formal Notice of Project Completion. Following Project Closeout, the Warranty period(s) take effect.

## **10.9 Warranty / Maintenance**

The Proposer agrees that the system and all related installation work shall be subject to the warranties and obligations set forth in this section. The warranties and obligations set forth in this Section shall commence upon system acceptance and end after the end-date of the Agreement, unless extended for a longer period. There are two general warranty periods:

- ✓ Two-year period following system acceptance, also referred to as Installation Warranty
- ✓ Three One-year periods, referred to as Extended Warranty

Fixed Pricing is requested for both the two-year period and for three annual extensions.

During the warranty period, the Proposer shall provide on-call support to assist the Commission in the maintenance of the System. This on-call support shall be provided on-site for hardware and software problems and operational troubleshooting, and over the phone such as to answer questions regarding missing or incorrect data.

All non-critical warranty work on defective or non-complying installation work, or system hardware, or any software defects or errors that cause the software to fail to conform to the requirements of these specifications shall be performed at no cost to the Commission within fifteen (15) days of being notified in writing by the Commission or its representative. Any defects that affect the critical functions of the operations shall be fixed within 48 hours.

The Proposer shall maintain adequate resources for replacement of all defective or noncompliant work or equipment, including test repair, warranty repair, spare modules, spare assemblies, spare components and spare parts in furtherance of the warranty requirements and maintain sufficient relationships with qualified local technicians.

The Commission will operate the System hardware and software in accordance with the Proposer's specific instructions in order to maintain all warranties. However, the Proposer shall hold the Commission harmless and Proposer shall be responsible for repairing any damage from the Commission's improper operation of any System hardware or software resulting from Proposer's failure to provide adequate or correct training and / or complete operating manuals, software manuals, electrical drawings, complete computer program documentation and other documentation required to be furnished as identified within these specifications.

The Proposer shall provide a **single point of contact** for all warranty administration during the warranty period.

### **10.9.1 Installation Warranty**

The Proposer warrants that all installation work and all System hardware furnished by the Proposer including, but not limited to, all such work, and System hardware provided by sub-

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

contractors, suppliers, or other manufacturers, shall be of good quality and free of any defects or faulty materials and workmanship for the TWO-YEAR warranty period.

The Proposer shall also warrant that all installation work and system hardware shall perform according to the specifications for the two-year warranty period.

If the Proposer upgrades its devices to ensure the continued and proper operation of the System as configured for Project, the Proposer will assume all costs related to the hardware upgrade and there shall be no additional cost to the Commission.

### **10.9.2 Extended Service / Warranty Period**

The Commission requests that the Proposer propose an extended service / maintenance agreement beyond the initial two-year period for a minimum period of an additional three years, priced annually. The Proposer shall define all terms, conditions, and costs of the extended service / maintenance agreement in its Cost Proposal. Proposers should include their annual software and hardware service / maintenance escalation percentages.

### **10.9.3 Availability and Mean-Time-Between-Failure (MTBF) Targets**

All functions of the System, including those of the cellular communications network shall be designed, constructed, and implemented to perform as specified, without degradation in response times to meet the System availability targets provided below. The failure of any single component or device shall not render the System unavailable.

#### **Availability Targets**

<b>System or Subsystem</b>	<b>Availability Target (%)</b>
Vehicle On-Board Systems	98.0%
Hosted System	99.9%
Passenger Information Systems (e.g., CMS, Apps, and Web)	99.5%
Customer Website	99.8%

Availability for each of the above systems shall be calculated as follows:

	Total number of hours of downtime in time period
Availability = 100%	Total hours in time period

For availability calculation purposes, a vehicle with a failure of Proposer provided equipment will be considered unavailable from the time the failure is noted until the vehicle returns to the yard at the end of that vehicle's service day. An exception to this will be allowed in cases where the failure is intermittent and the failing operation is successfully performed in no more than two retries.

### **10.9.4 Chargeable and Non-Chargeable Failures**

For purposes of calculating MTBF and Availability performance targets, chargeable and non-chargeable failures are defined as follows:

### **Chargeable Failures**

Chargeable failures include any failures that are not specifically identified as non-chargeable, including but not limited to:

- ✓ A malfunction which prevents any System component (hardware or software) from performing its designated function, when used and operated under its intended operational and environmental conditions.
- ✓ A malfunction that poses a threat to the safety of the System components, passengers, Drivers, Operator staff or others.
- ✓ An occurrence where data is not successfully transmitted between vehicle on-board systems and the servers, or between fixed-end devices (e.g., CMS signs) and the servers.
- ✓ Software anomalies and bugs that affect the performance and operation of the System.
- ✓ Shutdown or unavailability of the System unless specifically directed by the Commission.
- ✓ Failure to send and receive required Passenger Information data, such as bus arrival and departure data.
- ✓ Failure to generate the reports required to reconcile and track System performance.

### **Non-Chargeable Failures**

Non chargeable failures shall include:

- ✓ Force majeure
- ✓ Vandalism
- ✓ Failure of test instrumentation.
- ✓ Failures that are patron or Commission induced.
- ✓ System component failures caused by externally applied stress conditions outside of the requirements of this RFP.
- ✓ System component failures caused by environmental or operating conditions outside of the requirements of this RFP.
- ✓ Normal operating adjustments as allowed in the Test Procedure or Maintenance Plan.
- ✓ Failures of expendable and consumable items in operation beyond their intended useful life in testing.

## **10.9.5 Diagnostics**

Maintenance personnel shall have easy access to components, and removal, testing and replacement shall not require extensive effort or tools. All test points necessary to diagnose the equipment while in operation shall be easily accessible and LED indicators shall be provided to assist technicians to identify and diagnose problems. Maintenance technicians shall have the ability to connect a laptop or terminal and keyboard to troubleshoot the components.

## **10.9.6 Maintainability**

The System hardware shall be designed with the following specifications:

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- ✓ Modular replaceable and repairable components to allow for easy and quick maintenance.
- ✓ All components that perform the same function shall be interchangeable.
- ✓ There shall be a second source for manufacture for all parts and it shall be identified in the Bill of Materials. All exceptions shall be noted and approved by the Commission.
- ✓ All replacements shall be plug-in compatible with no changes required. All exceptions shall be noted.

### **10.9.7 Repair and Replacement of Faulty Components**

During the warranty period, the Proposer shall repair or replace any faulty components. In the event that faulty components are replaced from the spares inventory by Operator staff, the Proposer shall repair or replace the faulty component. Each faulty component will be shipped to the Proposer, who shall return a new or repaired component within two weeks of originally receiving it.

If the Proposer determines a returned component is not faulty, the Commission must receive the original component back in working order within three days of the Proposer originally receiving the returned component.

All components received back from the Proposer will be tested by the Commission in accordance with the original Acceptance Test Procedures, and returned to the Proposer if faulty. The Proposer shall pay all shipping charges and any duties associated with the repair or replacement of faulty units. Returned or replaced spare components shall be packaged, organized, bar coded and labeled in the same manner as the original supply of spare components.

The Proposer warrants that all equipment furnished is guaranteed to be free from fleet and related defects for the warranty period. A fleet defect is defined as the failure of twenty-five (25) or more percent identical items covered by the warranty period. The Asset List shall be used to track the replacement of defective parts.

System-wide replacement shall require the Proposer to replace all units of the suspect component throughout the System, whether or not they have exhibited any fault.

The Proposer shall be obligated to complete the System wide replacement if the need was documented before the end of the warranty period, even if the replacement extends beyond the end of the warranty period.

### **10.9.8 On-Call Support**

The Proposer shall provide Commission staff and its agents with access to knowledgeable technical support personnel and trained field service personnel as may be required for the successful maintenance and operation of the System. Support personnel shall be available to assist the Commission to diagnose System problems, monitor vehicle on-board units, fixed-end devices, and Host server performance and availability levels; and troubleshoot hardware and

software errors in a timely manner. The terms of the Technical Support agreement shall be specified in the Service Level Agreement that should accompany the contract, including expected levels of effort, hours, and costs for maintenance support.

#### **10.9.9 Local and Escalated Support**

The Proposer shall provide for local support from one or more qualified firms to be available when needed by the Commission to assist with fault diagnosis or component replacement. The proposal must include a list of the local support firms, their support responsibilities and the response arrangements and DBE status.

If a local support firm does not respond within the agreed response timeframe for critical or non-critical support, or when a local support firm is not able to provide the needed support, the Proposer shall provide supplementary support in accordance with an agreed escalation procedure. The escalation procedure can initially involve telephone support, but must include the Proposer providing on-site support if needed. The proposal must define the proposed support escalation procedure.

#### **10.10 Spare Components**

The Proposer shall provide an initial supply of spare fleet components to the Operators. The initial supplied quantity of spares for each component shall be at least 10% or one (1), whichever is greater. The availability of spare components by the Operators does not relieve the Proposer from its responsibility for on-site fault diagnosis, and component replacement by Proposer technicians.

The proposal shall include a list of the spare components provided in the Asset List and As-Built Document. On-board and spare components should be bar coded to aid in inventory control and materials management.

At any time during the warranty period, the Commission shall have the option to purchase additional spare components at the "Agreement" price for two years after Final System Acceptance. These additional spare components shall be packaged, organized bar coded and labeled in the same manner as the original supply of spare components. These additional spare components will carry the same warranties as offered for the overall system, for two years beginning from the date of Final Acceptance of the spare components by the Commission.

The Proposer shall also provide a second source for manufacture of all parts and spare equipment. It is also desirable that Proposer furnish a list of other client properties using the installed System where hardware part exchanges may be feasible and Proposer should specify which identical hardware the reference properties utilize. The initial spare parts inventory shall be made available to the Commission's maintenance staff upon acceptance of the implementations.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### ***10.11 Schedule Requirements***

The Proposer shall complete installation and acceptance testing and fully invoice the Commission for its services by the end of 2017.

# APPENDIX

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### ***Required Submittals (RFP Checklist)***

All of the below referenced documents are required as part of your proposal submittal and any required forms and/or certifications **shall be signed** by an individual or individuals authorized to execute legal documents on behalf of the proposer. Proposers are instructed to include a copy of this RFP Checklist with their proposal submission indicating compliance for each item marked by a checked box. Wherever the word "Consultant" appears in the attachments, it should be read as the equivalent to the word "Contractor." Wherever the words "bid" or "bidder" appear in the attachments, they should be read as the equivalent to the words "proposal" or "Proposer."

- ☐ Seven (7) hard copies of the proposal, including one (1) signed original
- ☐ One (1) CD-ROM or USB flash drive containing a soft copy of the written proposal in its entirety, in Adobe Acrobat (PDF) format
- ☐ Acknowledgement of Receipt Form
- ☐ Table of Compliance
- ☐ Price Summary Forms, Including Optional Technologies Price Forms
- ☐ Milestone Payment Schedule
- ☐ Certification of Restriction on Lobbying
- ☐ Disadvantaged Business Enterprise
- ☐ Certification of Primary Participant Regarding Debarment, Suspension, and Other Responsibility Matters
- ☐ Mail-In Reference Questionnaire
- ☐ Bid Form

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### ***Attachment A - Acknowledgement of Receipt Form***

In acknowledgement of receipt of this Request for Proposal: 17-90164-AVL, "AVL / Passenger Information System," the undersigned agrees that he / she has received:

☐ Complete copy of the Request for Proposal beginning with the Title Page and ending with page 241.

☐ Addendum No:

☐ Addendum No:

☐ Addendum No:

*(Bidders are to modify this sheet and Insert Additional Addenda references as necessary)*

The acknowledgement of receipt should be filled out completely and submitted to the Ventura County Transportation Commission's Maintenance Manager prior to the bid deadline (date and time). It is ultimately your responsibility to check and acknowledge all amendments and addendums.

FIRM:					
REPRESENTATIVE:					
TITLE:		PHONE NO:			
E-MAIL:		FAX NO:			
ADDRESS:					
CITY:		STATE:		ZIP CODE:	
SIGNATURE:				DATE:	

This name and address will be used for all correspondence related to the Request for Proposal.

Firm **does / does not** (circle one) intend to respond to the Request for Proposal.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### **Attachment B - Table of Compliance**

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
<b>8.0</b>	<b>Functional Requirements</b>		
	As Specified.		
<b>8.1</b>	<b>General Requirements</b>		
	As Specified.		
	✓ All equipment will be new and meet or exceed applicable ISO, IEEE and ANSI standards.		
<b>8.2</b>	<b>Automated Vehicle Location (AVL)</b>		
	✓ AVL tracking accuracy shall be 30 feet or less.		
	✓ Vehicle movements on AVL maps and displays shall be based on actual vehicle location reports and shall not be simulated.		
<b>8.2.1.</b>	<b>GPS Antenna</b>		
	✓ Combine existing and Proposer's GPS antenna.		
	✓ The MDT shall integrate with the GPS receiver, mobile data communications radio modem, bulk data transfer system interface, covert alarm switch, covert microphone, voice radio and an SAE J-1708 or J-1939 interface to support integration with other future in-vehicle technologies.		
	✓ GPS receivers shall report latitude, longitude, speed, time, direction of travel and whether the GPS position is classified as "good" given the current Horizontal Dilution of Precision (HDOP).		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	✓ The GPS receivers shall be parallel tracking receivers, capable of simultaneously tracking at least four GPS satellites in the best available geometry, while also serially tracking the four next best satellites and upcoming (rising) satellites.		
	✓ Onboard GPS receivers must be capable of providing position accuracy within 10 feet at least 95 percent of the time.		
	✓ The GPS receiver shall have a cold start solution time of two minutes or less and a re-acquisition time of 15 seconds or less.		
	✓ The GPS equipment shall include multi-path rejection capabilities to help eliminate spurious signals caused by reflections off of buildings or other structures.		
	✓ Velocity measurements provided by the GPS equipment shall be accurate to within 0.3 feet per second.		
	✓ If the GPS antenna is not contained in the MDT, the GPS antenna shall be a low-profile unit housed in a rugged and weather tight enclosure. The GPS antenna shall be securely mounted on the exterior of the vehicle, clear of obstructions and interference-generating devices. GPS antenna location shall be determined in collaboration with Commission staff.		
	✓ If the GPS antenna is not contained in the MDT, the antenna, mounting and sealants shall provide protection from the environment, including moisture, snow, heat (20° F to +115° F), wind, debris, etc.		
	✓ The GPS receivers shall be capable of integrating with on board		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	systems to report required information electronically.		
<b>8.2.1.1</b>	<b>Vehicle Location Reporting</b>		
	✓ Reporting of vehicle locations based upon on-board Global Positioning System (GPS) equipment shall be provided by the System. In addition, any data sources used to back up the GPS equipment when the GPS signal cannot be received shall also be supported.		
	✓ Location data shall always be reported as part of all data messages.		
	✓ Regardless of the reporting scheme used, vehicles shall report their location at least once every 30 seconds or at a rate designated by the System Administrator within the range of 5 through 30 seconds. After the initial transmission of an Emergency Alarm, vehicles in an Emergency Alarm state shall report their location at a rapid polling interval designated by the System Administrator with the range of 5 through 30 seconds.		
	✓ There will likely be locations of momentary GPS signal blockage and / or distortion, such as in a downtown area. Accordingly, the selected Proposer shall investigate to become aware of the GPS satellite coverage throughout the Commission's service area.		
	✓ In the event of loss of GPS derived vehicle position information, vehicle location shall be determined with dead reckoning techniques utilizing the existing vehicle odometer or other means and technologies which provide position accuracy equivalent to		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	GPS tracking.		
	✓ When dead reckoning is utilized an event shall be recorded.		
<b>8.2.1.2</b>	<b>Handling Communication Exceptions</b>		
	As Specified		
<b>8.2.2</b>	<b>Vehicle Logic Unit</b>		
	✓ The System shall include a single Vehicle Logic Unit (VLU) central processing device and data storage device installed onboard for all vehicles and powered by the vehicle's electrical system.		
	✓ The VLU shall be AVA, APC, Farebox, Headsign, etc., ready.		
	✓ The System shall begin gathering AVL location data when the ignition is turned on and continue reporting until the ignition is turned off (based on a programmable time period, i.e., 30 minutes, etc.)		
	✓ The VLU shall integrate with the onboard equipment on each vehicle that provides route / destination announcements and vehicle informational signs with both audible and textual messages, fare collection and automated passenger counting (if installed). Where alternate efficiencies can reduce cost and improve reliability, alternate solutions shall be proposed.		
	✓ The VLU shall interface to capture, record, and transmit vehicle Automated Passenger Counter (APC) data, and Passenger fare payment information/data if installed.		
	✓ A Global Positioning System (GPS) receiver shall be integrated into the VLU used to provide time and location data for AVL functions..		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	✓ The VLU shall provide the interface / transmission of data to and from all subsystems such as passenger informational sign content, public address, passenger counter data, and farebox systems.		
	✓ The VLU shall meet environmental and vibration standards as defined by MIL-STD-810F and SAE J1455-06.		
	✓ The VLU shall meet electromagnetic immunity standards of SAE J1113 / 13 and protect against surge, and reverse polarity.		
	✓ The VLU shall be capable of real time updates to and from the vehicle.		
	✓ Provide GTFS-Realtime feed(s) for live Trip, Service and Vehicle Position updates to Google and applicable third party software		
	✓ Provided interfaces shall include USB, RS232, RS485, J1708, J1939, Ethernet, discrete inputs and outputs, odometer, spare I/O pins, audio inputs and outputs.		
	✓ The VLU shall allow for future expansion and interoperability with add on modems to include USB interfaces.		
	✓ Allow for easy access to System setup and configuration both remotely and onboard through non-proprietary interfaces such as RDP and USB. On-board access should be in the same location on every bus for standardization of configuration or locations documented for Commission staff.		
	✓ Data storage capacity shall be sufficient to store the complete current and pending route schedules, announcement files, and event messages.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	✓ System configuration settings related specifically to a vehicle shall be stored in a vehicle configuration module such that the VLU unit can be swapped out and vehicle information not lost.		
<b>8.2.3</b>	<b>Map Requirements</b>		
	✓ Maps shall cover all areas of Ventura County, southern Santa Barbara and northwestern Los Angeles counties.		
	✓ Proposer is responsible for import and initialization of maps.		
	✓ All functions necessary for successfully incorporating map data shall be provided as part of System.		
	✓ The displayed map shall be capable of supporting a variety of map attributes that shall include, but not be limited to, all streets, highways, prominent geographical features (e.g., rivers, major bodies of water, mountains), important landmarks (bridges, airports, transit centers, Vehicle Maintenance Facilities, important buildings, etc.), routes, bus stops, time points, and transfer points. The major bodies of water shall be displayed as areas of solid blue or cyan on the geographical map display.		
	✓ The System shall include mechanisms to allow for periodic independent updates by the Commission to built-in maps in the software and on-board systems.		
	✓ Selective updates of the base map and to any selected overlays shall be possible without re-importing the entire map and all overlays and without loss of prior map.		
	✓ Where minor data entries are required, such entries, and		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	corrections shall be stored (e.g., as a script) for reapplication in subsequent imports.		
	✓ The Proposer shall provide the GIS editing license (if necessary) for any built-in maps as part of the proposed solution for maintenance of AVL maps.		
	✓ GIS functionality shall include the ability to define service-based zones (e.g., Americans with Disabilities Act (ADA) complementary demand response service area, fare zones).		
	✓ The System shall have full geocoding capability, allowing the System to locate the address on the map when an address is entered.		
	✓ The street segments database shall be sufficiently complete to assure a geocoding success rate of 90 percent or better.		
	✓ The Commission shall be able to develop additional overlay map layers that can include polygons (e.g., municipal boundaries, fare zones), lines (e.g., route traces) and points (e.g., landmarks, transfer locations, time points, stops), with the color, shape and thickness being selectable.		
	✓ The System shall allow the user to calculate the distance along a line drawn on the map as a sequence of straight lines between points (e.g. the distance of a route trace).		
	✓ The System shall allow Commission users to save and reload a map view in the AVL window.		
	✓ The System shall be capable of defining an unlimited number of		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	bus stops and nodes.		
	✓ The System shall permit the user to define bus stops using a variety of methods, including direct entry of GPS determined coordinates, and setting the stop location with a mouse click.		
	✓ The System shall accurately align vehicle locations with the streets and routes on which the vehicles are operating. There shall be no visible offsetting of vehicle positions from the displayed streets and routes.		
	✓ The System shall be capable of allowing stops to be properly positioned at intersections.		
	✓ The System shall be capable of allowing the user to assign stop amenities (e.g., bench, shelter, etc.) to each stop and other supplemental data.		
	✓ The System shall also have the ability to import stop data from an external system in Excel or comma separated value (CSV) file format.		
	✓ The System shall also have the ability to import stop data from INIT (GOLD COAST OPTIONAL ITEM)		
	✓ The System shall allow any number of trip patterns to be defined as distinct bus stop sequences, including the designation of selected stops in each trip pattern as schedule time points and whether a trip pattern is inbound or outbound.		
	✓ The System shall be capable of generating a list of turning movements for an entire trip pattern.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	✓ The System shall allow routes to be defined as a sequence of trips using selected trip patterns during defined time periods.		
	✓ The System shall display route traces.		
	✓ Display vehicle Estimated Time of Arrival (ETA) at a specified destination location as part of the vehicle label. Vehicle ETA shall be available for next bus arrival signs, SMS text, website, web enabled smart devices (phones/tablets) and iOS and Android apps.		
	✓ Position deviation of a fixed route vehicle from on-route, on-time position as determined by vehicle on-board position measurements shall initiate a System event and shall automatically increase the vehicle polling rate to a rapid rate selectable by the System Administrator within a range of 15 to 30 seconds.		
	✓ The System shall be able to display fixed routes, and clearly mark each route when more than one travels on the same street segments.		
	✓ The locations of all AVL-equipped vehicles shall be indicated by special symbols that are overlaid on the geographical map display. A vehicle identifier shall be displayed adjacent to, or within each vehicle symbol. These vehicle identifiers shall uniquely identify each vehicle by their Operator name, vehicle number, fixed-route block number, or driver number.		
	✓ When multiple vehicles are located too close together to be displayed without overlapping at the selected zoom level, the System shall provide a means for the user to see the individual		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	vehicle identities for the overlapped vehicles.		
	✓ Vehicles reporting an Emergency Alarm shall always be visible on the geographical map display regardless of the user's current filtering criteria and data partition assignments.		
	✓ The System shall be capable of printing maps to peripheral devices (e.g., printers, plotters) directly attached to the workstation or available over a Local Area Network (LAN) or Virtual Private Network (VPN).		
<b>8.2.4</b>	<b>Mobile Data Terminal (MDT)</b>		
	✓ MDT shall be ruggedized, designed for transit.		
	✓ The MDT shall integrate with the GPS receiver, mobile data communications radio modem, bulk data transfer system interface, covert alarm switch, covert microphone, voice radio and an SAE J-1708 or J-1939 interface to support integration with other future in-vehicle technologies.		
	✓ The MDT and AVL system shall automatically engage when the vehicle is started, and shut down a programmable amount of time after the vehicle is turned off.		
	✓ The MDT shall store the most recent location received from the GPS receiver, so that if the GPS receiver is not able to report the location the "last known good" location will remain available.		
	✓ Electrical power for MDTs and all other on-board components shall be drawn from vehicle unconditioned nominal 12V DC power supply. All data inputs and outputs shall be designed to absorb "routine"		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	intermittent low voltage, over-voltage and reverse polarity conditions, and to use inexpensive and easily replaceable components to open circuits in the event of "extraordinary" conditions (e.g., through the use of fuses, transorbs, optical isolation).		
	✓ The Proposer shall include a solution that facilitates a "Single Log-on", whereby an input device serves as the primary Operator interface and eliminates the need to log on to disperse systems.		
	✓ The MDT shall incorporate a color graphical screen capable of displaying fonts of variable size and can change colors between day and night or has automatic brightness controls.		
	✓ The MDT shall be equipped with appropriate functional buttons capable of controlling other onboard systems (e.g. fare boxes, head signs, card readers) and will include a numeric keypad.		
	✓ The MDT display shall be readable by the Operator from the seated position under the full range of ambient illumination conditions, through the incorporation of such measures as driver-operated brightness / contrast control, anti-glare coating and adjustable orientation mounting.		
	✓ MDT application software shall be operated using either at least eight programmable function keys or touch screen programmable buttons.	Jeff	
	✓ The MDT shall be capable of providing unique audio tones to alert the Operator of incoming messages.		
	✓ The MDT shall be capable of, but not limited to, displaying the		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	following onboard information and interface to onboard systems during operation of the vehicle: <ul style="list-style-type: none"><li>✓ Logon</li><li>✓ Emergency Alarm</li><li>✓ Data Messaging</li><li>✓ Transfer Notification</li><li>✓ Schedule Adherence</li><li>✓ Head Sign Control</li><li>✓ Farebox Control</li><li>✓ Maintenance</li><li>✓ Stop Announcement</li><li>✓ Trip / Schedule Display Control</li><li>✓ Route Guidance</li></ul>		
	✓ MDTs and all other on-board components shall be designed to operate within the following environmental specifications:		
	✓ Ambient humidity from 5% to 80%, non-condensing.		
	✓ Temperatures from 20° F to +120° F.		
	✓ Vibration and shock forces associated with transit vehicles.		
	✓ MDTs and all other on-board components shall be shielded to avoid radiating electromagnetic interference.		
	✓ MDTs and all other on-board components shall be housed in enclosures which cannot be opened with standard hand tools.		
	✓ All Operator actions performed via the MDT that are processed entirely by the System on-board equipment shall be completed in		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	three seconds.		
	✓ The System shall support en-route changes of the assigned Operators for cases such as mechanical breakdowns and Operator substitutions.		
	✓ The System shall collect lift / ramp data indicating when the lift / ramp on a vehicle is raised and lowered. The data collected shall enable generation of statistics for lift / ramp usage by location and the time it takes to board / de-board passengers using the lift / ramp.		
	✓ The System shall provide for automatic control of all destination signs in fixed route vehicles. The destination signs shall be automatically updated by the System at Operator logon and at predefined points along each route (e.g., at the end of a trip). The points at which destination sign messages shall be automatically changed shall be definable by the System Administrator.		
	✓ The MDT shall not be usable by the Operator when the vehicle is in motion above 5 MPH and above.		
	✓ The MDC shall be equipped with a navigation assistance element that allows Operators to visually see a route on a map for fixed route vehicles (detours, training, etc.).		
<b>8.2.5</b>	<b>Covert Emergency Alarm (Silent Alarm)</b>		
	✓ The Proposer shall provide a Covert Emergency Alarm (CEA) with a hidden microphone which will activate a silent alarm when an Operator presses an existing button located in an inconspicuous		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	location of the Operator's area.		
	✓ The CEA shall be a recessed push button located on the Operator's left side instrument panel.		
	✓ Emergency Alarms shall have the highest priority of all data messages.		
	✓ A CEA event indication shall not be noticeable to passengers on any vehicle.		
	✓ When Dispatch receives a CEA the following events shall occur, in sequence: <ul style="list-style-type: none"> <li>✓ An audio alarm shall be triggered and a visual alarm shall be displayed in a separate window on the AVL of each Dispatcher</li> <li>✓ When a Dispatcher responds to the Emergency Alarm, an incident report shall be generated.</li> <li>✓ An Emergency Alarm acknowledgment message shall be sent to the vehicle.</li> <li>✓ The Dispatcher shall have the ability to listen in on the vehicle audio.</li> <li>✓ Receive audio on the vehicle shall be silenced.</li> </ul>		
	✓ The Dispatcher shall have the ability to downgrade an Emergency Alarm if conditions warrant.		
<b>8.2.6</b>	<b>Real-Time Monitor (RTM) Editor</b>		
	✓ Configure vehicle attributes such as restricting displayed vehicles by route (for public-facing information displays)		
	✓ Create and edit stops and routes with ease using drawing tools		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	such as polygons, lines, and points		
	✓ Annotate vehicle, route, stop, and landmark information		
	✓ Configure scheduled arrival and departure times for vehicle schedule adherence tracking		
	✓ Import existing route schedule parameters from GTFS data.		
	✓ Import existing route schedule parameters from INIT's scheduling application.		
	✓ Customize map appearance, color scheme, and image editor		
	✓ Adjust map extent and frame and support for zoom and pan functions		
	✓ Support for copy, paste, and screen capture functions		
<b>8.3</b>	<b>Computer Aided Dispatch (CAD)</b>		
<b>8.3.1</b>	<b>General Requirements</b>		
	✓ Dispatchers shall be able to zoom in to a map level that allows at least four vehicles lined-up within a 200-foot distance to be clearly distinguished, without overlap of the vehicle symbols. The map textual information such as street names, vehicle identities, route names, and landmark names displayed at the various zoom levels shall be clearly readable. Route and street names shall be repeated along lengthy routes and streets.		
	✓ Vehicle status information conveyed to the Dispatchers shall include, but not be limited to, the following attributes: ✓ Schedule status (early, on-schedule, or late) ✓ Silent Emergency Alarm conditions		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	<ul style="list-style-type: none"><li>✓ Route status (on or off-route)</li><li>✓ Type of vehicle (fixed route, supervisor, or other non-revenue, if AVL equipped)</li><li>✓ Non-scheduled - logged on (e.g., fill-in, trip, special event vehicles)</li><li>✓ Not logged on</li><li>✓ Vehicle Operator name</li><li>✓ Direction of travel</li><li>✓ Estimated time of arrival calculated by the System for a selected vehicle at a selected destination</li></ul>		
	✓ Dispatchers shall be able to quickly and easily configure their map view to show only the attributes that are desired		
	✓ The Dispatcher shall be able to manually turn on or off the available layers of the map		
	<ul style="list-style-type: none"><li>✓ A Dispatcher shall be able to restrict the display of AVL-equipped vehicles on the geographical map to any combination of the following criteria:<ul style="list-style-type: none"><li>✓ All bus vehicles on all routes</li><li>✓ Buses on selected routes</li><li>✓ A single bus vehicle</li></ul></li></ul>		
	✓ Provide Dispatchers with the capability to filter within the queues to tailor information as operationally required by each Dispatcher.		
	✓ Provide Dispatchers with schedule information by block and / or run including real time status.		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ Provide Dispatchers with pull-in and pull-out status from Garages and lunch/layover locations including alarms for late and missed pull-ins and pull-outs.		
	✓ Provide Dispatchers with roster information for logging in / out Operators and changing assignments.		
	✓ Provide capability for Dispatchers to log in Operators with selectable requirement for Operator acknowledgement.		
	✓ Provide Dispatchers with maintenance information of real time vehicle monitoring status including query capability for vehicle historical status (if option exercised).		
	✓ Provide Dispatchers capability to perform service adjustments for individual time points and stops.		
	✓ Allow Dispatchers capability to add new services (i.e., overloads).		
	✓ Allow Dispatchers to temporarily change times within a schedule (i.e., offsets, detours, etc.).		
	✓ Provide Dispatchers capability to cancel an entire block of service.		
	✓ Provide Dispatchers with communication history for reviewing most recent data communications with ability to create incident reports from the history list.		
	✓ Allow Dispatchers to review Operator generated transfers and cancel transfer requests.		
	✓ Capability for Dispatchers to intervene in the transfer process when operationally required.		
<b>8.3.2</b>	<b>Vehicle Status</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ Logon to indicate the start of a shift. The logon process shall allow the Dispatcher to use the System to indicate the time and identify the Driver.		
	✓ Accept base schedules for routes, runs, and Drivers.		
	✓ See Operators assignments to routes and runs.		
	✓ Display current bus status for all buses, and highlight those buses reporting some irregular status (e.g. ahead of schedule, behind schedule, off-route).		
	✓ Hear distinct audible alarm and / or see flashing on-screen icon if status received from bus is one of a set defined as disabling or emergency (e.g. covert alarm).		
	✓ Add buses to and delete buses from service.		
	✓ Deploy route detours (sending predefined detours as text messages through the bus MDT).		
	✓ Playback a sequence for a specified vehicle on a specified route at a specified time, in chronological order and review the path of the vehicle and its time at each reported location on its run. The Dispatcher shall be able to control the speed of playback.		
<b>8.3.3</b>	<b>Daily Schedule Selection</b>		
	✓ The schedule of trips for each service day shall be automatically selected by the System based upon the date, day of the week, and any special schedules applicable to particular days. In general, schedules include weekday, Saturday, and Sunday schedules. In addition, special (exception) schedules are generated for school		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	closures and early-outs, special events, and holidays. Holidays and other special dates may be defined by the Operators in real-time.		
<b>8.3.4</b>	<b>Service Performance</b>		
	✓ The System shall monitor off route status – for each vehicle off route, the distance off route, the time that the vehicle went off route and the next scheduled time point shall be displayed		
	✓ The System shall monitor off schedule status – for each vehicle that is off schedule, the schedule deviation and the next scheduled time point shall be displayed		
	✓ The System shall monitor late pull outs – for each block with a late pull out, the scheduled pull out time, and the associated vehicle status, if logged in, shall be displayed		
	✓ The System shall monitor late pull ins – for each block that is late pulling in, the scheduled pull in time, and the associated vehicle status, if logged in, shall be displayed		
	✓ The System shall accurately monitor the schedule adherence of all fixed route revenue vehicles that are operating on defined schedules. Fill-in vehicles (extra vehicles placed on a route) and special event / service vehicles that are without defined schedules shall not be monitored for schedule adherence.		
	✓ Schedule adherence shall be calculated at each defined time point and accurately estimated between defined time points. The time delay between the receipt of a vehicle's position and the availability of the calculated / estimated schedule adherence status shall not		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	exceed five seconds. Schedule deviations beyond pre-defined, System Administrator-adjustable thresholds shall produce an event.		
	✓ Schedule adherence to defined time points (i.e., those in official published schedules) shall be based on the scheduled departure time at each time point, with the exception of those specific stops that have both arrival and departure times (e.g., layovers) and the end of a trip. The number of time points shall range from 2 to 100 time points per route per direction. Time point departures shall be determined by the System to an accuracy of $\pm 5$ seconds, regardless of whether the vehicle stops at the time point or passes the time point without stopping.		
	✓ The System shall provide the Dispatcher the projected recovery time based on the next terminal departure.		
	✓ A vehicle's schedule adherence status shall be available for presentation to the Operator and to Dispatchers, and for generation of schedule adherence deviation events.		
<b>8.3.5</b>	<b>Route Guidance</b>		
	✓ The System shall have the capability of providing detour options to the Dispatcher and to the Operator via the MDT.		
<b>8.3.6</b>	<b>Turn Back Monitoring</b>		
	✓ The System shall detect and adjust for turn-backs within a fixed route vehicle's assigned block. The System shall issue a turn-back event when a vehicle has turned around before the end of a current		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	trip and proceeds along the route in the opposite direction for a subsequent trip within the same block.		
	✓ Following a turn-back, the System shall automatically determine which trip the vehicle has jumped to within the System assigned block based on the current time, the vehicle's new geographic location, the vehicle's direction, and the vehicle's schedule.		
	✓ After a turn-back adjustment, the System shall resume schedule and route adherence monitoring and automated voice announcements for the vehicle based on the new trip assignment. All turn-backs shall produce events.		
<b>8.3.7</b>	<b>Data Messaging</b>		
	✓ The System shall enable Dispatchers to send data messages to one or more selected vehicles and routes using any of the selection methods specified. Custom, free-form data messages and a set of canned data messages shall be supported. Pre-defined data messages shall be configurable by authorized Dispatchers and shall be available for rapid selection.		
	✓ Re-Route Notices ✓ The System shall provide a means for Dispatchers to issue re-route notices that describe detours and other short-term route changes to active vehicles based on their route assignments. ✓ Once defined, re-route notices shall be automatically delivered to all vehicles that log onto the affected routes throughout the service day. Re-route notices shall remain in effect until they		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	are removed by a user, or until a user-specified expiration date has passed, rather than have the notices expire at the end of each service day.		
	✓ Capability to assign priority levels for display ordering and filtering of message types within the message queues.		
<b>8.3.8</b>	<b>Vehicle Operator Changes</b>		
	As Specified		
<b>8.4</b>	<b>Cellular Communications Network</b>		
	As Specified		
<b>8.5</b>	<b>Passenger Information System (PIS)</b>		
	<ul style="list-style-type: none"> <li>✓ The Passenger Information System shall use GPS information, historic traffic patterns and vehicle schedules to determine a best estimate for all bus arrival and / or departure times.</li> <li>✓ The Passenger Information System shall be able to accurately identify vehicle locations for in-service vehicles.</li> <li>✓ The Passenger Information System shall be able to generate live maps for selected Operator routes that display accurate vehicle information, including route names, street and landmark names, vehicle location and estimated arrival time at bus stops.</li> <li>✓ The Passenger Information System shall be updated whenever new routes or schedules are created using the fixed-route management tool; the management tool must be directly accessible by Commission / Operator staffs for schedule changes.</li> </ul>		
<b>8.5.1</b>	<b>Predictive Bus Arrival and Departure Algorithms</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	As Specified		
<b>8.5.2</b>	<b>Changeable Message Signs (CMS)</b>		
	✓ During times when some routes are not in operation, the CMS shall display the message "No Service At This Time" next to any route not in service.		
	✓ CMS' shall be either an LCD screen or large LED screen capable of displaying between one and at least eight lines.		
	✓ CMS' shall be constructed and rated for outdoor installation in a hardened environment such as those common to a roadside or transit installations.		
	✓ CMS controllers shall be securely affixed to the back side of the display with keyed entry.		
	✓ CMS' shall have brightness control.		
	✓ CMS' shall produce message that conform to ADA requirements for character legibility and accessibility. At minimum, ADA compliant 3-inch characters (one line) shall be supported.		
	✓ CMS' shall be designed for operating outdoors and /or indoors in the temperature range 20° F to 120° F.		
	✓ CMS's shall use a local power supply (115V).		
	✓ CMS' must be protected using vandal resistant enclosures.		
	✓ The front face of the CMS shall provide high contrast, low sunlight reflection in all weather and site conditions.		
	✓ CMS displays shall be legible when sunlight is shining directly on the display face or when the sun is directly behind the display.		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ All internal CMS components shall be removable and replaceable by a single technician with basic hand tools.		
	✓ Removal of a CMS display module will not be required to access the internal components of the display.		
	✓ CMS controllers shall be capable of being configured both remotely via wireless data connection, and locally using a portable computer via a USB, an Ethernet, or an RS-232 connection.		
	✓ Each CMS controller shall be connected to photoelectric sensor(s) sufficient to automatically adjust CMS output to address the requirements for legibility under varying ambient illumination conditions.		
	✓ The CMS controller shall have a time of day clock and calendar. The time and date shall be in sync with the system time at the Commission.		
	✓ The CMS controller shall be configurable with a unique name for the display.		
	✓ Next vehicle arrival prediction messages shall be generated automatically by the CMS controller, incorporating the arrival time prediction data as it is received from the servers prediction software.		
	✓ The format of the message template shall be "(route #) (route /destination name) (countdown minutes)", or an alternative format approved by the Commission.		
	✓ When the CMS receives a message from the application indicating		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	that current prediction data is not available, the CMS shall display an alternate message approved by the Commission.		
	✓ Hold times for each message display and the blanking interval between message displays shall be variable in 0.1 second increments.		
	✓ The CMS shall include ongoing self-diagnostics and shall send an alarm message to the software in the event that a diagnostic fault is detected.		
	✓ Proposer will describe the communications infrastructure requirements.		
	✓ Proposer will recommend sizes, types and locations of CMS' at Transit Centers.		
<b>8.5.3</b>	<b>CMS Audible Component</b>		
	✓ Proposer shall determine best method for supporting ADA audible functions.		
	✓ The CMS shall include a manually-activated audio announcement system, which shall read out the sign text once successively in English and Spanish after a pushbutton has been pressed.		
	✓ Audio sign messages shall be constructed in real-time by the CMS in a manner that avoids the need to send audio data over the radio system, using either prerecorded announcements or text-to-speech generation of quality acceptable to the Commission.		
	✓ The audio announcement system shall be made through speakers built-in to the CMS enclosure or installed nearby.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ The pushbutton must be mounted no higher than 48 inches and no lower than 15 inches from the finished floor of the CMS.		
	✓ An unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint).		
	✓ The pushbutton must be operable with one hand; not require tight grasping, pinching, or twisting of the wrist.		
	✓ The pushbutton shall emit a brief low volume sound every few seconds (e.g., "chirp") to guide the visually impaired to the pushbutton location.		
	✓ The audio volume shall be automatically adjusted based on the current ambient sound level in front of the CMS to ensure that it is only loud enough to be understandable within a five foot radius from the sign.		
<b>8.5.4</b>	<b>Bus Stop Signage</b>		
	As Specified		
<b>8.5.5</b>	<b>Customer Website / Customer Communication Devices</b>		
	✓ The System shall allow a person using a personal computer, or web-based personal mobile device to visit a publicly accessible Web address to select a route, direction and stop, and in response receive the current predicted arrival time from the prediction software at the initiating device.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ The System shall provide support for mobile access, using simplified version of the Proposer / Commission Website specifically designed for handheld devices, and/or customized mobile applications (e.g., iPhone. Droid Apps, etc.)		
	✓ The Proposer shall provide all Web pages, data feeds and scripts needed to enable this Web service on the Commission's Website.		
	✓ The response Web page shall be continuously updated (whenever a new predicted arrival time is determined), until the user closes the web page.		
	✓ The System shall provide the ability to display route, stops and real-time location of a vehicle on a route on a web-based/app map display. The location shall be automatically refreshed at least every 60 seconds.		
	✓ The Web-based/App interface shall allow users to select the routes and stops of their choice for which they want to see real-time vehicle information.		
	✓ The Web-based/App interface shall provide the ability to zoom in / out and pan the map.		
	✓ The map display shall be automatically formatted to fit the screen size of the customer device (i.e. mobile device and personal computer).		
	✓ The vehicles shall be shown using a distinct icon approved by the Commission and also indicate the direction of movement of the vehicle.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ Clicking on a vehicle icon must show the current status of the vehicle (early / late / on-time).		
	✓ Clicking on a stop icon shall display arrival times for the next three buses for each route passing by that stop.		
	✓ The System shall provide the Commission the ability to publish any service alerts on the Web page showing real-time vehicle location display.		
	✓ The System shall provide real-time information alerts to Operators' customers based on their preferences. Customers shall be able to subscribe or unsubscribe to this service as desired. Also, the System shall allow customers to configure their preferences for the content and time interval for receiving real-time information alerts.		
	✓ The System shall automatically notify customers of the real-time status of buses at a specific stop on a requested route and direction. The notification will be made in the form of an email, App notification or SMS message.		
<b>8.5.6</b>	<b>Customer Trip Planner</b>		
	As Specified.		
<b>8.6</b>	<b>Information Technology Architecture</b>		
<b>8.6.1</b>	<b>Server Site</b>		
	✓ Proposer shall provide and justify their solution architecture.		
	✓ Proposer shall meet planned uptime requirements of 99.9%.		
	✓ Proposer shall provide a System architecture for all technologies, including the Optional Technologies		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ Proposer shall provide a System architecture for all supporting hardware, software, operating systems, databases, redundancies, environments, Disaster Recovery, and Security, etc.		
	✓ A backup system shall be available to the Commission in the event of failure of the centralized servers.		
	✓ The Commission shall be informed at least thirty (30) days in advance in writing of upgrades that require updated software or higher speed Internet connectivity, etc.		
	✓ The Proposer shall monitor and insure Internet connectivity to the services		
	✓ The system shall be available 24 hours a day, seven days a week.		
	✓ Secure access to the full system functionality shall be available to Commission staff remotely from any computer that meets the Proposer's stated requirements.		
	✓ Remote access to the system shall be secure and protected by password or other equivalent-or-improved security measure.		
	✓ The Commission's data shall be securely stored by the Proposer and accessible only by authorized individuals.		
	✓ The Commission's data shall be securely backed up on a daily basis, and backups shall be stored in a secure facility remote from the primary Host site.		
	✓ The Proposer may not retain data if the Commission requests its destruction, deletion or transfer.		
	✓ The Proposer shall relinquish all of the Commission's data to the		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	Commission upon request.		
	✓ The Proposer's Hosted site must be protected by current virus protection, internet security, and other security software against catastrophic failure and malicious attacks, if utilized.		
<b>8.6.2</b>	<b>Ownership of Data</b>		
	As Specified		
<b>8.6.3</b>	<b>Activity Logging</b>		
	✓ The System shall log all user actions.		
	✓ The activity log shall be real-time and accessible on-line.		
	✓ Each user logon and logoff shall be recorded in the historical event log.		
	✓ The recorded data shall include the date and time that the logon / logoff was executed, the name of the workstation, and the identification of the user. All functions performed by all users shall be stored in the historical event log.		
<b>8.6.4</b>	<b>Access Security</b>		
	✓ Access to the System shall be strictly limited to designated and authorized System Administrators.		
	✓ Users without proper minimum authorization shall be denied access to all System functions and data, as well as all System resources such as servers, printers, workstations, etc.		
	✓ Each user shall have a unique username that is assigned by the System Administrator.		
	✓ A function shall be provided for users to log off.		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	<ul style="list-style-type: none"><li>✓ Access to System functions and capabilities shall be based upon each user's authorization level and not the physical workstation being used.</li></ul>		
	<ul style="list-style-type: none"><li>✓ A minimum of four user-access levels shall be supported by the System. The term "user" alone shall refer to all levels except when it is clear from the context that another meaning is intended. The minimum user-access levels shall be:</li><li>✓ Information User — these users shall have only read-only access to System historical data via the information server resources, but shall have no access to System functions.</li><li>✓ Customer Service User – these users shall have all the rights of an Information User plus read-only access to selected Dispatcher functions (e.g., AVL functions).</li><li>✓ Dispatcher — these users shall have all of the rights of a Customer Service user plus full access to specific System functions as determined by the System Administrator.</li><li>✓ System Administrator — these users shall have unrestricted access to System functions and shall have special privileges required to administer overall access security and to maintain the System. A secure method shall be provided for the System Administrator to change passwords and user identifications and establish functional partitions.</li><li>✓ Operator Groups — to simplify user administration, categorization of users: Information, Customer Service, Dispatcher and System Admin by Operator name is desired.</li></ul>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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<b>8.6.5</b>	<b>Data Backups</b>		
	As Specified		
<b>8.6.6</b>	<b>Data Archival And Restore</b>		
	As Specified		
<b>8.6.7</b>	<b>Scheduled Maintenance</b>		
	As Specified		
<b>8.6.10</b>	<b>Version Tracking Requirements</b>		
	As Specified		
<b>8.6.11</b>	<b>System Administration Functions</b>		
	✓ Fixed-Route Data Retrieval		
	✓ Interim Schedule Maintenance		
	✓ AVL Map Retrieval and Maintenance		
	✓ Destination Sign Data Maintenance		
	✓ In-Vehicle Announcement Data Maintenance		
	✓ All parameters in the System that users may need to modify shall be adjustable by authorized System Administrators.		
	✓ System Administrators shall be able to define data partitions that specify, via selection criteria or other means, a subset of all System data, including events that Users are permitted to access.		
<b>8.6.10</b>	<b>Disaster Recovery</b>		
	As Specified		
<b>8.6.11</b>	<b>Continuity of Services</b>		
	As Specified		
<b>9.0</b>	<b>Optional Requirements</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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<b>9.1</b>	<b>Automated Voice Annunciators</b>		
	✓ The Proposer shall install new interior DMS. However, the Proposer may propose the use of any existing interior DMS if it can ensure that the proposed AVA system can integrate with the existing DMS to provide desired visual AVA features.		
	✓ The DMS shall display the "stop requested" message when stop requested or the wheelchair area stop request is activated by a customer.		
	✓ If stop request signal is received while another message is being displayed on the DMS, the AVA system shall show stop requested message after current message is completed.		
	✓ The AVA shall provide text announcements for configurable duration, which will be set using the central recording software.		
	✓ The AVA shall make an exterior announcement of the current route number and destination when doors open at a stop. At other locations (e.g., major intersections), the controller shall make preset location-based interior announcements.		
	✓ The Operator shall have the capability of overriding the automatic initiation of visual announcements and instead manually select from a menu of predefined messages for display to passengers. The override shall be reported as an event.		
	✓ Interior signs shall display stop requested, bus stop arrival, major intersections and landmarks, date / time information, and other preformatted messages.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ The interior sign system data files shall be updatable remotely.		
	✓ The AVA shall provide announcements to passengers on-board fixed-route revenue vehicles. This function shall support next stop announcements as well as annunciation of major intersections, key transfer points, promotional information, public service information, Vehicle Operator initiated messages and advertising.		
	✓ Next stop, major intersection and key transfer point announcement capacity shall be sufficient to support all of the routes in the service area and all of the trips made by each vehicle during a service day, plus a 50% spare capacity for other types of announcements.		
	✓ The AVA shall use the vehicle location information from the AVL system to trigger the appropriate announcements on-board the vehicle whenever the vehicle enters a "trigger zone." A trigger zone is a user-defined area that is located just prior to each stop location. For example, the trigger zone may begin 800 feet before a stop as well as at selected other announcement locations.		
	✓ Trigger zones shall be pre-defined by the software for AVA trigger management and downloaded to the controller over WLAN.		
	✓ Trigger zones shall be configurable by stop to accommodate for differences in operations, including but not limited to, the direction of approach and size of stop.		
	✓ Time-based announcements / displays shall be programmed to be made on-board the vehicle at specific times of the day or at a set frequency within specified time periods, on specific days of the		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	week.		
	✓ Location-based announcements / displays shall be programmed to be made on-board the vehicle when that vehicle passes any designated location(s).		
	✓ In the event that a vehicle is operating off-route, the automated announcements / displays shall not be made. Once the route is reacquired, the System shall automatically determine and announce the next valid bus stop or other designated location.		
	✓ The Operator shall have the ability to manually trigger the activation of any pre-recorded announcements if needed.		
	✓ The DMS shall display the current date / time when not displaying a triggered announcement.		
	✓ Dispatch shall have the ability to send a free form announcement message to one bus, a group of buses, to the AVA interior DMS.		
	✓ The AVA shall have the capability to create and schedule public service or advertising messages.		
	✓ Audio levels shall be controllable by the Operator within a usable audio range. The Operator shall have the capability of overriding the automatic initiation of audio announcements and instead manually select from a menu of predefined messages for announcements to passengers. The override shall be reported as an event.		
	✓ The volume of the internal announcements shall be automatically adjusted according to the noise level on the vehicle at the time, and		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	the vehicle operator shall not be able to lower the announcement volume.		
	✓ The AVA shall provide the capability to adjust external speaker volume levels based on time and location settings.		
	✓ The AVA shall provide the capability to adjust the minimum and maximum volume levels separately for interior and exterior announcements.		
	✓ The AVA announcements and PA volume level controls shall also allow the Operator to separately adjust the volumes for the Operator and handset speakers.		
	✓ Operator-initiated announcements / displays (e.g., safety-related announcements) shall be programmed to be made at the Operator's discretion.		
	✓ Operator use of the on-board PA system shall override any automated announcements.		
	✓ Dispatchers shall be able to activate the announcements simultaneously on a group of buses.		
<b>9.2</b>	<b><i>Automated Passenger Counters (APC)</i></b>		
	✓ Ability to accurately detect passengers boarding and alighting and eliminate false positive counts of passengers loitering near the boarding zone.		
	✓ Support for multiple entries, and for wider entry common to certain vehicle designs.		
	✓ Support for wheelchair boarding counts.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	✓ Ability to detect whether the vehicle door is open or closed (the APC shall only count passengers when the door is open).		
	✓ The APC solution shall be designed for the transit industry and not adapted for its intended purpose.		
	✓ Sensors shall operate automatically and without the need for manual intervention.		
	✓ Data shall automatically be compiled by the APC and integrated to the VLU and / or MDT in real-time.		
	✓ APC data shall be time-stamped for ease in associating the counts to validating farebox data.		
	✓ APC data shall be stored along with stop records.		
	✓ The APC shall meet or exceeds the relevant SAE specifications for vibration, humidity, electrical tolerance, and particulate matter.		
	✓ The APC for all doorways shall be connected to a single APC controller.		
	✓ The APC shall be able to separately count successive passengers that are walking as close together as is practicable, either one behind the other or side by side.		
	✓ The APC shall not register as multiple passengers the passage of a single passenger that reaches into or out of the doorway passage, or is swinging their arms, while passing through the sensor beams.		
	✓ The APC shall not separately count objects carried by passengers, such as shopping bags or umbrellas.		
	✓ The APC controller shall be interfaced with a wheelchair / ramp		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	sensor with the number of wheelchair / ramps cycles recorded for each stop.		
	✓ The APC will have sufficient on-board memory capacity to allow for storage of at least 72 hours of APC data.		
	✓ The APC subsystem shall provide a backup method (for use when the WLAN subsystem is temporarily unavailable) for bi-directional data transfer.		
	✓ Be accepted by NTD for reporting purposes.		
<b>9.3</b>	<b>Farebox Integration</b>		
	As specified		
<b>9.4</b>	<b>Headsign Integration</b>		
	As specified		
<b>9.5</b>	<b>Single-point Log-on</b>		
	As specified		
<b>10.0</b>	<b>Additional Requirements</b>		
<b>10.1</b>	<b>AVL Analytics</b>		
	✓ Analysis of vehicle activity including schedule adherence and on-time performance		
	✓ Historical playback of time-elapsed route activity using rewind, fast forward, pause, and play controls		
	✓ Analysis of stop times by route, block, run and trip		
	✓ Analysis of passenger loads by route, block, run and trip (with optional APC integration)		
	✓ Analysis of route performance including run times, average vehicle		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	speeds, and relative spacing between buses on the route		
	✓ Analysis of Driver run performance including, late pull-out/pull-in to Garage and schedule adherence		
	✓ Extensive report generation and query capabilities, including export functions.		
<b>10.2</b>	<b>Reports</b>		
	✓ Schedule Adherence Report: Measures driver on-time performance in relation to Paddles and published schedules.		
	✓ Average Arrival Times Report: Measures statistical mean of arrival times for user-defined parameters such as stop, route, vehicle, Driver, reporting period, etc.		
	✓ Idle Report: Measures periods of excessive inactivity based on vehicle engine diagnostic data.		
	✓ Detailed Trip Log: Records passenger activity (if APC option is exercised) by stop and arrival and departure times, based on user-defined parameters including stop, route, vehicle, direction, etc.		
	✓ Miles and Hours Report: Summarizes vehicle service hours and service mileage for revenue and non-revenue service (based on NTD definitions).		
	✓ Shift Report: Records the timestamp for Driver login and logout from AVL / MDT / VLU System.		
	✓ <b>Exception Reports:</b> Measure the frequency of occurrences for exceptions to user-defined parameters such as speed limits (by segment or global), route adherence, etc.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	✓ <b>Ridership Reports:</b> Include statistical averages for ridership by route during defined time periods, drill-down of daily boarding's and alighting's by route and time of day for single day or range of dates. (Option-requires Automatic Passenger Counters)		
	✓ <b>Passenger Web/App Activity Reports:</b> Provide a record of activity (e.g., number of "hits", type of information requested, etc) associated with the Contractor-furnished Customer Website and Apps for the Operators' Passenger Information System.		
	✓ <b>Performance Reports:</b> Reports shall be made available on the System that display summarized and detailed data on the status of operation, including a description of any failure (e.g., AVL downtime).		
<b>10.2.1</b>	<b>Dispatch Activity Reports</b>		
	As specified.		
<b>10.2.2</b>	<b>Schedule Deviation Reports</b>		
	✓ The System shall produce reports showing daily, weekly, and monthly schedule deviation.		
	✓ These reports shall summarize the schedule deviations that occurred during the time periods covered by the reports. The following statistics shall be produced for the fixed-route fleet, for each bus route, run and for each Driver:		
	✓ Total number of blocks.		
	✓ Total number of early blocks (i.e., blocks that were early departing from any time point).		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	✓ Average number of minutes early.		
	✓ Total number of late blocks (i.e., blocks that were late departing from any time point by more than a user-specified threshold).		
	✓ Average number of minutes late.		
	✓ The report output shall be configurable to allow the user to filter certain types of specific schedule deviations. The types of deviations that can be filtered shall include early times on selected routes and at selected stops, where early times are acceptable.		
	✓ The daily reports should provide the above statistics broken down on an hourly basis along with daily totals. The weekly reports should provide the above statistics broken down on a daily basis along with weekly totals. The monthly report should provide the above statistics broken down on a daily basis along with weekly and monthly totals.		
	✓ National Transit Database (NTD) annual reports in accordance with federal transit administration rules.		
<b>10.2.3</b>	<b>Customized Reports</b>		
	As Specified		
<b>10.2.4</b>	<b>Data Summarization</b>		
	As Specified		
<b>10.2.5</b>	<b>Report Filtering</b>		
	As Specified		
<b>10.2.6</b>	<b>Drill Down Capability</b>		
	As Specified		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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<b>10.2.7</b>	<b>Report Response Time</b>		
	As Specified		
<b>10.3</b>	<b>Transit Analytics (Dashboard)</b>		
	As Specified		
<b>10.4</b>	<b>Training</b>		
<b>10.4.1</b>	<b>Training Plan</b>		
	✓ Overall description of the training program		
	✓ Breakdown of total number of hours devoted to training: hours of classroom training, number of classes, anticipated number of students, hours developing training materials, etc.		
	✓ Proposed training delivery schedule		
	✓ Purpose of each training class		
	✓ Who should attend class		
	✓ Anticipated duration of the class (hours / days)		
	✓ Training materials, including manuals, guides and other supporting items, and techniques to be used		
	✓ Facility / equipment requirements		
<b>10.4.2</b>	<b>Training Facilities</b>		
	As Specified		
<b>10.4.3</b>	<b>Scheduling and Preparation for Training</b>		
	As Specified		
<b>10.4.4</b>	<b>Timing for Training</b>		
	As Specified		
<b>10.4.5</b>	<b>Training Materials</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	As Specified		
<b>10.4.6</b>	<b>Maintenance Training</b>		
	As Specified		
<b>10.4.7</b>	<b>Dispatcher / Operator Training</b>		
	As Specified		
<b>10.4.8</b>	<b>System Administrator Training</b>		
	As Specified		
<b>10.4.9</b>	<b>Manual Quantities</b>		
	As Specified		
<b>10.4.10</b>	<b>Supplemental Training</b>		
	As Specified		
<b>10.4.11</b>	<b>Bus-In-A-Box</b>		
	As Specified.		
<b>10.5</b>	<b>Testing</b>		
	✓ Be responsible for successfully completing all tests required.		
	✓ Furnish all test instruments and any other materials, equipment and personnel needed to perform the tests.		
	✓ Be fully responsible for the replacement of all equipment damaged as a result of the tests, and shall bear all associated costs.		
	✓ Maintain comprehensive records of all tests.		
	✓ Notify the Commission in writing, no less than 14 days prior to each test activity.		
	✓ Provide test plans, procedures, records and reports to the Commission for approval.		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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<b>10.5.1</b>	<b>Acceptance Test Plan</b>		
	✓ <u>Scope and Purpose</u> : Clearly state the scope, case, and conditions the procedure tests.		
	✓ <u>Pre-requisites</u> : Describe test environment and the pre-requisites, including access, availability, and equipment configuration for each group of functions.		
	✓ <u>Tools</u> : List test equipment and tools, with calibration data for each item.		
	✓ <u>Personnel</u> : List test participants and roles.		
	✓ <u>Procedure</u> : Contain enumerated step-by-step procedures. Procedures shall include regression test and Pass Fail Criteria.		
	✓ <u>Drawings</u> : Include detailed drawings depicting test setup. Drawings shall include list of equipment, parts and material used and tested.		
	✓ <u>Test Data Form</u> : The form will include space to record the tools with calibration date, environmental condition during the test (i.e. rainy, cloudy, temperature, etc.), test measurement, pass / fail criteria and space to record the pass / fail outcome and the signature of the test engineer and a test witness.		
	✓ <u>Test Exception Form</u> : The form shall be used to record the identifier of the defect report / problem report(s) generated as a result of faults / problems detected during the test. All the troubleshooting techniques and corrective actions shall be documented on this form.		
<b>10.5.2</b>	<b>Testing Requirements</b>		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	As Specified		
<b>10.5.3</b>	<b>Test Procedures</b>		
	✓ Test schedule		
	✓ Responsibilities of Commission and Proposer personnel		
	✓ Record-keeping procedures and forms		
	✓ Procedures for monitoring, correcting, and retesting variances		
	✓ Procedures for controlling and documenting all changes made to the System after the start of testing		
	✓ A list of individual tests to be performed, the purpose of each test segment		
	✓ Identification of special hardware, software, tools, and test equipment to be used during the test		
	✓ Copies of any certified test data (e.g., environmental data) to be used in lieu of testing		
	✓ Detailed, step-by-step procedures to be followed		
	✓ All inputs, expected results and measurements for successful sign-off for the full implementation tests		
<b>10.5.4</b>	<b>Functional Tests</b>		
	✓ Inspection of all equipment for conformance to drawings, specifications, and applicable standards, and for satisfactory appearance		
	✓ Testing of the proper functioning of all hardware by thoroughly exercising all devices, both individually and collectively		
	✓ Testing of the proper functioning of all software and firmware		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	features and functions, including test cases with normal and exception data		
	✓ Testing of the proper functioning of all data communication features and facilities and all communications control functions		
	✓ Testing of all AVL on-board functions, and of optional add-on equipment, using actual vehicle equipment items supplied as part of the Project		
	✓ Input and output signals from devices supplied by others or already installed on the vehicles shall be simulated if the Commission cannot provide actual devices for testing		
	✓ Testing of AVL functions using a mobile test vehicle and appropriate test map and database information for the routes that will be traversed		
	✓ Verification of all data transfers to the appropriate databases		
	✓ Testing of all user interface functions		
	✓ Simulation of hardware failures and failover of each AVL and Passenger Information device that has a backup unit		
	✓ Verification that spare capacity and ultimate sizing requirements have been met, including all expansion requirements		
	✓ Verification of the accuracy of the system performance monitoring software		
	✓ Verification that the processor loading and system response time requirements have been met while exercising all Proposer-supplied software and performing functions		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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	✓ Verification of device and system recovery from AC power failures		
	✓ Verification of the accuracy of hardware and software documentation via random checks		
	✓ Testing of the System User Interface, real-time monitor (RTM), and Customer Websites		
	✓ Testing of all software and database maintenance functions		
	✓ Verification of all reports provided by the system		
	✓ Testing of data exchanges between devices supplied by others or already installed on the vehicles (e.g., GFI farebox, AVA, APC, etc.)		
	✓ Tests of data exchanges that are not required in real time		
	✓ Verify the System stability and availability is free of problems caused by interactions between software and hardware while the System is operating as an integrated whole		
<b>10.5.5</b>	<b>Cellular Communications Coverage Test</b>		
	As Specified		
<b>10.5.6</b>	<b>30-Day Rolling Operational Test</b>		
	As Specified		
<b>10.5.7</b>	<b>Test Records and Reports</b>		
	As Specified		
<b>10.5.8</b>	<b>System Acceptance</b>		
	As Specified		
<b>10.6</b>	<b>Documentation</b>		
<b>10.6.1</b>	<b>General Manual Requirements</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	As Specified		
<b>10.6.2</b>	<b>Maintenance Service Manual</b>		
	As Specified		
<b>10.7</b>	<b>Design / Implementation</b>		
	✓ The proposed installation schedule, detailing phases and / or installation segments. Once the baseline schedule is approved by the Commission, monthly updates identifying all schedule changes and work progress in the form of percentage completions shall be submitted to the Commission for review.		
	✓ The minimum resource allocation requirement for any installation phase or segment.		
	✓ How the Contractor will manage delivery and staging of the AVL and Passenger Information System equipment that is to be installed.		
	✓ The order in which equipment items are to be installed, with estimated durations.		
	✓ Any special or unique installation requirements.		
	✓ Equipment to be used to perform installation.		
	✓ A detailed component list and how each item version number and serial number shall be recorded for each installation configuration.		
<b>10.7.1</b>	<b>Work Standards and Requirements</b>		
	As Specified		
<b>10.7.2</b>	<b>Commission Participation</b>		
	As Specified		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
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10.7.3	<b>Kick-Off Meeting</b>		
	As Specified		
10.7.4	<b>System Design</b>		
	As Specified		
10.7.5	<b>Preliminary Design Review</b>		
	As Specified		
10.7.6	<b>Design Plan General Requirements</b>		
	As Specified		
10.7.7	<b>Design Documentation</b>		
	As Specified		
10.7.8	<b>Final Design Review</b>		
	✓ Final Design Review (FDR) package shall be one complete submittal sufficient to provide all the required details for overall system integration and operation. Design review requirements defined within the individual subsystem specification sections, shall be consolidated and submitted as a single package. The FDR package shall be submitted to the Commission no later than 75 days after the NTP date.		
	✓ The Final Design Review submittal package shall not be submitted until the Commission has approved all individual PDR submittals. The FDR Submittal Package shall be organized to include the following final design information:		
	✓ Approved and updated versions of all previously submitted design review materials. Updated material shall represent		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	complete design, final calculation; detailed product (component level) parts list, drawings, phasing and interface details required for installation. All the new and revised sections of the subsystem PDRs shall have a side revision bar to reflect the changes. The previous information submitted in the PDRs shall be organized by subsystem.		
	✓ Updated product submittals for all, materials and components for which product submittals were not previously submitted and approved.		
	✓ Complete Drawing index.		
	✓ Complete list of items to be serialized.		
	✓ Complete cable identification and equipment labels.		
	✓ Complete wiring diagrams for all equipment to be installed, modified, upgraded, or interfaced to under this contract.		
	✓ Top level mechanical drawings, if applicable.		
	✓ Grounding details.		
	✓ Power panel schedule and distribution.		
<b>10.7.9</b>	<b>Installation</b>		
	✓ Furnish and install all wiring and connectors for on-board and fixed-end equipment and connections to power and communications enclosures and external systems integration. This includes the proper termination of all power and communication cables and wiring (copper or fiber optic) to connect the individual components into a fully operational System that complies with applicable		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	standards and specifications.		
	✓ Furnish and install all hardware, equipment, brackets, computer enclosures, pull boxes, junction boxes, conduits, power and communications infrastructure, and other such items as required to support System proper functioning.		
	✓ Furnish environmental control devices, such as Universal Power Supplies, as required.		
	✓ Furnish and install all electronics and other devices in their respective cabinets as required to provide a fully operational System.		
	✓ Furnish and install System equipment, including, but not limited to, GPS antennas and receivers, AVL components, communications devices, vehicle logic units, etc.		
	✓ As an option, furnish and install Automated Passenger Counter (APC) equipment, as specified.		
	✓ As an option, furnish and install Automated Voice Annunciation System equipment, as specified.		
	✓ Furnish and install Mobile Data Terminals (MDT), in the quantity and configuration directed by the Commission.		
	✓ Furnish and install Passenger Information Displays, in the quantity and configuration directed by the Commission.		
	✓ Furnish and install Changeable Message Sign (CMS) System, with optional add-on audio equipment, solar electric power systems, and cellular communications equipment, in the quantity and		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	configuration directed by the Commission.		
	✓ As an option, furnish and install standalone IVR phone solution, as specified.		
	✓ Validate all cable and wire terminations via a test process to ensure that the cable is connected to the correct location on each end and that the cable / wire is properly terminated.		
	✓ Test the full communications networks to validate proper functioning.		
	✓ Power up and provide a field check out / installation acceptance test of all Systems, to be witnessed and approved by the Commission. Track progress toward completion of all installation requirements using a "punch list".		
	✓ Calibration and testing of the System, as further described in full accordance with OEM supplier guidelines.		
<b>10.7.9.1</b>	<b>Modern OEM Products</b>		
	✓ The Contractor shall supply modern, unmodified, OEM products of computer and communication equipment required for its System.		
	✓ All OEM products utilized shall be from authorized distributors. Evidence that products were obtained by the selected Proposer from authorized distributors shall be provided to the Commission upon request.		
	✓ The equipment shall be delivered with the latest firmware, patches, and software updates available at the time of delivery.		
<b>10.7.9.2</b>	<b>Work Standards</b>		



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	As Specified		
<b>10.7.9.3</b>	<b>Equipment Removal, Relocation and Restoration Plan</b>		
	✓ All the items (by subsystem and location) requiring restoration, rebuild and / or upgrades to its original condition or better.		
	✓ All the items (by subsystem and location) requiring removal.		
	✓ All the items (by subsystem and location) requiring salvage and packaging to keep original condition or better.		
	✓ A plan for temporary relocation and offsite storage.		
<b>10.7.9.4</b>	<b>Equipment List</b>		
	As Specified		
<b>10.7.9.5</b>	<b>As-Built Documents</b>		
	As Specified		
<b>10.7.9.6</b>	<b>Bill of Materials (BOM)</b>		
	As Specified		
<b>10.7.10</b>	<b>Obsolescence</b>		
	As Specified		
<b>10.7.11</b>	<b>Environmental</b>		
	As Specified		
<b>10.7.12</b>	<b>System Scalability</b>		
	As Specified		
<b>10.8</b>	<b>Project Management</b>		
<b>10.8.1</b>	<b>Project Staffing</b>		
	As Specified		
<b>10.8.2</b>	<b>Project Schedule</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	As Specified		
<b>10.8.3</b>	<b>Weekly Status Meetings</b>		
	As Specified		
<b>10.8.4</b>	<b>Monthly Status Reports</b>		
	As Specified		
<b>10.8.5</b>	<b>Formal Correspondence</b>		
	As Specified		
<b>10.8.6</b>	<b>Punch List</b>		
	As Specified		
<b>10.8.7</b>	<b>Deliverables</b>		
	✓ Implementation Plan		
	✓ Implementation Schedule		
	✓ Staffing Plan		
	✓ Asset List		
	✓ Design Document		
	✓ Test Plan / Procedures		
	✓ Training Plan / Materials		
	✓ Maintenance Manuals / Documentation		
	✓ Operators Manual		
	✓ Dispatchers Manual		
	✓ As-Built Documents		
	✓ Functional (software usage) Documentation		
	✓ Quality Assurance Plan		
	✓ Final Acceptance Test Report		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

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	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
<b>10.8.8</b>	<b>Asset Management</b>		
	✓ Product description and manufacturer		
	✓ Quantity installed and quantity as spares		
	✓ Serial numbers, where available		
	✓ Installation or storage locations, including fleet unit #		
	✓ Status of equipment (e.g. installed, spare, awaiting repair, etc.)		
	✓ Item Value, if over \$2,500		
	✓ Replacement status of each part and reason for replacement		
<b>10.8.9</b>	<b>Quality Assurance Plan</b>		
	As Specified		
<b>10.8.10</b>	<b>Invoicing</b>		
	As Specified		
<b>10.8.11</b>	<b>Project Closeout</b>		
	As Specified		
<b>10.9</b>	<b>Warranty / Maintenance</b>		
<b>10.9.1</b>	<b>Installation Warranty</b>		
	As Specified		
<b>10.9.2</b>	<b>Extended Warranty Period</b>		
	As Specified		
<b>10.9.3</b>	<b>Availability and Mean-Time-Between-Failure (MTBF) Targets</b>		
	As Specified		
<b>10.9.4</b>	<b>Chargeable and Non-Chargeable Failures</b>		
	As Specified		
<b>10.9.5</b>	<b>Diagnostics</b>		

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

	Request for Proposals	Your Proposal	If your proposal does not fully comply, where in your proposal is this explained?
	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	As Specified		
10.9.6	<b>Maintainability</b>		
	As Specified		
10.9.7	<b>Repair and Replacement of Faulty Equipment</b>		
	As Specified		
10.9.8	<b>On-Call Support</b>		
	As Specified		
10.9.9	<b>Local and Escalated Support</b>		
	As Specified		
10.10	<b>Spare Components</b>		
	As Specified		
10.11	<b>Schedule Requirements</b>		
	As Specified		

\_\_\_\_\_  
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL

\_\_\_\_\_  
DATE

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

### ***Attachment C - Price Summary Forms***

Proposers are required to submit their price proposals using the Price Summary Form presented here or a table consistent with its format. The Summary consists of two forms: one form to be used for each discrete solution cost; and one form summarizing the total cost for all solutions. Proposers shall submit a cost for each applicable line item. For each solution, a total capital cost and estimated cost of operation and maintenance should be listed and described. The operation and maintenance cost shall include and detail all anticipated sources of ongoing costs, including, but not limited to: royalties, software license fees, technical support, training, rentals or anticipated replacements.

Recurring costs, such as licenses and fees shall be listed for the cost per year per unit, and indicated as a recurring cost.

Pricing for Optional Technologies should be entered using Price Summary form C-I, with one form completed for each of the nine transit Operators (i.e. nine C-I forms must be completed).

The Proposer shall complete the forms, leaving no requested fields blank. In the case of fields that represent items with no cost associated, or items that shall not be provided by the proposer, the number zero shall be used. For items that Proposers cannot identify a discrete solution cost, a single combined cost for the combined items may be accepted. The applicable cells should indicate which items/costs are combined.

The price summary form represents the total cost of the Proposer to furnish all labor, materials and services at the prices as quoted herein, in conformance with all the specifications and contract documents. The units submitted shall be consistent with the numbers specified in the RFP, and shall include spares as determined by the Commission for effective system operation.

The Proposer should modify or clarify entries, as necessary, so that the price summary represents the total cost to provide the System. The total cost shall include all incidentals associated with the hardware and software, such as mounting hardware, cables, fasteners, brackets and housings. **The Commission shall not incur additional costs for any additional equipment, services, shipping, handling, communications, installation or testing.**

**The contract shall be a firm fixed price contract.**

The Price Summary Form will be used as a basis for cost calculations during the Project and it is understood that these unit prices will be held firm until Final System Acceptance.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### **C - PRICE SUMMARY FORM**

A. Fixed Route Fleet Implementation						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? Indicate Yes or No)
10.1	Design for each vehicle type					
10.1	Cabling and wiring of vehicle					
8.2	GPS Antenna					
8.2	Vehicle Logic Unit (VLU) / Mobile Data Terminal (MDT)					
8.2	Covert Alarm					
<del>8.7</del> 8.4	Cellular Communications Network					
10.4	Operator / Dispatch Training					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Fixed Route Implementation Subtotal</b>						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

B. System Initiation Requirements						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	(Recurring Cost? Indicate Yes or No)
8.2	Database Conversion					
<del>8.5</del>	GTFS Conversion					
<del>8.10</del> 8.6	Server Site Equipment Acquisition and Setup (servers: application, database, communications, reports, SNMP, etc.; necessary routers / firewalls, redundancies and environments. Please itemize!					
	Other – please describe					
System Initiation Subtotal						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

C. Passenger Information System						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design at each location					
10.7	Cabling and wiring at each location		40			
<del>8-9</del> 8.5	Multiple Line (Terminal) Passenger Information System Display(s) (ML CMS')		4			
<del>8-9</del> 8.5	Single Line (Bus stop) Passenger Information System Displays (SL CMS')		36			
8-9	<del>CMS Audible Component</del> (Requirement removed, no longer a min. requirement)					
<del>8-9</del> 8.5	CMS' Cellular Communications Network					
<del>8-9</del> 8.5	Passenger Information Data Management and Dissemination					
<del>8-9</del> 8.5	Passenger Information System Hardware and / or Software License					
8.5	GTFS Realtime feed					
<del>8-9</del> 8.5	Passenger Information System Website/ Mobile Apps					
<del>8-9</del>	Customer Trip Planner					
10.7	Installation of all hardware at each location (if not included above)		40			
8.5	Single Line (Bus stop) Passenger Information System Displays (SL CMS')* [Hardware/Equipment ONLY. Does not include installation.]		20			
	Other – please describe					
	<b>Passenger Information System Subtotal</b>					



## Exhibit A - Request For Proposals

*March 3, 2017*

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

D. Spare Components (Describe the types and quantities of spares, along with cost and total cost, as per RFP Section 10.10)						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
Spare Components Subtotal						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

E. Additional Items						
RFP Section		Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Costs? (Indicate Yes or No)
10.1	AVL Analytics					
10.2	Reports (customized)					
10.3	Transit Analytics (Dashboard)					
10.4	Training					
10.5	Testing					
10.6	Documentation					
10.7	Design / Implementation					
10.8	Project Management					
10.9	Service / Warranty (2 years)					
	Other – please describe (use more lines as needed)					
Additional Items Subtotal						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

F. Extended Service / Maintenance (out years): Including Fixed Route, Integration, and Passenger Information System				
Item	Unit Cost	# of Units	Installation Cost for All Units	Total Cost
Extended Service / Maintenance, Year Three (Required)				
Extended Service / Maintenance, Year Four (Required)				
Extended Service / Maintenance, Year Five (Required)				
<b>Additional Service / Maintenance Out Year Sub-Total Cost</b>				

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Price Summary				
Item	Unit Cost	# of Units	Installation Cost for All Units	Total Cost
Table A – Fixed Route Vehicles				
Table B - System Initiation				
Table C – Passenger Information System				
Table D - Spare Components				
Table E - Additional Items				
Table F - Extended Maintenance (Years 3-5)				
<b>Total Cost</b>				

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SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL      DATE

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### OPTIONAL TECHNOLOGIES PRICE SUMMARY FORM C-I

Please complete a form for each of the nine transit operators (below)

**Note: Some items do not apply.**

See Operators Fleet and System Composition Schedule (Attachment #) for fleet-specific Optional Technologies needs

FORM C-I. Optional Technologies for Fleet No 1: VCTC INTERCITY						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / System Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counter System (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration					
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 2: VALLEY EXPRESS						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No 3: GOLD COAST TRANSIT DISTRICT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration					
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 4: SIMI VALLEY TRANSIT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 5: THOUSAND OAKS TRANSIT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA) (Most buses do not have AVA)					
9.1	Automated Voice Annunciators (AVA) /Integration (Some buses have AVA)					
9.2	Automatic Passenger Counters (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration					
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 6: MOORPARK CITY TRANSIT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators (AVA)	N/A	N/A	N/A	N/A	N/A
9.1	Automated Voice Annunciators (AVA) / System Integration					
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 7: OJAI TROLLEY						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 8: CAMARILLO AREA TRANSIT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

FORM C-I. Optional Technologies for Fleet No. 9 – KANAN SHUTTLE						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
Optional Technologies Total for Operator						

### PROPOSER SIGNATURE FOR FORM C-I ALL FLEETS 1 - 9:

\_\_\_\_\_  
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL

\_\_\_\_\_  
DATE

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### **Attachment D - Milestone Payment Schedule**

#### **Implementation Milestone Task Payment Schedule**

**Please Specify a suggested Milestone / Payment Schedule for the following In Accordance With The Scope Of Work Of This RFP (include in each Task Description, total hours, FTE's, Classification and hourly rates):**

Item #	Task	Proposer's description of specific work to be accomplished.	Estimated Task Hours	Blended Hourly Rate	Estimated Task Cost
10.7	Installation (Fleet 1)				
10.7	Installation (Fleet 2)				
10.7	Installation (Fleet 3)				
10.7	Installation (Fleet 4)				
10.7	Installation (Fleet 5)				
10.7	Installation (Fleets 6, 7, 8 and 9)				
10.7	Installation (CMS Locations 1-20)				
10.7	Installation (CMS Locations 20-40)				
10.2	Reports				
10.4	Training				
10.5	Testing				
10.5	30-Day Operational (Acceptance) Testing				

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Item #	Task	Proposer's description of specific work to be accomplished.	Estimated Task Hours	Blended Hourly Rate	Estimated Task Cost
10.7	System Design				
10.8	Planning Documents				
10.6	Documentation				
	TOTAL OF MILESTONE PAYMENTS				

\_\_\_\_\_  
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL

\_\_\_\_\_  
DATE

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

**The above milestone payment schedule refers to the tasks identified above. Payment for service/maintenance warranty coverage shall be made upon commencement of warranty period(s) as applicable (e.g. 2 year, three one-year periods etc). Payment for equipment /hardware/software shall be made upon receipt pursuant to the terms of the RFP / Agreement.**

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### ***Attachment E - Certification of Restrictions on Lobbying***

#### **RETURN THIS FORM WITH YOUR BID**

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

### **Lobbying Certification**

As required by U.S. DOT regulations, "New Restrictions on Lobbying," at 49 CFR 20.110, I certify to the best of my knowledge and belief that for each application for federal assistance exceeding \$100,000: (1) No Federal appropriated funds have been or will be paid, by or on behalf of \_\_\_\_\_, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress pertaining to the award of any Federal assistance, or the extension, continuation, renewal, amendment, or modification of any Federal assistance agreement; and (2) If any funds other than Federal appropriated funds have been or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any application to FTA for Federal assistance, I assure that Standard Form-LLL, "Disclosure Form to Report Lobbying," would be submitted and would include all information required by the form's instructions.

I understand that this certification is a material representation of fact upon which reliance is placed and that submission of this certification is a prerequisite for providing Federal assistance for a transaction covered by 31 U.S.C. 1352. I also understands that any person who fails to file a required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.

\_\_\_\_\_  
Signature & Title of Authorized Official

\_\_\_\_\_  
Date



**Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

***Attachment F - Disadvantaged Business Enterprise (DBE)***

**RETURN THIS FORM WITH YOUR BID**

\_\_\_\_\_ (firm name) hereby certifies that:

(check one)

☐

our firm's Bid does include committed DBE participation, which will account for \_\_\_\_\_ % of the total project amount;

OR

☐

our firm's Bid does not include any committed DBE participation.

BY: \_\_\_\_\_  
Authorized Official

\_\_\_\_\_  
Title

***If applicable***, please include on a separate sheet the names, addresses of all DBEs ~~contacted~~ ~~or~~ that will participate in the contract, the scope of work, dollar amount of for each participating DBE. ~~Also describe all efforts which have been made to secure maximum DBE participation.~~

**All participating DBEs must complete the DBE affidavit, attached.**

***(REVISED)***

**Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**Affidavit of Disadvantaged Business Enterprise**

**RETURN THIS FORM WITH YOUR BID**

I hereby declare and affirm that I am a qualifying DBE as describe in 49 CFR part 26 and that I will provide information to document this fact.

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE FOREGOING STATEMENTS ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF THE ABOVE FIRM, TO MAKE THIS AFFIDAVIT.**

BY: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

***Attachment G - Certification of Primary Participant Regarding  
Debarment, Suspension, and other Responsibility Matters***

**RETURN THIS FORM WITH YOUR BID**

**CERTIFICATION OF PRIMARY PARTICIPANT REGARDING  
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY  
MATTERS**

The Primary Participant (applicant for an FTA grant or cooperative agreement, or Potential Contractor for a major third party contract), certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency,-
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction,- violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICATION FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD PARTY CONTRACT), \_\_\_\_\_

CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET. SEQ. ARE APPLICABLE THERETO.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
Typed Name and Title of Contractor's Authorized Official

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### ***Attachment H - Mail-In Reference Questionnaire***

Proposer Company: \_\_\_\_\_ Date: \_\_\_\_\_

Reference Company: \_\_\_\_\_ Phone: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

#### **I. Instructions for Completion**

##### ***A. Proposing Company***

1. Type your company name on "Proposing Company" line.
2. Type the company name of your reference on "Reference Company" line.
3. **Mail or e-mail** this form to your references; three (3) are required. To ensure receipt of an adequate number of reference responses, send Questionnaires to more than three (3) companies.
4. Under no circumstances will reference questionnaires be accepted directly from proposer.
5. It is your responsibility to follow up with your references to ensure timely receipt of questionnaires.
6. The Commission will not be an acceptable reference, nor will any member of the Proposer's organization.

##### ***B. Reference Company***

1. Print the responding individual's name, title, phone # and date on the appropriate lines.
2. Legibly write or type your response in the following manner. Use this form or using a separate sheet of paper, restate each question followed by your answer.
3. Mail, email or fax your completed questionnaire to:

Ventura County Transportation Commission  
Attn: Aaron Bonfilio  
950 County Square Drive, 207  
Ventura, CA 93003

4. This completed questionnaire **MUST** be received by the RFP due date: May 2, 2017.
5. **DO NOT** return this questionnaire to the proposing company.

#### **II. Qualifying Questions – PLEASE ANSWER ALL QUESTIONS**

1. Are you the primary person responsible for contract administration with the proposing company?

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Yes ☐ No ☐

2. What was the nature of the project you contracted with the proposing company for?

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3. When did your contract with the proposing company begin?

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4. When did your contract with the proposing company end? **(If not ended, when will it end?)**

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5. What was the approximate annual cost of the proposing company's contract with you?

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### **III. Evaluated Questions. Please answer the following sixteen (16) questions using the scale provided:**

1. Please rate the quality of the proposing company's overall service.

Excellent ☐ Good ☐ Fair ☐ Poor ☐

2. How well did the proposing company meet your stated goals?

Excellent ☐ Good ☐ Fair ☐ Poor ☐

3. How would you rate the response time of the proposing company to your calls or emails?

Excellent ☐ Good ☐ Fair ☐ Poor ☐

4. Were the proposing company communications with you clear and concise?

Always ☐ Usually ☐ Sometimes ☐ Never ☐

5. Were the milestones identified for the project schedule consistently met?

Always ☐ Usually ☐ Sometimes ☐ Never ☐

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

6. Did the proposing company keep you informed of progress?

Always ☐ Usually ☐ Sometimes ☐ Never ☐

7. Did the proposing company keep you informed of problems that would affect a timely and satisfactory outcome of your project?

Always ☐ Usually ☐ Sometimes ☐ Never ☐

8. Was the team originally assigned to your project (including project manager) maintained for the duration of your project?

Yes ☐ No ☐

9. If proposing company replaced a project manager or staff, was your prior approval obtained?

Yes ☐ No ☐

10. Have you ever had to request that any of the proposing company's team be replaced?

Yes ☐ No ☐

**If yes, please explain:**

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11. Did you experience any problems with the accuracy of the proposing company's billing?

Yes ☐ No ☐

12. Did you experience problems with the proposing company canceling meetings or conference calls?

Yes ☐ No ☐

13. Was the proposing company reasonable and prudent with travel and incidental expenses?

Yes ☐ Usually ☐ Sometimes ☐ No ☐

14. Have the problems you experienced with the proposing company been dealt with to your satisfaction?

Always or No Problem ☐ Usually ☐ Sometimes ☐ Never ☐

15. Was the proposing company flexible in meeting your requirements?

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Yes ☐ Usually ☐ Sometimes ☐ No ☐

**If no, please explain.**

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16. From the beginning of your first contract with the proposing company, how long did it take for you to receive benefits from the proposing company's efforts on your behalf?

One Year ☐ Two Years ☐ Three Years ☐ Four Years or More ☐

### **IV. Additional Questions**

1. What would you do differently next time you undertake a similar contract?

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2. Explain why you would or would not do business with the proposing company again.

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3. Did you use specific performance criteria to measure progress on your project? Would you be willing to share them with us?

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4. What suggestions do you have to make the process easier and/or more productive?

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**Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

***Attachment I - Bid Form***

**VENTURA COUNTY TRANSPORTATION COMMISSION**  
**Automated Vehicle Location & Passenger Information System**  
**Request for Proposals No. 17-90164-AVL**

**BID FORM**

To: Ventura County Transportation Commission

Pursuant to and in compliance with your Request for Proposals, calling for bids and related documents, the undersigned bidder, having familiarized himself with the terms and conditions of the contract, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated; including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with this proposal and all in strict conformity with the drawings and specifications and other contract documents, including addenda number \_\_\_\_\_.

The bidder has carefully examined the plans and specifications for this project prepared and furnished by Ventura County Transportation Commission and acknowledge their sufficiency.

It is understood and agreed that the work under the contract shall commence by the bidder, if awarded the contract, on the date to be stated in Ventura County Transportation Commission's "Notice to Proceed."

I, the bidder identified below, declare under penalty of perjury, that the information provided and representations made in this bid are true and correct and that this declaration was executed on:

\_\_\_\_\_ day of \_\_\_\_\_, 2017

NAME OF BIDDER: \_\_\_\_\_

CORPORATE OR  
COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_



## ***Attachment J - Federally Required & Other Model Contract Clauses***

### **No Obligation by the Federal Government** *(Required for all Contracts)*

The VCTC and the Contractor acknowledge and agree that, notwithstanding any occurrence by the Federal Government in or approval of this solicitation or award of this Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to VCTC, the Contractor, or any other party (whether or not a party to this Contract) pertaining to any matter resulting from this Contract.

The Contractor agrees to include the above clause in each subcontract financed in whole or part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

### **Program Fraud and False Or Fraudulent Statements And Related Acts** *(Required for all Contracts)*

The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. 3801 et seq. And U.S. Department of Transportation (DOT) regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to this Contract. Upon execution of this Contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to this Contract or the FTA assisted project for which this Contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. 5307, the Government reserves the right to impose the penalties of 18 U.S.C. 1001 and 49 U.S.C. 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

### **Access to Records** *(Required for all Contracts)*

The Contractor agrees to provide VCTC, the FTA Administrator, the Comptroller General of the United States or of any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this Contract for the purposes of making and conducting audits, inspections, examinations, excerpts, and transcriptions.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

The Contractor also agrees, pursuant to 49 CFR 633.1.7, to provide the FTA Administrator or his or her authorized representatives, including any Project Management Oversight (PMO) contractor, access to the Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described in 49 U.S.C. 5307, 5309 or 5311. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to maintain all books, records, accounts and reports required under this Contract for a period of not less than three years after the date of termination or expiration of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case the Contractor agrees to maintain such books, records, account and reports until the VCTC, the FTA Administrator, the Comptroller general, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

### **Federal Changes** *(Required for all Contracts)*

The Contractor shall at all times comply with all applicable Federal Transit Administration (FTA) regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the grant agreements between the Ventura County Transportation Commission (VCTC) and FTA, as they may be amended or promulgated from time to time during the term of this contract. Failure by the Contractor to so comply shall constitute a material breach of this contract. In the event any such changes significantly affect the cost or the schedule to perform the work, the Contractor shall be entitled to submit a claim for an equitable adjustment under the applicable provisions of this contract.

### **Termination** *(Required for all projects over \$10,000)*

**Termination for Convenience** - The VCTC, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the Recipient shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

**Termination for Default [Breach or Cause]** - If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the VCTC may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the VCTC that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the VCTC, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

**Opportunity to Cure (General Provision)** - The VCTC in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to VCTC's satisfaction the breach or default or any of the terms, covenants, or conditions of this Contract within ten (10) days after receipt by Contractor or written notice from VCTC setting forth the nature of said breach or default, VCTC shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude VCTC from also pursuing all available remedies against Contractor and its sureties for said breach or default.

**Waiver of Remedies for any Breach** - In the event that VCTC elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by VCTC shall not limit VCTC's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

### Title VI Of The Civil Rights Act Of 1964 *(Required for all Contracts)*

During the performance of this Contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor"), and subcontractors agree as follows:

- A. Compliance with Regulations.** The Contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- B. Nondiscrimination.** In accordance with Title VI of the Civil Rights act, as amended, 42 U.S.C. 200d section 3 03 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. 12132, and Federal Transit laws at 49 U.S.C. 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- C. Equal Employment Opportunity.** The following equal employment opportunity requirements apply to this Contract:
  - 1. Race, Color, Creed, National Origin, Sex** – In accordance with title VII of the Civil Rights Act, as amended, 42 U.S.C. 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of the U.S. Department of Labor (USDOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 CFR Parts 60 et seq., (which implement Executive Order No. 11246 Relating to Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order No. 11246 Relating to Equal Employment Opportunity," 42 U.S.C. 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the project for which this Contract work is being performed. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment of recruitment advertising, layoff or termination; rates

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the contractor agrees to comply with any implementing requirements FTA may issue.

2. **Age** – In accordance with section 4 of the Age discrimination in Employment Act of 1967, as amended, 29 U.S.C. 623 and Federal Transit laws at 49 U.S.C. 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reasons of age. In addition, the contractor agrees to comply with any implementing requirements FTA may issue.
3. **Disabilities** – In accordance with Section 102 of the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, “ Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act,” 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
4. **Immigration and Naturalization Act of 1986** – In connection with the execution of this Contract, the Contractor must comply with all aspects of the federal Immigration and Naturalization Act of 1986.

**D. Solicitations for Subcontractors, Including Procurement of Materials and Equipment.** In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to non-discrimination on the grounds of race, color, or national origin.

**E. Information and Reports.** The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by City or the Federal Transit Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to City or the Federal Transit Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

**F. Sanctions for Noncompliance.** In the event of the Contractor's noncompliance with nondiscrimination provisions of this contract, City shall impose contract sanctions as it or the Federal Transit Administration may determine to be appropriate, including, but not limited to:

1. withholding of payments to the Contractor under the contract until the Contractor complies; and/or
2. cancellation, termination, or suspension of the contract, in whole or in part.

**G. Subcontracts.** The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

**Disadvantaged Business Enterprises** *(Required for all Contracts)*

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

The Ventura County Transportation Commission (VCTC) has established a DBE Program pursuant to 49 C.F.R. Part 26, which applies to this Agreement. The requirements and procedures of VCTC's DBE Program are hereby incorporated by reference into this Agreement. Failure by any party to this Agreement to carry out VCTC's DBE Program procedures and requirements or applicable requirements of 49 C.F.R. Part 26 shall be considered a material breach of this Agreement, and may be grounds for termination of this Agreement, or such other appropriate administrative remedy. Each party to this Agreement shall ensure that compliance with VCTC's DBE Program shall be included in any and all sub-agreements entered into which arise out of or are related to this Agreement.

CONTRACTOR's failure to make good faith efforts to comply with VCTC's DBE Program shall be considered a material breach of this AGREEMENT and may give rise to certain administrative penalties and proceedings, including, but not limited to, those set forth in 49 C.F.R. Part 26.107.

No later than Thirty (30) working days after receiving payment of retention from City for work satisfactorily performed by any of its subcontractors for services rendered arising out of or related to this Agreement, CONTRACTOR shall make full payment to its subcontractors of all compensation due and owing under the relevant subcontract agreement, unless excused by City for good cause pursuant to provisions of Section 1.1 below.

No later than Thirty (30) days after receiving payment of retention from City for work satisfactorily performed by any of its subcontractors for services rendered arising out of or related to this Agreement, CONTRACTOR shall also make full payment to its subcontractors of all retentions withheld by it pursuant to the relevant subcontract agreement, unless excused by City for good cause pursuant to provisions of Section 5.1 below.

There shall be no substitution of any DBE subcontractors subsequent to award of this Contract without the written approval of the City's DBE Officer.

### **Incorporation of Federal Transit Administration (FTA) Terms** *(Required for all Contracts)*

The Contractor shall take such action with respect to any subcontract or procurement as VCTC or the Federal Transit Administration may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request VCTC, and in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

### **Debarment and Suspension** *(Required by all projects greater than \$25,000)*

- A. The Contractor shall include in each subcontract exceeding \$25,000, regardless of tier, a clause requiring each lower tiered subcontractor to provide the certification set forth in paragraph B of this section. Each subcontract, regardless of tier, shall contain a provision that the subcontractor shall knowingly enter into any lower tier subcontract exceeding \$25,000 with a person who is disbarred, suspended or declared ineligible from obtaining federal assistance funds. If a proposed subcontractor is unable to certify to the statements in the following certification, the Contractor shall promptly notify VCTC and provide all applicable documentation.



**Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**B.** Each subcontractor with a subcontract exceeding \$25,000 shall certify as follows  
**(COMPLETE ATTACHMENT “G” FOR CERTIFICATION FORM):**

**CERTIFICATION OF PRIMARY PARTICIPANT REGARDING  
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY  
MATTERS**

The Primary Participant (applicant for an FTA grant or cooperative agreement, or Potential Contractor for a major third party contract), certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency,-
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction,- violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICATION FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD PARTY CONTRACT), \_\_\_\_\_

CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET. SEQ. ARE APPLICABLE THERETO.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
Typed Name and Title of Contractor's Authorized Official

***Buy America*** *(Required for Construction Projects and Materials and Supplies greater than \$100,000)*

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification (below) with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

### **BUY AMERICA CERTIFICATION REQUIREMENT FOR PROCUREMENT OF STEEL, IRON, OR MANUFACTURED PRODUCTS.**

***Certificate of Compliance with 49 U.S.C. 5323(j)(1)*** The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 CFR Part 661.5.

Date \_\_\_\_\_

Signature \_\_\_\_\_

Company Name \_\_\_\_\_

Title \_\_\_\_\_

***Certificate of Non-Compliance with 49 U.S.C. 5323(j)(1)*** The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 C.F.R. 661.7.

Date \_\_\_\_\_

Signature \_\_\_\_\_

Company Name \_\_\_\_\_

Title \_\_\_\_\_

### **Breach of Contract**    *(Required for Contracts Greater than \$100,000)*

**Disputes** - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of (Recipient)'s [title of employee]. This decision shall be final and conclusive unless within [ten (10)] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the [title of employee]. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the [title of employee] shall be binding upon the Contractor and the Contractor shall abide by the decision.

**Performance During Dispute** - Unless otherwise directed by (Recipient), Contractor shall continue performance under this Contract while matters in dispute are being resolved.

**Claims for Damages** - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

**Remedies** - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the (Recipient) and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the (Recipient) is located.

**Rights and Remedies** - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the (Recipient), (Architect) or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

### **Clean Air** *(Required for Projects greater than \$100,000)*

The contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 1 1017 of the California Government Code. All Contractors and suppliers shall be required to submit evidence, if requested, to City that the governing air pollution control criteria will be met.

The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 under this Contract.

### **Clean Water** *(Only required for projects over \$100,000)*

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

### **Lobbying** *(Required for all FTA Contracts over \$100,000)*

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

### **Lobbying Certification**

As required by U.S. DOT regulations, "New Restrictions on Lobbying," at 49 CFR 20.110, I certify to the best of my knowledge and belief that for each application for federal assistance exceeding \$100,000: (1) No Federal appropriated funds have been or will be paid, by or on behalf of \_\_\_\_\_, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress pertaining to the award of any Federal assistance, or the extension, continuation, renewal, amendment, or modification of any Federal assistance agreement; and (2) If any funds other than Federal appropriated funds have been or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any application to FTA for Federal assistance, I assure that Standard Form-LLL, "Disclosure Form to Report Lobbying," would be submitted and would include all information required by the form's instructions.

I understand that this certification is a material representation of fact upon which reliance is placed and that submission of this certification is a prerequisite for providing Federal assistance for a transaction covered by 31 U.S.C. 1352. I also understand that any person who fails to file a required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.

\_\_\_\_\_  
Signature & Title of Authorized Official

\_\_\_\_\_  
Date

### **Cargo Preference** *(Required for Rolling Stock Purchase, Construction and Materials and Supplies which includes transport by an ocean vessel)*

The contractor agrees:

- a. *to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;*
- b. *to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.)*
- c. *to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.*

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

### **Fly America Requirements** *(Required for all Contracts)*

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and subrecipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

### **Davis-Bacon and Copeland Anti-Kickback Acts** (Required for Construction Projects Greater than \$2,000)

(1) **Minimum wages** - (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met: 1. Except with respect to helpers as defined as 29 CFR 5.2(n)(4), the work to be performed by the classification requested is not performed by a

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

classification in the wage determination; and, 2 The classification is utilized in the area by the construction industry; and 3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and 4. With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof. (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (v)(A) The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination; and
2. The classification is utilized in the area by the construction industry; and
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(v) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(2) **Withholding** - The [ *insert name of grantee* ] shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the [ *insert name of grantee* ] may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) **Payrolls and basic records** - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the [ **insert name of grantee** ] for transmission to the Federal Transit Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following: (1) That the payroll for the payroll period contains the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5 and that such information is correct and complete; (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3; (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

**(4) Apprentices and trainees** - (i) Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) *Trainees* - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved. (iii) *Equal employment opportunity* - The utilization of apprentices, trainees and journeymen under this part

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) **Compliance with Copeland Act requirements** - The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) **Contract termination: debarment** - A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) **Compliance with Davis-Bacon and Related Act requirements** - All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) **Disputes concerning labor standards** - Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) **Certification of eligibility** - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1). (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1). (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**Contract Work Hours And Safety Standards Act** *(Required for Operations/Management, Rolling Stock Purchases and Construction Projects over \$2,500)*

**Overtime Requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**Violation; Liability For Unpaid Wages; Liquidated Damages.** In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

watchmen, and guards, employed in violation of the clause set forth in paragraph (l) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

**Withholding For Unpaid Wages And Liquidated Damages.** The (write the name of the grantee or recipient) shall upon its own action or upon written request of an authorized representative of the department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

**Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

(Section 102 non-construction contracts should also have the following provision:)

**Payrolls and Basic Records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions thereof of the types described in section 1(a)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(This section is applicable to construction contracts only)

The Contractor agrees to comply with section 107 of the Contract Work Hours and safety Standards Act, 40 U.S.C. section 333, and applicable DOL regulations, "Safety and Health Regulations for Construction" 29 C.F.R. Part 1926. Among other things, the Contractor agrees that it will not require any laborer or mechanic to work in unsanitary, hazardous, or dangerous surroundings or working conditions.



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**Subcontracts** – The Contractor also agrees to include the requirements of this section in each subcontract. The term “subcontract” under this section is considered to refer to a person who agrees to perform any part of the labor or material requirements of a contract for construction, alteration or repair. A person who undertakes to perform a portion of a contract involving furnishing of supplies or materials will be considered a “subcontractor” under this section if the work in question involves the performance of construction work and is to be performed: (1) directly on or near the construction site, or (2) by the employer for the specific project on a customized basis. Thus, a supplier of materials which will become an integral part of the construction is a “subcontractor” if the supplier fabricates or assembles the goods or materials in question specifically for the construction project and the work involved may be said to be construction activity. If the goods or materials in question are ordinarily sold to other customers from regular inventory, the supplier is not a “subcontractor.” The requirements of this section do not apply to contracts or subcontracts for the purchase of supplies or materials or articles normally available on the open market.

### **Bonding** (Required for Construction Projects greater than \$100,000)

The Recipient agrees to comply with the following bonding requirements and restrictions as provided in Federal regulations and guidance, except as FTA determines otherwise in writing: (1) Construction. As provided by Federal regulations and modified by FTA guidance, for Project activities involving construction, it will provide: (a) Bid guarantee bonds, (b) Contract performance bonds, and (c) Payment bonds, and (2) Activities Not Involving Construction. For Project activities not involving construction: (a) It will not impose excessive bonding, and (b) It will follow FTA guidance Bid Bond Requirements

### **Seismic Safety** *(Required for Professional Services (A&E) and Construction Projects and Materials and Supplies)*

The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

### **Transit Employees Protective Act** *(Required for Operations and Management Projects)*

The Contractor agrees to the comply with applicable transit employee protective requirements as follows:

1. General Transit Employee Protective Requirements - To the extent that FTA determines that transit operations are involved, the Contractor agrees to carry out the transit operations work on the underlying contract in compliance with terms and conditions determined by the U.S. Secretary of Labor to be fair and equitable to protect the interests of employees employed under this contract and to meet the employee protective requirements of 49 U.S.C. A 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the letter of

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

certification from the U.S. DOL to FTA applicable to the FTA Recipient's project from which Federal assistance is provided to support work on the underlying contract. The Contractor agrees to carry out that work in compliance with the conditions stated in that U.S. DOL letter. The requirements of this subsection (1), however, do not apply to any contract financed with Federal assistance provided by FTA either for projects for elderly individuals and individuals with disabilities authorized by 49 U.S.C. § 5310(a)(2), or for projects for nonurbanized areas authorized by 49 U.S.C. § 5311. Alternate provisions for those projects are set forth in subsections (b) and (c) of this clause.

2. Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5310(a)(2) for Elderly Individuals and Individuals with Disabilities - If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5310(a)(2), and if the U.S. Secretary of Transportation has determined or determines in the future that the employee protective requirements of 49 U.S.C. § 5333(b) are necessary or appropriate for the state and the public body subrecipient for which work is performed on the underlying contract, the Contractor agrees to carry out the Project in compliance with the terms and conditions determined by the U.S. Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the U.S. DOL's letter of certification to FTA, the date of which is set forth Grant Agreement or Cooperative Agreement with the state. The Contractor agrees to perform transit operations in connection with the underlying contract in compliance with the conditions stated in that U.S. DOL letter.
3. Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5311 in Nonurbanized Areas - If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5311, the Contractor agrees to comply with the terms and conditions of the Special Warranty for the Nonurbanized Area Program agreed to by the U.S. Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

The Contractor also agrees to include the any applicable requirements in each subcontract involving transit operations financed in whole or in part with Federal assistance provided by FTA.

### **Charter Service and School Bus Operations** *(Required for Operations and/or Management Projects)*

The contractor agrees to comply with 49 U.S.C. 5323(d) and 49 CFR Part 604, which provides that recipients and subrecipients of FTA assistance are prohibited from providing charter service using federally funded equipment or facilities if there is at least one private charter operator willing and able to provide the service, except under one of the exceptions at 49 CFR 604.9. Any charter service provided under one of the exceptions must be "incidental," i.e., it must not interfere with or detract from the provision of mass transportation.

### **Federal Privacy Act** *(Required for all Contracts)*

Contracts Involving Federal Privacy Act Requirements - The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.

The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

### **Drug and Alcohol Testing** *(Required for Operations and Management Programs)*

The Recipient agrees to comply, and assures its Third Party Participants will comply with: (a) Federal transit laws, specifically 49 U.S.C. § 5331, as amended by MAP-21, (b) FTA regulations, "Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations," 49 C.F.R. part 655, and (c) Applicable provisions of DOT regulations, "Procedures for Transportation Workplace Drug and Alcohol Testing Programs," 49 C.F.R. part 40, and (2) Remedies for Non-Compliance.

Recipient agrees that if FTA determines that a Recipient of funds or a Third Party Participant receiving funds under 49 U.S.C. Chapter 53 is not in compliance with 49 C.F.R. part 655, the Federal Transit Administrator may bar that Recipient or Third Party Participant from receiving all or a portion of the Federal transit assistance it would otherwise receive.

### **Patent Rights** *(Only applies for experimental, developmental or research work)*

The term "subject data" used in this clause means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to contract administration.

The following restrictions apply to all subject data first produced in the performance of the contract to which this Attachment has been added:

Except for its own internal use, the Purchaser or Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Purchaser or Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

In accordance with 49 C.F.R. § 18.34 and 49 C.F.R. § 19.36, the Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for "Federal Government purposes," any subject data or copyright described in subsections (2)(b)1 and (2)(b)2 of this clause below. As used in the previous sentence, "for Federal Government purposes," means use only for the direct purposes of the Federal Government. Without the copyright owner's consent, the Federal Government may not extend its Federal license to any other party. Any subject data developed under that contract, whether or not a copyright has been obtained; and Any rights of copyright purchased by the Purchaser or Contractor using Federal assistance in whole or in part provided by FTA.

When FTA awards Federal assistance for experimental, developmental, or research work, it is FTA's general intention to increase transportation knowledge available to the public, rather than to restrict the benefits resulting from the work to participants in that work. Therefore, unless FTA determines otherwise, the Purchaser and the Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of that contract, or a copy of the subject data first produced under the contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of the underlying contract, is not completed for any reason whatsoever, all data developed under that contract shall become subject data as defined in subsection (a) of this clause and shall be delivered as the Federal Government may direct. This subsection (c) , however, does not apply to adaptations of automatic data processing equipment or programs for the Purchaser or Contractor's use whose costs are financed in whole or in part with Federal assistance provided by FTA for transportation capital projects.

Unless prohibited by state law, upon request by the Federal Government, the Purchaser and the Contractor agree to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Purchaser or Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. Neither the Purchaser nor the Contractor shall be required to indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the Federal Government.

Nothing contained in this clause on rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal Government under any patent.

Data developed by the Purchaser or Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause , provided that the Purchaser or Contractor identifies that data in writing at the time of delivery of the contract work.

Unless FTA determines otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (i.e. , a large business, small business, state government or state

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), the Purchaser and the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

**Patent Rights** - This following requirement applies to each contract involving experimental, developmental, or research work:

General - If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under the contract to which this Attachment has been added, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, the Purchaser and Contractor agree to take actions necessary to provide immediate notice and a detailed report to the party at a higher tier until FTA is ultimately notified. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), the Purchaser and the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

### **Energy Conservation** *(Required for all Contracts)*

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

### **Recycled Products** *(Required for Operations and Management, Construction and Materials and Supplies Projects greater than \$10,000)*

The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

### **National Intelligent Transportation Systems Architecture and Standards** *(Required for all Contracts)*



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**The Recipient agrees to: (1) Conform to the National Intelligent Transportation Systems (ITS) Architecture requirements of 23 U.S.C. § 517(d), as amended by MAP-21, unless it obtains an exemption from those requirements, and (2) Except as the Federal Government determines otherwise in writing, follow: (a) FTA Notice, "FTA National ITS Architecture Policy on Transit Projects," 66 Fed. Reg. 1455, January 8, 2001, and (b) Other applicable Federal guidance.**

### **Access Requirements For Persons With Disabilities (ADA)** *(required for all contracts)*

The Recipient agrees to comply with the requirements of 49 U.S.C. § 5301(d) which states the Federal policy that the elderly and persons with disabilities have the same right as other persons to use mass transportation service and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement that policy. The Recipient also agrees to comply with all applicable requirements of section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of handicaps, and with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 *et seq.*, which requires that accessible facilities and services be made available to persons with disabilities, including any subsequent amendments thereto. In addition, the Recipient agrees to comply with all applicable requirements of the following regulations and any subsequent amendments thereto:

- (1) U.S. DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 C.F.R. Part 37;
- (2) U.S. DOT regulations, "Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance," 49 C.F.R. Part 27;
- (3) Joint U.S. Architectural and Transportation Barriers Compliance Board/U.S. DOT regulations, "Americans With Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. Part 1192 and 49 C.F.R. Part 38;
- (4) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;
- (5) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;
- (6) U.S. General Services Administration (U.S. GSA) regulations, "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19;
- (7) U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630;
- (8) U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 47 C.F.R. Part 64, Subpart F; and
- (9) FTA regulations, "Transportation for Elderly and Handicapped Persons," 49 C.F.R. Part 609; and
- (10) Any implementing requirements FTA may issue.

### **State and Local Government Laws/Regulations** *(Required for all Contracts)*

To the extent required under Federal law, the State, as the Recipient, agrees to provide the following information about FTA funding for State Programs or Projects: a. Types of Information. The State will provide information including: (1) Identification of FTA as the Federal agency providing the Federal funds for the Program or Project, (2) The Catalog of Federal Domestic Assistance Number of the Program from which the Federal funding for the Program or Project is authorized, and (3) The amount of Federal funds FTA has provided for the Program or Project, and b. Documents. The State will provide the information required under this provision in the

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

following documents: (1) Requests for proposals, (2) Solicitations, (3) Grant or cooperative agreement applications, (4) Forms, (5) Notifications, (6) Press releases, and (7) Other publications.

### **Bus Testing Certification** *(Required for Rolling Stock Purchases)*

The Contractor [Manufacturer] agrees to comply with 49 U.S.C. A 5323(c) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

1. A manufacturer of a new bus model or a bus produced with a major change in components or configuration shall provide a copy of the final test report to the recipient at a point in the procurement process specified by the recipient which will be prior to the recipient's final acceptance of the first vehicle.
2. A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.
3. If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must be provided to the recipient prior to recipient's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.
4. If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

### **CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS**

The undersigned [Contractor/Manufacturer] certifies that the vehicle offered in this procurement complies with 49 U.S.C. A 5323(c) and FTA's implementing regulation at 49 CFR Part 665.

The undersigned understands that misrepresenting the testing status of a vehicle acquired with Federal financial assistance may subject the undersigned to civil penalties as outlined in the Department of Transportation's regulation on Program Fraud Civil Remedies, 49 CFR Part 31. In addition, the undersigned understands that FTA may suspend or debar a manufacturer under the procedures in 49 CFR Part 29.

Date: \_\_\_\_\_

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Signature: _____
Company Name: _____
Title: _____

### **Pre-Award and Post-Delivery Audit Requirements**    *(Required for Rolling Stock Purchases over \$100,000)*

The Contractor agrees to comply with 49 U.S.C. § 5323(l) and FTA's implementing regulation at 49 C.F.R. Part 663 and to submit the following certifications:

1. Buy America Requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the Bidder/Offeror certifies compliance with Buy America, it shall submit documentation which lists 1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and 2) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.
2. Solicitation Specification Requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.
3. Federal Motor Vehicle Safety Standards (FMVSS): The Contractor shall submit 1) manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS or 2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.



***Attachment K – Resolution 91-05 VCTC Contract Protest Procedures***

**RESOLUTION 91-05**

**A RESOLUTION OF THE VENTURA COUNTY  
TRANSPORTATION COMMISSION ADOPTING  
CONTRACT PROTEST PROCEDURES**

**SECTION I.**

**THE VENTURA COUNTY TRANSPORTATION COMMISSION DOES HEREBY  
DETERMINE AND FIND AS FOLLOWS:**

- A. The Ventura County Transportation Commission (hereinafter, "VCTC") does from time to time solicit bids from contractors for work and/or proposals for professional services; and
- B. There is a potential that an Interested Party (as defined in Section II.A, below), may at some time wish to protest the determinations hereinafter set forth as protestable; and
- C. It is in the interest of the health, safety and general welfare of the residents of Ventura County and potential Interested Parties that the Commission establish procedures for protests to contracts awarded by, and bids or proposals on contracts received by VCTC, as hereinafter set forth:

**SECTION II.**

**NOW, THEREFORE, THE VENTURA COUNTY TRANSPORTATION COMMISSION  
DOES HEREBY RESOLVE AS FOLLOWS:**

**A. GENERAL.**

- 1. This policy specifies procedures for Interested Parties (as hereinafter defined) protesting the following staff actions:
  - (a) A written notice, by, or on behalf of, the Executive Director denying a bidder's or proposer's request for a change in contract requirement; and
  - (b) A written recommendation to Ventura County Transportation Commission ("VCTC") or a decision made by, or on behalf of, the Executive Director to disqualify a proposer, bidder or subcontractor; and
  - (c) A written recommendation by, or on behalf of, the Executive Director that VCTC award a contract to a particular bidder or proposer.

## **Exhibit A - Request For Proposals**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

2. This policy does not govern any VCTC staff decision not listed in this Section II.A.
3. When a protest has been properly filed, pursuant to the procedures hereinafter set forth, prior to contract award, the VCTC shall not award the contract prior to deciding the protest. When a protest has been properly filed before the opening of bids, bids shall not be opened prior to the VCTC decision on the protest. When a protest has been filed properly after the contract is awarded, the contract shall not be executed until the protest is resolved by the VCTC.
4. Materials submitted as a part of the protest resolution process will be available to the public except to the extent that:
  - (a) The information is designated proprietary by the person submitting the information to VCTC. If the person submitting material to VCTC considers that the material contains proprietary material which should be withheld, a statement advising of this fact shall be affixed to the front page of the material submitted and the alleged proprietary information must be specifically identified in the body of the materials wherever it appears.

### **B. FILING A PROTEST**

1. Protests may be filed only by "Interested Parties". "Interested Parties" are defined as (a) bidders who have responded, and prospective bidders who may respond, to a request for bids, (b) prospective professional services contractors who may respond, and professional service contractors who have responded, to a request for proposals on a VCTC contract and/or a generally funded contract, and (c) subcontractors or suppliers at any tier who have a substantial economic interest in an award, a provision of the specifications, or a bid or proposal submitted to VCTC by a prime contractor, or in the interpretation of the provisions of such documents.
2. Protests to a contract requirement must be filed at least ten (10) working days prior to bid opening or the deadline for receiving proposals. Protests to VCTC staff actions must be filed within five (5) working days of receipt by the bidder or proposer from the Executive Director, or a person authorized to act on behalf of the Executive Director, or written notice of the VCTC staff action.
3. Protests shall be addressed to Ventura County Transportation Commission, 950 County Square Drive, Suite 207, Ventura, California, 93003, or such other address as may appear on the request for proposal for bid solicitation.
4. Protests shall be in writing and contain a statement of the ground(s) for protest. At least ten (10) copies of the protest shall be submitted by the protestor in the time and manner specified in this section.
5. The Executive Director, or an authorized person acting on behalf of the Executive Director, shall provide notice, by telephone, telephone facsimile (FAX) or by letter, to all bidders and/or persons who have submitted proposals on the contract which

is subject to the protest known to VCTC. Such notice shall state that a protest has been filed with VCTC and identify the name of the protestor. The notice shall be given not more than five (5) working days after receipt of a properly filed protest. The notice shall state that bidders will receive further information relative to the protest only by submitting a written request for further information to the Executive Director.

**C. VCTC PRELIMINARY RESPONSE TO A PROTEST: MEETING WITH STAFF TO ATTEMPT EARLY RESOLUTION OF THE PROTEST**

1. Not more than ten (10) working days after receipt of a properly filed protest, the Executive Director, or a person authorized to act on his or her behalf, shall prepare and distribute to the protestor and to all persons specified in Section B.5, above:
  - (a) A written preliminary response to the protest. This response shall include a brief explanation of the reasons why the protested VCTC staff action is justified; and
  - (b) The time, date and place of the meeting described in Section C.2, below.
2. The Executive Director and/or appropriate VCTC staff shall meet with the protestor to discuss and attempt to resolve the protest within thirty (30) days of the response required by section C.1(a) above.
3. After the meeting required by Section C.2, above the protestor shall within five (5) working days give the Executive Director written notice that either the protest is withdrawn or, alternately, that the protestor requests further consideration of the protest. In the event that the protestor fails to file the notice required by this Section C.3 at the office of the Executive Director within five (5) working days after the meeting, the protest shall be deemed withdrawn.

**D. FURTHER INVESTIGATION**

1. If a protest is not withdrawn pursuant to Section C.3, above, the Executive Director shall, within thirty (30) days of receipt of the notice from the protestor described in Section C.3, above, further investigate the protest with the assistance of the VCTC staff.
2. The Executive Director may contract for third-party consulting services when necessary to investigate a protest. The Executive Director may negotiate with the protestor and other interested parties the sharing of the cost of such consulting services.
3. As part of the investigation, the Executive Director shall establish a reasonable time within which VCTC, the protestor, and other interested parties shall exchange all documents and arguments relevant to the protest; provided, however, that

such time shall not exceed thirty (30) days without the concurrence of the protestor and the Executive Director.

**E. INTENDED DECISION: COMMENTS BY PROTESTOR AND OTHER PARTIES**

1. Following investigation, the Executive Director shall, within thirty (30) days, prepare and distribute to the protestor and all persons specified in Section B.5:
  - (a) An intended decision recommending actions which the Executive Director believes the VCTC should take to resolve the protest and specifying the reasons for the recommended action of the VCTC.
  - (b) A statement of the date within which the protestor and other persons must submit written comments with respect to the intended decision. Such date shall allow a reasonable period for rebuttal and shall vary according to the complexity of the particular protest;
  - (c) Given written notice to all Interested Parties of the time, date and place of the VCTC meeting at which the protest will be considered.
2. The following materials shall be included in the agenda package sent to VCTC members prior to the VCTC meeting and shall be available to any person at the VCTC office at least five (5) working days before the hearing:
  - (a) The intended decision described in Section E.1(a), above.
  - (b) All written comments received within the submittal period described in Section E.1(b), above.
  - (c) If the Executive Director has revised his/her intended decision since its distribution pursuant to Section E.2(a), above, a written description of the new intended decision and the reasons for revision.

**F. VCTC CONSIDERATION**

1. At the hearing, VCTC staff and any person may present evidence relating to the protest. At the beginning of the hearing, the Chair of the VCTC may announce time limits on testimony and other procedural rules which, in the opinion of the Chair, are reasonable necessary to preclude repetitious or irrelevant testimony and afford all persons wishing to testify the opportunity to be heard.
2. In rendering its decision on the protest:
  - (a) VCTC may adopted or amend the intended decision and findings of fact prepared by the Executive Director and Staff; or

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

- (b) Make findings and adopt a decision different from the findings and intended decision of the Executive Director; or
- (c) Elect to defer its decision and direct VCTC staff
- (d) To Further investigate the protest; or
- (e) Hire an impartial hearing officer to conduct a hearing and prepare a written recommended decision, including findings of fact, to be returned to VCTC for decision which shall be made pursuant to the procedures outlined in this Section.

### ***Attachment L - Defined Terms / Acronyms***

A listing of abbreviations and acronyms and their non-abbreviated spellings used in the Specification is provided below:

**Acceptance Testing:** Includes all testing to verify the requirements of the Agreement as defined in this Scope of Work.

**ADA:** The Americans with Disabilities Act of 1990

**AES:** Advanced Encryption Standard

**AFCS:** Automated Fare Collection System

**Agreement:** The Agreement between the Contractor and Commission for the Automatic Vehicle Location (AVL) and Passenger Information System Installation, Implementation, and Maintenance Support.

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**APC:** Automatic Passenger Counter

**ARRA:** American Recovery and Reinvestment Act

**ASCII:** American Standard Code for Information Interchange

**ASP:** Application Service Provider, i.e., the Contractor

**Automatic Vehicle Location (AVL) System:** A system consisting of a global positioning system (GPS) receiver used for vehicle tracking as defined in the Scope of Work.

**AVM:** Automated Vehicle Monitoring

**Availability:** A ratio of the actual time a system, subsystem, or equipment is deemed operable and functioning properly as required by this Specification relative to the total time elapsed in said interval.

**BOM:** Bill of Materials

**Changeable Message Sign (CMS):** The signs that Contractor may be authorized to install at designated key transfer points or bus stops that display bus arrival and departure information, or user-defined messages, as defined in the Scope of Work.

**Single Line Changeable Message Sign (SL CMS):** CMS that have a scrolling or changeable display with only a single line of text (Also referred to as bus stop CMS)

**Multiple Line Changeable Message Sign (ML CMS):** CMS that have larger display screens capable of displaying up to 8 lines of scrolling or changeable text (Also called Transit Terminal CMS)

**Computer-Aided Dispatch (CAD):** A related system in which some, but not all, control center functions may be performed with the use of a computer.

**CAD/AVL:** Computer Aided Dispatch/ Automatic Vehicle Locator

**CAE:** Covert Emergency Alarm

**Commission:** The Ventura County Transportation Commission (VCTC / Commission).

**Commission Designated Representatives:** Person or persons authorized by Commission to represent the Commission in all dealings with the Contractor.

**Contractor:** The successful Proposer selected by Commission to install, implement and support the on-going maintenance of the Automatic Vehicle Location (AVL) and Passenger Information System.

**COTS:** Commercially Off-the-Shelf hardware and software supplied by the Contractor under this Agreement.

**CPPS:** Cutover Phasing Plan and Schedule

**Customized Hardware:** Any AVL and Passenger Information System hardware provided by the Contractor under this Agreement that is designed and certified by the Contractor.

**Design Documentation:** System design documentation required under the Scope of Work, including the System Requirements Document and System Design Document.

**Downtime:** Any period of time when a system, subsystem, or equipment is deemed unavailable for use. The opposite of "Uptime".

**DSD:** Detailed System Design

**DVD:** Digital Video Disc

**DTD:** Document Type Definitions

**EA:** Emergency Alarm

**ECM:** Engine Control Module

**End-to-End:** "End-to-end" means all software/hardware/interfaces and labor to ensure proper

## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

operation and availability of Systems implemented as part of this Project.

**Factory Acceptance Test (FAT):** The testing performed by the Contractor in accordance with the Scope of Work.

**FDR:** Final Design Review

**Force majeure:** Any occurrence which is outside the control of either Commission, Operators, or the Contractor, such as natural disasters, that could not be evaded through the exercise of due care.

**FTA:** Federal Transit Authority Administration

**Geo-fence:** A user-defined boundary that has been created, viewed, and edited visually on an interactive map to monitor the location and movement of an object (such as a vehicle).

**GPS:** Global Positioning System

**GUI:** Graphical User Interface

**HTML:** Hypertext Markup Language

**Hosted System:** Information technology model where all hardware, services and support needed to effectively operate a system are provided by the Contractor as part of ongoing monthly costs associated with ownership of the system. (see also "Application Service Provider" or "ASP")

**ICD:** Interface Control Document

**ID:** Identification

**I/O:** Input / Output

**ITS:** Intelligent Transportation Systems

**Interactive Voice Response (IVR) System:** An interactive technology that allows a computer to detect voice and keypad inputs, such as the Bay Area's 511 IVR telephone system.

**JMS:** Java Message Service

**LAN:** Local Area Network

**LCD:** Liquid Crystal Display

**LDAP:** Lightweight Directory Access Protocol

**MAR:** Mobile Access Router

**MDR:** Mobile Data Radio

**MDT:** Mobile Data Terminal

**MRS:** Maintenance Radio System

**MTBF:** Mean Time Between Failures

**MTTR:** Mean Time to Repair and Respond

**NIC:** Network Interface Card

**NTCIP:** National Transportation Communications for Intelligent Transportation Systems Protocol

**ODBC:** Open Database Connectivity

**OEA:** Overt Emergency Alarm

**OEM:** Original Equipment Manufacturer

**Operator/Operators:** The collection of fixed route transit providers seeking services through this RFP that the Commission is acting on behalf of, including the Commission operated systems VCTC Intercity and Valley Express; as well as, Gold Coast Transit District, Simi Valley, Thousand Oaks Transit, Moorpark City Transit, Ojai Trolley, Camarillo Area Transit / Trolley, and Kanan Shuttle.

**Operational Testing:** The testing conducted after the initial AVL System deployment for



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

Stagecoach and Shuttle vehicles whose purpose is to ensure and verify system reliability, accuracy, and performance as described in this Scope of Work.

**PA:** Public Access System

**PDF:** Portable Document Format

**PDR:** Preliminary Design Review

**Project:** Commission's Automatic Vehicle Location (AVL) and Passenger Information System

**Project Management Plan:** The plan developed by the Contractor for the Project in accordance with this Scope of Work and approved by Commission, as the same may be amended from time to time by written agreement of Commission and the Contractor.

**PRTT:** Priority Request To Talk

**QA/QC:** Quality Assurance and Quality Control Program

**QoS:** Quality of Service

**Recovery Act:** American Reinvestment and Recovery Act of 2009

**RF:** Radio Frequency

**RFP:** Request For Proposal

**RMA:** Return Merchandise Authorization

**ROI:** Return On Investment

**RTM:** Real-Time Monitor

**RTIS:** Real-time Transit Information System

**RTT:** Request To Talk

**SA:** System Administrator

**SAE:** Society of Automotive Engineers

**SDD:** System Design Document

**Service Level Agreement:** A set of performance standards similar to those contained in Section 9.0 of this Scope of Work that shall govern the Contractor's maintenance and uptime responsibilities that support the Hosted AVL and Passenger Information System.

**System:** The complete AVL and Passenger Information System that includes the hardware and software required to meet the technical and operational requirements of the Scope of Work.

**System Acceptance:** Commission's final acceptance of each or any phase of the Project shall be deemed to have occurred when Commission in its sole discretion, determines that the Contractor has complied with all of the completion requirements set forth for the Project in this Scope of Work.

**SIT:** System Integration Testing

**STS:** Special Transportation Services

**TCH:** Transit Control Head

**TCIP:** Transit Communications Interface Profiles

**TCP/IP:** Transfer Control Protocol / Internet Protocol

**TSP:** Traffic Signal Priority

**Uptime:** See "Availability"

**USB:** Universal Serial Bus

**VAN:** Vehicle Area Network

**VCTC:** Ventura County Transportation Commission (VCTC / Commission)

**Vehicle Logic Unit (VLU):** The main data collection computer on-board the vehicle

**VLAN:** Virtual Local Area Network



## Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**VLU:** Vehicle Logic Unit

**VMCS:** Vehicle Monitoring and Communication System

**VMS:** Vehicle Monitoring System

**VOIP:** Voice Over Internet Protocol

**WAN:** Wide Area Network

**Wi-Fi:** Wireless Fidelity

**WLAN:** Wireless Local Area Network

**Work:** Scope of Work. Includes deliverables, tasks and services described herein.

**WPA2:** Wireless Protected Access

**XML:** Extensible Markup Language

# Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

## Attachment M - Operators Fleet and System Composition Schedule

Operators Fleet and Systems Composition Schedule

Page 1/2

VEHICLE SPECIFICATIONS					ADDITIONAL SPECIFICATIONS RE: OPTIONAL TECHNOLOGIES FOR INSTALLATION AND/OR INTEGRATION						
FLEET No. 1	Total	Make	Model Year	Model	AUTOMATIC PASSENGER COUNTERS (APC)		AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN	
					Door Opening (" F R	System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model	
VCTC INTERCITY	14	MCI	2014	D4500	NA	NA	Yes. UTA - Integration Pricing Sought	SpeakEasy	None. System Pricing Sought	GFI Odyssey - Integration Pricing Sought	Hanover- Integration Pricing Sought
	11	MCI	2015	D4505	NA	NA		REI			
	1	MCI	2015	D4500	NA	NA		SpeakEasy			
	2	MCI	2016	D4500	NA	NA		SpeakEasy			
	2	MCI	2008	J-Series	NA	NA		REI			
	3	Volvo	2013	3400	NA	NA		TBD			
Total	33										
FLEET No. 2	Total	Make	Model Year	Model	AUTOMATIC PASSENGER COUNTERS (APC)		AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN	
					Door Opening (" F R	System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model	
VALLEY EXPRESS	10	Chev - Cutaway	2014	EI Dorado	N/A	N/A	No - Not seeking pricing at this time	Factory Install	None. System Pricing Sought	GFI Card Quest Readers (Planned) - Integration Pricing Sought	Manual Roller Signs - No Integration
	5	GMC Cutaway	2014	Arboc	38"	N/A	No. New System Pricing Sought				Hanover- Integration Pricing Sought
Total	15										
FLEET No. 3	Total	Make	Model Year	Model	AUTOMATIC PASSENGER COUNTERS (APC)		AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN	
					Door Opening (" F R	System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model	
GOLD COAST TRANSIT DISTRICT	9	NABI	2008	35LF	NA	Yes. UTA - Integration Pricing Sought	SpeakEasy	None. System Pricing Sought	GFI Odyssey - Integration Pricing Sought	Luminator-Integration Pricing Sought	
	8	NABI	2009	35LF							
	26	New Flyer	2006	C40LFR							
	8	Gillig	2015	40"							
	5	Gillig	2016	40"							
Total	56										
FLEET No. 4	Total	Make	Model Year	Model	AUTOMATIC PASSENGER COUNTERS (APC)		AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN	
					Door Opening (" F R	System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model	
SIMI VALLEY TRANSIT	3	New Flyer	2014	XN40	TBD	TBD	No. New System Pricing Sought	REI	None. System Pricing Sought	GFI Odyssey - Integration Pricing Sought	Hanover DG3 - Integration pricing sought
	3	New Flyer	2014	XN35	TBD	TBD		REI			
	3	New Flyer	2011	C40LFR	TBD	TBD		REI			
	2	NABI	2005	40LFW-32	TBD	TBD		REI			
Total	11										

Page 226 / 227 Pages

# Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

## Attachment M - Operators Fleet and System Composition Schedule (Continued)

FLEET No. 5	Total	Make	Model	Model	AUTOMATIC PASSENGER COUNTERS (APC)			AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN
			Year		Door Opening ("		System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model
			F		R						
THOUSAND OAKS TRANSIT	4	Orion	2008	VII	NA	NA	Yes. UTA - Integration Pricing Sought	Factory Installed	None. System Pricing Sought	GFI Odyssey - Integration Pricing Sought	Luminator - Integration Pricing Sought
	2	Gillig	2014	BRT	NA	NA		N/A	Yes. Clever Devices - Integration Pricing Sought		Hanover- Integration Pricing Sought
	1	Ford Cutaway	2009	Allstar	NA	NA		Factory Installed	None. System Pricing Sought		
	2	Ford Cutaway	2015	Allstar	NA	NA		Factory Installed	None. System Pricing Sought		
Total	9										
Fleet No. 6	Total	Make	Model	Model	AUTOMATIC PASSENGER COUNTERS (APC)			AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN
			Year		Door Opening ("		System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model
			F		R						
MOORPARK CITY TRANSIT	3	El Dorado	2010	EZ Rider II	40	34	None	Factory Installed	Yes. Clever Devices	GFI Odyssey/Cardquest TBD (Planned) - Integration Pricing Sought	Twin Vision- Integration Pricing Sought
	3	El Dorado	2015	EZ Rider II	40	34	None	Factory Installed	Yes. Clever Devices		Hanover- Integration Pricing Sought
Total	6										
FLEET No. 7	Total	Make	Model	Model	AUTOMATIC PASSENGER COUNTERS (APC)			AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN
			Year		Door Opening ("		System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model
			F		R						
OJAI TROLLEY	5	Trolley	TBD	TBD	TBD	WC Lift	None - system pricing sought	TBD	None-system pricing sought	GFI Card Quest (Planned) - Integration Pricing Sought	TBD
Total	5										
FLEET No.8	Total	Make	Model	Model	AUTOMATIC PASSENGER COUNTERS (APC)			AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN
			Year		Door Opening ("		System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model
			F		R						
CAMARILLO AREA TRANSIT	1	Chevy	2015	Arboc	35"	NA	None- System Pricing Sought	Factory Install	None. System Pricing Sought	GFI Card Quest (Planned) Integration Pricing Sought	Hanover- Integration Pricing Sought
Total	1										
FLEET No.9	Total	Make	Model	Model	AUTOMATIC PASSENGER COUNTERS (APC)			AUTOMATED VOICE ANUNCIATORS (AVA)		FAREBOX	HEADSIGN
			Year		Door Opening ("		System Installed?	Microphone/PA System	System Installed?	Make/Model	Make/Model
			F		R						
KANAN SHUTTLE	4	Starcraft	2014	Allstar	28"	WC Lift	None	Factory Installed	None - Integration request TBD	GFI Card Quest (Planned) Integration Pricing Sought	TwinVision
Total	4										
TOTAL FLEET		140									

Page 2/2

Page 2/2



## Exhibit A - Request For Proposals

Ventura County Transportation Commission  
Automatic Vehicle Location (AVL) & Passenger  
Information System [RFP No. 17-90164-AVL]

### **REQUEST FOR PROPOSAL**

### **FOR**

### **"AUTOMATIC VEHICLE LOCATION (AVL) & PASSENGER INFORMATION SYSTEM"**

### **ADDENDUM # 1**

**Issued: 4-17-17**

#### Table of Contents:

1. Amendments to the Request for Proposal, Sections 3.4 and 3.5
2. Acknowledgement of Receipt of Addendum

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Ventura County Transportation Commission (VCTC)

VCTC RFP No: 17-90164-AVL

Title: Automatic Vehicle Information & Passenger Information

Issued: March 3, 2017

Due: May 3, 2017

Addenda: No. 1

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**ITEM #1: Amendment to the Request for Proposal, Sections 3.4 and 3.5 (RFP-17-90164-AVL, Pg. 15-16)**

### **3.4 Pre-Proposal Conference**

There will be a mandatory Pre-Proposal Conference at the **VENTURA COUNTY GOVERNMENT CENTER – PACIFIC ROOM (located at 800 S. Victoria Avenue, Ventura, CA 93003)**. The Pre-proposal meeting is scheduled for March 20, 2017 from 10-11AM. It is anticipated that three to four representative buses will be on display and available for walk-through, beginning at 10:30AM. Entry to the Pacific Room is through the Cafeteria located adjacent to the Hall of Justice.

Any and all costs associated with attending this conference will be at the expense of the Proposer. No "call-in capability" will be provided.

A summary of the questions and answers from the pre-proposal meeting will be posted on the Commission's Website ~~within five business days after the pre-proposal meeting~~ **April 24, 2017**.

The names and phone numbers of potential proposers that signed-in and attended the pre-proposal meeting will be posted on the same Website to assist prime contractors and potential



## Exhibit A - Request For Proposals

Ventura County Transportation Commission  
Automatic Vehicle Location (AVL) & Passenger  
Information System [RFP No. 17-90164-AVL]

subcontractors in partnering on this contracting opportunity.

### **Attendance of the pre-proposal**

meeting is mandatory for prime Contractors.

### **3.5 Tentative Schedule for Evaluation, Selection, and Award**

The closing date of this RFP is May 2, 2 PM PST. The Commission anticipates the process for nominating and selecting a Contractor and awarding the contract will be per the following schedule:

Advertise and RFP Release	March 3, 2017
<b>Pre-Proposal Conference</b>	<b>March 20, 2017 (10 – 11AM)</b>
Last Day to Submit Questions Regarding RFP	April 7, 2017
<del>Answers to Questions Posted</del>	<del>April 17, 2017</del>
<b><i>Pre-proposal Meeting Questions and Bidder List Posted</i></b>	<b><i>April 24, 2017</i></b>
<b><i>Answers to Questions Posted</i></b>	<b><i>April 24, 2017</i></b>
<del><b>Proposal Due Date</b></del>	<del><b>May 2, 2017</b></del>
<b><i>Proposal Due Date</i></b>	<b><i>May 10, 2017</i></b>
<del><b>Proposal Evaluations</b></del>	<del><b>May 3-16, 2017</b></del>
<b><i>Proposal Evaluations</i></b>	<b><i>May 10 – 19, 2017</i></b>
<b>Oral Interviews Short-listed Proposers</b>	<b>May 30, 2017</b>
Best and Final Offer (BAFO)	June 1-9, 2017
Notice of Intent to Award and Begin Negotiations	July 7, 2017
<b>VCTC Commission Approval of Contract</b>	<b>September 1, 2017</b>
Notice to Proceed	September 5, 2017

The Commission does not guarantee the above schedule and reserves the right to modify the schedule as necessary. Any modifications will be posted on the Commission's Website at [www.goventura.org](http://www.goventura.org).



**Exhibit A - Request For Proposals**

Ventura County Transportation Commission  
*Automatic Vehicle Location (AVL) & Passenger  
Information System [RFP No. 17-90164-AVL]*

Ventura County Transportation Commission (VCTC)

VCTC RFP No: 17-90164-AVL

Title: Automatic Vehicle Information & Passenger Information

Issued: March 3, 2017

Due: May 3, 2017

Addenda: No. 1

---

**Item #2: Acknowledgement of Receipt of Addendum**

The undersigned acknowledges receipt of Addendum #1 to VCTC RFP 17-90164-AVL. This receipt must be included with your firm's proposal. Any proposal submitted without a completed ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM will be deemed non-responsive and discarded.

---

Authorized Signature

---

Dated

---

Printed Name

---

Company

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591

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**REQUEST FOR PROPOSAL**  
**Automatic Vehicle Location (AVL) & Passenger Information System**  
Addendum #2  
April 27, 2017

Table of Contents:

1. Acknowledgment of the Receipt of Addendum
2. Amendments to the Request for Proposals, Sections 3.4 and 3.5
3. Pre-proposal Meeting Sign-in Sheet & Questions Posed During the Meeting

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: June 15, 2017  
Addendum: No. 2

---

**Item #1: Acknowledgement of Receipt of Addendum**

The undersigned acknowledges receipt of **Addendum #2 to VCTC RFP No. 17-90164-AVL**. This receipt must be included with your firm's proposal. Any proposal submitted without a completed Acknowledgement of Receipt of Addendum may be deemed non-responsive and discarded.

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Dated

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Company/Firm

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: June 15, 2017  
Addendum: No. 2

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**Item #2: Amendments to the Request for Proposals (RFP), Cover Page, Section 3.4 and 3.5**

### **COVER PAGE**

The RFP Cover Page has been *amended* as follows.

Proposals must be submitted  
~~No later than 2:00 PM~~ **No later than 5:00 PM (Pacific Time)**  
~~May 2, 2017~~ **June 15, 2017**

### **Section 3.4**

#### ***3.4 Pre-Proposal Conference***

There will be a mandatory Pre-Proposal Conference at the **VENTURA COUNTY GOVERNMENT CENTER – PACIFIC ROOM (located at 800 S. Victoria Avenue, Ventura, CA 93003)**. The Pre-proposal meeting is scheduled for March 20, 2017 from 10-11AM. It is anticipated that three to four representative buses will be on display and available for walk-through, beginning at 10:30AM. Entry to the Pacific Room is through the Cafeteria located adjacent to the Hall of Justice.

Any and all costs associated with attending this conference will be at the expense of the Proposer. No "call-in capability" will be provided.

A summary of the questions and answers from the pre-proposal meeting will be posted on the Commission's Website ~~within five business days after the pre-proposal meeting~~ **April 27, 2017**. The names and phone numbers of potential proposers that signed-in and attended the pre-proposal meeting will be posted on the same Website to assist prime contractors and potential subcontractors in partnering on this contracting opportunity. **Attendance of the pre-proposal meeting is mandatory for prime Contractors.**





Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591

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## **Section 3.5**

### ***3.5 Tentative Schedule for Evaluation, Selection, and Award***

The closing date of this RFP is ~~May 2, 2 PM PST~~ **June 15, 5PM PST**. The Commission anticipates the process for nominating and selecting a Contractor and awarding the contract will be per the following schedule:

Advertise and RFP Release	March 3, 2017
Pre-Proposal Conference	March 20, 2017 (10 –11AM)
<del>Last Day</del> <b>First Deadline</b> to Submit Questions Regarding RFP	April 7, 2017
Pre-proposal Meeting <del>Questions and</del> Bidder Attendance List Posted	<del>April 24, 2017</del> <b>April 27, 2017</b>
Answers to <b>1<sup>st</sup> set of</b> Questions Posted	<del>April 24, 2017</del> <b>May 9, 2017</b>
<b>Second Deadline to Submit Questions Regarding RFP</b>	<b>May 12, 2017</b>
<b>Answers to 2<sup>nd</sup> set of Questions Posted</b>	<b>May 23, 2017</b>
Proposal Due Date	<del>May 10, 2017</del> <b>June 15, 2017</b>
Proposal Evaluations	<del>May 10 –19,</del> <b>June 15 – July 10, 2017</b>
<b>Oral Interviews Short-listed Proposers</b>	<del>May 30,</del> <b>July 24 – July 28, 2017</b>
Best and Final Offer (BAFO) ( <b>As needed</b> )	June 1-9, <b>July 31 – Aug 18, 2017</b>
Notice of Intent to Award and Begin Negotiations	<del>July 7, 2017</del> <b>Sept. 1, 2017</b>
<b>VCTC Commission Approval of Contract</b>	<del>September 1, 2017</del> <b>October 6, 2017</b>
Notice to Proceed	<del>September 5,</del> <b>October 9, 2017</b>
<b><u>Project Deliverables</u></b>	
<b><u>Anticipated Kickoff Meeting</u></b>	<b>Week of October 9, 2017</b>
<b><u>System/Final Acceptance</u></b>	<b><u>May 31, 2018</u></b>

The Commission does not guarantee the above schedule and reserves the right to modify the schedule as necessary. Any modifications will be posted on the Commission's Website at [www.goventura.org](http://www.goventura.org).

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: June 15, 2017  
Addendum: No. 2

### Item #3: Pre-proposal Conference Bidder Attendance List



**Ventura County Transportation Commission**  
Request for Proposals:  
Automatic Vehicle Location (AVL) & Passenger Information System  
[RFP 17-90164-AVL]

**MARCH 20, 2017 PRE-PROPOSAL MEETING SIGN-IN SHEET**

County of Ventura Government Center, Pacific Room: 800 S. Victoria Ave, Ventura, CA 93003

NAME	FIRM / AGENCY	E-MAIL	PHONE
Jerry Poylas	ETA	Jdouglass@etaincs.com	(480) 406-2422
Cat Mette	TransLoc	cat.mette@transloc.com	919-282-3144
Kaitlyn Weaver	Avail	kweaver@availtr.com	(570) 772-1217
Steve White	Synchromatics	steve@synchromatics.com	213-973-1539
Lalish Soldate	Trillium Transit	Lalish@trilliumtransit.com	505-567-5822
Anne Dowling	NEC	Anne.dowling@nec.com	713 817 1777
Gertie Kirchler	TRIPSPARK	Gertie.Kirchler@TRIPSPARK.COM	804-357-7540
Hugh Skumson	NextBus	hugh@nextbus.com	415 477 7009
Walter Weichselbaum	Clever Devices	walterw@cleverdevices.com	(516) 967-3498
Brian Garrett	CONNECTION 2 LTD	Brian.Garrett@connection2.us	309-706-0174

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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

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**REQUEST FOR PROPOSAL (RFP)**  
**Automatic Vehicle Location (AVL) & Passenger Information System**  
Addendum #3  
May 15, 2017

**Table of Contents:**

- |    |   |          |
|----|---|----------|
| 1. | Acknowledgment of the Receipt of Addendum   | (Pg. 1)  |
| 2. | Amendments to the Request for Proposals, Sections:<br>Cover Page, 3.4; 3.5; 8.2; 8.2.2; 8.5.3; 9.1, 10.7.9.3, and 10.11; and corresponding<br>sections of Attachment B- Table of Compliance | (Pg. 2)  |
| 3. | Answers to Questions Submitted in Response to the RFP   | (Pg. 10) |
| 4. | List of recent VCTC ITS contractors and current system vendors  | (Pg. 30) |
| 5. | Revised Attachments:<br>Attachment C – Cost Form, Attachment D- Milestone Task Payment Schedule, and<br>Attachment F – Disadvantage Business Enterprise                                     | (Pg. 32) |

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: June 27, 2017  
Addendum: No. 3

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**Item #1: Acknowledgement of Receipt of Addendum**

The undersigned acknowledges receipt of **Addendum #3 to VCTC RFP No. 17-90164-AVL**. This receipt must be included with your firm's proposal. Any proposal submitted without a completed Acknowledgement of Receipt of Addendum may be deemed non-responsive and discarded.

---

Authorized Signature

---

Dated

---

Printed Name

---

Company/Firm

## Exhibit A - Request For Proposals



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VCTC RFP 17-90164-AVL  
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---

**Item #2: Amendments to the Request for Proposals (RFP), Cover Page, Section 3.4, 3.5, 8.2, 8.2.2, 8.5.3, 9.1, 10.7.9.3, and 10.11; as well as corresponding amendments to attachment forms.**

### COVER PAGE

The RFP Cover Page has been *amended* as follows.

Proposals must be submitted  
***No later than 5:00 PM (Pacific Time)***  
***June ~~15~~ 27, 2017***

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### Section 3.4

#### ***3.4 Pre-Proposal Conference***

There will be a mandatory Pre-Proposal Conference at the **VENTURA COUNTY GOVERNMENT CENTER – PACIFIC ROOM (located at 800 S. Victoria Avenue, Ventura, CA 93003)**. The Pre-proposal meeting is scheduled for March 20, 2017 from 10-11AM. It is anticipated that three to four representative buses will be on display and available for walk-through, beginning at 10:30AM. Entry to the Pacific Room is through the Cafeteria located adjacent to the Hall of Justice.

Any and all costs associated with attending this conference will be at the expense of the Proposer. No "call-in capability" will be provided.

A summary of the questions and answers from the pre-proposal meeting will be posted on the Commission's Website ~~April 27, 2017~~ **May 15, 2017**. The names and phone numbers of potential proposers that signed-in and attended the pre-proposal meeting will be posted on the same Website to assist prime contractors and potential subcontractors

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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

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in partnering on this contracting opportunity. **Attendance of the pre-proposal meeting is mandatory for prime Contractors.**

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### **Section 3.5**

#### ***3.5 Tentative Schedule for Evaluation, Selection, and Award***

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Second Deadline to Submit Questions Regarding RFP	<del>May 12, 2017</del> <b>May 19, 2017</b>
Answers to 2 <sup>nd</sup> set of Questions Posted	<del>May 23, 2017</del> <b>May 30, 2017</b>
Proposal Due Date	<del>June 15, 2017</del> <b>June 27, 2017</b>
Proposal Evaluations	<del>June 15</del> <b>June 27</b> – July 11, 2017
Oral Interviews Short-listed Proposers	July 24 – July 28, 2017
Best and Final Offer (BAFO) (As needed)	<del>June 1-9,</del> <b>July 31 – Aug 18, 2017</b>
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VCTC Commission Approval of Contract	October 6, 2017
Notice to Proceed	October 9, 2017
<b><u>Project Deliverables</u></b>	
<b><u>Anticipated Kickoff Meeting</u></b>	<b><u>Week of October 9, 2017</u></b>
<b><u>System/Final Acceptance</u></b>	<b><u>May 31, 2018</u></b>

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Addendum No. 3, May 15, 2017

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## **Section 8.2**

### ***8.2 Automatic Vehicle Location (AVL)***

The following table represents the Commission's concepts of how the Proposer's AVL solution will meet the Objectives:

**AVL Capabilities to Meet the Commission Goals**

<b>Commission Objective</b>	<b>Technology Capability</b>
Make public transit more attractive to the general population.	✓ By providing real-time, accurate updates on vehicle location through customer service and real-time passenger information signs.
Maximize passenger movements.	✓ By better tracking vehicles and identifying vehicles that are off route or schedule. ✓ By enabling transfer requests among fixed-route vehicles. ✓ By providing more complete and accurate data for trip planning and scheduling purposes.
Reduce operational costs.	✓ By improving the efficiency of passenger transfers. ✓ By automating the collection of operational data, including NTD required service data.
Reduce emission / energy costs.	✓ By collecting better schedule and route adherence data, and better tracking <b>paratransit fixed route</b> vehicles to improve more efficient scheduling and trip planning.
Improve transit system safety.	✓ By automatically locating and reporting vehicle locations to the dispatch center. ✓ Through the emergency alarm function of the MDT which lets vehicle operators alert the dispatch center of incidents on the bus without making passengers aware an alarm has been issued.





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Addendum No. 3, May 15, 2017

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## **Section 8.2.2 (Pages 50 and 113-Table of Compliance)**

### **8.2.2 Vehicle Logic Unit (VLU)**

The Proposer's design shall utilize an automotive-grade Vehicle Logic Unit (VLU) that has, at a minimum, the following specifications:

- ✓ The System shall include a single Vehicle Logic Unit (VLU) central processing device and data storage device installed onboard for all vehicles and powered by the vehicle's electrical system.
- ✓ The VLU shall be AVA, APC, Headsign, Farebox, etc., ready. **[Optional Technologies]**
- ✓ The VLU shall interface to send/change messages displayed on Headsigns and interior vehicle CMS **[Optional Technologies]**
- ✓ The System shall begin gathering AVL location data when the ignition is turned on and continue reporting until the ignition is turned off (based on a programmable time period, i.e., 30 minutes, etc.)
- ✓ The VLU shall integrate with the onboard equipment on each vehicle that provides route / destination announcements and vehicle informational signs with both audible and textual messages, fare collection and automated passenger counting (if installed). **[Optional Technologies]**
- ✓ The VLU shall interface to capture, record, and transmit vehicle Automated Passenger Counter (APC) data if installed, and passenger fare payment information. **[Optional Technologies]**
- ✓ A Global Positioning System (GPS) receiver shall be integrated into the VLU used to provide time and location data for AVL functions.
- ✓ For all wireless communications including bulk data uploads and downloads, the VLU shall communicate using cellular connection provided by the Proposer.
- ✓ The VLU shall provide the interface / transmission of data to and from all subsystems such as passenger informational sign content, public address, passenger counter data, and farebox systems.
- ✓ The VLU shall meet environmental and vibration standards as defined by MIL-STD-810F and SAE J1455-06.
- ✓ The VLU shall meet electromagnetic immunity standards of SAE J1113 / 13 and protect against surge, and reverse polarity.
- ✓ The VLU shall be capable of real time updates to and from the vehicle.
- ✓ Provide GTFS-Realtime feed(s) for live Trip, Service and Vehicle Position updates to Google and applicable third party software
- ✓ Provided interfaces shall include USB, RS232, RS485, J1708, J1939, Ethernet, discrete inputs and outputs, odometer, spare I/O pins, audio inputs and outputs.
- ✓ The VLU shall allow for future expansion and interoperability with add on modems to include USB interfaces.
- ✓ Allow for easy access to System setup and configuration both remotely and onboard through non-proprietary interfaces such as RDP and USB. On-board access should generally be in the same location on every bus for standardization of configuration or locations documented for Operators' staff.
- ✓ System configuration settings related specifically to a vehicle shall be stored in a vehicle configuration module such that the VLU unit can be swapped out and vehicle information not lost.

(Page 50)

## Exhibit A - Request For Proposals



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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

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In addition to the above amendment(s), the corresponding section of Attachment B-Table of Compliance is amended as follows.

8.2.2	✓ Allow for easy access to System setup and configuration both remotely and onboard through non-proprietary interfaces such as RDP and USB. On-board access should <u>generally</u> be in the same location on every bus for standardization of configuration or locations documented for Commission staff.		
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(Page 113)

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### **8.5.3 CMS Audible Component (Pages 62, and 133- Attachment B- Table of Compliance)**

#### ***8.5.3 CMS Audible Component***

***The CMS Audible Component is a value-added option for Proposers to consider and is not a minimum requirement of CMS functionality.*** Changeable Message Signs (CMS) shall also be able to broadcast bus arrival and departure times in audible format consistent with the Automatic Stop Annunciation System requirements. The Proposer shall determine the best method for supporting ADA audible functions for CMS signs, which options may include wireless feed from the server or text-to-speech conversion performed by the sign controller.

- ~~✓—The CMS shall include a manually-activated audio announcement system, which shall read out the sign text once successively in English and Spanish after a pushbutton has been pressed.~~
- ~~✓—Audio sign messages shall be constructed in real-time by the CMS in a manner that avoids the need to send audio data over the radio system, using either prerecorded announcements or text-to-speech generation of quality acceptable to the Commission.~~
- ~~✓—The audio announcement system shall be made through speakers built-in to the CMS enclosure or installed nearby.~~
- ~~✓—The pushbutton must be mounted no higher than 48 inches and no lower than 15 inches from the finished floor of the CMS.~~
- ~~✓—An unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint).~~
- ~~✓—The pushbutton must be operable with one hand; not require tight grasping, pinching, or twisting of the wrist.~~
- ~~✓—The pushbutton shall emit a brief low-volume sound every few seconds (e.g., "chirp") to guide the~~



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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

~~visually impaired to the pushbutton location.~~

- ~~✓ The audio volume shall be automatically adjusted based on the current ambient sound level in front of the CMS to ensure that it is only loud enough to be understandable within a five foot radius from the sign.~~

(Page 62)

In addition to the above amendment(s), the corresponding section of Attachment B- Table of Compliance is amended as follows.

<b>8.5.3</b>	<b><del>CMS Audible Component</del></b>		
	<del>✓ Proposer shall determine best method for supporting ADA audible functions.</del>		
	<del>✓ The CMS shall include a manually-activated audio announcement system, which shall read out the sign text once successively in English and Spanish after a pushbutton has been pressed.</del>		
	<del>✓ Audio sign messages shall be constructed in real-time by the CMS in a manner that avoids the need to send audio data over the radio system, using either prerecorded announcements or text-to-speech generation of quality acceptable to the Commission.</del>		
	<del>✓ The audio announcement system shall be made through speakers built-in to the CMS enclosure or installed nearby.</del>		
	<del>✓ The pushbutton must be mounted no higher than 48 inches and no lower than 15 inches from the finished floor of the CMS.</del>		
	<del>✓ An unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint).</del>		
	<del>✓ The pushbutton must be operable with one hand; not require tight grasping, pinching, or twisting of the wrist.</del>		
	<del>✓ The pushbutton shall emit a brief low volume sound every few seconds (e.g., "chirp") to guide the visually impaired to the pushbutton location.</del>		
	<del>✓ The audio volume shall be automatically adjusted based on the current ambient sound level in front of the CMS to ensure that it is only loud enough to be understandable within a five foot radius from the sign.</del>		

(Page 133)



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950 County Square Drive #207  
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805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

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## **Section 9.1**

**(Pages 72 and 143-144- Attachment B-Table of Compliance)**

### ***9.1 Automated Voice Annunciation (AVA) [Optional Technologies]***

...

- ✓ ~~The volume of the internal announcements shall be automatically adjusted according to the noise level on the vehicle at the time, and the vehicle operator shall not be able to lower the announcement volume.~~

...

**(Page 72)**

In addition to the above amendment(s), the corresponding section of Attachment B-Table of Compliance is amended as follows.

(9.1 cont)	✓ <del>The volume of the internal announcements shall be automatically adjusted according to the noise level on the vehicle at the time, and the vehicle operator shall not be able to lower the announcement volume.</del>		
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**(Page 143-144)**

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## **Section 10.7.9.3**

**(Pages 94 and 161- Attachment B-Table of Compliance)**

### **10.7.9.3 Equipment Removal, Relocation and Restoration Plan**

The Design Plan shall include a submittal detailing a plan for all the equipment and facilities requiring removal, restoration and /or relocation required under the resultant contract to include:

- ✓ All the items (by subsystem and location) requiring restoration, rebuild and / or upgrades to its original condition or better.
- ✓ All the items (by subsystem and location) requiring removal.
- ✓ All the items (by subsystem and location) requiring salvage and packaging to keep original condition or better.
- ✓ A plan for temporary relocation ~~and offsite storage.~~ **to Commission/Operator storage.**

**(Page 94)**

## Exhibit A - Request For Proposals



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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

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In addition to the above amendment(s), the corresponding section of Attachment B-Table of Compliance is amended as follows.

10.7.9.3	Equipment Removal, Relocation and Restoration Plan		
	✓ All the items (by subsystem and location) requiring restoration, rebuild and / or upgrades to its original condition or better.		
	✓ All the items (by subsystem and location) requiring removal.		
	✓ All the items (by subsystem and location) requiring salvage and packaging to keep original condition or better.		
	✓ A plan for temporary relocation <del>and offsite storage.</del> <b>to Commission/Operator storage.</b>		

(Page 161)

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### Section 10.11

#### **10.11 Schedule Requirements**

The Proposer shall complete installation and acceptance testing **by May 31, 2018** and fully invoice the Commission for its services by the end of **June 2017 2018**. Payment for service/maintenance warranty coverage shall be made upon commencement of warranty period(s) as applicable (e.g. 2 year, three one-year periods etc).

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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

---

Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
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### **Item #3: Answers to Questions Submitted in Response to the RFP**

#### **Q/A Format**

**Q-# | Question [Firm Name]**

**A-# | Commission Response**

Q - 1	<i>Can you (VCTC) move the pre-bid conference date [Multiple firms]</i>
A - 1	<u>No, the date cannot be moved.</u>
Q-2	<i>Are you looking for an all-in-one avl provider package or is VCTC open to multiple vendors participating providing different portions of the AVA/cad AVL system? I ask because we only provide AVA (audio, visual announcements) and AVA software and would need to partner with or team up with another avl company to provide VCTC with a full avl system? We are developing partnerships with smaller avl companies. [Hanover]</i>
A-2	<u>Proposers may propose a joint venture. For example, regarding your question, the AVL-Passenger information system vendor could be the prime bidder, and the optional technologies such as AVA could be provided by another company as part of a joint submittal.</u>
Q-3	<i>Will VCTC be able to answer some received questions in advance of the mandatory pre-proposal conference on March 20? [Trillium]</i>
A-3	<u>No.</u>
Q-4	<i>I'd like to submit a question regarding the statement on page 24: "Alternative Approach. Where the Proposer wishes to propose alternative approaches to meeting the requirements, these should be thoroughly explained, including the alternative methodology to be employed to meet the functional requirements and any benefit provided to the Commission by the alternative methodology." What represent the "requirements" which are referred to on page 24 under "Alternative Approach"? Do requirements refer to the scope of functionality and expected outcomes, or do requirements refer to detailed technical specifications (e.g. accuracy of GPS hardware)? [Trillium]</i>
A-4	<u>It is the desire of the Commission that Proposers submit proposals for Systems that meet the requirements specified in the RFP. However, proposers that wish to present an alternative approach to a requirement may do so. For example, with relation to MDTs, tablets are increasingly used in-lieu of MDTs. Such alternatives may be proposed if they meet the functional requirements</u>

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VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

	<u>of the system. So in this example the tablet would provide similar functionality as the MDT.</u>
Q-5	<i>On page 24, you mention that you are willing to explore alternative approaches that meet the requirements of the RFP. What represent these "requirements" regarding both the hardware and software components mentioned in the RFP? Additionally, how strict are the functional requirements? If the key objectives of this RFP are around vehicle tracking (for dispatch and reporting) and passenger information, can an alternative approach be sufficient if it removes much of the costly required hardware while still accomplishing these goals? [Swiftly]</i>
A-5	<u>Please see the response to question #4. Bidders are encouraged to propose high quality cost-effective solution(s). Please review the RFP scope of work, including, but not limited to sections 8 through 10.</u>
Q-6	<i>We have two questions (so far) regarding this RFP: 1. How strict are the functional requirements? It appears that some of the listed requirements are far in excess of what is needed to track bus locations (such as 0.3 ft / second GPS accuracy = ~1/1000 MPH resolution) and would incur significant additional costs for the scope of this project with no improvement in outcomes (i.e. multi-path rejection / precision GPS capability). 2. The requested training requirements appear to be over-ambitious given the desired equipment and software procured. As all hardware will be installed in a manner compliant with VCTC standards, the provided installation &amp; maintenance manual should provide ample guidance if and when any issues arise. The administration software will evolve along with VCTC needs; extensive training aids / lesson plans developed for the initial product will significantly increase the deployment costs and become obsolete very quickly. Will VCTC accept an efficient and dynamic training plan instead? [Bishop Peak Technologies]</i>
A-6	<u>Please see the response to Question #4. Bidders are encouraged to propose high quality cost-effective solution(s). Please review the RFP scope of work, including, but not limited to sections 8 through 10.</u>
Q-7	<i>Section 1.4 Project Description: Please identify the various Operators' scheduling application(s) or processes. [ TripSpark]</i>
A-7	<u>At this time only one Operator is actively utilizing fixed route scheduling software; Gold Coast Transit District uses INIT. At various times, multiple Operators have utilized outside consultants to assist with GTFS development, or planning activities, however.</u>
Q-8	<i>Section 7.2 Fixed Route Operations: Please identify who the Operators' Transit Planners are? [TripSpark]</i>
Q-8	<u>The list of Operator staff resources will be provided to the selected Proposer.</u>
Q-9	<i>Section 7.4 Transit Centers and Bus Stop Inventory. If any of the existing changeable message signs are to be re-used for this project, please provide make and model specifications and information on the current communication protocol and interface method used (i.e. wired LAN or cellular modem?) [TripSpark]</i>
A-9	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>

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Addendum No. 3, May 15, 2017

Q-10	<i>Section 8.2 Automatic Vehicle Location. The table "AVL Capabilities to Meet the Commission Goals" includes a requirement for reducing emissions/energy costs that states "By collecting better schedule and route adherence data, and better tracking paratransit vehicles to improve more efficient scheduling and trip planning." Please elaborate on the goal for tracking paratransit vehicles and describe how the Commission sees this being incorporated in this project. [TripSpark]</i>
A-10	<u>This was a typo. The term "paratransit vehicles" has been amended to state "fixed route vehicles."</u>
Q-11	<i>Section 8.2.3 Map Requirements. Regarding the requirement "The System shall have full geocoding capability, allowing the System to locate the address on the map when an address is entered and provide Operator-specific trip (planning routing) between two addresses". Could the Commission please clarify the use case for this functionality including who the user would be? [TripSpark]</i>
A-11	<u>The user in this case could be either the patron (rider), or potentially Operator staff assisting a rider or confirming information, for example.</u>
Q-12	<i>Section 8.2.4 Mobile Data Terminal. The MDT shall be equipped with appropriate functional buttons capable of controlling applicable other onboard systems (e.g. fare boxes, head signs, card readers) and will include a numeric keypad. Please provide technical and functional details about the card readers that the MDT must integrate with. [TripSpark]</i>
A-12	<u>In addition to pass (card) readers which are in the SPX/Genfare Odyssey fareboxes, Operators have indicated a desire to procure SPX/Genfare Card Quest card reader systems. Bidders are encouraged to contact applicable vendors.</u>
Q-13	<i>Section 8.2.5 Covert Emergency Alarm (Silent Alarm: Please provide details about the existing button that is to be used for silent alarms (i.e. number of contacts, voltage, and normally-closed/open?) [TripSpark]</i>
A-13	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-14	<i>Section 8.2.6 Real-Time Monitor. Please provide samples of the INIT scheduling information that would be available for import? What data formats could the INIT data be provided in (e.g. GTFS, CSV, .xls, etc.)? [TripSpark]</i>
A-14	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-15	<i>Section 8.4 Cellular Communications Network: Do any of the seven (7) maintenance facilities have a WLAN communications available where buses are parked? If so, please provide details. If not are there plans to install WLAN as part of this project? [TripSpark]</i>
A-15	<u>Some if not all locations have WLAN systems in place. Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions. Bidders are encouraged to provide high quality cost-effective solutions.</u>
Q-16	<i>Section 8.5.4 Bus Stop Signage. How many bus stop signs does the Commission expect would need decals if that is the method being used? Can the Commission provide examples (artwork or photos) of the current bus stop signs to enable Bidders to estimate the area available to affix a decal? [TripSpark]</i>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

A-16	<u>Design and installation of decals on bus stop signs is not a requirement of this RFP. As stated in section 8.5.4 Proposers are tasked with providing a “method for allowing patrons to determine next arrivals at each bus stop...”</u>
Q-17	<i>Section 9.1 Automated Voice Annunciation (AVA) [Optional Technologies]: For any Clever Devices equipped vehicles with integration requirements, please provide make/model information for the AVA equipment and Destination Message Signs. What is the approximate age of these products and what is the interface technology they currently use for data and control (i.e. RS232, J1708, etc.)? [TripSpark]</i>
A-17	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-18	<i>Section 9.1 Automated Voice Annunciation (AVA) [Optional Technologies]: For all vehicle PA systems please indicate whether the vehicles are equipped with both interior and external speakers. [TripSpark]</i>
A-18	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-19	<i>Section 9.3 Farebox Integration [Optional Technologies]. Please confirm that all GFI fare boxes onboard the vehicles are already capable of J1708 communication with 3rd party devices. [TripSpark]</i>
A-19	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-20	<i>Section 9.4 Headsign Integration [Optional Technologies]. Please confirm whether the existing destination sign controllers onboard the vehicles are already capable of J1708 communication with 3rd party devices. [TripSpark]</i>
A-20	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-21	<i>Section 10.7.9 Installation: Please confirm how many different sites there will be for vehicle installations, and their addresses. [TripSpark]</i>
A-21	<u>At this time, there are seven garage locations. They are: Thousand Oaks/Kanan/Moorpark - 1993 Rancho Conejo Blvd, Thousand Oaks, CA 91320; Simi Valley Transit - 490 W Los Angeles Ave, Simi Valley, CA 93065; Camarillo Area Transit - 95 Dawson Drive, Camarillo CA 93012; VCTC Intercity - 240 South Glenn Dr. Camarillo CA 93010; Gold Coast Transit District - 301 E. 3rd Street, Oxnard, CA 93030; Ojai Trolley - 408 S Signal St, Ojai, CA 93023; Valley Express – 918 Mission Rock Road Bldg. E1, Santa Paula CA 93060</u>
Q-22	<i>Section 10.7.9 Installation: Installations are to be performed outside of business hours – please provide the specific hours of access for each site, including any weekend availability. [TripSpark]</i>
A-22	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-23	<i>Section 10.7.9 Installation: What is the minimum number of vehicles that will be made available from each Agency for installations? [TripSpark]</i>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

A-23	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-24	<i>Attachment B - Table of Compliance: Would VCTC please provide an editable version of Attachment B to facilitate Bidder's entries? [TripSpark]</i>
A-24	<u>No. To preserve the form and integrity of the attachment, and minimize opportunity for transposition of any requirements, only the original PDF document will be provided.</u>
Q-25	<i>Attachment C - Price Summary Forms: Would VCTC please provide an editable version (Excel preferred) of the pricing form? [TripSpark]</i>
A-25	<u>No. To preserve the form and integrity of the attachment only the original PDF document will be provided.</u>
Q-26	<i>Since there are nine (9) jurisdictions, shall the system operate 9 distinct systems operating under one umbrella or is one system that can accommodate nine (9) operators acceptable? This is usually related to some local data controls. [NEC]</i>
A-26	<u>Bidders are encouraged to propose what they determine are the best solutions to the specifications contained in the RFP.</u>
Q-27	<i>There are limitations to using LCD or LED signage due to environmental considerations, such as sunlight and power consumption. Will Ventura consider alternative, proven technologies that meet or exceed the requirements in the tender? [NEC]</i>
A-27	<u>Yes.</u>
Q-28	<i>Can you please add a requirement for accuracy levels for the APCs since this will impact the technology proposed? [NEC]</i>
A-28	<u>The APC systems must at a minimum achieve the NTD-FTA required confidence level, which currently is 95%.</u>
Q-29	<i>How should the vendor price the base functionality with respect to quantity discount pricing since the line items are separated by operating agency? Can it be assumed that all 140 buses will be equipped with the system regardless of separation in the pricing table? [NEC]</i>
A-29	<u>All 140 Operator vehicles will be equipped with the AVL-PIS, however those system components or functionality identified as Optional Technologies will be selected for implementation by each operator independently. I.e. some or all of the Optional Technologies may not be elected for implementation by some or all Operators. Bidders are encouraged to price their solutions as they see fit to provide the best value.</u>
Q-30	<i>Please provide the work version of the RFP document [NEC]</i>
A-30	<u>To preserve the form and integrity of the RFP and attachments only the original PDF document will be provided.</u>
Q-31	<i>Can you please provide an updated pricing table that reflects the appropriate quantities of the components, where applicable to ensure consistency in bid submissions? [NEC]</i>
A-31	<u>VCTC is not going to update or add numeric quantities into the pricing sheets for each Operator. The fleet unit quantities by Operator can be found in Attachment M - Fleet and System Composition Schedule. Other quantities such as related to CMS can be found on the pricing sheets</u>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

	<u>themselves. Additionally other cost items are intentionally left blank, as bidders are to specify what their firm thinks are the proper quantities per the item; such as for spare parts/components,</u>
Q-32	<i>The RFP refers to a replacement forty (40) signs plus an extra twenty (20) CMS (Section 7.4.) However, the pricing refers to installation of only 40 signs. Please clarify [NEC]</i>
A-32	<u>This is clarified per this Addendum. See Addendum Item 5, revised pricing form ('C), including , Table C – Passenger Information System. The updated pricing sheets provide opportunity for firm pricing of the 20 additional signs (hardware/equipment only). The Commission is not seeking pricing for installation of the 20 additional signs.</u>
Q-33	<i>Section 7.4 says that there are 40 existing signs in place. However, there is a requirement to run power to the new CMS. Since the existing signs are in place, are there already power and network terminations at the locations? [NEC]</i>
A-33	<u>Power availability differs from location to location. Staff is preparing the CMS inventory which shall include the locations to be installed, the expected power source and other location specific information such as geo-coordinates. This inventory will be released at the next scheduled response to questions. It should be noted that the goal of the Operators and the bus stop property owners is to minimize the use of on-site internet or power sources whenever possible, and instead use solar or cellular sources.</u>
Q-34	<i>Please clarify the section of the proposal the signed forms should be in. [NEC]</i>
A-34	<u>To the degree that this is not specified in the RFP instructions, proposers are to format their proposal as they best see fit. All sections should be clearly titled/labeled.</u>
Q-35	<i>There is a requirement for duplicated functionality with respect to GPS and J1939 connections in the MDT and the vehicle logic unit. Is there a need to have the functionality in both components? [NEC]</i>
A-35	<u>With respect to this question, #35, proposers are to submit the approach, including any alternative approach that they feel is the best solution while still meeting the functional requirements of the RFP. For example, the VLU and MDT could be one unit.</u>
Q-36	<i>What are your current methodologies for transfer connection protection between the operators? [NEC]</i>
A-36	<u>There is no technological transfer connection protection system; however, dispatch offices contact one another on an ad-hoc basis.</u>
Q-37	<i>For all transit centers, how is bus parking assigned? Are they dedicated slips or dynamic? [NEC]</i>
A-37	<u>It varies. Some locations have dedicated slips by route, e.g. Gold Coast Transit, at the Ventura Transit Center or at the Oxnard Transit Center. Other Operators serving the same locations may alternate which of the “dedicated slips” they use, and the slips are not route-specific.</u>
Q-38	<i>Section 1.2, Agency Overview The RFP indicates that the nine Agencies work from 7 yard/maintenance facilities – can you provide the details for each yard operation and which Agency works/operates from each of the seven yards? [Clever Devices]</i>
A-38	<u>At this time, there are seven garage locations. They are: Thousand Oaks/Kanan/Moorpark - 1993 Rancho Conejo Blvd, Thousand Oaks, CA 91320; Simi Valley Transit - 490 W Los Angeles Ave,</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

	<u>Simi Valley, CA 93065; Camarillo Area Transit - 95 Dawson Drive, Camarillo CA 93012; VCTC Intercity - 240 South Glenn Dr. Camarillo CA 93010; Gold Coast Transit District - 301 E. 3rd Street, Oxnard, CA 93030; Ojai Trolley - 408 S Signal St, Ojai, CA 93023; Valley Express – 918 Mission Rock Road Bldg. E1, Santa Paula CA 93060</u>
Q-39	<i>Section 7 The Commission prefers an “out-of-the-box” System Hosted and served from a central data center and accessible from any Internet capable desktop Can the Commission provide a list of the Internet Browsers currently in use? [Clever Devices]</i>
A-39	<u>Chrome, Safari, Firefox, and Internet Explorer.</u>
Q-40	<i>Section 7 Also, the Commission is eager to deploy a robust Passenger Information System that will enable the Commission's fixed route riders to ascertain next bus arrival predictions at the Operators' bus stops and at the Transit Centers, Can you provide a list of all Bus stops for each operator indicating; 1] if the stop currently has CMS installed, 2] if the stop will have CMS installed under this project, 3] list all operators who use this stop [Clever Devices]</i>
A-40	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-41	<i>Section 8.2 The AVL implementation shall provide both Drivers and Dispatchers with accurate and timely position data and schedule and route adherence data, while minimizing the use of radio communications for the transmission of vehicle location data. It is identified that the use of radio based data communications is to be minimized. Can you please provide the details for the radio system infrastructure: land based, radio consoles, and on vehicle equipment, that is installed and used by the Commission and the Operators? Please provide specifics for the mobile data communications radio modem, its manufacturer, model #, and use. [Clever Devices]</i>
A-41	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-42	<i>Section 8.2 AVL In the table "AVL Capabilities to Meet the Commission Goals", in the Technology Capability Column for "reduce emission/energy costs", the response states "...better tracking paratransit vehicles....". Can you provide more details for the paratransit requirement? Can you please confirm that this project does not involve onboard equipment for paratransit vehicles? [Clever Devices]</i>
A-42	<u>This was a typo. The term “paratransit vehicles” has been amended to state “fixed route vehicles.” The project does not involve onboard equipment for paratransit vehicles.</u>
Q-43	<i>Section 8.4 Cellular Communications Network In Section 8.4 there is a statement that all communications are to use the commercial cellular service the Proposer is to provide. Can you please clarify whether a radio system interface is needed, or the new system is to use only the commercial cellular service for all messaging and data transmissions? [Clever Devices]</i>
A-43	<u>No radio system interface is needed. However interface with the covert alarm is desired. Proposers should propose their best solution to the requirements.</u>
Q-44	<i>Section 8.3.1 All bus vehicles on all routes Can we assume the term Provider is synonymous</i>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

	<i>with the Commission and Operators? Also, the statement indicates "when the service is available..." is this to mean if provided or availability due to service outages? [Clever Devices]</i>
A-44	<u>The term Provider is not used in this section 8.3.1. However, it is used in Section 8.5 -as is the following statement "when the service is available." The term Provider in this case refers to the Proposer (Bidder) selected to provide the respective services. Additionally the term "when the service is available," reflects the desired expected outcome of the AVL-PIS as described in this section. With respect to "service outages" see the RFP for information related to the required service level agreement or 'uptime' i.e. the system mean-time between failure requirements.</u>
Q-45	<i>Section 10.7 Design/Implementation Will the Commission provide an Operator Priority sequence list for progressing the installations? [Clever Devices]</i>
A-45	<u>Yes. A tentative Operator Installation and Implementation List will be provided at the next scheduled response to questions.</u>
Q-46	<i>Section 10.7.9.3 Equipment Removal, Relocation and Restoration Plan Can the Commission please indicate what existing onboard equipment is to be removed for each Operator's fleet? [Clever Devices]</i>
A-46	<u>At a minimum the driver control units (DCUs) and mounting equipment.</u>
Q-47	<i>Section 10.7.9.3 Equipment Removal, Relocation and Restoration Plan Calls for the Proposer to provide temporary relocation and off-site storage - can the Commission specify the estimated time period for the requested offsite storage? [Clever Devices]</i>
A-47	<u>This requirement has been modified and the applicable section(s) amended with this addendum.</u>
Q-48	<i>Section 10.8.4 Monthly Status Reports Can you provide the details for the supplemental FTA reporting requirements identified for proposers' support? [Clever Devices]</i>
A-48	<u>The reporting varies. One example of such reporting could pertain to payments made to DBE subcontractors. For more information, see the RFP (including Attachment J – Federally Required and Other Model Clauses).</u>
Q-49	<i>Section 8.2.1 GPS Antenna Please provide details for the GPS antennas currently installed (their make, model number, and use). [Clever Devices]</i>
A-49	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-50	<i>Section 8.2.2 On-board access should be in the same location on every bus for standardization of configuration or locations documented for Operators' staff. Request that this statement is modified to read; "... The same location on each bus model for standardization...." Physical locations for the on-board equipment differs based on the design and configuration found on the various bus models. [Clever Devices]</i>
A-50	<u>Language from this section was amended. See item 2 of this addendum.</u>
Q-51	<i>Section 8.2.3 Map Requirements It is indicated that Gold Coast Transit uses software provided by INIT for routing and scheduling - can you please identify the routing/scheduling method used by the other operators? [Clever Devices]</i>
A-51	<u>At this time no other agencies use formal scheduling software.</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

Q-52	<i>Section 8.2.3 Map Requirements Identifies the need to have the GIS functionality include defined service based zones and it identifies ADA demand response area. Is it the Commission's intention to use this new system for demand response services? [Clever Devices]</i>
A-52	<u>This was just used as an example. That is, the ability to define service-based areas used ADA demand-response service area as an example as to the type of functionality sought. Other references to tracking Paratransit vehicles, for example, have been removed.</u>
Q-53	<i>Section 8.2.6 Real-Time Monitor It is indicated that the systems shall ".... Import existing route schedule parameters from GTFS data". Can you provide the details for the data being used and which of the 9 agencies this will apply to? [Clever Devices]</i>
A-53	<u>The following transit agencies have developed GTFS: VCTC, Gold Coast Transit, Thousand Oaks Transit, Ojai Trolley. The GTFS development for Kanan Shuttle, Simi Valley Transit, Moorpark City Transit, Valley Express and Camarillo Area Transit is outstanding.</u>
Q-54	<i>Section 8.3.1 Provide Dispatchers with maintenance information of real time vehicle monitoring status including query capability for vehicle historical status (if option exercised). Can you provide details for the option identified in this statement? We did not find an RFP option for maintenance information. [Clever Devices]</i>
A-54	<u>While not part of the Optional Technologies list, this feature was mentioned as a potential value-added option since it is common in the industry for such systems to report maintenance needs or system health.</u>
Q-55	<i>Section 8.5.3 An unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint). This section includes "unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint)." Are proposers responsible for the construction of this path and clear floor space, or is the requirement referring to placement of the sign and pushbutton relative to the existing layout? Will the designated CMS sign site be fully prepared and assessable including ADA compliant curb cuts by the Commission and/or Operators prior to sign installation? [Clever Devices]</i>
A-55	<u>No, proposers are not responsible for construction of pathways. This section of the RFP has been amended per this Addendum.</u>
Q-56	<i>Section 8.5.3 Audible Function Is the audible function required for all CMS signs? [Clever Devices]</i>
A-56	<u>No. This section of the RFP has been amended. See section 2 of this Addendum.</u>
Q-57	<i>Section 8.5.4 Bus Stop Signage Please provide details for the bus stops to receive the bus stop signage, and whether at each stop suitable power (115v) and internet (Ethernet or wi-fi) is available, and whether a shelter exists. [Clever Devices]</i>
A-57	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

Q-58	<i>Section 8.6.2 Ownership of Data Suggest modifying this section to state "...location data must also be available to Commission and/or Operator approved third party application providers...." [Clever Devices]</i>
A-58	<i>This is implied. That is, the data must be available to the Commission and must also be available to third party application developers.</i>
Q-59	<i>Attachment B Section 8.2.4- Mobile Data Terminal Listed in this section is the requirement for control of the Destination Signs, which is not listed as "optional". Where as in the same section in the RFP, this functionality is listed as optional. Can you confirm this is optional? [Clever Devices]</i>
A-59	<u>Integration of AVL-PIS with headsigns is considered one of the <b>Optional Technologies</b> that may/may not be exercised by the Commission/Operator.</u>
Q-60	<i>Attachment B Compliance Matrix Can you provide this attachment in an Excel or Word file to facilitate easy completion? [Clever Devices]</i>
A-60	<u>No, we cannot.</u>
Q-61	<i>Attachment C Cost Proposal Can you provide this attachment in an Excel or Word file to facilitate easy completion? Is the Proposer permitted to make changes to this Attachment to add information that will provide greater clarity? [Clever Devices]</i>
A-61	<u>No, we cannot.</u>
Q-62	<i>Attachment M APC For Moorpark Transit, and the Kanan Shuttle there is no indication to either provide APC integration or new functionality. Can you confirm that no APC functionality is required for these Operators? [Clever Devices]</i>
A-62	<u>Confirmed, these two Operators are not seeking APC systems/APC integration.</u>
Q-63	<i>Attachment M Headsigns For the Ojai Trolley, there is no indication for Headsign integration. Can you confirm that no integration is required with the Headsign for this Operator's vehicles? [Clever Devices]</i>
A-63	<u>That is confirmed: Ojai Trolley is not seeking Headsign integration.</u>
Q-64	<i>Sections 8.6.5 &amp; 8.6.6 The Commission's data shall be retained for a minimum of one (1) year on the Proposer's server(s) and then archived in a format agreed upon with the Commission. Commission users shall be able to generate queries from the restored data.</i>  <i>The System shall provide an information storage function (data warehouse) that collects and stores all operational data for the purpose of later retrieval and analysis. Enough online data storage shall be provided to keep at least two (2) years of historical data. Can you please confirm whether 1 or 2 years of data retention is required? [Clever Devices]</i>
A-64	<u>To clarify, the requirement is capacity for up to only ONE year on Proposer's server(s) and then archived in a format agreed upon with the Commission. Storage capacity for two years is <b>not</b> required.</u>
Q-65	<i>Attachment A The acknowledgement of receipt should be filled out completely and submitted to the Ventura County Transportation Commission's Maintenance Manager prior to the bid deadline (date and time). Can bidders submit this form with their proposals? [Clever Devices]</i>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

A-65	<u>Yes.</u>
Q-66	8.5.2 CMS When will we receive the current and desired CMS stop inventory? [Clever Devices]
A-66	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-67	8.5 CMS How many of the new CMS devices will be at Transit Centers? Can the Commission please provide a breakout of required sign types (LED vs. LCD, number of lines, type of installation, etc.) and exact location or address of each (including transit center or bus stop, indoors or outdoors)? [Clever Devices]
A-67	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-68	8.5.2 CMS For each transit center receiving signage, how many routes are serviced? 8.5.2 CMS Please provide an example/indicative bus stop that would receive CMS signage [Clever Devices]
A-68	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-69	Section 8.5.2 CMS For each bus stop please indicate the number of routes serviced.& Can the authority provide an exact quantity of CMS signs they would like to have quoted for this proposal as 8.5.2 Changeable Message Signs states that 40 to 60 are required? [Clever Devices]
A-69	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions. See also response to Question 32 and revised Attachment C - . Price Summary Form – Table C.</u>
Q-70	Section 8.5.2 CMS Will any concrete construction be required to mount signage? [Clever Devices]
A-70	<u>No.</u>
Q-71	Section 8.5.2 CMS During which hours would the authority prefer all sign and onboard installations be completed? Regarding onboard installations, how many vehicles will be made available for each day of the week (from each Operator)? [Clever Devices]
A-71	<u>The hours of installation for CMS are generally 7am-6pm, M-F (some exceptions can be made). Onboard installations will vary based on the applicable Operator. More detail regarding general vehicle availability by Operator will be provided no later than the next scheduled response to questions.</u>
Q-72	Attachment F Good Faith Efforts As there is no identified DBE participation requirement in the RFP, and the pre-bid conference confirmed that there is no goal for this contract, can the Commission please clarify how the DBE Good Faith Efforts form will be evaluated? [Clever Devices]
A-72	<u>There is no DBE participation requirement and no scoring preference. The Commission has a race neutral DBE goal of 11.7%. Should Proposers commit to engage with DBEs as part of their proposal (e.g. to perform as a subcontractor) this detail must be reported using Attachment F. Attachment F has been amended to clarify this item. Further, there is no good faith effort requirement.</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

Q-73	<i>Section 2.0 Audited Financial Statements The RFP requests for three years of Audited Financial Statements in the main proposal volume. Can the Financial Statements be submitted as a part of the confidential Cost Proposal? [Clever Devices]</i>
A-73	<u>Yes.</u>
Q-74	<i>We just received the RFP documents, and noticed that the pre-proposal meeting was mandatory. Since we were initially unaware of the RFP, will this affect our ability to submit a proposal? [Doublemap]</i>
A-74	<u>Firms which intend to submit a proposal as the Prime Contractor were required to attend the pre-proposal meeting. However, firms that did not attend may participate as part of a joint-venture with or as a subcontractor to a Prime Contractor. Prime Contractors are required to perform at least 51% of the work.</u>
Q-75	<i>The Changeable Message Sign that is either to be LED or LCD says it needs to be able to show between 1 and 8 Lines of Characters. Can you let us know how many Characters per line you are looking for using the 3-in Characters (one line) or 2-inch Characters (2 lines) so we know what size of sign to price out. [Daktronics]</i>
A-75	<u>The number of characters per line is not specified. Proposers shall propose what they determine is the best solution for the requirement.</u>
Q-76	<i>I just wanted to verify that as we did not attend the March 20<sup>th</sup> pre-bid meeting we are ineligible to participate in this RFP submission. If this was removed as a requirement please let me know as we would like to respond if possible. [MarshallGIS]</i>
A-76	<u>Firms which intend to submit a proposal as the Prime Contractor were required to attend the pre-proposal meeting. However, firms that did not attend may participate as part of a joint-venture with or as a subcontractor to a Prime Contractor. Prime Contractors are required to perform at least 51% of the work.</u>
Q-78	<i>Are the Operators fleets managed independently, or is there some common management / oversight in place? Are any of the Operators fleets managed by a 3rd party Contractor, and if so can you identify the Contractor(s)? [Avail Tech.]</i>
A-78	<u>Ojai Trolley, Gold Coast Transit and Simi Valley Transit are directly operated and maintained independently from one another. The remaining services are operated and maintained by purchased transportation providers, including MV Transportation and Roadrunner Management Services. The Thousand Oaks Transit, Moorpark City Transit and Kanan shuttle fleets are garaged together.</u>
Q-79	<i>Is it the desire of the Commission to consolidate any of the operations management with the adoption of the new, hosted AVL and Passenger Information Systems? [Avail Tech.]</i>
A-79	<u>Generally, each Operator operates independently of one another. However, Proposers are encouraged to be creative and are free to include potential value-added features and functionality.</u>
Q-80	<i>Other than the INIT scheduling software being used by Gold Coast Transit District, do any of the other Operators utilize 3rd party scheduling software? If so, can you please identify which 3rd party tools are currently in use at each Operator? [Avail Tech.]</i>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

A-80	<u>No.</u>
Q-81	<i>Do any of the Operators currently use automated Run Cutting software for developing the Fixed Route schedules? [Avail Tech.]</i>
	<u>Gold Coast Transit uses INIT, which may or may not include run cutting capabilities.</u>
Q-82	<i>Is automated Run Cutting and Rostering a requirement for the Scheduling Software of the new system? [Avail Tech.]</i>
	<u>No, it is not a requirement. However, bidders are encouraged to be creative with their proposals.</u>
Q-83	<i>Can the Commission provide any priorities and anticipated timeline for adoption of the Optional Technologies? [Avail Tech.]</i>
A-83	<u>The following is subject to change and at the discretion of the Commission/Operators: Regarding schedule- it is anticipated that the first Operator implementation will be Gold Coast Transit, and that this Operator's implementation will at that time include at least the AVA system functionality from the list of Optional Technologies. Similarly, Thousand Oaks Transit is anticipated to exercise the AVA system functionality with the AVL-PIS deployment. While it is the responsibility of Bidders to develop the full schedule that they feel is best for the Commission, Gold Coast Transit has the largest fleet, largest service area, most routes, and highest ridership, thus it is anticipated/recommended to be the first implementation.</u>
Q-84	<i>Is there a desire to align the adoption the Optional Technologies by the Commission (e.g., to gain some efficiency and cost advantage), or are the Operators prioritizing the Optional Technologies independently? [Avail Tech.]</i>
A-84	<u>Generally, the Commission desires to gain efficiencies and reduce costs (when possible). However, exercise of the Optional Technologies will be prioritized by the Operators independently.</u>
Q-85	<i>Should the pricing include the removal of any existing AVL or AVA equipment on the fleet, or will the agency handle the removal of the existing equipment? [Avail Tech.]</i>
A-85	<u>Proposer installation pricing should include applicable removal cost.</u>
Q-86	<i>Will the agency be responsible for removal of any existing CMS being replaced, or should the proposer include costs for existing sign removal as needed for replacement? [Avail Tech.]</i>
A-86	<u>Proposer installation pricing should include applicable removal cost.</u>
Q-87	<i>Is a payment and / or performance bond required for this contract? [Avail Tech.]</i>
A-87	<u>Not at this time. However, pending review of Proposals this may be a requirement of the selected Bidder.</u>
Q-88	<i>Please confirm that it is the intention of VCTC and partnering agencies to replace all of the existing legacy equipment regardless of the vendor selected for the procurement. If there is a desire to reuse the on-board hardware, does VCTC have an existing API available for use? [NEC]</i>
A-88	<u>Bidders are encouraged to propose the solution that best fits the requirements of the RFP.</u>
Q-89	<i>Can you please provide the total expected budget for project? [NEC]</i>
A-89	<u>No, however, proposers are encouraged to be competitive and provide cost-effective solutions.</u>
Q-90	<i>Can you please provide the Luminator destination sign ODK part number for the 2006 New Flyers at Gold Coast (on the back of the ODK)? [NEC]</i>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

---

A-90	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-91	<i>Can you please provide the Twinvision destination sign part number for the Kanan Shuttle? [NEC]</i>
A-91	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-92	<i>Can you please provide operational requirements of the solar power signs? [NEC]</i>
A-92	<u>The requirements of the CMS are included in the RFP.</u>
Q-93	<i>Has a physical bus stop survey been completed in the last five years? [Connexionz]</i>
A-93	<u>Yes, to varying degrees per each Operator service area.</u>
Q-94	<i>How many stops does each service have? [Connexionz]</i>
A-94	<u>Staff is in the process of collecting this information. However, Proposers may access each Operator's route and schedule information online.</u>
Q-95	<i>Can you please confirm that each yard has its' access point infrastructure already set up or if pricing will be necessary for these systems? [Connexionz]</i>
A-95	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions. However, Proposers are encouraged to propose what they determine is the best solution.</u>
Q-96	<i>The RFP refers to : Real Time Monitor; Is this term interchangeable with AVL Map or similar? [Connexionz]</i>
A-96	<u>Yes. Please refer to the RFP for more information – including section 8.2.6.</u>
Q-97	<i>Is VCTC requiring a public tracking option AND android/IOS or does one or the other meet the real-time tracking specification components listed? [Connexionz]</i>
A-97	<u>Proposers should refer to the RFP specification(s), as applicable.</u>
Q-98	<i>If an 'app' is proposed is it required each agency have it's own branding and custom implementation or are you looking for one implementation to serve each agency? [Connexionz]</i>
A-98	<u>Proposers should refer to the RFP specification(s), as applicable.</u>
Q-99	<i>Can you please provide details of the fleet which might have an internal DMS including the manufacturer? [Connexionz]</i>
A-99	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-100	<i>The audio component of the CMS seems to be listed as both an option or requirement in places – Which is the case and how should this be applied to the pricing for CMS? [Connexionz]</i>
A-100	<u>This section of the RFP has been amended. See section 2 of this Addendum.</u>
Q-101	<i>In 8.2.1 you describe dead-reckoning 'events' to be recorded— Can you provide more detail on what you expect this event record to look like or the specific 'event' it might capture? [Connexionz]</i>
A-101	<u>When dead reckoning is utilized an event shall be recorded.</u>
Q-102	<i>Can we please see an example of the data which might be required to be imported from INIT, since there are more than one variants? [Connexionz]</i>
A-102	<u>Staff is in the process of collecting this information. It will be provided no later than the next</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

---

	<u>scheduled response to questions.</u>
Q-103	<i>It is noted that the lowest price response receives the highest point score for pricing. Does this only apply to a response which is 100% fully compliant with the listed specification or can it be partially compliant but deemed 'responsive' by the committee? [Connexionz]</i>
A-103	<u>Responsive proposals will be scored. Evaluation criteria are specified in the RFP, including section 4.1.</u>
Q-104	<i>How do the optional items play in to the overall scoring of the overall compliance? Do specification within the core system receive more weight? [Connexionz]</i>
A-104	<u>See the RFP including section 4.1.</u>
Q-105	<i>Do only 'partially' compliant items require additional proposal explanation- or is there also a requirement to explain items that are non-compliant? [Connexionz]</i>
A-105	<u>This is covered in the RFP. Moreover, Proposers are encouraged to be thorough with description of proposed system design/solutions.</u>
Q-106	<i>Can you please confirm the desired go-live date and confirm also what will be required and signed off functionality at go-live? [Connexionz]</i>
A-106	<u>The schedule has been amended through addenda. Final system acceptance and go-live date is scheduled to be no-later than May 31, 2018 and June 1, 2018, respectively. System acceptance will pertain to those items and deliverables as identified in the contract.</u>
Q-107	<i>Considering the technical compliance and size of the solution is VCTC willing to extend the proposal due date? [Connexionz]</i>
A-107	<u>Yes. Please refer to this addendum.</u>
Q-108	<i>Section 4.1 Technical Evaluation and Scoring: Cost Proposal Evaluation: Will the cost evaluation be conducted after and in isolation from evaluation of the balance of the technical proposal? [Tripspark]</i>
A-108	<u>No, not necessarily.</u>
Q-109	<i>Section 7.3 Fleet Inventory: For the purposes of pricing services of the core system should vendors assume that all nine (9) operators will be deployed at the same time and be available for combined training? [Tripspark]</i>
A-109	<u>Proposers should develop and propose their recommended deployment plan. Regarding deployment, see Answer to Question #83 in this addendum for more information. Regarding Training see the RFP including section 10.4 for more information.</u>
Q-110	<i>Section 7.3 Fleet Inventory: For the purposes of pricing services for the optional modules should vendors assume that all nine (9) operators will be deployed at the same time as the core system? [Tripspark]</i>
A-110	<u>Yes. However, the decision of which Optional modules will be determined by the Operators. See Answer #83 for additional information.</u>
Q-111	<i>Section 8.3.1 CAD/General Requirements: Please confirm the number of concurrent users (dispatchers and administration) of the CAD system. [Tripspark]</i>
A-111	<u>While this will vary by time of day and between each operator, Proposers can assume a minimum</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

	<u>of ten users per Operator. However, some Operators may have as few as one to two users concurrently using the system at a given time.</u>
Q-112	<i>Section 8.4 Cellular Communications Network: Are proposers expected to contract with the cellular network or will VCTC contract directly? [Tripspark]</i>
A-112	<u>Proposers. As specified in the RFP: The Proposer shall provide all data, cellular communications and network infrastructure as part of ongoing annual costs associated with ownership of the system.</u>
Q-113	<i>Section 8.4 Cellular Communications Network: Does VCTC have a preferred cellular carrier? [Tripspark]</i>
A-113	<u>No.</u>
Q-114	<i>Section 9.1 Automated Voice Annunciation (AVA) [Optional Technologies]: There are two requirements regarding Operator control of audio levels which seem contradictory: "Audio levels shall be controllable by the Operator within a usable audio range....", and "The volume of the internal announcements shall be automatically adjusted according to the noise level on the vehicle at the time, and the vehicle operator shall not be able to lower the announcement volume." Please verify what the requirements are regarding Operator control of audio level. [Tripspark]</i>
A-114	<u>The latter was deleted. This section and requirement are amended through this Addendum. See Item #2 of this Addendum for more information.</u>
Q-115	<i>Section 10.7.9 Installation: What are the specific addresses of the sites where vehicle hardware will be installed? [Tripspark]</i>
A-115	<u>At this time, there are seven garage locations. They are: Thousand Oaks/Kanan/Moorpark - 1993 Rancho Conejo Blvd, Thousand Oaks, CA 91320; Simi Valley Transit - 490 W Los Angeles Ave, Simi Valley, CA 93065; Camarillo Area Transit - 95 Dawson Drive, Camarillo CA 93012; VCTC Intercity - 240 South Glenn Dr. Camarillo CA 93010; Gold Coast Transit District - 301 E. 3rd Street, Oxnard, CA 93030; Ojai Trolley - 408 S Signal St, Ojai, CA 93023; Valley Express – 918 Mission Rock Road Bldg. E1, Santa Paula CA 93060</u>
Q-116	<i>Attachment J: Disadvantaged Business Enterprises: Please specify what DBE participant content is associated with this project. [Tripspark]</i>
A-116	<u>There is no DBE participation requirement and no scoring preference. The Commission has a race neutral DBE goal of 11.7%. Should Proposers commit to engage with DBEs as part of their proposal (e.g. to perform as a subcontractor) this detail must be reported using Attachment F. Attachment F has been amended to clarify this item. Further, there is no good faith effort requirement.</u>
Q-117	<i>Page 166, Form C, Section A.8.7: Please confirm what section of the RFP this refers to, there doesn't seem to be a section 8.7. What costs does Cellular Communication Network line item need to capture? [Tripspark]</i>
A-117	<u>This was a typo, and intended to be 8.4 (not 8.7). The line-item on Table A should contain any applicable Cellular Communication Network costs for the Fixed Route Fleet implementation. Attachment C – Price Summary Forms was revised and included in this Addendum.</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

Q-118	<i>Page 168, Form C, Section C.8.9: Please confirm what section of the RFP this section is related to, there doesn't seem to be a section 8.9. [Tripspark]</i>
A-118	<u>This was a typo, and intended to be 8.5 (not 8.9). Attachment C – Price Summary Forms was revised and included in this Addendum.</u>
Q-119	<i>Pages 174, 178 - 181, Form C-1: 9.3: Five (5) agencies (Valley Express, Moore Park Transit, Ojai Trolley, Camarillo Area Transit and Kanan Shuttle) are identified as planning to install GFI Care Quest Readers. How are vendors to quote integration and installation to these readers? Are we to assume that these readers will be installed and ready for integration at the same time the balance of the optional technologies are deployed? [Tripspark]</i>
A-119	<u>Yes. With respect to pricing the Optional Technologies, Proposers should assume the Optional Technologies, including Card Quest integration, are to be installed / deployed by Proposers at the same time as the core system for the applicable Operator.</u>
Q-120	<i>Pages 177, Form C-1: Thousand Oaks Transit, 9.1: Shouldn't the N/A currently shown for AVA integration be removed? [Tripspark]</i>
A-120	<u>Correct, Thousand Oaks Transit currently has some buses equipped with AVA. Attachment C – Price Summary Forms was revised (N/A removed).</u>
Q-121	<i>Pages 178, Form C-1: Moore Park Transit, 9.1 &amp; 9.2: Please confirm that vendors should quote on providing AVA and APC, attachment M does not confirm if quotes are required. [Tripspark]</i>
A-121	<u>No. Moorpark City Transit is not seeking APC system pricing, nor pricing for integration of its AVA's.</u>
Q-122	<i>Pages 178, Form C-1: Kanan Shuttle, 9.2: Please confirm that vendors should quote on providing APC, attachment M does not confirm if this quote is required. [Tripspark]</i>
A-122	<u>No. Kanan Shuttle is not seeking APC system pricing. Nor is it seeking AVA systems, AVA integration or Headsign integration pricing.</u>
Q-123	<i>Page 226 Attachment M: Simi Valley Transit: Please confirm specific door dimension for vehicles to be outfitted with APC sensor(s). [Tripspark]</i>
A-123	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-124	<i>Page 227 Attachment M: Thousand Oaks Transit. Can vendors to propose replacement of the two (2) existing Clever Device AVA systems so as to standardize all of TOT's fleet? [Tripspark]</i>
A-124	<u>Yes, they may. However, at a minimum they <b>must</b> also provide integration pricing.</u>
Q-125	<i>Page 227 Attachment M: Ojai Trolley: Please confirm specific door dimension for trollies to be outfitted with APC sensors. [Tripspark]</i>
A-125	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-126	<i>Page 227 Attachment M: Oji Trolley: Please confirm specific make and model of Microphone/PA system for trollies to be outfitted with AVA. [Tripspark]</i>
A-126	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-127	<i>Page 227 Attachment M: Oji Trolley: Please confirm specific make and model of Headsigns.</i>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

	<i>[Tripspark]</i>
A-127	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-128	<i>Can you please clarify/confirm the DBE requirement for this project? At the Pre-bid meeting, a 12.5% DBE component was mentioned, but we could not locate an RFP reference for this detail. [Avail Tech.]</i>
A-128	<u>There is no DBE participation requirement and no scoring preference. The Commission has a race neutral <b>DBE goal of 11.7%</b>. Should Proposers commit to engage with DBEs as part of their proposal (e.g. to perform as a subcontractor) this detail must be reported, (see Attachment F). Attachment F has been revised to clarify this item. Further, there is no good faith effort requirement.</u>
Q-129	<i>In section 3.5, you indicate the Notice to Proceed to be September 5, 2017, and in section 10.11 you indicate that the entire project be completed and invoiced by the end of 2017? Can you please clarify if this is the calendar year 2017, or the fiscal year 2017/18? [Avail Tech.]</i>
A-129	<u>The timeline has been modified. The Please see Item #2 of this Addendum.</u>
Q-130	<i>If the completion is desired by calendar year 2017 end, can you clarify the schedule driver behind the calendar year end completion? This would be helpful in understanding of additional project goals. Also, does this include completion of the base system, or also the completion of all options that may be selected? [Avail Tech]</i>
A-130	<u>The timeline, including section 10.11, was amended. See this Addendum for more information. It is anticipated that the base systems plus selected options will be completed by system Final Acceptance.</u>
Q-131	<i>In attachment D, Milestone Payment Schedule, can you please confirm the last column of that table includes payment for all equipment and software deliverables related to the milestone (where applicable), in addition to the labor? [Avail Tech.]</i>
A-131	<u>Attachment D – Milestone Task Payment Schedule has been amended to clarify this item.</u>
Q-132	<i>In section 7.4, the Commission states that an addendum will be provided to clarify information regarding desired CMS inventory? Since no addendum has been released to date, will the Commission consider extending the deadline for final question submittal to afford proposers an opportunity to review and request clarifications on this new information? [Avail Tech.]</i>
A-132	<u>Yes. The deadline has been extended.</u>
Q-133	<i>In section 8.2.5, you ask for the dispatcher to be able to downgrade the EA condition. Do you have a current process for downgrading the EA, and if so how is it currently enacted? [Avail Tech.]</i>
A-133	<u>The process varies from Operator to Operator. Bidders are encouraged to propose the solution they see as the best fit to meet the functional needs and requirements of the RFP.</u>
Q-134	<i>In Attachment M – Operators Fleet and System Composition, there is varying detail provided for existing systems where integration is requested. Can you supply the manufacturer and model for each existing vehicle system where integration is desired (e.g., Clever Devices SpeakEasy2, Sunrise NXTP7X962M interior DMS, etc.)? [Avail Tech.]</i>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

A-134	<u>Staff is in the process of collecting this information. It will be provided with the next scheduled response to questions.</u>
Q-135	<i>For the Customized Reports requested in section 10.2.3, would the commission be interested in a solution that provided Ad-hoc Reporting capabilities such that the Commission or Operators could develop their own reports? [Avail Tech.]</i>
A-135	<u>Bidders are encouraged to propose the solution they see as the best fit to meet the functional needs and requirements of the RFP.</u>
Q-136	<i>Will RFP responses be accepted from proposers who were not in attendance at the March 20<sup>th</sup> pre-proposal conference? [Ridesystems]</i>
A-136	<u>Firms which intend to submit a proposal as the Prime Contractor were required to attend the pre-proposal meeting. However, firms that did not attend may participate as part of a joint-venture with, or as a subcontractor to, a Prime Contractor. Prime Contractors are required to perform at least 51% of the work.</u>
Q-137	<i>The above-referenced RFP states that "a summary of the questions and answers from the pre-proposal meeting will be posted on the Commission's Website within five business days after the pre-proposal meeting. The names and phone numbers of potential proposers that signed-in and attended the pre-proposal meeting will be posted on the same Website..." We are unable to locate this information on the website. Has it been posted? [Ridesystems]</i>
A-137	<u>The schedule was amended and the information has been posted.</u>
Q-138	<i>As a matter of formality, I would like to put in one more formal request for a bid extension given the complexity and size of scope. [Connexionz]</i>
A-138	<u>The bid deadline has been extended. See this Addendum for more information.</u>
Q-139	<i>Attachment M - With regard to the Clever Devices voice annunciator integration requirements (Thousand Oaks, Moorpark City), please provide information on: a. The make, module and interface port capabilities of the existing units. b. The current firmware version of the annunciator units. c. The method that is currently used to update or change the announcements in the units (i.e. manual upload at each unit, Wi-Fi, etc.) [TripSpark]</i>
A-139	<u>Staff is in the process of collecting this information. It will be provided with the next scheduled response to questions.</u>
Q-140	<i>Attachment M - With regard to the integration requirements for the existing UTA automatic passenger counters (Thousand Oaks, VCTC, GCTD), please provide: a. Make and model information for the existing APC units b. Describe current method of obtaining passenger count data from the APCs (i.e. manual download on vehicles, Wi-Fi, cell, etc.) c. Are there currently any wheelchair ramp or bicycle rack sensors interfaced to the APC equipment? [TripSpark]</i>
A-140	<u>Staff is in the process of collecting this information. It will be provided with the next scheduled</u>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

---

	<u>response to questions.</u>
Q-141	<i>Since no answers have been released as of the question deadline, would VCTC please consider revising the proposal due date to allow for a second set of questions to be submitted after the first round of answers and addendum have been released? This will allow Bidders an opportunity to evaluate the information in the addendum and submit any follow-up questions that may result. [TripSpark]</i>
A-141	<u>The bid deadline has been extended. See this Addendum for more information.</u>
Q-142	<i>In RFP you request a passenger information system (PIS), however I would like to know if the Comission has this system, I mean, if PIS is an own system of the Transport Committee in which we will have to integrate with ours or if this system will have to be DEVELOPED by our company. (sic) [Showtech/ Show Service Provider]</i>
A-142	<u>The Commission seeks to replace the existing system.</u>

**[CONTINUED]**

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: June 27, 2017  
Addendum: No. 3

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### **Item #4: List of VCTC ITS Contractors and System Vendors (in no particular order)**

The following list reflects firms that have participated in transit-related VCTC projects during the last fiscal year.

#### **Meyer Electric**

Terry Meyer  
(805) 444-2481

[terry.meyer@meyer-electric.com](mailto:terry.meyer@meyer-electric.com)

Provides/provided: Onboard fleet and in-field technician service, including CMS at bus stops, yard WAPs

#### **Aegir Engineering and Technical Services**

2151 Alessandro Dr., #211

Ventura, CA 93001

(805) 648-2660

Provided: Support for onboard smartcard system equipment

#### **Transit Tech, Inc.**

Chad Campbell, Business Development

PO Box 9146

Whittier, California

[ccampbell@4transit.com](mailto:ccampbell@4transit.com)

Provides/provided: Onboard fleet installation of video surveillance system

### **System Vendors and Representatives**

#### **Headsigns:**

Luminator/TwinVision - John Obert, 614-327-4351, [jobert@luminatorusa.com](mailto:jobert@luminatorusa.com)

Hanover – Rian Phillips, 916-240-0601, [rphillips@hanoverdisplays.com](mailto:rphillips@hanoverdisplays.com)



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

---

### Farebox:

SPX/Genfare – Mark Mahon, 847-871-1115, [mark.mahon@spx.com](mailto:mark.mahon@spx.com)

### Automatic Passenger Counters:

UTA – Thomas Kowalski, 513-961-0099, [tkowalski@fuse.net](mailto:tkowalski@fuse.net)

UTA – Chris Cooper, 513-961-0099, [ccooper@utatransit.net](mailto:ccooper@utatransit.net)

### Automated Voice Annunciators:

Clever Devices – Walter Weichselbaumer, 516-967-3498, [walterw@cleverdevices.com](mailto:walterw@cleverdevices.com)

Clever Devices – Charles Holeman, 919-313-3051, [choleman@cleverdevices.com](mailto:choleman@cleverdevices.com)

### Scheduling Software:

INIT – Bridgette Holzapfel, 757-413-9100 x 365, [bholzapfel@initusa.com](mailto:bholzapfel@initusa.com)

INIT – 877-GO2-INIT

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 3, May 15, 2017

---

Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL

Title: Automatic Vehicle Location & Passenger Information System

Issued: March 3, 2017

Due: June 27, 2017

Addendum: No. 3

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**Item #5:**

**Revised Attachments:**

**Attachment C – Cost Form;**

**Attachment D – Milestone Task Payment Schedule; and,**

**Attachment F – Disadvantage Business Enterprise**

**[CONTINUED]**

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

### ***Attachment C - Price Summary Forms***

Proposers are required to submit their price proposals using the Price Summary Form presented here or a table consistent with its format. The Summary consists of two forms: one form to be used for each discrete solution cost; and one form summarizing the total cost for all solutions. Proposers shall submit a cost for each applicable line item. For each solution, a total capital cost and estimated cost of operation and maintenance should be listed and described. The operation and maintenance cost shall include and detail all anticipated sources of ongoing costs, including, but not limited to: royalties, software license fees, technical support, training, rentals or anticipated replacements.

Recurring costs, such as licenses and fees shall be listed for the cost per year per unit, and indicated as a recurring cost.

Pricing for Optional Technologies should be entered using Price Summary form C-I, with one form completed for each of the nine transit Operators (i.e. nine C-I forms must be completed).

The Proposer shall complete the forms, leaving no requested fields blank. In the case of fields that represent items with no cost associated, or items that shall not be provided by the proposer, the number zero shall be used. For items that Proposers cannot identify a discrete solution cost, a single combined cost for the combined items may be accepted. The applicable cells should indicate which items/costs are combined.

The price summary form represents the total cost of the Proposer to furnish all labor, materials and services at the prices as quoted herein, in conformance with all the specifications and contract documents. The units submitted shall be consistent with the numbers specified in the RFP, and shall include spares as determined by the Commission for effective system operation.

The Proposer should modify or clarify entries, as necessary, so that the price summary represents the total cost to provide the System. The total cost shall include all incidentals associated with the hardware and software, such as mounting hardware, cables, fasteners, brackets and housings. **The Commission shall not incur additional costs for any additional equipment, services, shipping, handling, communications, installation or testing.**

**The contract shall be a firm fixed price contract.**

The Price Summary Form will be used as a basis for cost calculations during the Project and it is understood that these unit prices will be held firm until Final System Acceptance.

**C - PRICE SUMMARY FORM**

<b>A. Fixed Route Fleet Implementation</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? Indicate Yes or No)</b>
10.1	Design for each vehicle type					
10.1	Cabling and wiring of vehicle					
8.2	GPS Antenna					
8.2	Vehicle Logic Unit (VLU) / Mobile Data Terminal (MDT)					
8.2	Covert Alarm					
<del>8.7</del> 8.4	Cellular Communications Network					
10.4	Operator / Dispatch Training					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Fixed Route Implementation Subtotal</b>						

Exhibit A - Request For Proposals

March 3, 2017

*Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System*

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

B. System Initiation Requirements						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	(Recurring Cost? Indicate Yes or No)
8.2	Database Conversion					
<del>8.5</del>	GTFS Conversion					
<del>8.4</del> 8.6	Server Site Equipment Acquisition and Setup (servers: application, database, communications, reports, SNMP, etc.; necessary routers / firewalls, redundancies and environments. Please itemize!					
	Other – please describe					
System Initiation Subtotal						

# Exhibit A - Request For Proposals

March 3, 2017

## Ventura County Transportation Commission RFP for Automatic Vehicle Location & Passenger Information System

MAY 15, 2017 ADDENDUM 3  
RFP 17-90164-AVL

C. Passenger Information System						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design at each location					
10.7	Cabling and wiring at each location		40			
<del>8.9</del> 8.5	Multiple Line (Terminal) Passenger Information System Display(s) (ML CMS')		4			
<del>8.9</del> 8.5	Single Line (Bus stop) Passenger Information System Displays (SL CMS')		36			
8.9	<del>CMS Audible Component</del> (Requirement removed, no longer a min. requirement)					
<del>8.9</del> 8.5	CMS' Cellular Communications Network					
<del>8.9</del> 8.5	Passenger Information Data Management and Dissemination					
<del>8.9</del> 8.5	Passenger Information System Hardware and / or Software License					
8.5	GTFS Realtime feed					
<del>8.9</del> 8.5	Passenger Information System Website/ Mobile Apps					
<del>8.9</del>	Customer Trip Planner					
10.7	Installation of all hardware at each location (if not included above)		40			
8.5	Single Line (Bus stop) Passenger Information System Displays (SL CMS')* [Hardware/Equipment ONLY. Does not include installation.]		20			
	Other – please describe					
Passenger Information System Subtotal						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

D. Spare Components (Describe the types and quantities of spares, along with cost and total cost, as per RFP Section 10.10)						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
Spare Components Subtotal						



**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>E. Additional Items</b>						
<b>RFP Section</b>		<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Costs? (Indicate Yes or No)</b>
10.1	AVL Analytics					
10.2	Reports (customized)					
10.3	Transit Analytics (Dashboard)					
10.4	Training					
10.5	Testing					
10.6	Documentation					
10.7	Design / Implementation					
10.8	Project Management					
10.9	Service / Warranty (2 years)					
	Other – please describe (use more lines as needed)					
<b>Additional Items Subtotal</b>						

Exhibit A - Request For Proposals

March 3, 2017

Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System

MAY 15, 2017 ADDENDUM 3  
RFP 17-90164-AVL

F. Extended Service / Maintenance (out years): Including Fixed Route, Integration, and Passenger Information System				
Item	Unit Cost	# of Units	Installation Cost for All Units	Total Cost
Extended Service / Maintenance, Year Three (Required)				
Extended Service / Maintenance, Year Four (Required)				
Extended Service / Maintenance, Year Five (Required)				
<b>Additional Service / Maintenance Out Year Sub-Total Cost</b>				

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3  
RFP 17-90164-AVL**

<b>Price Summary</b>				
<b>Item</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>
Table A – Fixed Route Vehicles				
Table B - System Initiation				
Table C – Passenger Information System				
Table D - Spare Components				
Table E - Additional Items				
Table F - Extended Maintenance (Years 3-5)				
<b>Total Cost</b>				

\_\_\_\_\_  
**SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL      DATE**

\_\_\_\_\_  
**NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL**

**OPTIONAL TECHNOLOGIES PRICE SUMMARY FORM C-I**

**Please complete a form for each of the nine transit operators (below)**

**Note: Some items do not apply.**

See Operators Fleet and System Composition Schedule (Attachment #) for fleet-specific Optional Technologies needs

<b>FORM C-I. Optional Technologies for Fleet No 1: VCTC INTERCITY</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / System Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counter System (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration					
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 2: VALLEY EXPRESS</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals****MAY 15, 2017 ADDENDUM 3**

March 3, 2017

**Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System**

RFP 17-90164-AVL

<b>FORM C-I. Optional Technologies for Fleet No 3: GOLD COAST TRANSIT DISTRICT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration					
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**
**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 4: SIMI VALLEY TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						



**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 5: THOUSAND OAKS TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA) (Most buses do not have AVA)					
9.1	Automated Voice Annunciators (AVA) Integration (Some buses have AVA)					
9.2	Automatic Passenger Counters (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration					
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 6: MOORPARK CITY TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators (AVA)	N/A	N/A	N/A	N/A	N/A
9.1	Automated Voice Annunciators (AVA) / System Integration					
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 7: OJAI TROLLEY</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 8: CAMARILLO AREA TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission**  
**RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3**  
**RFP 17-90164-AVL**

<b>FORM C-I. Optional Technologies for Fleet No. 9 – KANAN SHUTTLE</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type					
10.7	Cabling and wiring of vehicle					
9.1	Automated Voice Annunciators System (AVA)					
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)					
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration					
9.4	Headsign control Integration					
9.5	Single Point Log-on for integrated systems					
10.7	Installation of all hardware in each vehicle					
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

**PROPOSER SIGNATURE FOR FORM C-I ALL FLEETS 1 - 9:**

\_\_\_\_\_  
 SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL

\_\_\_\_\_  
 DATE

\_\_\_\_\_  
 NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

**Attachment D - Milestone Payment Schedule****Implementation Milestone Task Payment Schedule**

Please Specify a suggested Milestone / Payment Schedule for the following In Accordance With The Scope Of Work Of This RFP (include in each Task Description, total hours, FTE's, Classification and hourly rates):

Item #	Task	Proposer's description of specific work to be accomplished.	Estimated Task Hours	Blended Hourly Rate	Estimated Task Cost
10.7	Installation (Fleet 1)				
10.7	Installation (Fleet 2)				
10.7	Installation (Fleet 3)				
10.7	Installation (Fleet 4)				
10.7	Installation (Fleet 5)				
10.7	Installation (Fleets 6, 7, 8 and 9)				
10.7	Installation (CMS Locations 1-20)				
10.7	Installation (CMS Locations 20-40)				
10.2	Reports				
10.4	Training				
10.5	Testing				
10.5	30-Day Operational (Acceptance) Testing				

**Exhibit A - Request For Proposals**

March 3, 2017

**Ventura County Transportation Commission  
RFP for Automatic Vehicle Location & Passenger Information System**

**MAY 15, 2017 ADDENDUM 3  
RFP 17-90164-AVL**

Item #	Task	Proposer's description of specific work to be accomplished.	Estimated Task Hours	Blended Hourly Rate	Estimated Task Cost
10.7	System Design				
10.8	Planning Documents				
10.6	Documentation				
	TOTAL OF MILESTONE PAYMENTS				

\_\_\_\_\_  
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL

\_\_\_\_\_  
DATE

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

**The above milestone payment schedule refers to the tasks identified above. Payment for service/maintenance warranty coverage shall be made upon commencement of warranty period(s) as applicable (e.g. 2 year, three one-year periods etc). *Payment for equipment /hardware/software shall be made upon receipt pursuant to the terms of the RFP / Agreement.***



March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

***Attachment F - Disadvantaged Business Enterprise (DBE)***

**RETURN THIS FORM WITH YOUR BID**

\_\_\_\_\_ (firm name) hereby certifies that:

(check one)

☐

our firm's Bid does include committed DBE participation, which will account for \_\_\_\_\_ % of the total project amount;

OR

☐

our firm's Bid does not include any committed DBE participation.

BY:

\_\_\_\_\_  
Authorized Official

\_\_\_\_\_  
Title

***If applicable***, please include on a separate sheet the names, addresses of all DBEs ~~contacted~~ ~~or~~ that will participate in the contract, the scope of work, dollar amount of for each participating DBE. ~~Also describe all efforts which have been made to secure maximum DBE participation.~~

**All participating DBEs must complete the DBE affidavit, attached.**

***(REVISED)***

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

## **Affidavit of Disadvantaged Business Enterprise**

### **RETURN THIS FORM WITH YOUR BID**

I hereby declare and affirm that I am a qualifying DBE as describe in 49 CFR part 26 and that I will provide information to document this fact.

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE FOREGOING STATEMENTS ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF THE ABOVE FIRM, TO MAKE THIS AFFIDAVIT.**

BY: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

---

**REQUEST FOR PROPOSAL (RFP)**  
**Automatic Vehicle Location (AVL) & Passenger Information System**  
Addendum #5  
June 10, 2017

**Table of Contents:**

- |    |  |          |
|----|--|----------|
| 1. | Acknowledgment of the Receipt of Addendum                              | (Pg. 1)  |
| 2. | Amendments to the Request for Proposals, Sections:<br>Cover Page, 3.4; | (Pg. 2)  |
| 3. | Answers to Questions Submitted in Response to the RFP –Round #1 Q&A    | (Pg. 3)  |
| 4. | Answers to Questions Submitted in Response to the RFP –Round #2 Q&A    | (Pg. 11) |
| 5. | Attachment N - Bus Stop CMS Inventory                                  | (Pg.14)  |

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 5

---

**Item #1: Acknowledgement of Receipt of Addendum**

The undersigned acknowledges receipt of **Addendum #5 to VCTC RFP No. 17-90164-AVL**. This receipt must be included with your firm's proposal. Any proposal submitted without a completed Acknowledgement of Receipt of Addendum may be deemed non-responsive and discarded.

---

Authorized Signature

---

Dated

---

Printed Name

---

Company/Firm

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 5

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**Item #2: Amendments to the Request for Proposals (RFP), Cover Page, 3.5,**

### **COVER PAGE**

The RFP Cover Page has been *amended* as follows.

Proposals must be submitted  
No later than 5:00 PM (Pacific Time)  
***July 11, 2017***

---

### **Section 3.5**

#### ***3.5 Tentative Schedule for Evaluation, Selection, and Award***

The closing date of this RFP is ***July 11, 5PM PST***. The Commission anticipates the process for nominating and selecting a Contractor and awarding the contract will be per the following schedule:

#### **Answers to Questions Posted (Final)**

Proposal Due Date  
Proposal Evaluations  
Oral Interviews Short-listed Proposers  
Best and Final Offer (BAFO) (As needed)  
Notice of Intent to Award and Begin Negotiations  
VCTC Commission Approval of Contract  
Notice to Proceed

***June 10, 2017***  
***July 11, 2017***  
***July 11 – July 20, 2017***  
***July 31- Aug. 2, 2017***  
***Aug. 3 – Aug 18, 2017***  
Sept. 1, 2017  
October 6, 2017  
October 9, 2017

#### **Project Deliverables**

**Anticipated Kickoff Meeting**

**System/Final Acceptance**

***Week of October 9, 2017***  
**May 31, 2018**

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 5

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**Item #3: Answers to Questions Submitted in Response to the RFP**  
**ROUND #1 QUESTIONS AND ANSWERS**

The following questions were submitted during the first round of questions and answers. The answers are below. The below question numbers reflect the numbers as originally listed in Addendum #3.

**Q/A Format**

**Q-# | Question [Firm Name]**

**A-# | Commission Response**

Q-9	<i>Section 7.4 Transit Centers and Bus Stop Inventory. If any of the existing changeable message signs are to be re-used for this project, please provide make and model specifications and information on the current communication protocol and interface method used (i.e. wired LAN or cellular modem?) [TripSpark]</i>
A-9	<u>Rather than submit pricing based on the reuse of existing changeable message sign(s) (CMS) equipment, all proposers are to submit proposals that assume the provision of NEW CMS at the quantities identified in the RFP. Further it should be assumed, that there will be 40 bus stop CMS that will need to be removed.</u>  <b><u>Please refer to this addendum, Item #5 – Attachment N – Bus Stop CMS Inventory for more information.</u></b>
Q-13	<i>Section 8.2.5 Covert Emergency Alarm (Silent Alarm: Please provide details about the existing button that is to be used for silent alarms (i.e. number of contacts, voltage, and normally-closed/open?) [TripSpark]</i>
A-13	<u>Silent Alarm: The following details were provided by each operator</u> <u># Contacts; Voltage; Open/Closed</u> <ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): No existing button.</u></li><li>• <u>Gold Coast Transit:</u><ul style="list-style-type: none"><li>○ <u>NABI buses: 8 contacts; 24v; Dest sign open, Radio closed</u></li><li>○ <u>New Flyer: 4 contacts; 24v; Dest sign open, Radio closed</u></li></ul></li></ul>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<ul style="list-style-type: none"><li>○ <u>Gillig: 8 contacts; 24v; Camera open, Radio closed</u></li><li>● <u>Kanan Shuttle: No existing button</u></li><li>● <u>Moorpark City Transit: No existing button</u></li><li>● <u>Ojai Trolley: No existing button</u></li><li>● <u>Simi Valley: 2 contacts, 24v; Open</u></li><li>● <u>Thousand Oaks Transit: No existing button</u></li><li>● <u>Valley Express: 2 contacts; 12v; Camera open</u></li><li>● <u>VCTC: 2 contacts; 12v; Camera open</u></li></ul>
Q-14	<i>Section 8.2.6 Real-Time Monitor. Please provide samples of the INIT scheduling information that would be available for import? What data formats could the INIT data be provided in (e.g. GTFS, CSV, .xls, etc.)? [TripSpark]</i>
A-14	<u>No sample is available. However, exported data will be provided to the selected contractor. INIT scheduling information can be exported as Excel, CSV, and GTFS, or for a fee a custom format.</u>
Q-15	<i>Section 8.4 Cellular Communications Network: Do any of the seven (7) maintenance facilities have a WLAN communications available where buses are parked? If so, please provide details. If not are there plans to install WLAN as part of this project? [TripSpark]</i>
A-15	<u>Availability?</u> <ul style="list-style-type: none"><li>● <u>Camarillo Area Transit (CAT): No</u></li><li>● <u>Gold Coast Transit: Yes</u></li><li>● <u>Kanan Shuttle: n/a</u></li><li>● <u>Moorpark City Transit: n/a</u></li><li>● <u>Ojai Trolley: Yes</u></li><li>● <u>Simi Valley: No</u></li><li>● <u>Thousand Oaks Transit: Yes</u></li><li>● <u>Valley Express: Yes</u></li><li>● <u>VCTC: Yes</u></li></ul>
Q-17	<i>Section 9.1 Automated Voice Annunciation (AVA) [Optional Technologies]: For any Clever Devices equipped vehicles with integration requirements, please provide make/model information for the AVA equipment and Destination Message Signs. What is the approximate age of these products and what is the interface technology they currently use for data and control (i.e. RS232, J1708, etc.)? [TripSpark]</i>
A-17	<u>All Clever units are Speakeasy 2, age is 2-5 years. Any information regarding internal DMS is unavailable.</u>
Q-18	<i>Section 9.1 Automated Voice Annunciation (AVA) [Optional Technologies]: For all vehicle PA systems please indicate whether the vehicles are equipped with both interior and external speakers.</i>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<i>[TripSpark]</i>
A-18	<ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): Yes Internal / No External</u></li><li>• <u>Gold Coast Transit: Yes to both</u></li><li>• <u>Kanan Shuttle: Yes Internal / No External</u></li><li>• <u>Moorpark City Transit: Yes to both</u></li><li>• <u>Ojai Trolley: Yes internal/ No external</u></li><li>• <u>Simi Valley: Yes to both</u></li><li>• <u>Thousand Oaks Transit: Yes to both</u></li><li>• <u>Valley Express: Yes Internal / No External</u></li><li>• <u>VCTC: Yes to both</u></li></ul>
Q-19	<i>Section 9.3 Farebox Integration [Optional Technologies]. Please confirm that all GFI fare boxes onboard the vehicles are already capable of J1708 communication with 3rd party devices.</i> <i>[TripSpark]</i>
A-19	<u>Yes. All are capable of J1708 communication.</u>
Q-20	<i>Section 9.4 Headsign Integration [Optional Technologies]. Please confirm whether the existing destination sign controllers onboard the vehicles are already capable of J1708 communication with 3rd party devices. [TripSpark]</i>
A-20	<ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): N/a</u></li><li>• <u>Gold Coast Transit: Yes</u></li><li>• <u>Kanan Shuttle: No</u></li><li>• <u>Moorpark City Transit: Unknown</u></li><li>• <u>Ojai Trolley: No</u></li><li>• <u>Simi Valley: Unknown</u></li><li>• <u>Thousand Oaks Transit: Yes</u></li><li>• <u>Valley Express: No</u></li><li>• <u>VCTC: Yes</u></li></ul>
Q-22	<i>Section 10.7.9 Installation: Installations are to be performed outside of business hours – please provide the specific hours of access for each site, including any weekend availability. [TripSpark]</i>
A-22	<u>For each location: the following number of buses will be available per day by type of day (weekday or weekend):</u> <ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): 5pm-9pm weekdays, 1 bus</u></li><li>• <u>Gold Coast Transit: 7am-6pm weekdays, 1-2 buses, 6pm – 12am 3+, more veh may be available during off peak with prior coordination w/maintenance dept.</u></li><li>• <u>Kanan Shuttle: 6:30am – 5pm weekdays, 1 bus; more veh may be available during off peak with prior coordination w/maintenance dept. Moorpark City Transit: 6:30am-5pm</u></li></ul>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<p><u>weekdays, 1 bus</u></p> <ul style="list-style-type: none"><li>• <u>Ojai Trolley: 7am – 5pm weekdays, 3 buses, after 5:30pm 4 buses</u></li><li>• <u>Simi Valley: 7am – 5pm weekdays, 4-5 buses</u></li><li>• <u>Thousand Oaks: 6:30am – 5pm weekdays, 1 bus; more veh may be available during off peak with prior coordination w/maintenance dept.</u></li><li>• <u>Valley Express: 6:30am– 5:30pm weekdays, 2 buses, after 5:30pm, 5-6 buses; 7am – 6pm weekends; 7-9 buses</u></li><li>• <u>VCTC: 4am – 7pm weekdays 1 bus, after 7pm-1am 33; 6am – 7pm weekend days 10-14 buses</u></li></ul>
Q-23	<i>Section 10.7.9 Installation: What is the minimum number of vehicles that will be made available from each Agency for installations? [TripSpark]</i>
A-23	<u>See above Answer #22.</u>
Q-40	<i>Section 7 Also, the Commission is eager to deploy a robust Passenger Information System that will enable the Commission's fixed route riders to ascertain next bus arrival predictions at the Operators' bus stops and at the Transit Centers, Can you provide a list of all Bus stops for each operator indicating; 1] if the stop currently has CMS installed, 2] if the stop will have CMS installed under this project, 3] list all operators who use this stop [Clever Devices]</i>
A-40	<u>Please refer to this addendum, Item #5 – Attachment N – Bus Stop CMS Inventory for more information.</u>
Q-41	<i>Section 8.2 The AVL implementation shall provide both Drivers and Dispatchers with accurate and timely position data and schedule and route adherence data, while minimizing the use of radio communications for the transmission of vehicle location data. It is identified that the use of radio based data communications is to be minimized. Can you please provide the details for the radio system infrastructure: land based, radio consoles, and on vehicle equipment, that is installed and used by the Commission and the Operators? Please provide specifics for the mobile data communications radio modem, its manufacturer, model #, and use. [Clever Devices]</i>
A-41	<p><u>As this project is meant to alleviate/reduce radio traffic, the Commission does not see this question as relevant. However the following information regarding existing radio systems was provided:</u></p> <ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): N/a – Sprint push to talk</u></li><li>• <u>Gold Coast Transit: Motorola CDM 1250</u></li><li>• <u>Kanan Shuttle: Unknown</u></li><li>• <u>Moorpark City Transit: Unknown</u></li><li>• <u>Ojai Trolley: Unknown</u></li><li>• <u>Simi Valley: Unknown</u></li><li>• <u>Thousand Oaks Transit: Motorola XPR 4550 base and mobile, XPR 6650 handheld</u></li><li>• <u>Valley Express: Motorola</u></li></ul>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<ul style="list-style-type: none"><li>• <u>VCTC: N/a – Sprint push to talk</u></li></ul>
Q-45	<i>Section 10.7 Design/Implementation Will the Commission provide an Operator Priority sequence list for progressing the installations? [Clever Devices]</i>
A-45	<u>The following (tentative) list is provided in order of sequence, and subject to change at the discretion of the Commission:</u> <ol style="list-style-type: none"><li>1. <u>Gold Coast Transit District</u></li><li>2. <u>Thousand Oaks Transit</u></li><li>3. <u>Moorpark Transit</u></li><li>4. <u>Kanan Shuttle</u></li><li>5. <u>Ojai Trolley</u></li><li>6. <u>Valley Express</u></li><li>7. <u>Camarillo Area Transit</u></li><li>8. <u>Simi Valley Transit</u></li><li>9. <u>Ventura County Transportation Commission</u></li></ol>
Q-49	<i>Section 8.2.1 GPS Antenna Please provide details for the GPS antennas currently installed (their make, model number, and use). [Clever Devices]</i>
A-49	<u>Proposers should assume provision of new GPS antennas.</u>
Q-57	<i>Section 8.5.4 Bus Stop Signage Please provide details for the bus stops to receive the bus stop signage, and whether at each stop suitable power (115v) and internet (Ethernet or wi-fi) is available, and whether a shelter exists. [Clever Devices]</i>
A-57	<u>Please refer to this addendum, Item #5 – Attachment N – Bus Stop CMS Inventory for more information.</u>
Q-66	<i>8.5.2 CMS When will we receive the current and desired CMS stop inventory? [Clever Devices]</i>
A-66	<u>Staff is in the process of collecting this information. It will be provided no later than the next scheduled response to questions.</u>
Q-67	<i>8.5 CMS How many of the new CMS devices will be at Transit Centers? Can the Commission please provide a breakout of required sign types (LED vs. LCD, number of lines, type of installation, etc.) and exact location or address of each (including transit center or bus stop, indoors or outdoors)? [Clever Devices]</i>
A-67	<u>Please refer to this addendum, Item #5 – Attachment N – Bus Stop CMS Inventory for more information.</u>
Q-68	<i>8.5.2 CMS For each transit center receiving signage, how many routes are serviced? 8.5.2 CMS Please provide an example/indicative bus stop that would receive CMS signage [Clever Devices]</i>
A-68	<u>Please refer to this addendum, Item #5 – Attachment N – Bus Stop CMS Inventory for more information.</u>
Q-69	<i>Section 8.5.2 CMS For each bus stop please indicate the number of routes serviced... [Clever</i>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<i>Devices]</i>
A-69	<u>Please refer to this addendum, Item #5 – Attachment N – Bus Stop CMS Inventory for more information.</u>
Q-71	<i>Section 8.5.2 CMS During which hours would the authority prefer all sign and onboard installations be completed? Regarding onboard installations, how many vehicles will be made available for each day of the week (from each Operator)? [Clever Devices]</i>
A-71	<u>The hours of installation for CMS are generally 7am-6pm, M-F (some exceptions can be made). For each garage location: the following number of buses will be available per day by type of day (weekday or weekend):</u> <ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): 5pm-9pm weekdays, 1 bus</u></li><li>• <u>Gold Coast Transit: 7am-6pm weekdays, 1-2 buses, 6pm – 12am 3+, more veh may be available during off peak with prior coordination w/maintenance dept.</u></li><li>• <u>Kanan Shuttle: 6:30am – 5pm weekdays, 1 bus; more veh may be available during off peak with prior coordination w/maintenance dept. Moorpark City Transit: 6:30am-5pm weekdays, 1 bus</u></li><li>• <u>Ojai Trolley: 7am – 5pm weekdays, 3 buses, after 5:30pm 4 buses</u></li><li>• <u>Simi Valley: 7am – 5pm weekdays, 4-5 buses</u></li><li>• <u>Thousand Oaks: 6:30am – 5pm weekdays, 1 bus; more veh may be available during off peak with prior coordination w/maintenance dept.</u></li><li>• <u>Valley Express: 6:30am– 5:30pm weekdays, 2 buses, after 5:30pm, 5-6 buses; 7am – 6pm weekends; 7-9 buses</u></li><li>• <u>VCTC: 4am – 7pm weekdays 1 bus, after 7pm-1am 33; 6am – 7pm weekend days 10-14 buses</u></li></ul>
Q-90	<i>Can you please provide the Luminator destination sign ODK part number for the 2006 New Flyers at Gold Coast (on the back of the ODK)? [NEC]</i>
A-90	<u>Unknown.</u>
Q-91	<i>Can you please provide the Twinvision destination sign part number for the Kanan Shuttle? [NEC]</i>
A-91	<u>Unknown.</u>
Q-94	<i>How many stops does each service have? [Connexionz]</i>
A-94	<u>Proposers may access each Operator's route and schedule information online.</u>
Q-95	<i>Can you please confirm that each yard has its' access point infrastructure already set up or if pricing will be necessary for these systems? [Connexionz]</i>
A-95	<u>Existing WLAN/WAP yes/no?</u> <ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): No</u></li><li>• <u>Gold Coast Transit: Yes</u></li></ul>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<ul style="list-style-type: none"><li>• <u>Kanan Shuttle: n/a</u></li><li>• <u>Moorpark City Transit: n/a</u></li><li>• <u>Ojai Trolley: Yes</u></li><li>• <u>Simi Valley: No</u></li><li>• <u>Thousand Oaks Transit: Yes</u></li><li>• <u>Valley Express: Yes</u></li><li>• <u>VCTC: Yes</u></li></ul>
Q-99	<i>Can you please provide details of the fleet which might have an internal DMS including the manufacturer? [Connexionz]</i>
A-99	<u>None.</u>
Q-123	<i>Page 226 Attachment M: Simi Valley Transit: Please confirm specific door dimension for vehicles to be outfitted with APC sensor(s). [Tripspark]</i>
A-123	<u>Dimension of Each Door (in) approx. Front: 78.4 x 34.5 Rear: 78.6 x 32.0</u>
Q-125	<i>Page 227 Attachment M: Ojai Trolley: Please confirm specific door dimension for trollies to be outfitted with APC sensors. [Tripspark]</i>
A-125	<u>Approx. front 72 x 34</u>
Q-126	<i>Page 227 Attachment M: Oji Trolley: Please confirm specific make and model of Microphone/PA system for trollies to be outfitted with AVA. [Tripspark]</i>
A-126	<u>Unknown</u>
Q-127	<i>Page 227 Attachment M: Oji Trolley: Please confirm specific make and model of Headsigns. [Tripspark]</i>
A-127	<u>N/A – no Headsign integration sought</u>
Q-134	<i>In Attachment M – Operators Fleet and System Composition, there is varying detail provided for existing systems where integration is requested. Can you supply the manufacturer and model for each existing vehicle system where integration is desired (e.g., Clever Devices SpeakEasy2, Sunrise NXTP7X962M interior DMS, etc.)? [Avail Tech.]</i>
A-134	<u>All Speak Easy Units are SPEAKEASY 2.</u>
Q-139	<i>Attachment M - With regard to the Clever Devices voice annunciator integration requirements (Thousand Oaks, Moorpark City), please provide information on: a. The make, module and interface port capabilities of the existing units. b. The current firmware version of the annunciator units. c. The method that is currently used to update or change the announcements in the units (i.e. manual upload at each unit, Wi-Fi, etc.) [TripSpark]</i>
A-139	<u>Unknown.</u>
Q-140	<i>Attachment M - With regard to the integration requirements for the existing UTA automatic passenger counters (Thousand Oaks, VCTC, GCTD), please provide: a. Make and model information for the existing APC units b. Describe current method of obtaining passenger count data from the APCs (i.e. manual</i>

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

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	<i>download on vehicles, Wi-Fi, cell, etc.)</i> <i>c. Are there currently any wheelchair ramp or bicycle rack sensors interfaced to the APC equipment? [TripSpark]</i>
A-140	<u>UTA Model 30, LMU42H20W-UTA01, through yard WAP; yes.</u>

**[CONTINUED]**

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 5

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**Item #4:       Answers to Questions Submitted in Response to the RFP**  
**ROUND #2 QUESTIONS AND ANSWERS**

The following questions were submitted during the second round of questions.

**Q/A Format**

**Q-# | Question [Firm Name]**

**A-# | Commission Response**

Q-1	<p><i>This particular project doesn't appear to address voice communications at all. Can you confirm this?</i></p> <p><i>What does the VCTC use for voice communication throughout its transit operations?</i></p> <p><i>Is there any interest in upgrading and integrating the voice network? [Power Trunk]</i></p>
A-1	<p><u>Voice communication is not the focus of the procurement.</u></p> <p><u>VCTC uses push to talk cellular radios.</u></p> <p><u>Not at this time, no.</u></p>
Q-2	<p><i>Question 74 States:</i></p> <p><i>"Q-74 We just received the RFP documents, and noticed that the pre-proposal meeting was mandatory. Since we were initially unaware of the RFP, will this affect our ability to submit a proposal? [Doublemap]</i></p> <p><i>A-74 Firms which intend to submit a proposal as the Prime Contractor were required to attend the pre-proposal meeting. However, firms that did not attend may participate as part of a joint-venture with or as a subcontractor to a Prime Contractor. <b>Prime Contractors are required to perform at least 51% of the work.</b> [VCTC]"</i></p> <p><i>We believe this is a new statement that was not included in the original RFP prior to the pre-proposal meeting. If requirement highlighted in red above was known beforehand, Trillium would have either not expended the resources to attend the meeting, or would have directed a partner</i></p>



## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

	<p><i>firm to attend the meeting. We request that this new requirement should not be applied.</i></p> <p><i>This project requires the procurement and integration of a significant amount of ITS equipment, thus automatically disqualifying us from trying.[Trillium]</i></p>
<u>A-2</u>	<p><u>Following review, VCTC has amended the above response to Round #1, Question #74, as follows:</u></p> <p><u>"A-74 Firms which intend to submit a proposal as the Prime Contractor were required to attend the pre-proposal meeting. However, firms that did not attend may participate as part of a joint-venture with or as a subcontractor to a Prime Contractor." (End)</u></p>
<u>Q-3</u>	<p><i>We understand the importance of this project to the Commission and the participating Operators. It is our intent to submit a quality proposal, that is worthy of this position. However, our ability to develop and provide you with such a response requires the answers to all questions. With the new plan to push out the responses for the 2<sup>nd</sup> set of questions, and answers to the 1<sup>st</sup> set still outstanding, we respectfully request the RFP submission due date also be moved out to a new date being July 13, 2017. [Clever Devices]</i></p>
<u>A-3</u>	<p><u>The due date to submit proposals has been extended to July 11, 2017.</u></p>
<u>Q-4</u>	<p><i>1. As several first-round questions have not been answered, will VCTC provide an opportunity to ask follow up questions specifically regarding the responses to the outstanding questions, once they are released? [Clever Devices]</i></p>
<u>A-4</u>	<p><u>No.</u></p>
<u>Q-5</u>	<p><i>2. VCTC's response to Addendum No 3., Question No 121 indicated that Moorpark did not require pricing for AVA Integration and APC's. Form C-1, for Fleet No, 6, Moorpark identifies that pricing is required for 9.1, AVA Integration and 9.2 APC System. Can you confirm if the pricing sheet is correct? [Clever Devices]</i></p>
<u>A-5</u>	<p><u>Moorpark is NOT seeking AVA Integration or pricing for APC systems. Bidders may disregard these boxes on Moorpark Form C-1.</u></p>
<u>Q-6</u>	<p><i>3. VCTC's response to Addendum No 3., Question No 122 indicated that Kanan Shuttle did not require pricing for 9.1 AVA System, 9.2 APC System, and 9.4 Headsign Integration. Form C-1, for Fleet No, 9 Kanan Shuttle identifies that pricing is required for 9.1, AVA System, 9.2 APC System and 9.4 Headsign Integration. Can you confirm if the pricing sheet is correct? [Clever Devices]</i></p>

## Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

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<u>A-6</u>	<u>Kanan Shuttle is NOT seeking an AVA system, APC system, or Headsign integration. Bidders may disregard these boxes on Kanan Shuttle Form C-1.</u>
<u>Q-7</u>	<i>Can you provide some detail on how the IT infrastructure is managed for each of the operators? That is, is the IT managed in-house by the agency, or is it managed at the City or County level for any particular Operator(s)? [Avail]</i>
<u>A-7</u>	<ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): In-house</u></li><li>• <u>Gold Coast Transit: In-house</u></li><li>• <u>Kanan Shuttle: City of Thousand Oaks</u></li><li>• <u>Moorpark City Transit: City of Thousand Oaks / City of Moorpark</u></li><li>• <u>Ojai Trolley: In-house</u></li><li>• <u>Simi Valley: City of Simi Valley</u></li><li>• <u>Thousand Oaks Transit: City of Thousand Oaks</u></li><li>• <u>Valley Express: In-house</u></li><li>• <u>VCTC: In-house</u></li></ul>
<u>Q-8</u>	<i>Can you please clarify how each agency operates their voice radio communications, i.e., in Open Mic (bus to bus, bus to Dispatch) or in Closed Mic (RTT between bus and Dispatch only)? [Avail]</i>
<u>A-8</u>	<ul style="list-style-type: none"><li>• <u>Camarillo Area Transit (CAT): Closed</u></li><li>• <u>Gold Coast Transit: Open</u></li><li>• <u>Kanan Shuttle: Open</u></li><li>• <u>Moorpark City Transit: Open</u></li><li>• <u>Ojai Trolley: Open</u></li><li>• <u>Simi Valley: Open</u></li><li>• <u>Thousand Oaks Transit: Open</u></li><li>• <u>Valley Express: Open</u></li><li>• <u>VCTC: Closed</u></li></ul>
<u>Q-9</u>	<i>In section 8.2.4, it states that the MDT shall integrate with the Voice Radio (among other interfaces), however, no other requirements are provided related to voice radio integration. In response to Q43 in Addendum 3, you state that no radio integration is required. Can you please clarify if there is any Voice Radio integration required for any of the operators, or if the Voice Communications systems will operate independently from the CAD/AVL system? [Avail]</i>
<u>A-9</u>	<u>No radio integration is required.</u>
<u>Q-10</u>	<i>If any voice radio integration is required, can you please provide the details of the voice radio systems equipment, operating frequencies, etc., in place at each Operator?</i>
<u>A-10</u>	<u>N/A</u>





Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 5

Item #5: Attachment N - Bus Stop CMS Inventory

No.	Stop Name	Local Operator (Routes)	VCTC Intercity (Routes)	APPROX LAT	APPROX LONG	SIGN TYPE TO BE INSTALLED (Single Line - SL or Multiple Line - ML)	POWER? No unless specified "Yes"
1	Oxnard Transit Center	GCTD (1, 2, 3, 4, 5, 6, 8, 18, 19, 20 )	VCTC, Metrolink	34.199651	-119.176606	ML x 2	Yes
2	Ventura Transit Center	GCTD (6, 10, 11, 16, 21)	VCTC (Costal, HWY 101, 126)	34.272576	-119.249579	ML	Yes
3	C St Transfer Ctr (NB)	GCTD (1, 3, 7, 8, 9, 21)	VCTC (CSUCI, Camarillo)	34.175365	-119.181188	SL	
4	4Th & B St (WB)	GCTD (1, 2, 3, 4, 5, 6, 19, 20)	n/a	34.199101	-119.179508	SL	
5	C St Transfer Ctr (SB)	GCTD (1, 3, 9)	VCTC (CSUCI, Camarillo)	34.175496	-119.181268	SL	
6	Wells Center	GCTD (10, 11, 22)	VCTC (126)	34.292126	-119.158481	SL	
7	Rose & Bard (Oxnard College)	GCTD (8, 17)	VCTC (CSUCI)	34.162746	-119.157431	SL	
8	Victoria & Telephone (SB)	GCTD (6, 21)	VCTC (101)	34.266026	-119.212805	SL	

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
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VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

9	Telegraph & Estates (EB) Ventura College	GCTD (6, 10, 21)	VCTC (126, others)	34.275579	-119.230851	SL	
10	St. John's Hospital	GCTD (15, 22, 4B, 19, 20)	n/a	34.217241	-119.156538	SL	
11	Rose & Gonzales (SB)	GCTD (4A, 17)	n/a	34.218222	-119.158522	SL	
12	Victoria & Telephone (NB)	GCTD (6, 21)	VCTC (Coastal Express, HWY 101)	34.266184	-119.212414	SL	
13	Main & Catalina (WB)	GCTD (6)	n/a	34.277788	-119.268830	SL	
14	Gonzales & Rose (Wal-Mart, WB)	GCTD (4B, 20)	n/a	34.219080	-119.161398	SL	
15	Esplanade & Esplanade Shp Ct (SB)	GCTD (6, 15)	VCTC (Coastal Express, HWY 101)	34.231761	-119.176131	SL	
16	Santa Paula City Hall - Veterans Park	Valley Express (A &B)	VCTC (hwy 126)	34.351883	-119.060022	SL	
17	Fillmore Terminal	Valley Express (Fillmore Loop, Piru)	VCTC (hwy 126)	34.391422	-118.917913	SL	
18	Simi Valley Town Center mall	Simi Valley (A, B, C)	VCTC (East County)	34.285317	-118.769455	SL	
19	Simi Valley Civic Center	Simi Valley (B, D)	n/a	34.286878	-118.717959	SL	
20	Simi Valley Civic Center	Simi Valley (A, C)	n/a	34.286876	-118.717585	SL	
21	Simi Valley Metrolink (EB)	Simi Valley (B, C)	n/a	34.271511	-118.695155	SL	
22	Simi Valley Metrolink (WB)	Simi Valley (A, C)	n/a	34.271761	-118.693842	SL	
23	Yosemite/LA (WB)	Simi valley (A, C)	n/a	34.271837	-118.679003	SL	
24	Yosemite/LA (EB)	Simi Valley (B, C)	n/a	34.271574	-118.677770	SL	
25	Thous. Oaks Transit Center - interior	TOT (2,3,4, Metrolink-TO)	VCTC (Hwy 101/Conejo, East County)	34.1748849	-118.8611611	ML	Yes
26	Thous. Oaks Transit Center - exterior	TOT (2,3,4, Metrolink-TO)	VCTC (Hwy 101/Conejo, East County)	34.1748849	-118.8611611	ML	Yes
27	Oaks Mall	TOT (1, 2,3,4, Metrolink-TO)	VCTC (Hwy 101/Conejo, East County)	34.18274394	-118.8870986	ML	Yes

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
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VCTC RFP 17-90164-AVL  
Addendum No. 5, June 10, 2017

28	Thous. Oaks Teen Center / Library	TOT (Route 2)	VCTC (East County)	34.20011961	-118.8544438	SL	
29	Hillcrest / Amgen	TOT (Route 1,3)	VCTC (East County)	34.18808185	-118.9186266	SL	
30	Hillcrest / Shady Oaks	TOT (Route 1, 3 )	VCTC (East County)	34.18792042	-118.9184181	SL	
31	Moorpark College	MCT (1)	VCTC (East County)	34.299514	-118.8403546	SL	
32	Moorpark Metrolink Stn	MCT (1,2)	VCTC (East County)	34.284473	-118.8774659	SL	
33	Moorpark City Hall	MCT (1,2)	n/a	34.287106	-118.883083	SL	
34	Camarillo Metrolink Stn	CAT	VCTC (hwy 101, CSUCI)	34.2160862,	-119.0342868	SL	
35	Carmen Plaza City Hall	CAT	VCTC (hwy 101, CSUCI)	34.2208737	-119.0518105	SL	
36	Leisure Village	CAT	n/a	34.223048	-118.9890875	SL	
37	Park and Ride - OJAI	Ojai Trolley 2 routes	GCTD 1 route	34.4482184	-119.2418375	SL	
38	Maricopa Hwy (VONs)	Ojai Trolley 2 routes	n/a	34.4415338,	-119.2615713	SL	
39	El Roblar (ACE)	Ojai Trolley 2 routes	n/a	34.448269	-119.277836	SL	
40	Hwy 150 / Hwy 33	Ojai Trolley 2 routes	GCTD 1 route	34.4294272	,-119.2887936	SL	

**ATTENTION BIDDERS**

Final locations subject to change.

Geo-coordinates approximate. Route count per stop subject to change.

Proposers should assume the removal of existing CMS at above locations as part of proposal.

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 6, June 27, 2017

---

**REQUEST FOR PROPOSAL (RFP)**  
**Automatic Vehicle Location (AVL) & Passenger Information System**  
Addendum #6  
June 27, 2017

**Table of Contents:**

- |    |   |         |
|----|---|---------|
| 1. | Acknowledgment of the Receipt of Addendum   | (Pg. 1) |
| 2. | Amendments to the Request for Proposals, and updated form(s):<br>Attachment H – Mail-in Reference Questionnaire | (Pg. 2) |

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 6

---

**Item #1: Acknowledgement of Receipt of Addendum**

The undersigned acknowledges receipt of **Addendum #6 to VCTC RFP No. 17-90164-AVL**. This receipt must be included with your firm's proposal. Any proposal submitted without a completed Acknowledgement of Receipt of Addendum may be deemed non-responsive and discarded.

---

Authorized Signature

---

Dated

---

Printed Name

---

Company/Firm

Exhibit A - Request For Proposals



Ventura County Transportation Commission  
950 County Square Drive #207  
Ventura, CA 93003  
805.642.1591  
VCTC RFP 17-90164-AVL  
Addendum No. 6, June 27, 2017

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Ventura County Transportation Commission

VCTC RFP No: 17-90164-AVL  
Title: Automatic Vehicle Location & Passenger Information System  
Issued: March 3, 2017  
Due: July 11, 2017  
Addendum: No. 6

---

**Item #2: Amendments to the Request for Proposals, and  
updated form(s):**

**Attachment H – Mail-in Reference Questionnaire**

The submittal deadline for *ATTACHMENT H: Mail-in Questionnaire* has been extended to **JULY 11, 2017**.

An updated Questionnaire form is provided on the following pages; however, either the original form or the updated form will be accepted prior to **JULY 11, 2017, 5:00PM, Pacific**.

**(CONTINUED)**

June 27, 2017

RFP 17-90164-AVL

Addendum No. 6

***Attachment H - Mail-In Reference Questionnaire***

Proposer Company: \_\_\_\_\_

Date: \_\_\_\_\_

Reference Company: \_\_\_\_\_

Phone: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

**I. Instructions for Completion**

***A. Proposing Company***

1. Type your company name on "Proposing Company" line.
2. Type the company name of your reference on "Reference Company" line.
3. **Mail or e-mail** this form to your references; three (3) are required. To ensure receipt of an adequate number of reference responses, send Questionnaires to more than three (3) companies.
4. Under no circumstances will reference questionnaires be accepted directly from proposer.
5. It is your responsibility to follow up with your references to ensure timely receipt of questionnaires.
6. The Commission will not be an acceptable reference, nor will any member of the Proposer's organization.

***B. Reference Company***

1. Print the responding individual's name, title, phone # and date on the appropriate lines.
2. Legibly write or type your response in the following manner. Use this form or using a separate sheet of paper, restate each question followed by your answer.
3. Mail, email or fax your completed questionnaire to:

Ventura County Transportation Commission

Attn: Aaron Bonfilio

950 County Square Drive, 207

Ventura, CA 93003

**abonfilio@goventura.org**

4. This completed questionnaire **MUST** be received by the RFP due date: ***JULY 11, 2017***
5. **DO NOT** return this questionnaire to the proposing company.

-

(CONTINUED)

Exhibit A - Request For Proposals

June 27, 2017

RFP 17-90164-AVL

Addendum No. 6

**II. Qualifying Questions – PLEASE ANSWER ALL QUESTIONS**

1. Are you the primary person responsible for contract administration with the proposing company?

Yes ☐ No ☐

2. What was the nature of the project you contracted with the proposing company for?

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3. When did your contract with the proposing company begin?

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4. When did your contract with the proposing company end? **(If not ended, when will it end?)**

---

---

5. What was the approximate annual cost of the proposing company's contract with you?

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**III. Evaluated Questions. Please answer the following sixteen (16) questions using the scale provided:**

1. Please rate the quality of the proposing company's overall service.

Excellent ☐ Good ☐ Fair ☐ Poor ☐

2. How well did the proposing company meet your stated goals?

Excellent ☐ Good ☐ Fair ☐ Poor ☐

3. How would you rate the response time of the proposing company to your calls or emails?

Excellent ☐ Good ☐ Fair ☐ Poor ☐

4. Were the proposing company communications with you clear and concise?

Always ☐ Usually ☐ Sometimes ☐ Never ☐

Exhibit A - Request For Proposals

June 27, 2017

RFP 17-90164-AVL  
Addendum No. 6

5. Were the milestones identified for the project schedule consistently met?  
Always ☐ Usually ☐ Sometimes ☐ Never ☐
6. Did the proposing company keep you informed of progress?  
Always ☐ Usually ☐ Sometimes ☐ Never ☐
7. Did the proposing company keep you informed of problems that would affect a timely and satisfactory outcome of your project?  
Always ☐ Usually ☐ Sometimes ☐ Never ☐
8. Was the team originally assigned to your project (including project manager) maintained for the duration of your project?  
Yes ☐ No ☐
9. If proposing company replaced a project manager or staff, was your prior approval obtained?  
Yes ☐ No ☐
10. Have you ever had to request that any of the proposing company's team be replaced?  
Yes ☐ No ☐

**If yes, please explain:**

---

---

11. Did you experience any problems with the accuracy of the proposing company's billing?  
Yes ☐ No ☐
12. Did you experience problems with the proposing company canceling meetings or conference calls?  
Yes ☐ No ☐
13. Was the proposing company reasonable and prudent with travel and incidental expenses?  
Yes ☐ Usually ☐ Sometimes ☐ No ☐
14. Have the problems you experienced with the proposing company been dealt with to your satisfaction?



Exhibit A - Request For Proposals

June 27, 2017

RFP 17-90164-AVL  
Addendum No. 6

Always or No Problem ☐ Usually ☐ Sometimes ☐ Never ☐

15. Was the proposing company flexible in meeting your requirements?

Yes ☐ Usually ☐ Sometimes ☐ No ☐

**If no, please explain.**

---

---

16. From the beginning of your first contract with the proposing company, how long did it take for you to receive benefits from the proposing company's efforts on your behalf?

One Year ☐ Two Years ☐ Three Years ☐ Four Years or More ☐

**IV. Additional Questions**

1. What would you do differently next time you undertake a similar contract?

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2. Explain why you would or would not do business with the proposing company again.

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3. Did you use specific performance criteria to measure progress on your project? Would you be willing to share them with us?

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4. What suggestions do you have to make the process easier and/or more productive?

---

---

# REDACTED

**This copy can be used to service public records requests and is identical to the original with the exception of confidential information.**



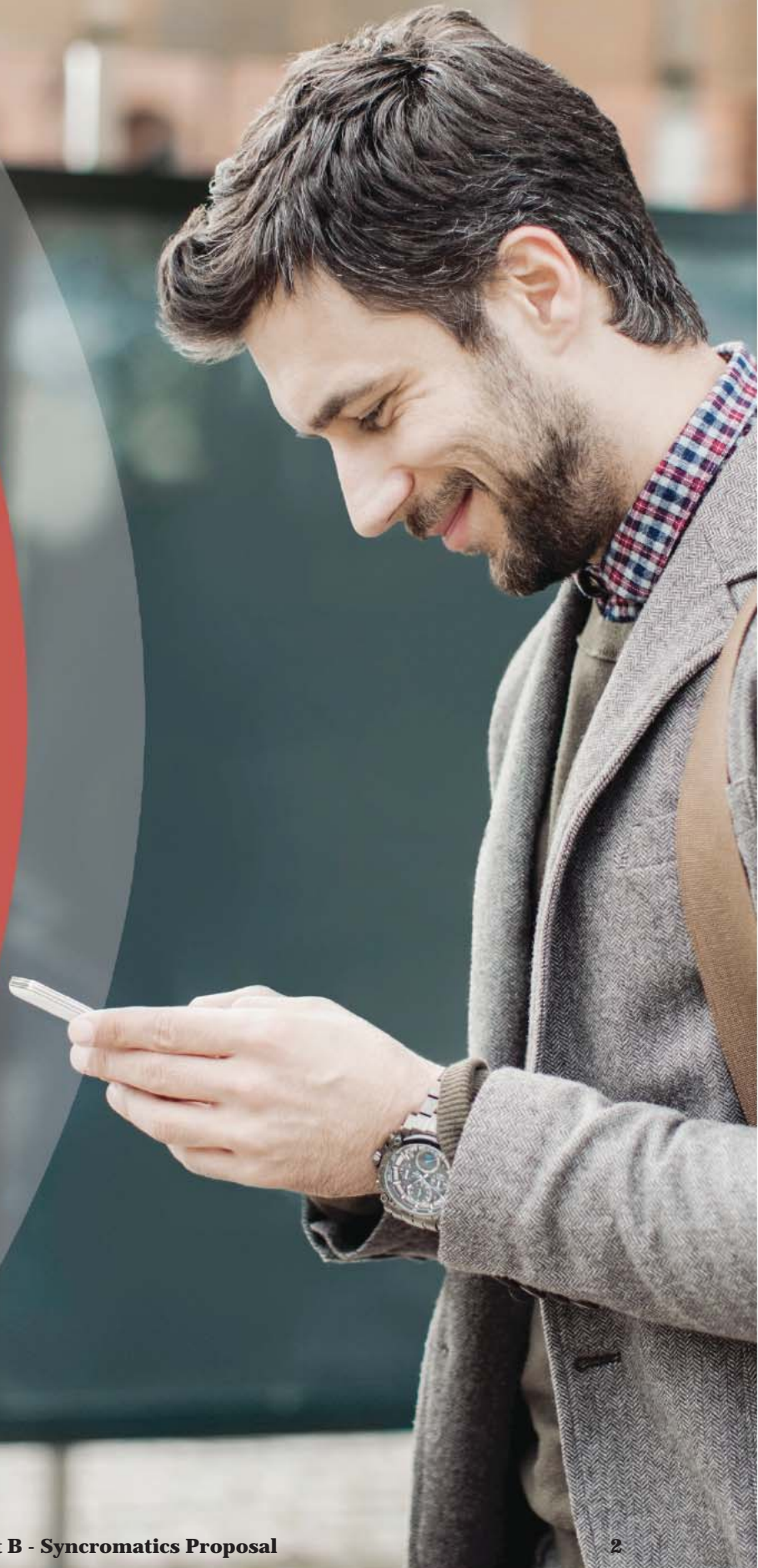
RFP 17-90164-AVL  
Automatic Vehicle Location &  
Passenger Information System

# Technical Proposal

July 11, 2017

PREPARED FOR:  
Ventura County  
Transportation Commission  
950 County Square Drive,  
Suite 207  
Ventura, CA 93003

SUBMITTED BY:  
Alex Fay  
VP, Business Development







523 W 6th St, Suite 444, Los Angeles, CA 90014

July 11, 2017

Dear Stakeholders:

Like any relationship, over time the partnership between a transit agency and its technology vendor can get stale. Equipment can get old and sag behind the times. Software doesn't look as fresh as it once did. The cheery customer service attitude you got at the beginning fades to indifference... This may be the case with many vendors in the industry, but that's not how Syncromatics operates. Ask our long-term clients like Los Angeles Department of Transportation, and they'll tell you our commitment to customer service stays fresh and our technology keeps working even after being together for almost a decade.

Syncromatics started 10 years ago as a scrappy startup, and now we are the North American arm of a multinational technology company. We have grown tremendously since our founding in 2006, and we owe our success to the quality of our technology and the way that we treat our customers. During our growth, we've held on to the flexible "can-do" attitude that defined our early days, and we know that our business won't be successful unless our customers are happy over the long term. Since our acquisition in 2015 by GMV, a global transportation technology leader, we now have all the power and resources of our parent company behind us.

We believe in Open Innovation. This means that good ideas can come from anywhere. We develop great technology of our own, and we pair it with best in breed solutions from experts in their respective fields. We aspire to be the best integrator of transit technology, whether we've invented it ourselves or not.

Our hardware solution is designed to be simple and modular. We've eliminated unnecessary components like a separate Vehicle Logic Unit in order to streamline, keep costs down, and reduce potential failure modes. We primarily rely on "off the shelf" components, and we bring together the best technologies in each category to provide a single integrated solution.

We specialize in serving small and mid-sized transit agencies, and our system is designed to meet their unique needs. Our software is designed to give operators powerful tools in an easy-to-use interface.

We move quickly to launch new clients because we have done this before, and we aren't getting paid by the hour. Our system is designed to be repeatable with minimal customization. We've installed the very same set of equipment many times before, so we don't need to waste your time by starting each project from scratch. All of our projects have 90% common elements, and 10% customization for routes, stops, vehicle types, etc. This enables us to get new client sites fully deployed, tested, and live to the public within 6 months, while others in our field insist on deployment schedules 2-3 times that long. This means that, we can enable a smooth and seamless transition from your current CAD/AVL system to a more modern architecture before the end of May 2018.

We have included detailed reference information for several customers similar in size, scope and operating profile. These clients have years of history with Syncromatics and can vouch for how we perform over time and how we respond to their requests for new product capabilities and new features. Marin County, Merced County, and LADOT have all been clients for at least four years, and in that time they've experienced the dramatic growth in our firm's capabilities. We have also included a complete list of our public transit clients to facilitate reference checks about our customer service history. Our company's strategy is built around long term customer relationships, and we've worked hard to develop the trust and continued business of our current clients. You are authorized and encouraged to contact any of them.

Syncromatics is a company where each and every customer can call the founder or CEO directly if something doesn't work, and we can pull the right staff together at a moment's notice to fix it. We won't pass you off to a regional field office or a traveling sales team – we will support your account from our corporate headquarters in Downtown Los Angeles, where our software engineers sit next to project

managers and sales staff sit next to customer support reps. The salesman who pitches you the system will be on the hook as your account manager to deliver on his promises.

We are proposing the following elements in the Base System:

- Fixed Route CAD/AVL hardware and cloud hosted software to enable real-time dispatching and robust analysis of operational performance
- Real Time Passenger Information (via web and mobile devices) that is accurate and reliable
- A custom branded smartphone app for iOS and Android devices to provide real time information to passengers in addition to schedules, fares, and trip planning
- 40 solar powered LED signs that require no wires, no maintenance, and no special site conditions to provide comprehensive passenger information across the county.
- Reporting module for analysis of transit operations metrics and easy to generate graphical reports

Highlighted optional items include:

- Syncromatics' custom designed annunciator system, featuring configurable text-to-speech announcements and stop/route settings that can be updated over the air in real time
- Integration of existing Automated Passenger Counting hardware with Syncromatics fully integrated APC reporting software, or installation of new APC systems as needed
- Integration with fareboxes and headsigns for single sign on

We've also described a number of optional elements, such as electronic fare collection, paperless pre-trip inspections, and on board multimedia infotainment screens to enhance passenger communications.

We have received and reviewed all six addenda related to this RFP, and we commit to honor the enclosed pricing for 180 days. The price in the proposal was arrived at independently, without collusion, consultation, communication, or agreement as to any matter related to the proposal with any other Proposer, competitor, or public officer.

Our favorite client relationships are the ones in which we are truly a partner with the client to solve an important challenge. We love getting new product ideas from our clients, and we find great satisfaction in delivering new features to make public transit a more attractive transportation option. Our Los Angeles based staff is keenly aware of the unique transportation challenges in Southern California, and we are excited to be part of the solution.

If you have any further questions, please don't hesitate to contact me by phone at (213) 973-1209 or by email at alex@syncromatics.com.

Sincerely,



Alex Fay  
Vice President, Business Development

# Table of Contents

<b>1. Executive Summary .....</b>	<b>6</b>
1-1. What Makes Syncromatics Unique.....	6
1-2. Product Overview .....	9
1-3. One System for CAD/AVL and RTPI .....	10
1-4. System Diagram.....	11
<b>2. Project Understanding, Proposer Solution .....</b>	<b>12</b>
2-1. Clearly Defined Goals.....	12
2-2. Multi-Agency Project.....	13
2-3. Leverage Existing Equipment and Resources.....	13
2-4. Immediate Solution with Long Term Growth Potential .....	13
<b>3. System Description – Base System .....</b>	<b>14</b>
3-1. Real-Time Passenger Information .....	14
3-2. Computer Aided Dispatch / AVL .....	25
3-3. Administrative & Reporting Functions.....	37
3-4. NTD Reporting .....	42
3-5. Automatic Trip Switching to Reduce Driver Workload .....	43
3-6. Hosting of Software, Data, and Infrastructure .....	44
3-7. Clarifying Feature Capabilities and Timelines .....	47
3-8. Compliance Matrix .....	48
<b>4. System Description – Optional Items .....</b>	<b>51</b>
4-1. Next Stop Annunciator & Interior Bus Signage .....	51
4-2. Exterior Headsign Integration.....	60
4-3. Automatic Passenger Counting (APC) System.....	60
4-4. Real-Time Arrival Signs .....	66
4-5. Electronic Signs - Route & Stop Management .....	67
4-6. Electronic Signs – Message Management .....	72
4-7. Electronic Signs – Experience with Alternative Signs .....	76
4-8. Equipment Service Plan.....	81
4-9. REMIX Planning and Scheduling Software .....	82
4-10. SyncCHECK: Pre-Trip, Post-Trip, and Maintenance Inspections.....	86
4-11. Mobile Broadband Routers and Passenger Wi-Fi.....	88
4-12. Electronic Fare Collection via TouchPass .....	90
4-13. Multimedia On-Board Infotainment .....	92
4-14. Demand Based Transit Service Expandability .....	93
<b>5. Team Overview .....</b>	<b>94</b>
5-1. Project Team Organization .....	94
5-2. Summary of Project Team Experience .....	95
5-3. Resumes of Key Personnel .....	96
5-4. Use of Subcontractors .....	99
<b>6. Implementation Plan / Project Management.....</b>	<b>100</b>
6-1. Proposed Timeline .....	100
6-2. Detailed Project Schedule .....	101
6-3. Installation.....	108
<b>7. Quality Assurance Plan .....</b>	<b>110</b>

7-1.	Ensuring a High Quality Job Every Time.....	110
7-2.	Warranties .....	112
7-3.	Support.....	114
<b>8.</b>	<b>Training .....</b>	<b>119</b>
8-1.	Training, Implementation, and Documentation .....	119
<b>9.</b>	<b>Commission / Operator Roles and Responsibilities .....</b>	<b>126</b>
9-1.	Overview .....	126
9-2.	Cellular Network Preference.....	126
9-3.	Workstation Requirements.....	126
9-4.	Availability of Vehicles and Staff.....	127
9-5.	Provision of Route and Stop Information .....	127
9-6.	Notification of Route and Schedule Changes .....	127
<b>10.</b>	<b>Experience .....</b>	<b>128</b>
10-1.	Syncromatics by the Numbers .....	128
10-2.	Marquee Projects .....	129
10-3.	Value Proposition.....	130
10-4.	Mission Statement and Core Values .....	130
10-5.	Organizational Culture.....	131
10-6.	Syncromatics Organization and Management Team .....	133
10-7.	GMV as Syncromatics' Parent Company .....	136
10-8.	Locally Based in Southern California.....	136
10-9.	Additional Company Details.....	137
10-10.	References .....	138
10-11.	Complete List of Municipal Public Transit Clients .....	143
	<b>Financial Statements .....</b>	<b>145</b>
<b>11.</b>	<b>Pricing.....</b>	<b>147</b>
<b>12.</b>	<b>Required Forms .....</b>	<b>148</b>
<b>13.</b>	<b>Appendices .....</b>	<b>151</b>
13-1.	Request for Notification of Shortlist/Award.....	151
13-2.	Designated Point of Contact .....	151



# Executive Summary

## 1-1. What Makes Syncromatics Unique

### The Local Company with National Experience

Syncromatics is based in Downtown Los Angeles, so we can offer Ventura County operators a full featured tech solution of a national market leader as well as the customer support you'd expect from a local company. This means that we can attend project management meetings in person once a month (or more!), and we'll have rapid response times to send out a technician or replace a component. Participating operators will be invited to participate in Southern California workshops with other Syncromatics clients. Furthermore, our local presence allows us to offer a concierge Equipment Service Plan to ensure that your CAD/AVL system will always be tuned up without putting additional workload on local staff or operating contractors who lack the technical expertise.

### Experience with Multi-Site CAD/AVL Projects

Managing a single project with multiple participating agencies is a complex process that requires a unique approach, and Syncromatics has extensive experience with this kind of project. For almost 10 years we have managed Los Angeles DOT's 300+ bus operation, which is spread across 5 contract packages, 4 bus yards, and 2 different operating companies. We also provide CAD/AVL services for hundreds of buses operated by MV Transportation spread across sites all over the United States. In both cases, we provided special software to help provide administrators top level access to all data while restricting individual user access to only a specific site. We also know the project management challenges of deploying multiple sites in a single project, and our project implementation plan reflects our approach of starting with a solid foundation of project level planning before beginning individual site implementations (see detailed Gantt Chart).

### Technology Designed for Small to Mid-Sized Operations

Syncromatics product is a good fit for the range of operators in Ventura County. Our software is easy to use for small agencies under 10 buses, but it also provides the feature set needed by VCTC and Gold Coast to manage more complex transit systems. Our average client fleet size is around 30 vehicles, so we've got a lot of experience in this corner of the industry, and we know the special challenges that small operators face. As one example, we offer basic excel based bus schedule import template for use by small operators, and we also support full GTFS import capability for more complex operations.

### Open Platform with Integrated Third Party Solutions

Our MDT runs on the open source Android operating system. Our schedules and routes natively import/export via GTFS. We share real time passenger information via JSON APIs....

We have designed our system to be open so we can take advantage of the best transit technology solutions out there, even if we didn't build them ourselves. In this proposal, we have included a number of best of breed solutions from partners that will help deliver a successful project.

- Scheduling software provided by Remix
- GTFS creation and data cleanup by Trillium
- Touchpass Electronic Fare Collection by Delerrok
- Comprehensive Pre/Post Trip inspections by Revecorp

No single company can be the best at everything, so we've assembled the best into an integrated solution.



## We Will Get ALL Operators on GTFS and GTFS-RT

As part of our initial setup, Syncromatics and Trillium will create a clean GTFS feed for each operator, and we will assist in uploading this to Google Maps. We will also publish a GTFS Realtime feed so every operator can share real-time data with the public and software developers.

## Comprehensive Software to Manage Electronic Signs and Messages

Our new SyncSIGN module provides easy to use control over the timing, content, and display of electronic signs to enable transit agencies to get the most out of their investment. This unique software was developed by Syncromatics to meet the needs of Los Angeles Metro during the deployment of 300 bus shelter LED signs across Los Angeles County. Now we can offer this powerful tool to all of our clients deploying digital signage to push out live service alerts, schedule public service announcements, organize signs by location, service provider, route, or other grouping. Syncromatics has experience deploying large fleets of electronic signs, and we have the software tools to help our clients operate and support these projects.

## Mobile Data Terminal and Dock (No VLU Required)

The Syncromatics OpenMDT Plus is the cornerstone of our ITS system inside the bus. It handles all of the data processing, storage, transmission, and user interface. All these features are packaged in a single modular and swappable package. The touchscreen works in all weather conditions and is compatible with gloves.

The MDT is delivered with a fully integrated vehicle dock to enable rapid removal/replacement of the MDT. This can support walk-around pre-trip inspections of vehicle condition and safety features.

The dock also provides additional input/output (I/O) ports to support peripheral integrations like external antennae, automatic passenger counters, automatic voice annunciator, headsign, farebox, and other components. The MDT/dock will connect to the existing Cisco routers via an Ethernet cable.

The Syncromatics on board solution does not include a Vehicle Logic Unit. All functions normally provided by competitor's vehicle logic units are handled by the MDT and Dock. This approach reduces complexity and cost, and improves reliability by having fewer components to break and fewer elements to troubleshoot.

## Automatic Voice Annunciator

Our Automatic Voice Announcement system is proprietary, and we have designed it to be fully integrated with our CAD/AVL software. It will automatically adjust to changes in routes, stops, and schedules, and it will never erroneously announce a stop on the wrong side of the street as some are prone to doing.

The system uses a text-to-speech (TTS) engine to make announcements, which can be configured to suit hard to pronounce stop names **from any web browser**.

No driver/operator interaction is necessary to operate the AVA system

Syncromatics AVA announces **every stop**, not just major stops and transfer points

The AVA system will integrate with the existing PA system, microphones and speakers

The TTS system natively supports Spanish, French and other foreign languages with proper accent and inflection.

The system supports interior PIDS to provide text based notification of upcoming stops

The approach distance and time between announcements are configurable for each stop via an intuitive graphical user interface

Changes to route/stop/announcement settings sync over-the-air with the fleet within 5 minutes

**Severe weather issues impacting service?** Push out an EMERGENCY notification to all buses advising riders of the change in normal service as soon as you decide on a contingency plan – that way no one gets stuck in the storm without a ride home.

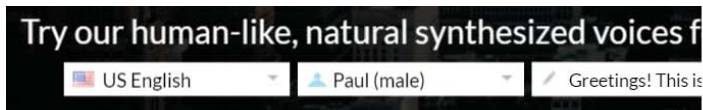
Text to speech: “Severe weather will result in suspended operations today at 4pm”

Start Announcement: ASAP, push the update to all buses now.

Expire Announcement: Today at 4:10pm

Frequency: Every 5 minutes, on all buses

Take the Text-to-Speech quality for a test drive at [www.neospeech.com](http://www.neospeech.com) -- a screenshot of the custom test widget is below.

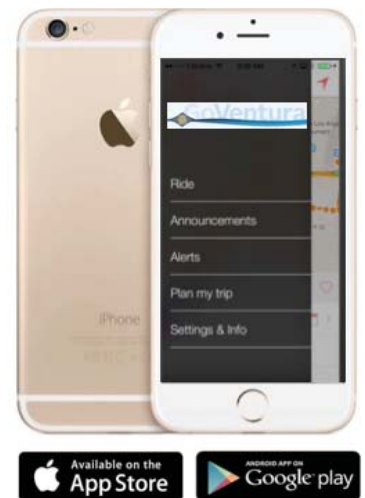


## Custom Mobile Apps with Your Branding

The most important thing about passenger facing technologies is that they are easy to use. The first step is making your app easy for riders to find and download. By branding the app for the client (and not the vendor's name) it will be easy for riders to visit the iOS or Android app store and install the app on their phones. This will help drive adoption among new student riders.

Once they have the app, they can select favorite stops, setup recurring weekly/daily notifications for bus arrival times, track buses in real time, and receive alerts from the mobile app about delays and service interruptions. The app includes an integrated trip planner as well.

Syncromatics offers a unique client branded mobile app solution that puts the university's name and logo front and center.



## Paperless Pre-trip Inspection






Our customizable pre- and post-trip inspection software runs right on the MDT and instantly validates whether a bus is safe to operate and transmits issues to the maintenance team without any paperwork. You can build your inspection templates based on our samples and customize them to fit your needs. Inspection software also support periodic maintenance inspections, preventive maintenance schedules per vehicle type, and “incident reporting” in the event of a bus collision, passenger injury, or other complaint.

## Data Based Decisions for Route Redesign

We've helped many clients do wholesale redesigns of their routes and schedules using AVL data as a factual basis for the modifications. Check out our case study about working with Merced County Transit (CA) in the references section for more details.

## 1-2. Product Overview

Syncromatics provides tools to benefit every user of the transit system. These features are designed to address common problems that each user encounters and address those problems in a comprehensive system.

	PROBLEM	SOLUTION
 <b>Rider</b>	Where's the bus?	RTPI Real Time Passenger Information
 <b>Driver</b>	How do I operate the bus safely and on time?	MDTs Mobile Data Terminal
 <b>Dispatcher</b>	Are the buses working right now? If not, why?	Exception-based Dispatching
 <b>Planner</b>	How do i make the buses run better? Whats the problem?	Detailed reports
 <b>Executive</b>	Does my transit system work? How do I know?	Bottom Line reports

## TRANSIT STAKEHOLDERS

## 1-3. One System for CAD/AVL and RTPI



### Where's my bus?

#### Real Time Passenger Information

- Arrival predictions – "bus in 6 minutes"
- Web-based bus tracking maps for riders on their laptops or at their desks
- Mobile access for people waiting at the stop – iPhone, Blackberry, Android, Windows phones
- Customized portal, applications and branding with your agency's name and logos on it, not Syncromatics
- Electronic signs for transfer centers and hubs
- Text (SMS) and IVR phone access for riders without smartphones
- Push notifications that let planners and administrators proactively notify riders of service changes and disruptions via smartphone applications and text/SMS

### Does our transit system work?

#### CAD/AVL

- Bus tracking maps for dispatchers—drivers, runs, deadheading, real-time performance
- Real-time tools for analyzing schedule performance, ideal spacing between buses, who is signed in to what bus, right now
- Ridership reporting via passenger counters and web-based reports
- Customer service tools for figuring out what is happening and what happened in real time and after the fact
- Operator terminals that help drivers tell the system what service their bus is operating and get real-time feedback and communications from the system and dispatch
- Fully integrated automated passenger counting option
- Executive-level bottom-line reporting
- Planner-level detailed reporting

## 1-4. System Diagram

This diagram provides an overview of the Syncromatics technology on and off the bus. Yellow highlighted items are included in the base proposal.



## 2. Project Understanding, Proposer Solution

### 2-1. Clearly Defined Goals

This RFP included a clear set of goals that we interpret as being well aligned with our solution. We have attempted to reflect these goals throughout the proposal to show how our technology can help VCTC succeed.

Commission Objective	Technology Capability	How Syncromatics Can Help
Make public transit more attractive to the general population.	By providing real-time, accurate updates on vehicle location through customer service and real-time passenger information signs.	Mobile App, Websites, and Realtime signs with up to date info will make riding more pleasant.  Helpful, relevant, timely on board announcements will improve the rider experience on the bus, especially for new riders.
Maximize passenger movements.	By better tracking vehicles and identifying vehicles that are off route or schedule.  By enabling transfer requests among fixed routes By providing more complete and accurate data for trip planning and scheduling purposes.	See Merced "The Bus" case study in References section to learn how Syncromatics help Merced increase ridership by planning better routes.  We've included optional Remix Planning and Scheduling software to optimize routes and schedules even further.
Reduce operational costs.	By improving the efficiency of passenger transfers.  By automating the collection of operational data, including NTD required service data.	Our planning tools can identify excess vehicles and low performing routes so you can reposition resources to be more effective and do more with less.
Reduce emission / energy costs.	By collecting better schedule and route adherence data, and better tracking paratransit vehicles to improve more efficient scheduling and trip planning.	Increasing ridership through better Real Time Passenger Information will help take cars off the road, and planning more efficient routes with less idling and shorter run times will reduce bus fuel usage.
Improve transit system safety.	By automatically locating and reporting vehicle locations to the dispatch center.  Through the emergency alarm function of the MDT which lets vehicle operators alert the dispatch center of incidents on the bus without making passengers aware an alarm has been issued.	Syncromatics will integrate covert alarm buttons into CAD/AVL software and enable realtime alerting of dispatch and even the police, if desired.

## 2-2. Multi-Agency Project

This project is unique because it is composed of multiple smaller transit agencies joining together to leverage their buying power to secure a better deal and pursuing tight coordination of their technology to enhance the rider experience for travelers throughout Ventura County.

In general, Syncromatics cautions transit agencies against consortia based procurements because it can be challenging to find a single tech solution that meets the various needs of the participants. However, in this case the approach is sensible. The smallest participating agencies (under 10 buses) would be hard pressed to get the attention of high quality technology companies without partnering together, so they would be stuck with a low quality technology solution better suited to a basic university campus shuttle operation. The larger agencies in Ventura County, Gold Coast and VCTC, can also benefit from an easy to use technology solution – they aren't so big and complex as to require a big, heavy CAD/AVL system better suited to a large metropolitan area.

This project is a "Goldilocks" – the participating agencies are not too small and not too large. The most successful transit technology project come from a good fit between the transit agency and the awarded vendor. It's important to identify a vendor who has a product and company that are geared towards transit agencies of around 50 buses and under.

## 2-3. Leverage Existing Equipment and Resources

The RFP has made it clear there is a desired to save money by reusing components where it is possible, without sacrificing the quality of the project. We think this is an admiral goal. Syncromatics will commit to value engineering this project to be as cost effective as possible, even if that means reducing our fees and scope of work to save the client money. For example, if we are able to reuse existing components on the bus, such as cellular/GPS antennae, interior LED signs, speakers, and other components beyond what was included in our proposal, then we will issue a credit to the client. We would rather help transit agencies spend their money on advanced technology that improves the bus rider experience rather than replacing systems that are in good working order and compatible with new technology.

One potential area of cost savings could be re-using the existing NextBus digital signs and simply upgrading them with new modems that will work on the 4G cellular network. The sign hardware may still be functional in many cases, and the new modems will give the signs a new lease on life. Syncromatics has upgraded many similar signs in the past, including NextBus signs installed in Little Rock, AR (which subsequently became a Syncromatics client).

## 2-4. Immediate Solution with Long Term Growth Potential

This project is trying to serve two different but equally important goals: meet the short term needs of the transit operators to upgrade their legacy NextBus on-bus equipment, software, and digital signs, while also creating a new technology platform for future growth and expansion. Syncromatics can meet the immediate needs with a turnkey solution that has been tested hundreds of times, and we also offer a robust technology roadmap for new systems that can grow with your transit agency's needs.



### 3. System Description – Base System

#### 3-1. Real-Time Passenger Information

Syncromatics' real-time passenger information (RTPI) tools are all presented with YOUR brand front and center, even though the data comes from our servers. Your riders do not need to know who Syncromatics is – we help them build a relationship with your agency. When someone in town looks at the bus stop signs, sees the logo on the bus, or goes to your website, they should be able to search for YOUR name (not ours) in the App Store to find your app.


Our proposal includes building a single app to serve all participating agencies, but we are also open to other approaches, such as a single app for each agency.



It is our goal and philosophy to meet riders where they're at. We know that high school seniors have different technical knowledge than senior citizens. So we provide information via Smartphone App, but also via traditional desktop and mobile websites, and text message or call in systems.

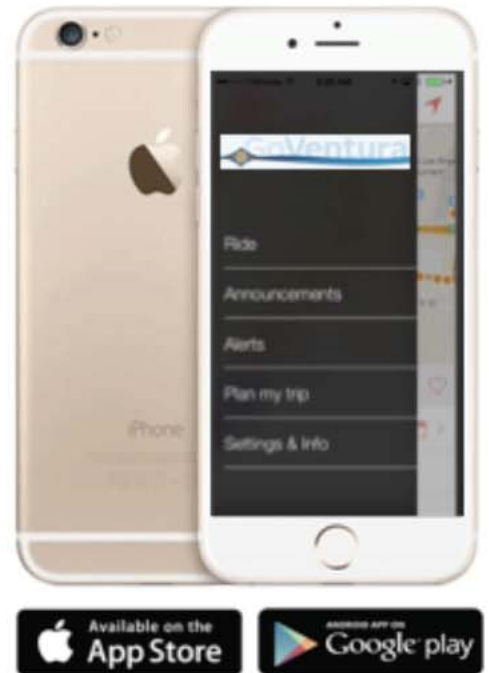
Method	Features / Sample
Smartphone App	Fully featured native app, customized for your brand (iOS, Android) Search "METROTrack" in the app store to view the app for Rock Region Metro.
Mobile Website	Mobile geo-location of stops iPhone / Android / Blackberry / Windows Phone <a href="http://www.thebuslive.com">www.thebuslive.com</a> – see it now on a mobile device (Merced County Transit)
Desktop Website	Fully featured, optimized for larger screen. See the same URL above on a desktop device. Can also be embedded within agency website, see: <a href="http://rrmetro.org/rider/plan-your-trip/transit-trackers/find-my-bus/">http://rrmetro.org/rider/plan-your-trip/transit-trackers/find-my-bus/</a>
SMS - Text Messaging	Arrival predictions by stop #: e.g. Text "ladot 6143" to 41411 Subscription based rider alerts customized by route/stop/day of week/time
IVR - Telephone	Call (213) 785-3858, press 0, enter stop # 6143
LED/LCD Signs	Various sizes and formats for transfer centers or individual stops

## Client Branded Mobile Apps for iOS and Android

 SyncAPP CUSTOMIZED APP

- ✓ iPhone, Android
- ✓ How To Ride
- ✓ Trip Planner
- ✓ Announcements: Detours, Closures, Delays
- ✓ Favorite stops, Custom alerts
- ✓ Contact Form
- ✓ Schedules
- ✓ Customizable Sections

Your App  
Your Name  
Your Logo and Colors  
Your Customized Content



## Reminders and Push Notifications

The Smartphone app includes the option for riders to set customizable reminders for any stop and any given day or time. These reminders will automatically trigger a push notification at the desired day and time, so that users will have instant, automatic access to arrival predictions for their stop without even having to open the app.

In addition to user-customizable push notifications, agency staff can send a push notification to inform riders of system delays or other pertinent information at any time. This could be related to weather delays, detours, upcoming public meetings, or anything else as the agency sees fit. From the dispatch software, you have the opportunity to send notifications to the Smartphone App, to users who have subscribed via text message, or both.

## Smartphone App Features

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## Desktop and Mobile Website

When riders visit the public portal, they will be seeing your brand and your web address. Riders will never go to [www.syncromatics.com](http://www.syncromatics.com) to view your data – the web portal is branded for your agency. The public portal is compatible with all major browsers and allows users to choose a specific route and stop to receive arrival predictions. It also presents riders with associated stop numbers and information for visiting the mobile site or calling/texting to get updated information after they leave the computer.

### Estimated Arrival Times

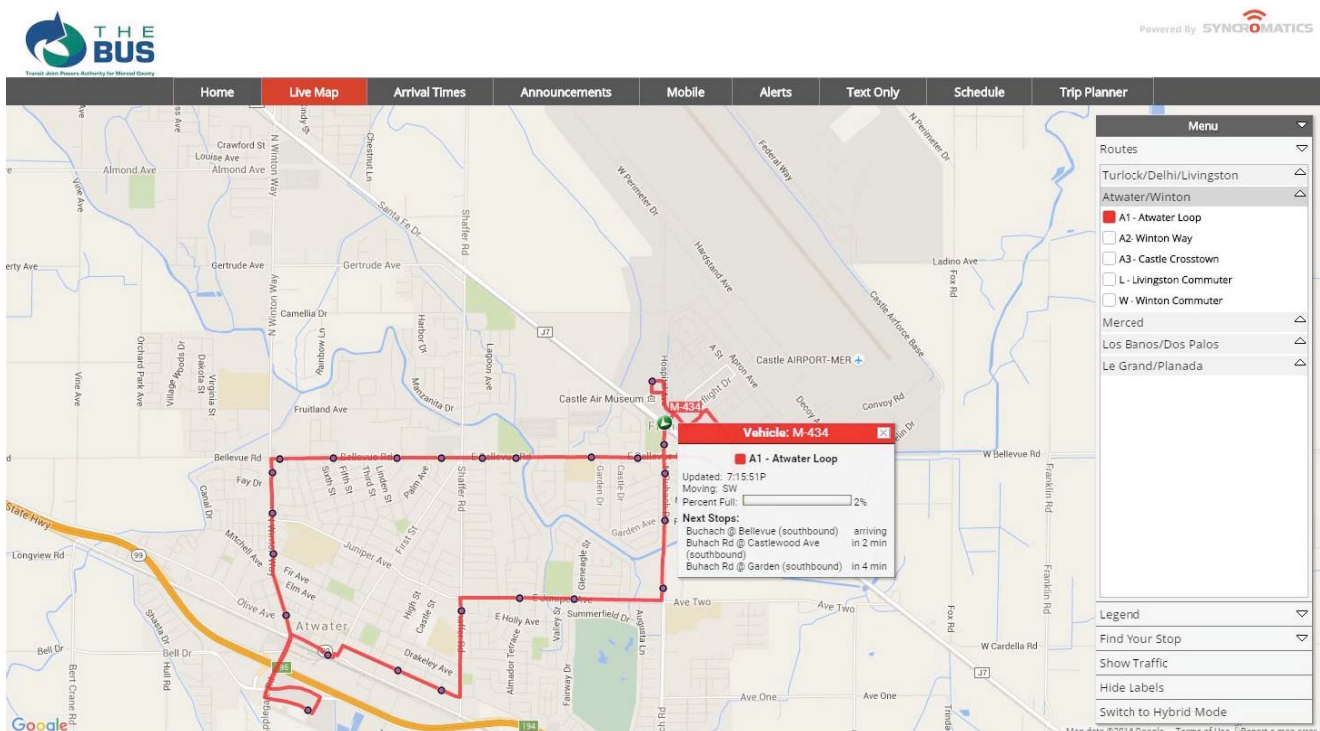
Grey Routes indicate there are no vehicles on the route.

1. Choose Service: Atwater/Winton
2. Choose Route: A1 - Atwater Loop
3. Choose Stop: Juniper Ave @ Bridgewater St (westbound)

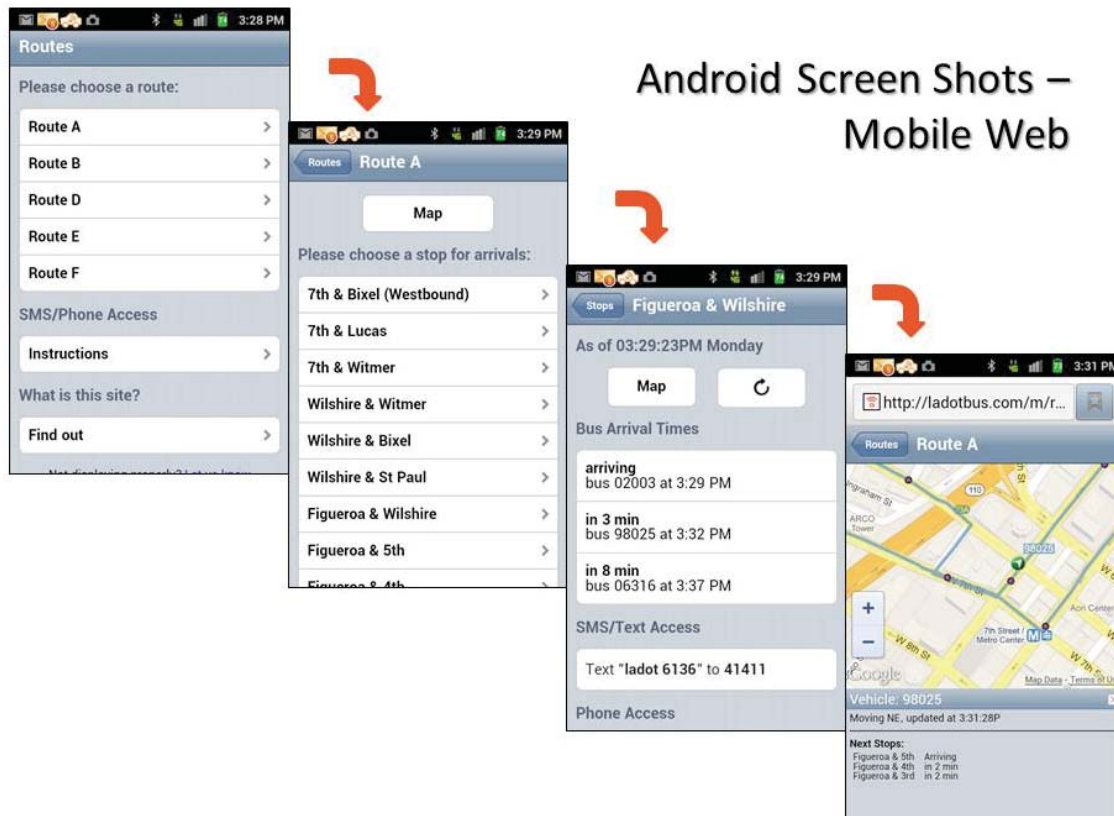
**Next Vehicles In**  
As of 7:18 PM  
2 minutes - Bus M-434 @ 7:20 PM  
43 minutes - Bus M-434 @ 8:01 PM

**Mobile:**  
Mobile Maps: <http://thebuslive.com>  
Visit from any mobile phone  
Call: (209) 626-1414  
Press 0, enter stop 51  
Text: "merced 51" to 41411

Some riders may not know the exact stop they're looking for, but know where they are. These users may prefer view the live map and click on buses or stops to view arrival predictions and other information.





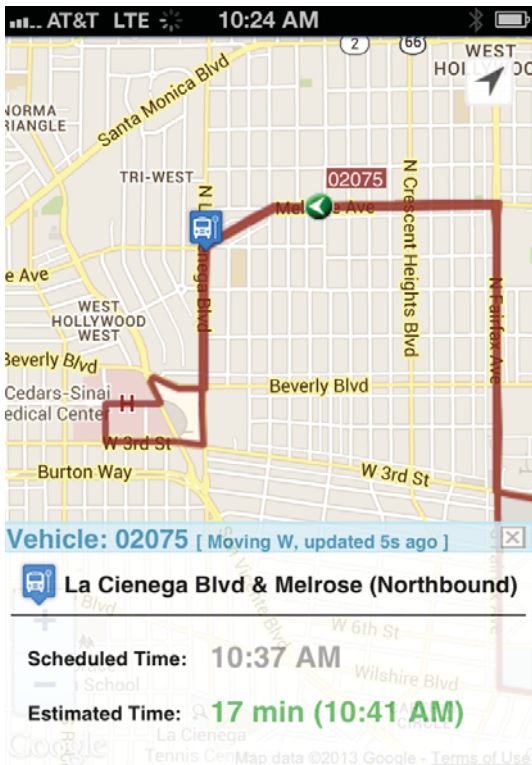


## Compatibility with all operating systems



Is there an app for my \_\_\_\_\_ phone? What if I don't have a mobile phone?

One passenger information portal allows you to provide value for iPhone, Blackberry, Android, Windows, and flip phone/SMS/IVR riders with your agency's brand as the center point. This also makes embedding this inside your agency's website a snap.



## Where Is My Bus?

Which one is it, and when will it be here?

Make the rider's stop the center of the screen, and eliminate the other noise

Let them pick a vehicle to track

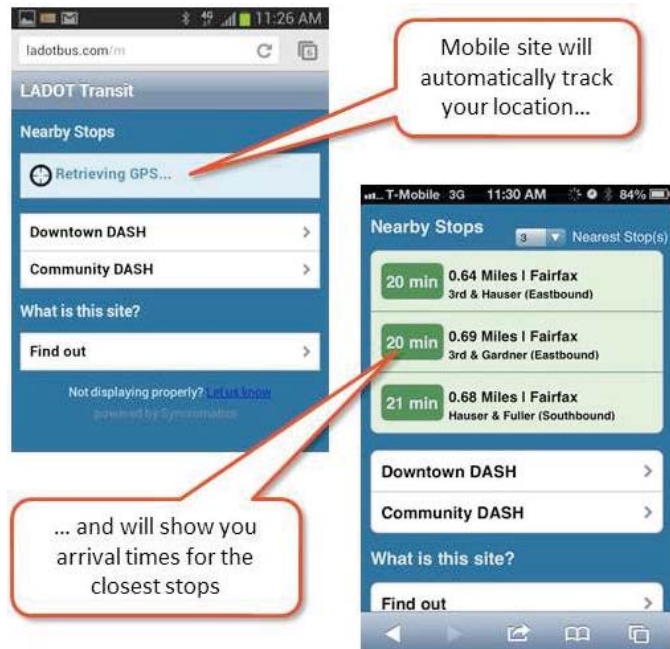
Show them their location next to the stop

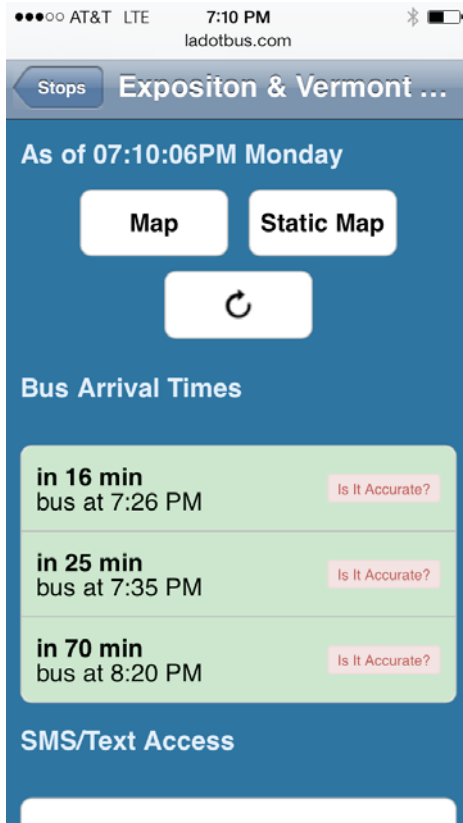
Keep It Simple--Show Me My Bus!

Show all vehicles' real-time location and status

iPhone, Blackberry, Android, Windows

GPS geolocation automatically finds nearest stops to you at the first step  
Step by step navigation to get from landing to "Where's the bus?" in 3 easy steps  
Administrators can create announcements which will appear here in real time, and can be push notified via text/SMS  
Linked to your branded portal, example <http://ladotbus.com>  
iPhone, Blackberry, Android, Windows  
Embeddable in 3<sup>rd</sup> party applications





## The Rider Feedback System

### Rider Knows Best

Show the rider real-time predictions

Ask the rider to tell us if it isn't right ("**Is It Accurate?**"), and if not, which prediction is the problem

If there's a problem, ask riders to describe what was expected so it gets recorded and our staff knows where the problem was

Catalog and analyze this data to tune your settings and identify stops or routes that might need to be looked at

## IVR (Telephone) and SMS (Text) Arrival Information

For riders that don't have a smartphone for app/web-based access, Syncromatics offers voice and text endpoints to get arrival predictions and real-time service information.

### Creating "stop numbers"

Each stop will be assigned a unique stop number, e.g. 6142, that the agency can post on the physical bus stop signs and Syncromatics adds to the RTPI website

This stop number becomes the access point for voice and text access

### IVR/Phone

You will receive a local telephone number in your agency's area code

Riders call in and use the stop number to access the information

Riders can also select route and stop from menus

System recognizes return callers and allows them to store favorite stop numbers for frequently used stops

Example: dial 213-785-3858, press 0, enter stop 6142

### SMS/Text

Riders text in their stop number along with an agency identifier to the system

Real-time arrival time of next buses are returned

Example: text "ladot 6142" to 41411



## Comparison of Mobile Passenger Information Tools

### HTML5 MOBILE WEBSITE

Available any time on any platform  
Off the shelf functionality



GPS-based arrival predictions  
Real-time bus locations  
Choose by route/stop  
Geolocation of nearest stops and routes  
Agency-branded URL, e.g.  
[www.thebuslive.com](http://www.thebuslive.com) – makes  
marketing simple

### CLIENT-BRANDED NATIVE APPS

Custom branding and colors  
Expanded functionality



Supports all functionality that HTML based apps support (listed at left), plus...  
Native iPhone and Android apps  
Agency brand, colors, logo and app name  
A to Z management from development to app store publishing  
Ongoing maintenance to support new operating systems/updates as they become necessary  
Native functionality, e.g. push notifications  
Expanded functionality beyond passenger information  
Contact Us  
How To Ride  
Expandability to embed agency-hosted pages in-app

## Arrival Prediction Algorithm

Regardless of the way a prediction is delivered to the rider, if the prediction isn't accurate, then riders won't trust the system. A real time passenger information system is a very visible system, and if it isn't accurate and reliable, it can quickly become a black eye instead of a gold star.

A unique aspect of Syncromatics' algorithm is that it works independently of the bus schedule. We know that riders care less about whether the bus' actual trip matches the schedule, and they care more about their particular question: "When will the bus come to my stop?" So we provide pure predictions based on time relative to now, e.g. "The bus will arrive in 4 minutes." The algorithm does not regularly compare the bus's actual location and time with some hypothetical idealized "schedule," because a hypothetical schedule is by design a weighted average that rarely if ever actually exists in the world of transit operations. Technologies that are based on a "deviation from schedule" algorithm are inherently less accurate as a result of their reliance on what is by definition an imperfect schedule.

Syncromatics ensures highly accurate arrival predictions by constantly assessing and evaluating the arrival prediction algorithm to ensure it is meeting accuracy benchmarks at various time thresholds. Our target benchmarks are as follows:

If the arrival prediction is this far in the future:	1-10 min	11-25 min	26-60 min
It should be accurate this percent of the time:	90%	85%	85%
An accurate prediction is defined as: (+/- spread in minutes)	3 min	4 min	6 min

We design the sensitivity of the analysis to place more emphasis on being late vs. early. It is most often better to consistently be a little bit early with the prediction and have a rider waiting for 30-60 seconds than to be a little bit late and have the rider miss their bus. We've tuned our algorithm to take this important rider experience into account.

## Complete GTFS Export

The Syncromatics system exports and hosts a complete set of GTFS, including all schedule and stop data. As part of the initial configuration, we will work with Trillium, a GTFS specialist, to get all participating transit agencies' data into GTFS format.

Syncromatics natively produces GTFS files that can be uploaded directly to Google Transit to ensure that the client's routes are visible on the Google Maps public site or other third party transit apps. Syncromatics hosts the GTFS files within your public portal so that you don't have to update Google whenever there is a change.

## Open API and Third Party Data Access

 SyncSHARE DATA API

All the data collected, hosted, and generated by the proposed system is the property of your agency, and it is freely available in automated formats at any time. Syncromatics will not extra charge fees at any time for you to access your data.

Syncromatics will offer API keys to developers you wish to be able to access your data – whether it is a student, transit reporting software, or a third-party app developer. Some of the world's most popular transit app developers (including "Transit App" and "Citymapper") have stress tested the Syncromatics API and confirmed it works to offer our customer's data into their apps. This access is completely controlled by you, and we ensure that no unauthorized developers are able to access your data.

Formats

RESTful APIs are web-based with HTTP endpoints  
Available in JSON format for standards compliance  
CSV/XLS downloadable with a request wizard on the CAD/AVL front-end system  
All information is secured with API keys issued by Syncromatics to your agencies or third parties as needed, so we can control which third parties have access to your data

Data Available

- Route/Stop/Schedule Database
- Real-time Arrival Information
- Real-time Vehicle Locations
- Real-time Bus Occupancy
- Arrive/depart stop records of actual service
- Schedule adherence data
- Additional CAD/AVL data can be made available via API on request

The same data available to app developers can be pushed to digital signage controlled by Syncromatics or by a third party.

## 3-2. Computer Aided Dispatch / AVL

### Syncromatics OpenMDT



The Syncromatics OpenMDT Plus is the cornerstone of our ITS system inside the bus. It handles all of the data processing, data storage, transmission, and user interface. All these features are packaged in a single modular and swappable package.



The OpenMDT Plus was engineered to protect the tablet against drops, shocks, rain, vibration, dust, liquid and more. The OpenMDT Plus has been independently tested and certified to MIL-STD 810G and IP65 standards.

The OpenMDT Plus uses advanced technology to achieve a display that is more readable and offers better contrast and more crisp colors than any other rugged display. By bonding the display glass with the touch panel and LCD, the OpenMDT Plus offers a single panel that is more durable, minimizes glare and improves readability. Touchscreen works in all weather conditions and is compatible with gloves.

The OpenMDT Plus is delivered with a fully integrated vehicle dock to enable rapid removal/replacement of the MDT. This can support walk-around pre-trip inspections of vehicle condition and safety features.

The dock also provides additional input/output (I/O) ports to support peripheral integrations like external antennae, automatic passenger counters, automatic voice annunciator, headsign, farebox, and other components.

Due to the potential for changes in the supply chain of Commercial Off The Shelf equipment, Syncromatics may identify a functionally equivalent MDT device to the unit pictured here. The ubiquity of the Android operating system enables us to choose from a variety of devices, mitigates supply chain risks, and helps reduce equipment costs.



### INDUSTRIAL-GRADE MDT

Future-proof, transit-grade, expansion-ready

- ✓ Rated for extreme temperatures
- ✓ Tolerant to harsh power conditions
- ✓ Rugged against moisture, shock, impact and sunlight
- ✓ Industrial wiring harnesses and connectors
- ✓ Independent, industrial manufacturer
- ✓ All-in-one: J1708, J1939, Wi-Fi, Ethernet, RS232, RS485 via in-vehicle dock
- ✓ Plug and play annunciators, passenger counters
- ✓ Turnkey automation of farebox and headsign

### CONSUMER TABLET

Continuity risks, easily damaged, hidden costs



- ✗ Consumer devices subject to discontinuation with as little as six months' notice
- ✗ Even with rugged cases, still subject to impact shattering, power fluctuations, unreliable wiring connections
- ✗ Even with Android support, manufacturers may abandon support quickly as they release new products
- ✗ J1708 support not native—this means external expansion boxes are necessary for headsigns/fareboxes/passenger counting
- ✗ These expansion boxes introduce more points of failure, more components to RMA, and higher costs than an integrated MDT solution
- ✗ Audio support not advanced enough to handle annunciators
- ✗ Ethernet/wired connections unavailable, network access less reliable

Syncromatics does have the technical capability to repurpose the clients' existing consumer grade tablets; however, we do not recommend it. In order to support the clients' desired peripheral hardware integrations (APC, AVA, Headsign, etc) the OpenMDT Plus and vehicle dock are required. These peripherals cannot be supported by a consumer tablet in Syncromatics' system.



## OpenMDT Technical Details

### Professional Engineering

Logon. Simple wizard based logon process  
Integration. APC, AVAS, Headsigns  
Messaging. 2-way text messaging with dispatch including canned messages  
Silent Alarm. Covert notification to dispatch  
Brain. Integrated core application that stores, transmits, processes and produces data in real time  
Reliable. Aggressive recovery and reliability measures surrounding connectivity and stability  
Industrial. Cabling and connectors built to withstand transit realities

### Technical Diversity

Cellular. Using roof mount, dash mount, or internal antennae  
Memory. 4GB, expandable to 8GB  
Network. Can connect to Wi-Fi networks onboard  
GPS. 20 channel, DGPS+WAAS, SiRF Star III  
OS. Android  
Modern Protocols. WiFi, RS232, RS485, USB, digital IO  
Transit Ready. J1708, J1939  
Extensible. Can be natively extended via a variety of onboard peripherals.

The Syncromatics OpenMDT is a touchscreen computing platform running on the Android operating system. By using the most popular mobile OS in the world, the OpenMDT can run a variety of third party software. The same device can run our Fixed Route Driver software, Demand-Response Driver software, Pre-trip Inspection software, and other Android-based software that your agency may use. Third party apps are subject to review and approval by Syncromatics.

We know it's important for drivers to focus on the job of driving. As technology improves and devices are installed in the bus that use the same operating systems as consumer devices, it opens up the possibility that consumer apps (email, YouTube, etc.) can be installed and used on those devices. Syncromatics manages the OpenMDT with a software called AirWatch, which allows us to control access to only specified apps and push app updates and installations remotely. With AirWatch, we restrict usage to only those apps necessary for the operations of your transit system. Drivers will not be able to exit the Syncromatics app or approved third party apps (such as a demand-response app, pre-trip inspection app, or others), and will not be able to install or use any unapproved apps.

The Syncromatics OpenMDT is the driver interface to the ITS system. It is important for this interface to be simple, clear, and user friendly. Drivers have much to focus on – they are not only responsible for safely transporting your passengers, but for being the front line customer service representatives as well – so we've taken care to make the driver interface the least of their worries.

The OpenMDT can be accessed remotely by Syncromatics personnel to perform over the air software updates. As such, there is no need for a SD card slot to perform updates, and the significant internal memory is more than sufficient for current or future ITS needs.

## **Default Driver Views**

The MDT screen is color-coded based on current status. If the vehicle is currently running on time, dials and progress meters will be green. Red represents late, and blue represents early. As you can see in the screenshot below, this driver started his route on time for the first two stops, but is falling behind schedule and running late at the third stop.

## MDT Messenger and Recognition Alerts



The messaging service allows dispatch to communicate with drivers through free form and canned text messages. The Syncromatics MDT Messenger function includes the ability to customize “canned messages.” In practice, the first canned message tends to be “10-4” – though this can be customized by your agency. 10-4 is commonly used as a read receipt and can be sent as a reply without the need to type out a message, informing dispatch that the driver has confirmed receipt and understanding of the message.

While “10-4” tends to be the industry standard for this recognition message, you are free to customize as you see fit, and it could potentially read “Acknowledged,” “Read,” or even simply “Ok.” Upon sending of this or any other message, dispatch will receive an alert and the message will be recorded in the dispatch and driver message history.

## Store and Forward

The Syncromatics OpenMDT contains separate antennae for both cellular and GPS. While cellular coverage can drop in certain areas due to cellular provider network conditions, GPS tends to be more reliable as it is based on a number of satellites.

In the absence of a cellular connection, the MDT will store all its events – sign-ins, APC data, GPS coordinates – and upload them to the server retroactively to ensure that the driver is not prevented from doing her job and the dispatcher gets the data as soon as it is available. All data will remain available in reports as expected.

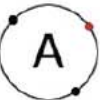
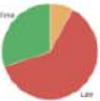




## Roof Mount Antennae

To enhance signal quality and ensure a high reliability system, Syncromatics recommends the use of roof mount antennae whenever possible. Syncromatics technology will consolidate all needed antennae into a single weather proof unit to minimize roof penetrations while providing enhanced connectivity. A hybrid cellular/GPS antennae can connect to either the MDT or the Wi-Fi system to provide connectivity.

Syncromatics has installed more than 1,000 roof mount antennae, and they do not leak despite some client concerns on this topic. By using a special silicone adhesive/sealant, the antennae are mounted with a long life waterproof seal. Our roof mount antennae pass OEM Factory Install test procedures and function reliably through daily high pressure bus washes without leaking.

## Syncromatics Web-Based Dispatch Software

Syncromatics web based software includes a variety of dispatch tools:

	<b>Bunching Screen</b>	The bunching screen allows you to see how far apart buses are on a route. This allows the dispatcher to view if they are properly spaced out.
	<b>On Time Performance Graph</b>	The On Time Performance Graph provides a simple, easy to use pie graph, which indicates the early, late, and on time performance of vehicles for routes you select.
	<b>Vehicles</b>	The vehicle status screen shows the ignition state, speed, route assigned, and update status times of the vehicles.
	<b>Alert Feed</b>	The alert feed shows you events happening in real-time on your buses, like ignition events, speeding alerts, and route assignments. If you have some of our optional features like MDTs or engine telemetry, you can also use this to see inbound and outbound text messages and maintenance alerts coming from the buses.
	<b>Live Dispatch Map</b>	The Live Dispatch map allows you to view the live locations of your vehicles and manage all your vehicles from one central page. The dispatch map also provides a wealth of essential dispatch features such as RealTime Off Route and Off Schedule notifications.
	<b>MDT Messenger</b>	The MDT Messenger allows you to view incoming and outgoing MDT messages and also allows you to send messages to a vehicle, route, or all vehicles.

### Using the (Mobile Data Terminal) MDT matters

Although it may seem simple, one of the things that consistently undermines the results of any ITS system is getting drivers to sign in consistently to the operator terminals, especially during unexpected or chaotic circumstances. That means explicitly declaring your driver ID, route, and run; it also means signing out when you're out of service so dispatcher and rider-facing systems reflect that. A well designed, simple, fast sign in process increases driver compliance, and we have specific software tools to discover and solve any missed assignments.

Consistent driver sign-in can be trickier than it sounds because of driver turnover or different levels of commitment from particular individuals. The Syncromatics OpenMDT's sign in wizard makes it as easy as possible to sign in; however, the most important step in the process is allowing The Dispatcher to proactively manage sign-in problems by showing them who should be signed in (based on the schedules), but isn't, and what vehicle they're in.

That is the essence of the Daily Schedule Analyzer, designed to improve sign-in compliance one day at a time.



Managing vehicle assignments is one of the primary benefits of a truly responsive and intelligent transportation system.



Knows what runs are not being serviced according to the ITS in real time  
Receives proactive notifications of these problems as they occur  
Can quickly isolate and respond to the vehicle or run that is the problem  
Can make assignments herself if need be



Empowered to indicate to the ITS and The Dispatcher that they are dealing with an unplanned service situation  
Can operate the bus safely and responsively using MDTs  
Can be reminded gently that signing in matters by The Dispatcher  
Doesn't need to spend time going back and forth with The Dispatcher about why their bus isn't showing up to the passengers



Knows who signed into what bus when and what runs and routes they drove  
Can measure performance by route, driver and stop with a full set of accurate data  
Has accurate APC data because the ITS knows what bus served what route, run, trip, and stop when

If the driver isn't able to sign in or forgets, or if your dispatchers would like to make the assignments themselves for a future date, you can do that. You can set a standard assignment plan and apply it to multiple future dates.

Dispatchers have much to worry about, so an effective ITS system should be proactive and show them exactly the kinds of things they need to focus on. While we allow dispatchers to look at all vehicles or choose routes as they prefer, we also have a specific live dispatch tool that shows only the things that are going wrong at any particular time. The Dispatch Map shows off route alerts, off schedule alerts, emergency alerts, and vehicles missing assignments.

#### Off-Route Alerts

When a vehicle deviates from the assigned route, the dispatch system will create an alert as well as show the dispatcher the path the vehicle has actually taken in relation to the actual route, as well as the operator information.

#### Speed and Location Alerts:

Configurable alerts provide notification of speeding or can enforce them specifically inside relevant geofences, e.g. school zones.

#### Vehicle Breadcrumb History:

If a dispatcher or executive needs to replay any alerted (or non-alerted) time period, all vehicles can be traced in history using the breadcrumb tool, regardless of route/run assignment; each breadcrumb represents a real time update. Note that Speed, Direction, map location and even APC events are captured.

#### Daily Schedule Analyzer

The Daily Schedule Analyzer shows dispatchers where there are assignment problems, such as duplicate run assignments – allowing the dispatcher to focus on the problems that could impact data quality and address them quickly. Dispatchers can correct re-assign drivers as necessary, or send message using the MDT messenger to have drivers correct the sign-in.

#### Route Editor



Make adjustment to routes with an intuitive, self-service tool based on a familiar map interface. Edit stops and way points to ensure that the system matches your transit operations.

Client users have access to the same route editing tools as Syncromatics staff.



## Temporary Detours

We can handle short term detours in two ways.

- Create a copy of the route, make the detour effective, and use that as the operational version. This allows you to retain the pre-existing route structure and dataset while collecting data on the detoured version
- If the detour is minor and for a very limited time, you can post an announcement letting your riders know about the detour, but leave the route structure in place for consistent data collection.

If a bus route is blocked by snow, a downed tree, or other obstruction, it is easy for dispatchers to create a detour on the fly. By using the drag and drop route editor tool, dispatchers and planners can modify a route and stops with a couple clicks, and the detour will automatically be published to all passenger facing endpoints (mobile, web, app, API, etc). The route will immediately show the modified version as soon as it is published. The arrival prediction algorithm will automatically adjust for the new route and continue to give accurate predictions, and a “service alert” message can go out to riders to advise them of the change. By making it very easy to modify routes and create detours AND inform the public of the change, we enable our clients to use this strategy more frequently than they might otherwise.

Syncromatics reports will enable planners and management to evaluate the impact that severe weather has on bus operations and plan accordingly for the next storm. By tracking on time performance, ridership, and other figures, and tagging certain days as “severe weather days,” we can create a subset of data that reflects how your system operates in fair weather versus foul weather. This can be used to plan additional vehicles, adjusted schedules, and other resources to anticipate severe weather events.

Should the temporary route modification be other than immediate (for example, in the case of planned construction work rather than weather) a copy of the route can be created, edited to reflect the modification, and then put into service only on the future date(s) when the change will occur – leaving the “normal” version of the route intact and ready to be put back into service as soon as the change is lifted.

Syncromatics has worked with over 30 transit agencies nationwide, and we are experienced and familiar with the changing nature of schedules, detours, and even operating contractors.

## **Permanent Route and Schedule Changes**

As you make service changes, we will use the baseline of your previous data (from the import) and re-import the data for you. It is a quick and painless process in most scenarios.

We encourage you to beware of any “you can edit it any time” promises. In order for an ITS system to do all the things it needs to do, there needs to be synchronized data between routes / stops / runs / blocks / trips / drivers / timepoints / relief points, and that data needs to be consistent across server/real-time information system/driver MDTs. That’s a lot of places that data needs to go, right? That’s why it’s important for our folks be involved in the process, even if you choose to edit routes on your own. Let us know when you’re making permanent changes and we’ll work with you to be sure every piece of data is carried through the process consistently.

There is no limit to the number of routes that can be created, and all routes can be assigned names/numbers and colors.

## **Data Integration with Third Party Software**

The Syncromatics web based software solution provides straightforward support for integrations with a variety of third party software packages. This could include GIS software packages, such as ESRI products, Human Resources software, or data analytics tools.

### **Importing and Visualizing External GIS Data**

Syncromatics maps are all based on the Google Maps platform, a web based, open architecture system that has the ability to import GIS data from many software tools in various formats. Google Maps natively supports many data layers that are of interest to public transit agencies and are incorporated directly within Google Maps, such as live traffic conditions, walking directions, and bicycle paths. These various modes of transport can help round out the transit users experience on a multi-modal journey, and Syncromatics desktop/mobile web as well as mobile app end points make use of these features. In another example, fixed-route dispatchers can toggle on/off the Google Maps traffic data layer to see how prevailing traffic speeds are affecting bus on time performance, and transit planner can retroactively compare bus operating speeds with general traffic speeds to assess bottlenecks in the bus network.

Syncromatics can incorporate a client’s existing GIS data into the base map or as one or more layers which can be toggled on/off within the user interface. For example, if a transit agency wanted to include government facilities (police/fire stations, city-owned parking lots, etc) into either the public facing real time arrivals map or the internal dispatch tracking map, Syncromatics can support that with no additional charges. The client can export a GIS dataset (geotagged points of interest, perimeter polylines, census household income data, etc) from their preferred GIS software package and then import that dataset as a map layer into Google Maps. Find more information about loading GIS data onto Google Maps here: <https://developers.google.com/maps/documentation/javascript/layers>. Syncromatics’ internal software development team is well versed in these integrations and will provide support at no additional charge.

### **Exporting Syncromatics Data for Further Analysis in 3<sup>rd</sup> Party GIS Software**

Syncromatics is also able to easily export spatial data from our software tools in a way that can be imported by ESRI and other GIS software for deeper investigations and mashups with existing data sets. For transit schedule data, we support the General Transit Feed Specification (GTFS) and can produce an up to date set of GTFS files with Latitude/Longitude coordinates that reflects all modifications made to routes and stops within the Syncromatics software program. This streamlines the process of syncing up

various records and ensures that if a transit planner makes a detour in a route to reflect construction on Monday morning, all of the other mapping applications used in the City/County can be up to date that same day.

Syncromatics can also export other data from our system, such as on time performance measured in the Daily Schedule Analyzer tool. We make our raw "stop times" data available so you can see exactly when a given bus reached a given stop, if anyone boarded/alighted at the stop, and when the bus departed the stop. This can facilitate analysis of dwell times to help improve transit service efficiency. Syncromatics has shared data with Merced County Transit (CA) to help them improve running times, design new routes, and extend the service area without adding vehicles or drivers. We have also helped SPORTRAN (Shreveport, LA) to transition from a flag-stop service to a designated-stop service by creating invisible "phantom stops" in our software on every single city block so that regardless of where a rider boarded or exited the bus, we could track it with fine grained detail. This level of detail helped SPORTRAN decide where the designated stops should be placed to maximize ridership.

If there is a dataset that we can generate through our CAD/AVL system, we will do the work to make it easily accessible by client staff at no additional charge. You own the data, we are just the stewards of it.

### 3-3. Administrative & Reporting Functions

#### REPORTS & ANALYTICS

#### Data Ownership

Syncromatics will never claim ownership over the data generated by the ITS system. Your agency owns all data; we are just the good stewards of it.

- ▶ Syncromatics stores and processes data for you as part of our turnkey hosted solution.
- ▶ If you need to download the data, Syncromatics has a number of different raw data download mechanisms, including the route database, vehicle position history, stop time audit trail, etc. These are available via HTTP/web to make the access straightforward and available.
- ▶ Syncromatics offers XML and JSON API endpoints for your staff and developers to access.
- ▶ At the end of the contract, Syncromatics can provide a hard drive containing all relevant data for your agency to archive.

An area of particular strength in the proposed system is the value of a unified data warehouse that measures real transit operational performance.

Syncromatics software natively generates full color PDF reports that are suitable for distribution throughout the agency or submission to management or the board. There is no special skill or 3<sup>rd</sup> party software needed to generate useful reports from the Syncromatics software, and all users can be trained to generate reports. The reporting wizard generally meets the vast majority of reporting needs for a transit agency, but for special research projects Syncromatics also support raw data exports (in excel, csv, and other formats) for more detailed analysis.

## Wizard Based Report Generator

### Operational and Planning Value of Reports

- On time performance
- Historical
- Real-Time vs. Arrival Predictions
- Driver scorecard to compare each driver against the average performance
- Driver/vehicle event logs with sign-in/out, ignition, and door open/close events
- Detailed query traffic reporting on passenger information requests, including most popular routes and stops for which passengers are asking "when is the next bus coming?"
- Bottom-line APC ridership reporting by day of week/time of day/time period/route/stop
- Actual service times of arrival and departure at stops
- Summary of event logs triggered by geofences, speed limits, and other parameters
- Ability to generate custom reports and access raw data in excel format for further analysis



## Feature Description

## Sample Screenshot

### On Time Performance:

Syncromatics provides easy-to-read tables for each trip showing color-coded indicators of on time, late and early conditions. This makes it easy for dispatchers and planners to zero in on problem trips and recurring late times.

### Route On-Time Performance:

Reporting includes pre-formatted report templates providing easy-to-read graphs and tables showing on-time, early and late performance on a bottom-line basis.

### Headway Spacing Report:

This feature shows how the spacing between buses changes over the course of the day, which allows an agency to adjust service intervals, add/remove vehicles, and take other proactive steps to ensure a consistent rider experience on headway based routes.



## Daily Schedule Performance Report

Syncromatics provides a real-time daily schedule analyzer. This report can be run viewed at the end of the day, or it can be viewed at any time during the day to discover and address any issues with the schedules, runs, or assignments. While we have discussed the Daily Schedule Analyzer in previous sections, there is another tool that provides an overview of every scheduled trip and allows agency staff to view on-time-performance across trips as well as any missed trips.

The Daily Schedule Performance report can be viewed at any time during the day, or can be viewed for any day in the past and will give users an overview of every trip. Vertical columns representing trips will be color coded based on overall on-time performance, with individual stop times also color coded to show early or late status. Columns that appear white are used to indicate missed trips or no assignments.

## On time Performance by Driver

### Driver Scorecards:

The on-time performance reporting system also includes driver performance relative to their peer groups operating on the same route. The report provides both an individual report card per driver as well as comparison graphs for the best and/or worst drivers.

In addition to overall on-time-performance, the report can show deviation from the mean, or how each driver compares to the average, which is the most effective way of evaluating individual performance.



#### Event Logs:

System activity reports provide in-depth audit capabilities, with multiple levels of filtering and date tracking. Examples include vehicle assignment histories, yard pull in/out, triggered alerts, etc.

#### Actual Stop Records:

For every stop on every route, the system logs arrival time, departure time, dwell time and riding time, per stop, and between stops. With APC installed, the stop times report will also show boardings and alightings at each stop during each trip.

Based on the list of desired reports included in the RFP, Syncromatics does not natively provide vehicle speed summary or idle by location reports, but this data can be easily found in the vehicle breadcrumb history and in real-time dispatch views. Speed Infraction alerts are available within specified geofence perimeters, as is garage pull-out information.

### 3-4. NTD Reporting

Syncromatics offers a full NTD reporting solution as a standard element of its CAD/AVL software package to help transit agencies comply with their federal reporting requirements.

The report will automatically calculate totals and averages based on operations, this automated data collection and analysis will reduce the workload on client staff and help provide insights into the operations. The report will feature interactive drill downs to enable a user to validate any figures that are out of line with expectations and identify the specific day/vehicle/trip that is the source of the outlier.

### **3-5. Automatic Trip Switching to Reduce Driver Workload**

To alleviate the burden on drivers from manually selecting a new Trip on the MDT every time a bus changes routes or inbound/outbound patterns, Syncromatics offers Automatic Trip Switching (ATS). ATS combines data about the vehicles current position and operations with schedule data about planned operations to intelligently re-assign the bus. When a bus is nearing the end of its trip, the software will recognize that a switch is coming, identify the next trip scheduled in the run, and automatically move the bus to the next trip without any driver interaction. This process will automatically update headsign and farebox assignments as well, if headsign/farebox integration options are implemented. The software uses robust error checking algorithms to eliminate false positive re-assignments, and it always allows the driver or dispatcher to manually override the assignment in the event of a necessary deviation from the plan.

## 3-6. Hosting of Software, Data, and Infrastructure

### Web Based, Vendor Hosted Software and Data

The Syncromatics system is fully web-based and hosted by Syncromatics. No servers or software will be installed at the client site.

Syncromatics leverages a purpose built network architecture running in a professional data center to achieve high performance and reliability in a cloud based software program. A locally hosted server cannot achieve the efficiencies of scale of a cloud based application running at a co-located data center. Our 35+ clients share in the costs of maintaining Syncromatics' top notch network infrastructure and our innovative team of software developers, so the incremental cost to each customer is significantly less than operating their own servers. The following section describes the physical hardware and infrastructure in our data center, and we hope you'll find that our approach yields significant benefits in terms of resiliency to emergency outages, robust data protection and restoration, and high performance.

When you consider the costs associated with hosting a complex software application such as CAD/AVL, it is important to think broadly about the impact it will have on the client's resources. Even if a client has already incurred significant capital costs to establish a new server room on premises, the client will still incur incremental costs associated with adding new applications and the computing power they require. Consider the costs of software licenses for database and other applications – Syncromatics' proposal includes all of these. Consider the opportunity cost associated with tying up a machine, be it physical or virtual, that could be deployed on an alternative application – Syncromatics proposal will impose no congestion on your existing system. Consider the costs of burdening your IT staff with another application to monitor, support, and periodically upgrade – Syncromatics handles this for you. Even for an agency with a robust IT function in house, the Syncromatics cloud based solution makes good business sense.

For a low, fixed annual license fee, Syncromatics offers an entirely turnkey system that doesn't impose extra costs on the agency for hardware or licensing, doesn't tie up existing technology or human resources, and doesn't require any IT commitment for support or integration.

Syncromatics proposes to store all agency data in an immediately accessible format for at least five years. There will be no archiving or retrieval necessary. Accessing five-year-old data will happen the same way as accessing 2-week old data.

### Data Usage

- System has a minimal data footprint and does not require bulk transfer or yard/garage/depot Wi-Fi connectivity

- Data on drivers, routes, and annunciators synchronizes automatically and leverages text-to-speech and compression technology to avoid the need for large data transfers

- Most firmware and application updates are packaged and downloaded in compressed fashion over the air, via remote automation

Syncromatics has volume discount relationships with wireless carriers, so we can purchase machine-to-machine (M2M) data plans at very competitive rates. These M2M plans connect the Mobile Data Terminal to the Syncromatics servers. We work with AT&T and Verizon networks because they generally have the strongest, most reliable coverage – if a particular network is stronger or preferred in your area, it should be discussed as part of the contracting process.

## Data Center Practices to Ensure Redundancy

### Server Infrastructure

Syncromatics collocates its production infrastructure at a Tier 3+ datacenter in Downtown Los Angeles, one of the most connected locations on the planet.

Syncromatics maintains standby infrastructure in the public cloud (Amazon Web Services), to which we can fail over in case of catastrophic failure (e.g. datacenter entirely offline).

The system is architected primarily with load balanced, stateless application servers built on top of virtualized infrastructure. Application servers are essentially disposable, with an automation platform leveraged to quickly provision and configure machines as well as deploy applications.

Application binaries and source code are securely stored with a cloud storage provider.

Syncromatics leverages multiple persistent data stores including relational databases and specialized search and statistical data stores.

### System Uptime

Due to our advanced hosting environment system downtime related to hardware or facilities is negligible.

The load balanced architecture allows for zero-downtime deployment of application updates in most cases.

In rare circumstances where a system update requires the software to go offline temporarily, this is scheduled to occur when no buses are in service and when US based clients are asleep.

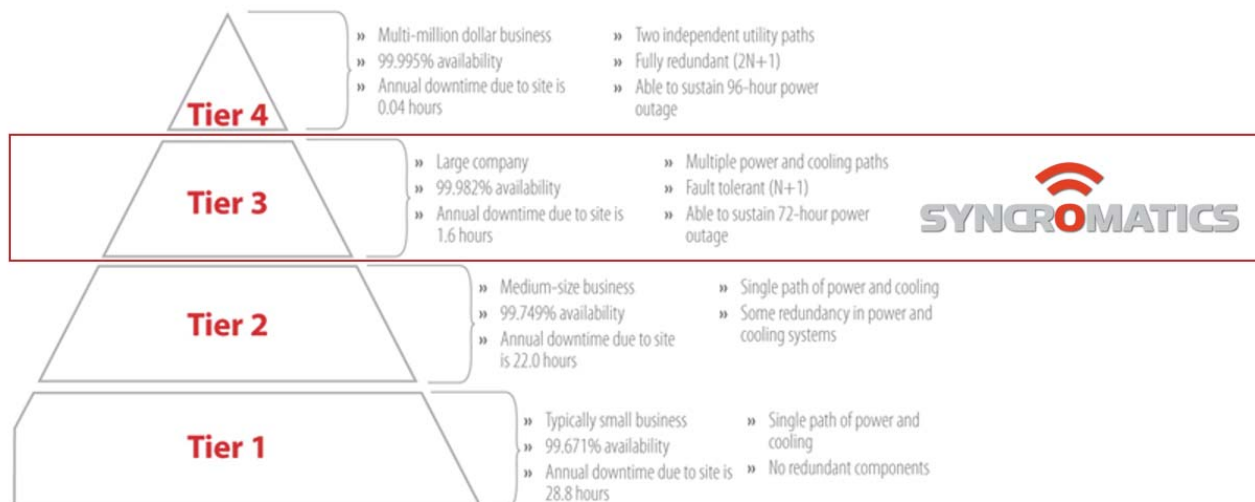
### Data Protection

Syncromatics consistently maintains backups of your critical data on a 10-minute interval, minimizing rare occurrences of data-loss to an average of 5 minutes.

Data backups are synchronized (near real-time) to offsite backup/disaster recovery storage.

Dedicated hard drives and servers are maintained on standby at all times. All of your data is stored on RAID 10 arrays with hot spare disks that auto provision upon a disk failure, and hot failover servers are in place in case of database server failure.

## Data Center Tiers



### Monitoring

Syncromatics leverages leading monitoring solutions to internally and externally monitor system components for failure.

These solutions are integrated into a central notification system that automatically notifies our staff of failures via phone, SMS and email in near real-time.

#### Disaster Recovery Plan

In the event of a level 1 disaster (earthquake, datacenter destroyed), Syncromatics would restore your data from the offsite backup location to the public cloud (Amazon Web Services) and failover via DNS change.

A conservative estimate of recovery from a level 1 disaster would be 24-48 hours with optimal recovery occurring in 4-8 hours.

Your application servers could be moved to an agency-owned public cloud instance in the event that Syncromatics went out of business, or the application could be migrated to the agency's local servers.

Earlier sections of our proposal, especially steady growth and continuous stable operations since inception, should give you comfort that this is not going to happen.

## System Downtime

Syncromatics endeavors to keep its servers up and running 24x7x365. However, there are extreme cases which could cause downtime, which are beyond Syncromatics' control. In the case of downtime, the following discounts will apply:

#### Vehicle Downtime

Vehicle downtime is defined as a service outage that affects only a single vehicle starting from the point at which Syncromatics has identified a hardware device failure. Outages related to wiring tampering are not covered. If Syncromatics has not shipped a replacement unit within 1 calendar week after receiving the defective equipment, the customer is eligible for a discount of the service fee from the day Syncromatics received the defective unit until the replacement device arrived at the customer site.

#### Service Downtime

The 'downtimes' listed below relate to the Syncromatics ITS system and exclude any local network issues at or near a client site, or internet routing failures beyond the control of Syncromatics. Any downtime claims must be submitted within 2 weeks of the claimed downtime for evaluation. Downtimes caused by cellular outages or failures in the internet are not covered by the downtime discount policy.

##### Brief Downtime:

Brief downtime is defined as a service outage of the entire system for less than 8 hours. In the case of brief downtime, Syncromatics will provide a one-time \$100.00 discount between 1-8 hours of downtime. For downtime less than 1 hour, a one-time \$50.00 discount will apply.

##### Extended Downtime:

Extended downtime may occur if Syncromatics or its datacenters experience a major system failure which involves multiple hard-drive and/or server failures, a city-wide network outage, or a city-wide power outage. Syncromatics will provide a \$300.00 discount for periods between 8 and 24 hours of downtime, as well as a \$300.00 discount for each 24 hour period thereafter.

##### Scheduled Maintenance:

Syncromatics may conduct scheduled maintenance on its databases, web applications and in-vehicle hardware. Whenever possible, Syncromatics will conduct this maintenance during the periods when the agency's vehicles are not in operation; this is defined as all vehicles are parked at designated parking locations. If Syncromatics must conduct maintenance while vehicles are moving, Syncromatics will give the agency at least 1 business day's notice, including the number of vehicles that will be affected. If it is not possible to give this notice, Syncromatics will apply a \$25.00 discount for each unscheduled maintenance occurrence during normal operations.

## Backups

Syncromatics' servers are housed in a secure server facility near downtown Los Angeles. The facility is home to several thousand servers; it draws communications from One Wilshire, the largest network communications

hub in greater Los Angeles. The facility has multiple redundant power supplies, a 24x7 Network Operations staff, and is housed in an underground facility secured by a four level security system (building, elevator, facility and rack). For these reasons, a high degree of confidence is placed on the reliability of the server infrastructure.

Syncromatics' backup schedule is as follows:

- Syncromatics consistently maintains backups of your critical data on a 10 minute interval, minimizing data-loss to an average of 5 minutes.
- Every 24 hours, the entire structure of the system and all data with the exception of historical position and stop data is backed up inside the data center to at least 2 backup media.
- Every 24 hours this backup is transferred over the high-speed network to an online backup repository in Utah.
- Every 72 hours historical data is backed up in the same fashion above (2 local backup media, 1 offsite backup) and uploaded offsite. The schedule is longer because this is a substantially large amount of data to transfer and may take 48-72 hours to complete the offsite upload.

You may request that Syncromatics restore route or stop data from one of its daily backups in the event that undesired changes are accidentally made.

## **3-7. Clarifying Feature Capabilities and Timelines**

Syncromatics' technical solution can meet the core needs of VCTC and participating operators right out of the box. Our system will be set up rapidly to provide vehicle tracking, dispatching, passenger information, and integration with onboard peripheral devices. We will quickly get your system up and running, but over the course of a multi-year partnership, the long term support and investment in our product is a key consideration for you.

Syncromatics strives for continuous improvement in our software programs. This means that the system you buy in 2017 never gets obsolete and does not degrade over time. In fact, the software you buy in 2017 will be more powerful, more beautiful, and easier to use in 2020 because of the accumulation of improvements we make over time. This is due to the constantly evolving nature of Software as a Service, in which a client does not really "buy" a fixed product, but rather pays a service fee to have access to the latest version of the system.

Syncromatics balances the requests and requirements of multiple customers in planning its product roadmap, and based on our current plans we can provide estimates for the delivery of certain new features that are required or requested in this RFP.

In some cases, we may recommend a different approach to solve an issue than another ITS firm or than your staff originally planned. We'd like to help solve the problems that matter to you in a way that will be replicable and useful to our other clients as well. By sharing the software development workload over more than 50 clients, we can keep our prices low and avoid a software maintenance nightmare of having to support multiple distinct versions of the software at different client sites. The discipline of this approach helps us provide great value for our clients' money.

The timelines listed here are flexible based on the needs and priorities of our clients, so if there is a date that appears problematic, please let us know so we can take that into consideration.

Syncromatics will gladly tie contract value milestones to the delivery of key features after the core system acceptance date. This will ensure we still are "on the hook" to deliver on our promises.

## **Timing of Feature Delivery**

- Integrate Google Maps trip planning into web based Real Time Passenger Information (it is already supported on mobile apps) – Q1 2018
- Integrate service alerts and announcements with social media – Q4 2017
- MDT can enable/disable onboard announcements, operator triggered announcements – Q2 2018. In our experience, many transit agencies want to remove the driver from the equation regarding onboard announcements to prevent the driver from silencing announcements that are considered “annoying.” Other agencies trust their drivers to control the volume. We believe that setting a minimum volume, empowering drivers to make adjustments, and logging the volume levels for evidence of policy violations is the best approach. But we are open to your suggestions.
- APC Integration with wheelchair lift/ramp sensor to provide reporting of wheelchair counts – Q1 2018

## Clarifications or Differences in Approach

Editing Automatic Passenger Count data manually – we are open to discussion on this item, but we don’t feel like the CAD/AVL software is the right place to make those changes. Perhaps this is a function that could be provided in the UTA software, or via a third party like TransTrack? If we start modifying the data “source of truth” then it can lose credibility and reduce the stability of the platform.

Syncromatics has worked hard to build the best Voice Annunciator in the industry, and as such it has some specific requirements in order to maximize its function. In order to provide real-time over the air updates, dynamic text to speech programming, and tight integration with CAD/AVL route and stop data, we need to ensure consistency of equipment on the bus. As such, we do not propose to integrate with any existing AVA equipment (with the exception of existing speakers and microphone), rather we will replace existing AVA equipment with new Syncromatics equipment.

## 3-8. Compliance Matrix

Please find the completed compliance matrix on the following pages.



### **Attachment B - Table of Compliance**

	<b>Request for Proposals</b>	<b>Your Proposal</b>	<b>If your proposal does not fully comply, where in your proposal is this explained?</b>
	<b>Requirement (see corresponding RFP section for full requirement description)</b>	<b>Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"</b>	
<b>8.0</b>	<b>Functional Requirements</b>		
	As Specified.	<b>F</b>	
<b>8.1</b>	<b>General Requirements</b>		
	As Specified.	<b>F</b>	
	✓ All equipment will be new and meet or exceed applicable ISO, IEEE and ANSI standards.	<b>f</b>	
<b>8.2</b>	<b>Automated Vehicle Location (AVL)</b>		
	✓ AVL tracking accuracy shall be 30 feet or less.	<b>f</b>	
	✓ Vehicle movements on AVL maps and displays shall be based on actual vehicle location reports and shall not be simulated.	<b>f</b>	
<b>8.2.1.</b>	<b>GPS Antenna</b>		
	✓ Combine existing and Proposer's GPS antenna.	<b>f</b>	
	✓ The MDT shall integrate with the GPS receiver, mobile data communications radio modem, bulk data transfer system interface, covert alarm switch, covert microphone, voice radio and an SAE J1708 or J-1939 interface to support integration with other future invehicle technologies.	<b>f</b>	
	✓ GPS receivers shall report latitude, longitude, speed, time, direction of travel and whether the GPS position is classified as "good" given the current Horizontal Dilution of Precision (HDOP).	<b>f</b>	

**Agreement Between VCTC and Syncromatics Corporation  
Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	<b>Request for Proposals</b>	<b>Your Proposal</b>	<b>If your proposal does not fully comply, where in your proposal is this explained?</b>
	<b>Requirement (see corresponding RFP section for full requirement description)</b>	<b>Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"</b>	
	✓ The GPS receivers shall be parallel tracking receivers, capable of simultaneously tracking at least four GPS satellites in the best available geometry, while also serially tracking the four next best satellites and upcoming (rising) satellites.	f	
	✓ Onboard GPS receivers must be capable of providing position accuracy within 10 feet at least 95 percent of the time.	f	
	✓ The GPS receiver shall have a cold start solution time of two minutes or less and a re-acquisition time of 15 seconds or less.	f	
	✓ The GPS equipment shall include multi-path rejection capabilities to help eliminate spurious signals caused by reflections off of buildings or other structures.	f	
	✓ Velocity measurements provided by the GPS equipment shall be accurate to within 0.3 feet per second.	f	
	✓ If the GPS antenna is not contained in the MDT, the GPS antenna shall be a low-profile unit housed in a rugged and weather tight enclosure. The GPS antenna shall be securely mounted on the exterior of the vehicle, clear of obstructions and interferencegenerating devices. GPS antenna location shall be determined in collaboration with Commission staff.	f	
	✓ If the GPS antenna is not contained in the MDT, the antenna, mounting and sealants shall provide protection from the environment, including moisture, snow, heat (20° F to +115° F), wind, debris, etc.	f	
	✓ The GPS receivers shall be capable of integrating with on board	f	

**Agreement Between VCTC and Syncromatics Corporation  
Exhibit B - Syncromatics Proposal**

March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System

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	Requirement (see corresponding RFP section for full requirement description)	Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"	
	systems to report required information electronically.		
<b>8.2.1.1</b>	<b>Vehicle Location Reporting</b>		
	✓ Reporting of vehicle locations based upon on-board Global Positioning System (GPS) equipment shall be provided by the System. In addition, any data sources used to back up the GPS equipment when the GPS signal cannot be received shall also be supported.	f	
	✓ Location data shall always be reported as part of all data messages.	P	Location data is transmitted at regular intervals, see below. This allows it to be correlated to timestamps on other data values. All data values are transmitted with timestamps. This is functionally equivalent.
	✓ Regardless of the reporting scheme used, vehicles shall report their location at least once every 30 seconds or at a rate designated by the System Administrator within the range of 5 through 30 seconds. After the initial transmission of an Emergency Alarm, vehicles in an Emergency Alarm state shall report their location at a rapid polling interval designated by the System Administrator with the range of 5 through 30 seconds.	f	Default GPS reports every 4 seconds



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ There will likely be locations of momentary GPS signal blockage and / or distortion, such as in a downtown area. Accordingly, the selected Proposer shall investigate to become aware of the GPS satellite coverage throughout the Commission's service area.	F	
	✓ In the event of loss of GPS derived vehicle position information, vehicle location shall be determined with dead reckoning techniques utilizing the existing vehicle odometer or other means and technologies which provide position accuracy equivalent to	n	System does not include dead reckoning or odometer based compensation for bad GPS. In our experience, this does not affect the system quality or accuracy. This is a feature that is unnecessary in cities the size of Oxnard, Ventura, and others, especially since there are no significantly long tunnels in the service area.

	GPS tracking.		
	✓ When dead reckoning is utilized an event shall be recorded.	n	Dead reckoning is not part of the system.
<b>8.2.1.2</b>	<b>Handling Communication Exceptions</b>		
	As Specified		
<b>8.2.2</b>	<b>Vehicle Logic Unit</b>		
	✓ The System shall include a single Vehicle Logic Unit (VLU) central processing device and data storage device installed onboard for all vehicles and powered by the vehicle's electrical system.	f	
	✓ The VLU shall be AVA, APC, Farebox, Headsign, etc., ready.	f	
	✓ The System shall begin gathering AVL location data when the ignition is turned on and continue reporting until the ignition is turned off (based on a programmable time period, i.e., 30 minutes, etc.)	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The VLU shall integrate with the onboard equipment on each vehicle that provides route / destination announcements and vehicle informational signs with both audible and textual messages, fare collection and automated passenger counting (if installed). Where alternate efficiencies can reduce cost and improve reliability, alternate solutions shall be proposed.	f	
	✓ The VLU shall interface to capture, record, and transmit vehicle Automated Passenger Counter (APC) data, and Passenger fare payment information/data if installed.	f	
	✓ A Global Positioning System (GPS) receiver shall be integrated into the VLU used to provide time and location data for AVL functions..	f	
	✓ The VLU shall provide the interface / transmission of data to and from all subsystems such as passenger informational sign content, public address, passenger counter data, and farebox systems.	f	
	✓ The VLU shall meet environmental and vibration standards as defined by MIL-STD-810F and SAE J1455-06.	f	
	✓ The VLU shall meet electromagnetic immunity standards of SAE J1113 / 13 and protect against surge, and reverse polarity.	f	
	✓ The VLU shall be capable of real time updates to and from the vehicle.	<b>f</b>	
	✓ Provide GTFS-Realtime feed(s) for live Trip, Service and Vehicle Position updates to Google and applicable third party software	<b>f</b>	
	✓ Provided interfaces shall include USB, RS232, RS485, J1708, J1939, Ethernet, discrete inputs and outputs, odometer, spare I/O pins, audio inputs and outputs.	P	The system will provide all necessary interfaces to accomplish the proposed scope of work. Additional interfaces can be provided via expansion packs.
	✓ The VLU shall allow for future expansion and interoperability with add on modems to include USB interfaces.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Allow for easy access to System setup and configuration both remotely and onboard through non-proprietary interfaces such as RDP and USB. On-board access should be in the same location on every bus for standardization of configuration or locations documented for Commission staff.	f	
	✓ Data storage capacity shall be sufficient to store the complete current and pending route schedules, announcement files, and event messages.	f	
	✓ System configuration settings related specifically to a vehicle shall be stored in a vehicle configuration module such that the VLU unit can be swapped out and vehicle information not lost.	f	
<b>8.2.3</b>	<b>Map Requirements</b>		
	✓ Maps shall cover all areas of Ventura County, southern Santa Barbara and northwestern Los Angeles counties.	f	
	✓ Proposer is responsible for import and initialization of maps.	f	
	✓ All functions necessary for successfully incorporating map data shall be provided as part of System.	f	
	✓ The displayed map shall be capable of supporting a variety of map attributes that shall include, but not be limited to, all streets, highways, prominent geographical features (e.g., rivers, major bodies of water, mountains), important landmarks (bridges, airports, transit centers, Vehicle Maintenance Facilities, important buildings, etc.), routes, bus stops, time points, and transfer points. The major bodies of water shall be displayed as areas of solid blue or cyan on the geographical map display.	f	
	✓ The System shall include mechanisms to allow for periodic independent updates by the Commission to built-in maps in the software and on-board systems.	f	
	✓ Selective updates of the base map and to any selected overlays shall be possible without re-importing the entire map and all overlays and without loss of prior map.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Where minor data entries are required, such entries, and	f	
	corrections shall be stored (e.g., as a script) for reapplication in subsequent imports.		
	✓ The Proposer shall provide the GIS editing license (if necessary) for any built-in maps as part of the proposed solution for maintenance of AVL maps.	P	Maps provided by Google Maps. Client can request modifications of Google, but this has never been necessary in the past, as Google automatically updates their maps constantly. Addl data can be customized onto the maps using Google Maps Layers.
	✓ GIS functionality shall include the ability to define service-based zones (e.g., Americans with Disabilities Act (ADA) complementary demand response service area, fare zones).	n	Not included
	✓ The System shall have full geocoding capability, allowing the System to locate the address on the map when an address is entered.	N	Not included.
	✓ The street segments database shall be sufficiently complete to assure a geocoding success rate of 90 percent or better.	F	Google Maps
	✓ The Commission shall be able to develop additional overlay map layers that can include polygons (e.g., municipal boundaries, fare zones), lines (e.g., route traces) and points (e.g., landmarks, transfer locations, time points, stops), with the color, shape and thickness being selectable.	f	
	✓ The System shall allow the user to calculate the distance along a line drawn on the map as a sequence of straight lines between points (e.g. the distance of a route trace).	N	Not included.
	✓ The System shall allow Commission users to save and reload a map view in the AVL window.	p	Web based map will automatically load centered on the service area or other configurable lat/long coordinates
	✓ The System shall be capable of defining an unlimited number of	f	
	bus stops and nodes.		



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The System shall permit the user to define bus stops using a variety of methods, including direct entry of GPS determined coordinates, and setting the stop location with a mouse click.	f	
	✓ The System shall accurately align vehicle locations with the streets and routes on which the vehicles are operating. There shall be no visible offsetting of vehicle positions from the displayed streets and routes.	f	
	✓ The System shall be capable of allowing stops to be properly positioned at intersections.	f	
	✓ The System shall be capable of allowing the user to assign stop amenities (e.g., bench, shelter, etc.) to each stop and other supplemental data.	P	This capability is planned in our product roadmap, estimated completion in 2018.
	✓ The System shall also have the ability to import stop data from an external system in Excel or comma separated value (CSV) file format.	F	GTFS format preferred
	✓ The System shall also have the ability to import stop data from INIT (GOLD COAST OPTIONAL ITEM)	F	Init to export data in GTFS format, and Syncromatics can import it.
	✓ The System shall allow any number of trip patterns to be defined as distinct bus stop sequences, including the designation of selected stops in each trip pattern as schedule time points and whether a trip pattern is inbound or outbound.	f	
	✓ The System shall be capable of generating a list of turning movements for an entire trip pattern.	n	We have the route shape stored in the database and turns are shown on the route line, but we do not extract a "turn list" from the route line. If necessary, Syncromatics staff can manually create this during the implementation phase.
	✓ The System shall allow routes to be defined as a sequence of trips using selected trip patterns during defined time periods.	f	
	✓ The System shall display route traces.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Display vehicle Estimated Time of Arrival (ETA) at a specified destination location as part of the vehicle label. Vehicle ETA shall be available for next bus arrival signs, SMS text, website, web enabled smart devices (phones/tablets) and iOS and Android apps.	f	
	✓ Position deviation of a fixed route vehicle from on-route, on-time position as determined by vehicle on-board position measurements shall initiate a System event and shall automatically increase the vehicle polling rate to a rapid rate selectable by the System Administrator within a range of 15 to 30 seconds.	F	n/a – standard polling rate is 4 seconds
	✓ The System shall be able to display fixed routes, and clearly mark each route when more than one travels on the same street segments.	f	
	✓ The locations of all AVL-equipped vehicles shall be indicated by special symbols that are overlaid on the geographical map display. A vehicle identifier shall be displayed adjacent to, or within each vehicle symbol. These vehicle identifiers shall uniquely identify each vehicle by their Operator name, vehicle number, fixed-route block number, or driver number.	f	
	✓ When multiple vehicles are located too close together to be displayed without overlapping at the selected zoom level, the System shall provide a means for the user to see the individual	f	
	vehicle identities for the overlapped vehicles.		
	✓ Vehicles reporting an Emergency Alarm shall always be visible on the geographical map display regardless of the user's current filtering criteria and data partition assignments.	f	
	✓ The System shall be capable of printing maps to peripheral devices (e.g., printers, plotters) directly attached to the workstation or available over a Local Area Network (LAN) or Virtual Private Network (VPN).	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>8.2.4</b>	<b>Mobile Data Terminal (MDT)</b>		
	✓ MDT shall be ruggedized, designed for transit.	f	
	✓ The MDT shall integrate with the GPS receiver, mobile data communications radio modem, bulk data transfer system interface, covert alarm switch, covert microphone, voice radio and an SAE J1708 or J-1939 interface to support integration with other future invehicle technologies.	F	
	✓ The MDT and AVL system shall automatically engage when the vehicle is started, and shut down a programmable amount of time after the vehicle is turned off.	F	
	✓ The MDT shall store the most recent location received from the GPS receiver, so that if the GPS receiver is not able to report the location the "last known good" location will remain available.	F	
	✓ Electrical power for MDTs and all other on-board components shall be drawn from vehicle unconditioned nominal 12V DC power supply. All data inputs and outputs shall be designed to absorb "routine"	F	
	intermittent low voltage, over-voltage and reverse polarity conditions, and to use inexpensive and easily replaceable components to open circuits in the event of "extraordinary" conditions (e.g., through the use of fuses, transorbs, optical isolation).		
	✓ The Proposer shall include a solution that facilitates a "Single Logon", whereby an input device serves as the primary Operator interface and eliminates the need to log on to disperse systems.	f	
	✓ The MDT shall incorporate a color graphical screen capable of displaying fonts of variable size and can change colors between day and night or has automatic brightness controls.	p	Brightness is tuned for both day/night during field survey, and can be calibrated further with additional adjustments on mdt
	✓ The MDT shall be equipped with appropriate functional buttons capable of controlling other onboard systems (e.g. fare boxes, head signs, card readers) and will include a numeric keypad.	F	All buttons are represented as touchscreen "soft keys" rather than physical buttons.

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The MDT display shall be readable by the Operator from the seated position under the full range of ambient illumination conditions, through the incorporation of such measures as driver-operated brightness / contrast control, anti-glare coating and adjustable orientation mounting.	f	
	✓ MDT application software shall be operated using either at least eight programmable function keys or touch screen programmable buttons.	f	
	✓ The MDT shall be capable of providing unique audio tones to alert the Operator of incoming messages.	f	
	✓ The MDT shall be capable of, but not limited to, displaying the	P	Does not display turn by turn route guidance. Farebox and headsign logon is automatic during MDT logon and requires no special driver control. All other features are included.

	<p>following onboard information and interface to onboard systems during operation of the vehicle:</p> <ul style="list-style-type: none"> <li>✓ Logon</li> <li>✓ Emergency Alarm</li> <li>✓ Data Messaging</li> <li>✓ Transfer Notification</li> <li>✓ Schedule Adherence</li> <li>✓ Head Sign Control</li> <li>✓ Farebox Control</li> <li>✓ Maintenance</li> <li>✓ Stop Announcement</li> <li>✓ Trip / Schedule Display Control ✓ Route Guidance</li> </ul>		
	✓ MDTs and all other on-board components shall be designed to operate within the following environmental specifications:	F	
	✓ Ambient humidity from 5% to 80%, non-condensing.	F	
	✓ Temperatures from 20° F to +120° F.	F	
	✓ Vibration and shock forces associated with transit vehicles.	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ MDTs and all other on-board components shall be shielded to avoid radiating electromagnetic interference.	F	
	✓ MDTs and all other on-board components shall be housed in enclosures which cannot be opened with standard hand tools.	F	
	✓ All Operator actions performed via the MDT that are processed entirely by the System on-board equipment shall be completed in	F	
	three seconds.		
	✓ The System shall support en-route changes of the assigned Operators for cases such as mechanical breakdowns and Operator substitutions.	F	
	✓ The System shall collect lift / ramp data indicating when the lift / ramp on a vehicle is raised and lowered. The data collected shall enable generation of statistics for lift / ramp usage by location and the time it takes to board / de-board passengers using the lift / ramp.	P	Wheelchar lift/ramp data collection and analysis is part of our product roadmap, expected completion in 2018.
	✓ The System shall provide for automatic control of all destination signs in fixed route vehicles. The destination signs shall be automatically updated by the System at Operator logon and at predefined points along each route (e.g., at the end of a trip). The points at which destination sign messages shall be automatically changed shall be definable by the System Administrator.	F	
	✓ The MDT shall not be usable by the Operator when the vehicle is in motion above 5 MPH and above.	F	
	✓ The MDC shall be equipped with a navigation assistance element that allows Operators to visually see a route on a map for fixed route vehicles (detours, training, etc.).	N	No turn by turn or mapping of the route is currently provided. The Android software on the MDT could be updated to include this if desired, but it will significantly increase cellular data usage.
<b>8.2.5</b>	<b>Covert Emergency Alarm (Silent Alarm)</b>		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The Proposer shall provide a Covert Emergency Alarm (CEA) with a hidden microphone which will activate a silent alarm when an Operator presses an existing button located in an inconspicuous	F	
	location of the Operator's area.		
	✓ The CEA shall be a recessed push button located on the Operator's left side instrument panel.	f	
	✓ Emergency Alarms shall have the highest priority of all data messages.	f	
	✓ A CEA event indication shall not be noticeable to passengers on any vehicle.	f	
	✓ When Dispatch receives a CEA the following events shall occur, in sequence: <ul style="list-style-type: none"> <li>✓ An audio alarm shall be triggered and a visual alarm shall be displayed in a separate window on the AVL of each Dispatcher</li> <li>✓ When a Dispatcher responds to the Emergency Alarm, an incident report shall be generated.</li> <li>✓ An Emergency Alarm acknowledgment message shall be sent to the vehicle.</li> <li>✓ The Dispatcher shall have the ability to listen in on the vehicle audio.</li> <li>✓ Receive audio on the vehicle shall be silenced.</li> </ul>	P	An emergency alarm triggers email and text notifications to a configurable list of recipients. It also displays a visual alert on the live dispatch screen.  The system does not include incident reporting.  Dispatch can listen in to the vehicle covert alarm if either a) this functionality is provided by the existing voice radio system, or b) the optional SyncConnect VOIP Radio replacement is included in the scope of work
	✓ The Dispatcher shall have the ability to downgrade an Emergency Alarm if conditions warrant.	n	
<b>8.2.6</b>	<b>Real-Time Monitor (RTM) Editor</b>		
	✓ Configure vehicle attributes such as restricting displayed vehicles by route (for public-facing information displays)	f	
	✓ Create and edit stops and routes with ease using drawing tools	f	
	such as polygons, lines, and points		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Annotate vehicle, route, stop, and landmark information	f	
	✓ Configure scheduled arrival and departure times for vehicle schedule adherence tracking	f	
	✓ Import existing route schedule parameters from GTFS data.	f	
	✓ Import existing route schedule parameters from INIT's scheduling application.	F	Init to export GTFS, Syncromatics to import GTFS
	✓ Customize map appearance, color scheme, and image editor	F	
	✓ Adjust map extent and frame and support for zoom and pan functions	f	
	✓ Support for copy, paste, and screen capture functions	f	
<b>8.3</b>	<b>Computer Aided Dispatch (CAD)</b>		
<b>8.3.1</b>	<b>General Requirements</b>		
	✓ Dispatchers shall be able to zoom in to a map level that allows at least four vehicles lined-up within a 200-foot distance to be clearly distinguished, without overlap of the vehicle symbols. The map textual information such as street names, vehicle identities, route names, and landmark names displayed at the various zoom levels shall be clearly readable. Route and street names shall be repeated along lengthy routes and streets.	f	
	<ul style="list-style-type: none"> <li>✓ Vehicle status information conveyed to the Dispatchers shall include, but not be limited to, the following attributes:</li> <li>✓ Schedule status (early, on-schedule, or late)</li> <li>✓ Silent Emergency Alarm conditions</li> </ul>	f	



**Agreement Between VCTC and Syncromatics Corporation  
Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

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	<b>Requirement (see corresponding RFP section for full requirement description)</b>	<b>Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"</b>	
	<ul style="list-style-type: none"> <li>✓ Route status (on or off-route)</li> <li>✓ Type of vehicle (fixed route, supervisor, or other non-revenue, if AVL equipped)</li> <li>✓ Non-scheduled - logged on (e.g., fill-in, trip, special event vehicles)</li> <li>✓ Not logged on</li> <li>✓ Vehicle Operator name ✓ Direction of travel</li> <li>✓ Estimated time of arrival calculated by the System for a selected vehicle at a selected destination</li> </ul>		
	✓ Dispatchers shall be able to quickly and easily configure their map view to show only the attributes that are desired	f	
	✓ The Dispatcher shall be able to manually turn on or off the available layers of the map	f	
	<ul style="list-style-type: none"> <li>✓ A Dispatcher shall be able to restrict the display of AVL-equipped vehicles on the geographical map to any combination of the following criteria:</li> <li>✓ All bus vehicles on all routes</li> <li>✓ Buses on selected routes</li> <li>✓ A single bus vehicle</li> </ul>	f	
	✓ Provide Dispatchers with the capability to filter within the queues to tailor information as operationally required by each Dispatcher.	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Provide Dispatchers with schedule information by block and / or run including real time status.	f	
	✓ Provide Dispatchers with pull-in and pull-out status from Garages and lunch/layover locations including alarms for late and missed pull-ins and pull-outs.	f	
	✓ Provide Dispatchers with roster information for logging in / out Operators and changing assignments.	f	
	✓ Provide capability for Dispatchers to log in Operators with selectable requirement for Operator acknowledgement.	P	If a dispatcher performs the log in on behalf of the driver, then there is no need for driver to acknowledge.
	✓ Provide Dispatchers with maintenance information of real time vehicle monitoring status including query capability for vehicle historical status (if option exercised).	f	
	✓ Provide Dispatchers capability to perform service adjustments for individual time points and stops.	F	Requires updating the schedule
	✓ Allow Dispatchers capability to add new services (i.e., overloads).	F	Requires updating the schedule
	✓ Allow Dispatchers to temporarily change times within a schedule (i.e., offsets, detours, etc.).	F	Requires updating the schedule
	✓ Provide Dispatchers capability to cancel an entire block of service.	F	Requires updating the schedule with exception
	✓ Provide Dispatchers with communication history for reviewing most recent data communications with ability to create incident reports from the history list.	F	
	✓ Allow Dispatchers to review Operator generated transfers and cancel transfer requests.	P	Transfer requests are managed via MDT text messaging between dispatch and vehicle.
	✓ Capability for Dispatchers to intervene in the transfer process when operationally required.	F	
<b>8.3.2</b>	<b>Vehicle Status</b>		
	✓ Logon to indicate the start of a shift. The logon process shall allow the Dispatcher to use the System to indicate the time and identify the Driver.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Accept base schedules for routes, runs, and Drivers.	f	
	✓ See Operators assignments to routes and runs.	f	
	✓ Display current bus status for all buses, and highlight those buses reporting some irregular status (e.g. ahead of schedule, behind schedule, off-route).	f	
	✓ Hear distinct audible alarm and / or see flashing on-screen icon if status received from bus is one of a set defined as disabling or emergency (e.g. covert alarm).	P	We get phone notifications and see it on Live Dispatch
	✓ Add buses to and delete buses from service.	f	
	✓ Deploy route detours (sending predefined detours as text messages through the bus MDT).	F	
	✓ Playback a sequence for a specified vehicle on a specified route at a specified time, in chronological order and review the path of the vehicle and its time at each reported location on its run. The Dispatcher shall be able to control the speed of playback.	f	
<b>8.3.3</b>	<b>Daily Schedule Selection</b>		
	✓ The schedule of trips for each service day shall be automatically selected by the System based upon the date, day of the week, and any special schedules applicable to particular days. In general, schedules include weekday, Saturday, and Sunday schedules. In addition, special (exception) schedules are generated for school	f	
	closures and early-outs, special events, and holidays. Holidays and other special dates may be defined by the Operators in real-time.		
<b>8.3.4</b>	<b>Service Performance</b>		
	✓ The System shall monitor off route status – for each vehicle off route, the distance off route, the time that the vehicle went off route and the next scheduled time point shall be displayed	F	
	✓ The System shall monitor off schedule status – for each vehicle that is off schedule, the schedule deviation and the next scheduled time point shall be displayed	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The System shall monitor late pull outs – for each block with a late pull out, the scheduled pull out time, and the associated vehicle status, if logged in, shall be displayed	F	
	✓ The System shall monitor late pull ins – for each block that is late pulling in, the scheduled pull in time, and the associated vehicle status, if logged in, shall be displayed	F	
	✓ The System shall accurately monitor the schedule adherence of all fixed route revenue vehicles that are operating on defined schedules. Fill-in vehicles (extra vehicles placed on a route) and special event / service vehicles that are without defined schedules shall not be monitored for schedule adherence.	f	
	✓ Schedule adherence shall be calculated at each defined time point and accurately estimated between defined time points. The time delay between the receipt of a vehicle's position and the availability of the calculated / estimated schedule adherence status shall not	f	
	exceed five seconds. Schedule deviations beyond pre-defined, System Administrator-adjustable thresholds shall produce an event.		
	✓ Schedule adherence to defined time points (i.e., those in official published schedules) shall be based on the scheduled departure time at each time point, with the exception of those specific stops that have both arrival and departure times (e.g., layovers) and the end of a trip. The number of time points shall range from 2 to 100 time points per route per direction. Time point departures shall be determined by the System to an accuracy of $\pm 5$ seconds, regardless of whether the vehicle stops at the time point or passes the time point without stopping.	F	
	✓ The System shall provide the Dispatcher the projected recovery time based on the next terminal departure.	N	The system does not project recovery times
	✓ A vehicle's schedule adherence status shall be available for presentation to the Operator and to Dispatchers, and for generation of schedule adherence deviation events.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>8.3.5</b>	<b>Route Guidance</b>		
	✓ The System shall have the capability of providing detour options to the Dispatcher and to the Operator via the MDT.	P	Detour options to dispatcher only. We don't want to distract the driver with this info on the MDT.
<b>8.3.6</b>	<b>Turn Back Monitoring</b>		
	✓ The System shall detect and adjust for turn-backs within a fixed route vehicle's assigned block. The System shall issue a turn-back event when a vehicle has turned around before the end of a current	f	
	trip and proceeds along the route in the opposite direction for a subsequent trip within the same block.		
	✓ Following a turn-back, the System shall automatically determine which trip the vehicle has jumped to within the System assigned block based on the current time, the vehicle's new geographic location, the vehicle's direction, and the vehicle's schedule.	f	
	✓ After a turn-back adjustment, the System shall resume schedule and route adherence monitoring and automated voice announcements for the vehicle based on the new trip assignment. All turn-backs shall produce events.	f	
<b>8.3.7</b>	<b>Data Messaging</b>		
	✓ The System shall enable Dispatchers to send data messages to one or more selected vehicles and routes using any of the selection methods specified. Custom, free-form data messages and a set of canned data messages shall be supported. Pre-defined data messages shall be configurable by authorized Dispatchers and shall be available for rapid selection.	f	
	<ul style="list-style-type: none"> <li>✓ Re-Route Notices</li> <li>✓ The System shall provide a means for Dispatchers to issue reroute notices that describe detours and other short-term route changes to active vehicles based on their route assignments.</li> <li>✓ Once defined, re-route notices shall be automatically delivered to all vehicles that log onto the affected routes throughout the service day. Re-route notices shall remain in effect until they</li> </ul>	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	are removed by a user, or until a user-specified expiration date has passed, rather than have the notices expire at the end of each service day.		
	✓ Capability to assign priority levels for display ordering and filtering of message types within the message queues.	n	All messages have the same priority.
<b>8.3.8</b>	<b>Vehicle Operator Changes</b>		
	As Specified	F	
<b>8.4</b>	<b>Cellular Communications Network</b>		
	As Specified	F	
<b>8.5</b>	<b>Passenger Information System (PIS)</b>		
	<ul style="list-style-type: none"> <li>✓ The Passenger Information System shall use GPS information, historic traffic patterns and vehicle schedules to determine a best estimate for all bus arrival and / or departure times.</li> <li>✓ The Passenger Information System shall be able to accurately identify vehicle locations for in-service vehicles.</li> <li>✓ The Passenger Information System shall be able to generate live maps for selected Operator routes that display accurate vehicle information, including route names, street and landmark names, vehicle location and estimated arrival time at bus stops.</li> <li>✓ The Passenger Information System shall be updated whenever new routes or schedules are created using the fixed-route management tool; the management tool must be directly accessible by Commission / Operator staffs for schedule changes.</li> </ul>	F	
<b>8.5.1</b>	<b>Predictive Bus Arrival and Departure Algorithms</b>		
	As Specified	F	
<b>8.5.2</b>	<b>Changeable Message Signs (CMS)</b>		
	✓ During times when some routes are not in operation, the CMS shall display the message "No Service At This Time" next to any route not in service.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ CMS' shall be either an LCD screen or large LED screen capable of displaying between one and at least eight lines.	f	
	✓ CMS' shall be constructed and rated for outdoor installation in a hardened environment such as those common to a roadside or transit installations.	f	
	✓ CMS controllers shall be securely affixed to the back side of the display with keyed entry.	f	
	✓ CMS' shall have brightness control.	F	Automatic brightness adjustment based on ambient light
	✓ CMS' shall produce message that conform to ADA requirements for character legibility and accessibility. At minimum, ADA compliant 3inch characters (one line) shall be supported.	f	
	✓ CMS' shall be designed for operating outdoors and /or indoors in the temperature range 20° F to 120° F.	F	
	✓ CMS's shall use a local power supply (115V).	N	Proposed solar powered signs operated in 12V/24V self contained power supply.
	✓ CMS' must be protected using vandal resistant enclosures.	F	
	✓ The front face of the CMS shall provide high contrast, low sunlight reflection in all weather and site conditions.	F	
	✓ CMS displays shall be legible when sunlight is shining directly on the display face or when the sun is directly behind the display.	F	
	✓ All internal CMS components shall be removable and replaceable by a single technician with basic hand tools.	F	
	✓ Removal of a CMS display module will not be required to access the internal components of the display.	F	
	✓ CMS controllers shall be capable of being configured both remotely via wireless data connection, and locally using a portable computer via a USB, an Ethernet, or an RS-232 connection.	F	



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Each CMS controller shall be connected to photoelectric sensor(s) sufficient to automatically adjust CMS output to address the requirements for legibility under varying ambient illumination conditions.	F	
	✓ The CMS controller shall have a time of day clock and calendar. The time and date shall be in sync with the system time at the Commission.	F	
	✓ The CMS controller shall be configurable with a unique name for the display.	F	
	✓ Next vehicle arrival prediction messages shall be generated automatically by the CMS controller, incorporating the arrival time prediction data as it is received from the servers prediction software.	F	
	✓ The format of the message template shall be "(route #) (route /destination name) (countdown minutes)", or an alternative format approved by the Commission.	F	
	✓ When the CMS receives a message from the application indicating	F	
	that current prediction data is not available, the CMS shall display an alternate message approved by the Commission.		
	✓ Hold times for each message display and the blanking interval between message displays shall be variable in 0.1 second increments.	F	
	✓ The CMS shall include ongoing self-diagnostics and shall send an alarm message to the software in the event that a diagnostic fault is detected.	F	
	✓ Proposer will describe the communications infrastructure requirements.	F	
	✓ Proposer will recommend sizes, types and locations of CMS' at Transit Centers.	F	
<b>8.5.3</b>	<b>CMS Audible Component</b>		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Proposer shall determine best method for supporting ADA audible functions.	F	
	✓ The CMS shall include a manually-activated audio announcement system, which shall read out the sign text once successively in English and Spanish after a pushbutton has been pressed.	P	Proposed approach is for a proximity activated audio announcement without the need for a pushbutton. Alternately, a pushbutton can be provided if necessary.
	✓ Audio sign messages shall be constructed in real-time by the CMS in a manner that avoids the need to send audio data over the radio system, using either prerecorded announcements or text-to-speech generation of quality acceptable to the Commission.	F	
	✓ The audio announcement system shall be made through speakers built-in to the CMS enclosure or installed nearby.	F	
	✓ The pushbutton must be mounted no higher than 48 inches and no lower than 15 inches from the finished floor of the CMS.	P	If a pushbutton is desired, instead of the proximity based annunciator, then we will comply with this requirement.
	✓ An unobstructed pathway no less than 36 inches wide connecting the pushbutton to an adjoining or overlapping accessible route must be provided. A clear floor space of no less than 30 inches wide by 48 inches long must exist at the device (wheelchair footprint).	P	If a pushbutton is desired, instead of the proximity based annunciator, then we will comply with this requirement.
	✓ The pushbutton must be operable with one hand; not require tight grasping, pinching, or twisting of the wrist.	P	If a pushbutton is desired, instead of the proximity based annunciator, then we will comply with this requirement.
	✓ The pushbutton shall emit a brief low volume sound every few seconds (e.g., "chirp") to guide the visually impaired to the pushbutton location.	P	If a pushbutton is desired, instead of the proximity based annunciator, then we will comply with this requirement.
	✓ The audio volume shall be automatically adjusted based on the current ambient sound level in front of the CMS to ensure that it is only loud enough to be understandable within a five foot radius from the sign.	F	
<b>8.5.4</b>	<b>Bus Stop Signage</b>		
	As Specified	F	

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>8.5.5</b>	<b>Customer Website / Customer Communication Devices</b>		
	✓ The System shall allow a person using a personal computer, or web-based personal mobile device to visit a publicly accessible Web address to select a route, direction and stop, and in response receive the current predicted arrival time from the prediction software at the initiating device.	f	
	✓ The System shall provide support for mobile access, using simplified version of the Proposer / Commission Website specifically designed for handheld devices, and/or customized mobile applications (e.g., iPhone. Droid Apps, etc.)	f	
	✓ The Proposer shall provide all Web pages, data feeds and scripts needed to enable this Web service on the Commission's Website.	f	
	✓ The response Web page shall be continuously updated (whenever a new predicted arrival time is determined), until the user closes the web page.	f	
	✓ The System shall provide the ability to display route, stops and real-time location of a vehicle on a route on a web-based/app map display. The location shall be automatically refreshed at least every 60 seconds.	f	
	✓ The Web-based/App interface shall allow users to select the routes and stops of their choice for which they want to see real-time vehicle information.	f	
	✓ The Web-based/App interface shall provide the ability to zoom in / out and pan the map.	f	
	✓ The map display shall be automatically formatted to fit the screen size of the customer device (i.e. mobile device and personal computer).	f	
	✓ The vehicles shall be shown using a distinct icon approved by the Commission and also indicate the direction of movement of the vehicle.	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Clicking on a vehicle icon must show the current status of the vehicle (early / late / on-time).	f	
	✓ Clicking on a stop icon shall display arrival times for the next three buses for each route passing by that stop.	F	
	✓ The System shall provide the Commission the ability to publish any service alerts on the Web page showing real-time vehicle location display.	f	
	✓ The System shall provide real-time information alerts to Operators' customers based on their preferences. Customers shall be able to subscribe or unsubscribe to this service as desired. Also, the System shall allow customers to configure their preferences for the content and time interval for receiving real-time information alerts.	F	
	✓ The System shall automatically notify customers of the real-time status of buses at a specific stop on a requested route and direction. The notification will be made in the form of an email, App notification or SMS message.	f	
<b>8.5.6</b>	<b>Customer Trip Planner</b>		
	As Specified.	F	We will provide a GTFS based trip planner and perform all necessary updates for each operator to have a functional GTFS feed.
<b>8.6</b>	<b>Information Technology Architecture</b>		
<b>8.6.1</b>	<b>Server Site</b>		
	✓ Proposer shall provide and justify their solution architecture.	F	
	✓ Proposer shall meet planned uptime requirements of 99.9%.	F	
	✓ Proposer shall provide a System architecture for all technologies, including the Optional Technologies	F	
	✓ Proposer shall provide a System architecture for all supporting hardware, software, operating systems, databases, redundancies, environments, Disaster Recovery, and Security, etc.	F	
	✓ A backup system shall be available to the Commission in the event of failure of the centralized servers.	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The Commission shall be informed at least thirty (30) days in advance in writing of upgrades that require updated software or higher speed Internet connectivity, etc.	F	
	✓ The Proposer shall monitor and insure Internet connectivity to the services	F	
	✓ The system shall be available 24 hours a day, seven days a week.	F	
	✓ Secure access to the full system functionality shall be available to Commission staff remotely from any computer that meets the Proposer's stated requirements.	F	
	✓ Remote access to the system shall be secure and protected by password or other equivalent-or-improved security measure.	F	
	✓ The Commission's data shall be securely stored by the Proposer and accessible only by authorized individuals.	F	
	✓ The Commission's data shall be securely backed up on a daily basis, and backups shall be stored in a secure facility remote from the primary Host site.	F	
	✓ The Proposer may not retain data if the Commission requests its destruction, deletion or transfer.	F	
	✓ The Proposer shall relinquish all of the Commission's data to the	F	
	Commission upon request.		
	✓ The Proposer's Hosted site must be protected by current virus protection, internet security, and other security software against catastrophic failure and malicious attacks, if utilized.	F	
<b>8.6.2</b>	<b>Ownership of Data</b>		
	As Specified	F	
<b>8.6.3</b>	<b>Activity Logging</b>		
	✓ The System shall log all user actions.	f	
	✓ The activity log shall be real-time and accessible on-line.	f	
	✓ Each user logon and logoff shall be recorded in the historical event log.	P	We track logon, but not log-off

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The recorded data shall include the date and time that the logon / logoff was executed, the name of the workstation, and the identification of the user. All functions performed by all users shall be stored in the historical event log.	P	Web based software, IP logging is available.
<b>8.6.4</b>	<b>Access Security</b>		
	✓ Access to the System shall be strictly limited to designated and authorized System Administrators.	f	
	✓ Users without proper minimum authorization shall be denied access to all System functions and data, as well as all System resources such as servers, printers, workstations, etc.	f	
	✓ Each user shall have a unique username that is assigned by the System Administrator.	f	
	✓ A function shall be provided for users to log off.	f	
	✓ Access to System functions and capabilities shall be based upon each user's authorization level and not the physical workstation being used.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	<ul style="list-style-type: none"> <li>✓ A minimum of four user-access levels shall be supported by the System. The term “user” alone shall refer to all levels except when it is clear from the context that another meaning is intended. The minimum user-access levels shall be:</li> <li>✓ Information User — these users shall have only read-only access to System historical data via the information server resources, but shall have no access to System functions.</li> <li>✓ Customer Service User – these users shall have all the rights of an Information User plus read-only access to selected Dispatcher functions (e.g., AVL functions).</li> <li>✓ Dispatcher — these users shall have all of the rights of a Customer Service user plus full access to specific System functions as determined by the System Administrator.</li> <li>✓ System Administrator — these users shall have unrestricted access to System functions and shall have special privileges required to administer overall access security and to maintain the System. A secure method shall be provided for the System Administrator to change passwords and user identifications and establish functional partitions.</li> <li>✓ Operator Groups — to simplify user administration, categorization of users: Information, Customer Service, Dispatcher and System Admin by Operator name is desired.</li> </ul>		
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<b>8.6.5</b>	<b>Data Backups</b>		
	As Specified	F	
<b>8.6.6</b>	<b>Data Archival And Restore</b>		
	As Specified	F	
<b>8.6.7</b>	<b>Scheduled Maintenance</b>		
	As Specified	F	
<b>8.6.10</b>	<b>Version Tracking Requirements</b>		
	As Specified	F	
<b>8.6.11</b>	<b>System Administration Functions</b>		



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Fixed-Route Data Retrieval	F	
	✓ Interim Schedule Maintenance	F	
	✓ AVL Map Retrieval and Maintenance	F	
	✓ Destination Sign Data Maintenance	F	
	✓ In-Vehicle Announcement Data Maintenance	F	
	✓ All parameters in the System that users may need to modify shall be adjustable by authorized System Administrators.	F	
	✓ System Administrators shall be able to define data partitions that specify, via selection criteria or other means, a subset of all System data, including events that Users are permitted to access.	F	
<b>8.6.10</b>	<b>Disaster Recovery</b>		
	As Specified	F	
<b>8.6.11</b>	<b>Continuity of Services</b>		
	As Specified	F	

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>9.0</b>	<b>Optional Requirements</b>		
	<b>Request for Proposals</b>	<b>Your Proposal</b>	<b>If your proposal does not fully comply, where in your proposal is this explained?</b>
	<b>Requirement (see corresponding RFP section for full requirement description)</b>	<b>Mark "F" for fully Comply, "P" for Partially Comply or N for "Do Not Comply"</b>	
<b>9.1</b>	<b>Automated Voice Annunciators</b>		
	✓ The Proposer shall install new interior DMS. However, the Proposer may propose the use of any existing interior DMS if it can ensure that the proposed AVA system can integrate with the existing DMS to provide desired visual AVA features.	f	
	✓ The DMS shall display the "stop requested" message when stop requested or the wheelchair area stop request is activated by a customer.	f	
	✓ If stop request signal is received while another message is being displayed on the DMS, the AVA system shall show stop requested message after current message is completed.	f	
	✓ The AVA shall provide text announcements for configurable duration, which will be set using the central recording software.	f	
	✓ The AVA shall make an exterior announcement of the current route number and destination when doors open at a stop. At other locations (e.g., major intersections), the controller shall make preset location-based interior announcements.	f	
	✓ The Operator shall have the capability of overriding the automatic initiation of visual announcements and instead manually select from a menu of predefined messages for display to passengers. The override shall be reported as an event.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Interior signs shall display stop requested, bus stop arrival, major intersections and landmarks, date / time information, and other preformatted messages.	f	
	✓ The interior sign system data files shall be updatable remotely.	f	
	✓ The AVA shall provide announcements to passengers on-board fixed-route revenue vehicles. This function shall support next stop announcements as well as annunciation of major intersections, key transfer points, promotional information, public service information, Vehicle Operator initiated messages and advertising.	f	
	✓ Next stop, major intersection and key transfer point announcement capacity shall be sufficient to support all of the routes in the service area and all of the trips made by each vehicle during a service day, plus a 50% spare capacity for other types of announcements.	f	
	✓ The AVA shall use the vehicle location information from the AVL system to trigger the appropriate announcements on-board the vehicle whenever the vehicle enters a "trigger zone." A trigger zone is a user-defined area that is located just prior to each stop location. For example, the trigger zone may begin 800 feet before a stop as well as at selected other announcement locations.	f	
	✓ Trigger zones shall be pre-defined by the software for AVA trigger management and downloaded to the controller over WLAN.	f	
	✓ Trigger zones shall be configurable by stop to accommodate for differences in operations, including but not limited to, the direction of approach and size of stop.	f	
	✓ Time-based announcements / displays shall be programmed to be made on-board the vehicle at specific times of the day or at a set frequency within specified time periods, on specific days of the	f	
	week.		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Location-based announcements / displays shall be programmed to be made on-board the vehicle when that vehicle passes any designated location(s).	f	
	✓ In the event that a vehicle is operating off-route, the automated announcements / displays shall not be made. Once the route is reacquired, the System shall automatically determine and announce the next valid bus stop or other designated location.	f	
	✓ The Operator shall have the ability to manually trigger the activation of any pre-recorded announcements if needed.	P	This function is in our product roadmap, planned for 2018
	✓ The DMS shall display the current date / time when not displaying a triggered announcement.	f	
	✓ Dispatch shall have the ability to send a free form announcement message to one bus, a group of buses, to the AVA interior DMS.	F	
	✓ The AVA shall have the capability to create and schedule public service or advertising messages.	f	
	✓ Audio levels shall be controllable by the Operator within a usable audio range. The Operator shall have the capability of overriding the automatic initiation of audio announcements and instead manually select from a menu of predefined messages for announcements to passengers. The override shall be reported as an event.	P	Operator can control the volume within a pre-defined range set by the administrator.  Overrides are not supported and not logged.
	✓ The volume of the internal announcements shall be automatically adjusted according to the noise level on the vehicle at the time, and	n	Our experience shows that automatic ambient noise sensors are unreliable and prone to errors, so we empower the drivers to set the volume within a min/max range configured by admin.
	the vehicle operator shall not be able to lower the announcement volume.		
	✓ The AVA shall provide the capability to adjust external speaker volume levels based on time and location settings.	P	Min/Max volume can be set by admin, and adding a time/date/location filter to this setting is a product roadmap item planned for 2018.

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The AVA shall provide the capability to adjust the minimum and maximum volume levels separately for interior and exterior announcements.	F	
	✓ The AVA announcements and PA volume level controls shall also allow the Operator to separately adjust the volumes for the Operator and handset speakers.	F	
	✓ Operator-initiated announcements / displays (e.g., safety-related announcements) shall be programmed to be made at the Operator's discretion.	P	Operator initiated announcements are a product roadmap item planned for 2018
	✓ Operator use of the on-board PA system shall override any automated announcements.	F	
	✓ Dispatchers shall be able to activate the announcements simultaneously on a group of buses.	F	
<b>9.2</b>	<b><i>Automated Passenger Counters (APC)</i></b>		
	✓ Ability to accurately detect passengers boarding and alighting and eliminate false positive counts of passengers loitering near the boarding zone.	f	
	✓ Support for multiple entries, and for wider entry common to certain vehicle designs.	f	
	✓ Support for wheelchair boarding counts.	P	This is a product roadmap feature planned for 2018
	✓ Ability to detect whether the vehicle door is open or closed (the APC shall only count passengers when the door is open).	f	
	✓ The APC solution shall be designed for the transit industry and not adapted for its intended purpose.	f	
	✓ Sensors shall operate automatically and without the need for manual intervention.	f	
	✓ Data shall automatically be compiled by the APC and integrated to the VLU and / or MDT in real-time.	f	
	✓ APC data shall be time-stamped for ease in associating the counts to validating farebox data.	f	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ APC data shall be stored along with stop records.	f	
	✓ The APC shall meet or exceeds the relevant SAE specifications for vibration, humidity, electrical tolerance, and particulate matter.	F	
	✓ The APC for all doorways shall be connected to a single APC controller.	f	
	✓ The APC shall be able to separately count successive passengers that are walking as close together as is practicable, either one behind the other or side by side.	f	
	✓ The APC shall not register as multiple passengers the passage of a single passenger that reaches into or out of the doorway passage, or is swinging their arms, while passing through the sensor beams.	F	
	✓ The APC shall not separately count objects carried by passengers, such as shopping bags or umbrellas.	F	
	✓ The APC controller shall be interfaced with a wheelchair / ramp	P	This is a product roadmap item planned for 2018

	sensor with the number of wheelchair / ramps cycles recorded for each stop.		
	✓ The APC will have sufficient on-board memory capacity to allow for storage of at least 72 hours of APC data.	f	
	✓ The APC subsystem shall provide a backup method (for use when the WLAN subsystem is temporarily unavailable) for bi-directional data transfer.	f	
	✓ Be accepted by NTD for reporting purposes.	f	
<b>9.3</b>	<b>Farebox Integration</b>		
	As specified	P	Single logon functionality only.
<b>9.4</b>	<b>Headsign Integration</b>		
	As specified	F	
<b>9.5</b>	<b>Single-point Log-on</b>		
	As specified	F	



*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>10.0</b>	<b>Additional Requirements</b>		
<b>10.1</b>	<b>AVL Analytics</b>		
	✓ Analysis of vehicle activity including schedule adherence and ontime performance	f	
	✓ Historical playback of time-elapsd route activity using rewind, fast forward, pause, and play controls	f	
	✓ Analysis of stop times by route, block, run and trip	f	
	✓ Analysis of passenger loads by route, block, run and trip (with optional APC integration)	f	
	✓ Analysis of route performance including run times, average vehicle	F	
	speeds, and relative spacing between buses on the route		
	✓ Analysis of Driver run performance including, late pull-out/pull-in to Garage and schedule adherence	f	We have driver performance reports as well as perimeter reports that can be set up to capture pull-out/pull-in
	✓ Extensive report generation and query capabilities, including export functions.		
<b>10.2</b>	<b>Reports</b>		
	✓ Schedule Adherence Report: Measures driver on-time performance in relation to Paddles and published schedules.	f	
	✓ Average Arrival Times Report: Measures statistical mean of arrival times for user-defined parameters such as stop, route, vehicle, Driver, reporting period, etc.	p	Our solution supports adherence times for route, vehicle, and period centric reports. Stops statistics are captured by the Stop Times Page and Driver performance by the Driver Performance report
	✓ Idle Report: Measures periods of excessive inactivity based on vehicle engine diagnostic data.	n	This is a product roadmap item planned for 2018
	✓ Detailed Trip Log: Records passenger activity (if APC option is exercised) by stop and arrival and departure times, based on userdefined parameters including stop, route, vehicle, direction, etc.	F	



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Miles and Hours Report: Summarizes vehicle service hours and service mileage for revenue and non-revenue service (based on NTD definitions).	F	
	✓ Shift Report: Records the timestamp for Driver login and logout from AVL / MDT / VLU System.	f	
	✓ <b>Exception Reports:</b> Measure the frequency of occurrences for exceptions to user-defined parameters such as speed limits (by segment or global), route adherence, etc.	F	
	✓ <b>Ridership Reports:</b> Include statistical averages for ridership by route during defined time periods, drill-down of daily boarding's and alighting's by route and time of day for single day or range of dates. (Option-requires Automatic Passenger Counters)	F	
	✓ <b>Passenger Web/App Activity Reports:</b> Provide a record of activity (e.g., number of "hits", type of information requested, etc) associated with the Contractor-furnished Customer Website and Apps for the Operators' Passenger Information System.	F	
	✓ <b>Performance Reports:</b> Reports shall be made available on the System that display summarized and detailed data on the status of operation, including a description of any failure (e.g., AVL downtime).	F	
<b>10.2.1</b>	<b>Dispatch Activity Reports</b>		
	As specified.	P	Events are alerted in real time. If a log is desired, we can implement this in 2018.
<b>10.2.2</b>	<b>Schedule Deviation Reports</b>		
	✓ The System shall produce reports showing daily, weekly, and monthly schedule deviation.	F	
	✓ These reports shall summarize the schedule deviations that occurred during the time periods covered by the reports. The following statistics shall be produced for the fixed-route fleet, for each bus route, run and for each Driver:	f	
	✓ Total number of blocks.	n	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Total number of early blocks (i.e., blocks that were early departing from any time point).	P	By driver
	✓ Average number of minutes early.	p	We show percentage of time late/early, not actual minutes
	✓ Total number of late blocks (i.e., blocks that were late departing from any time point by more than a user-specified threshold).	P	By driver
	✓ Average number of minutes late.	P	We show percentage of time late/early, not actual minutes
	✓ The report output shall be configurable to allow the user to filter certain types of specific schedule deviations. The types of deviations that can be filtered shall include early times on selected routes and at selected stops, where early times are acceptable.	p	We allow filters for time frames, routes, drivers, vehicles, but not late only or early only
	✓ The daily reports should provide the above statistics broken down on an hourly basis along with daily totals. The weekly reports should provide the above statistics broken down on a daily basis along with weekly totals. The monthly report should provide the above statistics broken down on a daily basis along with weekly and monthly totals.	F	
	✓ National Transit Database (NTD) annual reports in accordance with federal transit administration rules.	p	Support for the following NTD reports: s-10, mr-20
<b>10.2.3</b>	<b>Customized Reports</b>		
	As Specified	p	Our reports all have a set of curated parameters, but no option to select specific fields
<b>10.2.4</b>	<b>Data Summarization</b>		
	As Specified	f	
<b>10.2.5</b>	<b>Report Filtering</b>		
	As Specified	F	
<b>10.2.6</b>	<b>Drill Down Capability</b>		
	As Specified	F	
<b>10.2.7</b>	<b>Report Response Time</b>		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	As Specified	f	Reports are real time and not set in a queue
<b>10.3</b>	<b>Transit Analytics (Dashboard)</b>		
	As Specified	F	
<b>10.4</b>	<b>Training</b>		
<b>10.4.1</b>	<b>Training Plan</b>		
	✓ Overall description of the training program	F	
	✓ Breakdown of total number of hours devoted to training: hours of classroom training, number of classes, anticipated number of students, hours developing training materials, etc.	F	
	✓ Proposed training delivery schedule	F	
	✓ Purpose of each training class	F	
	✓ Who should attend class	F	
	✓ Anticipated duration of the class (hours / days)	F	
	✓ Training materials, including manuals, guides and other supporting items, and techniques to be used	F	
	✓ Facility / equipment requirements	F	
<b>10.4.2</b>	<b>Training Facilities</b>		
	As Specified	F	
<b>10.4.3</b>	<b>Scheduling and Preparation for Training</b>		
	As Specified	F	
<b>10.4.4</b>	<b>Timing for Training</b>		
	As Specified	F	
<b>10.4.5</b>	<b>Training Materials</b>		
	As Specified	F	
<b>10.4.6</b>	<b>Maintenance Training</b>		
	As Specified	F	
<b>10.4.7</b>	<b>Dispatcher / Operator Training</b>		
	As Specified	F	
<b>10.4.8</b>	<b>System Administrator Training</b>		
	As Specified	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>10.4.9</b>	<b>Manual Quantities</b>		
	As Specified	F	
<b>10.4.10</b>	<b>Supplemental Training</b>		
	As Specified	F	
<b>10.4.11</b>	<b>Bus-In-A-Box</b>		
	As Specified.	F	
<b>10.5</b>	<b>Testing</b>		
	✓ Be responsible for successfully completing all tests required.	F	
	✓ Furnish all test instruments and any other materials, equipment and personnel needed to perform the tests.	F	
	✓ Be fully responsible for the replacement of all equipment damaged as a result of the tests, and shall bear all associated costs.	F	
	✓ Maintain comprehensive records of all tests.	F	
	✓ Notify the Commission in writing, no less than 14 days prior to each test activity.	F	
	✓ Provide test plans, procedures, records and reports to the Commission for approval.	F	
<b>10.5.1</b>	<b>Acceptance Test Plan</b>		
	✓ <u>Scope and Purpose</u> : Clearly state the scope, case, and conditions the procedure tests.	F	
	✓ <u>Pre-requisites</u> : Describe test environment and the pre-requisites, including access, availability, and equipment configuration for each group of functions.	F	
	✓ <u>Tools</u> : List test equipment and tools, with calibration data for each item.	F	
	✓ <u>Personnel</u> : List test participants and roles.	F	
	✓ <u>Procedure</u> : Contain enumerated step-by-step procedures. Procedures shall include regression test and Pass Fail Criteria.	F	
	✓ <u>Drawings</u> : Include detailed drawings depicting test setup. Drawings shall include list of equipment, parts and material used and tested.	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ <u>Test Data Form</u> : The form will include space to record the tools with calibration date, environmental condition during the test (i.e. rainy, cloudy, temperature, etc.), test measurement, pass / fail criteria and space to record the pass / fail outcome and the signature of the test engineer and a test witness.	F	
	✓ <u>Test Exception Form</u> : The form shall be used to record the identifier of the defect report / problem report(s) generated as a result of faults / problems detected during the test. All the troubleshooting techniques and corrective actions shall be documented on this form.	F	
<b>10.5.2</b>	<b>Testing Requirements</b>		
	As Specified	F	
<b>10.5.3</b>	<b>Test Procedures</b>		
	✓ Test schedule	F	
	✓ Responsibilities of Commission and Proposer personnel	F	
	✓ Record-keeping procedures and forms	F	
	✓ Procedures for monitoring, correcting, and retesting variances	F	
	✓ Procedures for controlling and documenting all changes made to the System after the start of testing	F	
	✓ A list of individual tests to be performed, the purpose of each test segment	F	
	✓ Identification of special hardware, software, tools, and test equipment to be used during the test	F	
	✓ Copies of any certified test data (e.g., environmental data) to be used in lieu of testing	F	
	✓ Detailed, step-by-step procedures to be followed	F	
	✓ All inputs, expected results and measurements for successful signoff for the full implementation tests	F	
<b>10.5.4</b>	<b>Functional Tests</b>		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Inspection of all equipment for conformance to drawings, specifications, and applicable standards, and for satisfactory appearance	F	
	✓ Testing of the proper functioning of all hardware by thoroughly exercising all devices, both individually and collectively	F	
	✓ Testing of the proper functioning of all software and firmware	F	
	features and functions, including test cases with normal and exception data		
	✓ Testing of the proper functioning of all data communication features and facilities and all communications control functions	F	
	✓ Testing of all AVL on-board functions, and of optional add-on equipment, using actual vehicle equipment items supplied as part of the Project	F	
	✓ Input and output signals from devices supplied by others or already installed on the vehicles shall be simulated if the Commission cannot provide actual devices for testing	F	
	✓ Testing of AVL functions using a mobile test vehicle and appropriate test map and database information for the routes that will be traversed	F	
	✓ Verification of all data transfers to the appropriate databases	F	
	✓ Testing of all user interface functions	F	
	✓ Simulation of hardware failures and failover of each AVL and Passenger Information device that has a backup unit	F	
	✓ Verification that spare capacity and ultimate sizing requirements have been met, including all expansion requirements	F	
	✓ Verification of the accuracy of the system performance monitoring software	F	
	✓ Verification that the processor loading and system response time requirements have been met while exercising all Proposer-supplied software and performing functions	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Verification of device and system recovery from AC power failures	F	
	✓ Verification of the accuracy of hardware and software documentation via random checks	F	
	✓ Testing of the System User Interface, real-time monitor (RTM), and Customer Websites	F	
	✓ Testing of all software and database maintenance functions	F	
	✓ Verification of all reports provided by the system	F	
	✓ Testing of data exchanges between devices supplied by others or already installed on the vehicles (e.g., GFI farebox, AVA, APC, etc.)	F	
	✓ Tests of data exchanges that are not required in real time	F	
	✓ Verify the System stability and availability is free of problems caused by interactions between software and hardware while the System is operating as an integrated whole	F	
<b>10.5.5</b>	<b>Cellular Communications Coverage Test</b>		
	As Specified	F	
<b>10.5.6</b>	<b>30-Day Rolling Operational Test</b>		
	As Specified	F	
<b>10.5.7</b>	<b>Test Records and Reports</b>		
	As Specified	F	
<b>10.5.8</b>	<b>System Acceptance</b>		
	As Specified	F	
<b>10.6</b>	<b>Documentation</b>		
<b>10.6.1</b>	<b>General Manual Requirements</b>		
	As Specified	F	
<b>10.6.2</b>	<b>Maintenance Service Manual</b>		
	As Specified	F	
<b>10.7</b>	<b>Design / Implementation</b>		



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ The proposed installation schedule, detailing phases and / or installation segments. Once the baseline schedule is approved by the Commission, monthly updates identifying all schedule changes and work progress in the form of percentage completions shall be submitted to the Commission for review.	F	
	✓ The minimum resource allocation requirement for any installation phase or segment.	F	
	✓ How the Contractor will manage delivery and staging of the AVL and Passenger Information System equipment that is to be installed.	F	
	✓ The order in which equipment items are to be installed, with estimated durations.	F	
	✓ Any special or unique installation requirements.	F	
	✓ Equipment to be used to perform installation.	F	
	✓ A detailed component list and how each item version number and serial number shall be recorded for each installation configuration.	F	
<b>10.7.1</b>	<b>Work Standards and Requirements</b>		
	As Specified	F	
<b>10.7.2</b>	<b>Commission Participation</b>		
	As Specified	F	
<b>10.7.3</b>	<b>Kick-Off Meeting</b>		
	As Specified	F	
<b>10.7.4</b>	<b>System Design</b>		
	As Specified	F	
<b>10.7.5</b>	<b>Preliminary Design Review</b>		
	As Specified	F	
<b>10.7.6</b>	<b>Design Plan General Requirements</b>		
	As Specified	F	
<b>10.7.7</b>	<b>Design Documentation</b>		
	As Specified	F	
<b>10.7.8</b>	<b>Final Design Review</b>		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Final Design Review (FDR) package shall be one complete submittal sufficient to provide all the required details for overall system integration and operation. Design review requirements defined within the individual subsystem specification sections, shall be consolidated and submitted as a single package. The FDR package shall be submitted to the Commission no later than 75 days after the NTP date.	F	
	✓ The Final Design Review submittal package shall not be submitted until the Commission has approved all individual PDR submittals. The FDR Submittal Package shall be organized to include the following final design information:	F	
	✓ Approved and updated versions of all previously submitted design review materials. Updated material shall represent	F	
	complete design, final calculation; detailed product (component level) parts list, drawings, phasing and interface details required for installation. All the new and revised sections of the subsystem PDRs shall have a side revision bar to reflect the changes. The previous information submitted in the PDRs shall be organized by subsystem.		
	✓ Updated product submittals for all, materials and components for which product submittals were not previously submitted and approved.	F	
	✓ Complete Drawing index.	F	
	✓ Complete list of items to be serialized.	F	
	✓ Complete cable identification and equipment labels.	F	
	✓ Complete wiring diagrams for all equipment to be installed, modified, upgraded, or interfaced to under this contract.	F	
	✓ Top level mechanical drawings, if applicable.	F	
	✓ Grounding details.	F	
	✓ Power panel schedule and distribution.	F	
<b>10.7.9</b>	<b>Installation</b>		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Furnish and install all wiring and connectors for on-board and fixedend equipment and connections to power and communications enclosures and external systems integration. This includes the proper termination of all power and communication cables and wiring (copper or fiber optic) to connect the individual components into a fully operational System that complies with applicable	F	
	standards and specifications.		
	✓ Furnish and install all hardware, equipment, brackets, computer enclosures, pull boxes, junction boxes, conduits, power and communications infrastructure, and other such items as required to support System proper functioning.	F	
	✓ Furnish environmental control devices, such as Universal Power Supplies, as required.	F	
	✓ Furnish and install all electronics and other devices in their respective cabinets as required to provide a fully operational System.	F	
	✓ Furnish and install System equipment, including, but not limited to, GPS antennas and receivers, AVL components, communications devices, vehicle logic units, etc.	F	
	✓ As an option, furnish and install Automated Passenger Counter (APC) equipment, as specified.	F	
	✓ As an option, furnish and install Automated Voice Annunciation System equipment, as specified.	F	
	✓ Furnish and install Mobile Data Terminals (MDT), in the quantity and configuration directed by the Commission.	F	
	✓ Furnish and install Passenger Information Displays, in the quantity and configuration directed by the Commission.	F	
	✓ Furnish and install Changeable Message Sign (CMS) System, with optional add-on audio equipment, solar electric power systems, and cellular communications equipment, in the quantity and	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	configuration directed by the Commission.		
	✓ As an option, furnish and install standalone IVR phone solution, as specified.	F	
	✓ Validate all cable and wire terminations via a test process to ensure that the cable is connected to the correct location on each end and that the cable / wire is properly terminated.	F	
	✓ Test the full communications networks to validate proper functioning.	F	
	✓ Power up and provide a field check out / installation acceptance test of all Systems, to be witnessed and approved by the Commission. Track progress toward completion of all installation requirements using a "punch list".	F	
	✓ Calibration and testing of the System, as further described in full accordance with OEM supplier guidelines.	F	
<b>10.7.9.1</b>	<b>Modern OEM Products</b>		
	✓ The Contractor shall supply modern, unmodified, OEM products of computer and communication equipment required for its System.	F	
	✓ All OEM products utilized shall be from authorized distributors. Evidence that products were obtained by the selected Proposer from authorized distributors shall be provided to the Commission upon request.	F	
	✓ The equipment shall be delivered with the latest firmware, patches, and software updates available at the time of delivery.	F	
<b>10.7.9.2</b>	<b>Work Standards</b>		
	As Specified	F	
<b>10.7.9.3</b>	<b>Equipment Removal, Relocation and Restoration Plan</b>		
	✓ All the items (by subsystem and location) requiring restoration, rebuild and / or upgrades to its original condition or better.	F	
	✓ All the items (by subsystem and location) requiring removal.	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ All the items (by subsystem and location) requiring salvage and packaging to keep original condition or better.	F	
	✓ A plan for temporary relocation and offsite storage.	F	
<b>10.7.9.4</b>	<b>Equipment List</b>		
	<b>As Specified</b>	F	
<b>10.7.9.5</b>	<b>As-Built Documents</b>		
	As Specified	F	
<b>10.7.9.6</b>	<b>Bill of Materials (BOM)</b>		
	As Specified	F	
<b>10.7.10</b>	<b>Obsolescence</b>		
	As Specified	F	
<b>10.7.11</b>	<b>Environmental</b>		
	As Specified	F	
<b>10.7.12</b>	<b>System Scalability</b>		
	As Specified	F	
<b>10.8</b>	<b>Project Management</b>		
<b>10.8.1</b>	<b>Project Staffing</b>		
	As Specified	F	
<b>10.8.2</b>	<b>Project Schedule</b>		
	As Specified	F	
<b>10.8.3</b>	<b>Weekly Status Meetings</b>		
	As Specified	F	
<b>10.8.4</b>	<b>Monthly Status Reports</b>		
	As Specified	F	
<b>10.8.5</b>	<b>Formal Correspondence</b>		
	As Specified	F	
<b>10.8.6</b>	<b>Punch List</b>		
	As Specified	F	
<b>10.8.7</b>	<b>Deliverables</b>		
	✓ Implementation Plan	F	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

	✓ Implementation Schedule	F	
	✓ Staffing Plan	F	
	✓ Asset List	F	
	✓ Design Document	F	
	✓ Test Plan / Procedures	F	
	✓ Training Plan / Materials	F	
	✓ Maintenance Manuals / Documentation	F	
	✓ Operators Manual	F	
	✓ Dispatchers Manual	F	
	✓ As-Built Documents	F	
	✓ Functional (software usage) Documentation	F	
	✓ Quality Assurance Plan	F	
	✓ Final Acceptance Test Report	F	

<b>10.8.8</b>	<b>Asset Management</b>		
	✓ Product description and manufacturer	F	
	✓ Quantity installed and quantity as spares	F	
	✓ Serial numbers, where available	F	
	✓ Installation or storage locations, including fleet unit #	F	
	✓ Status of equipment (e.g. installed, spare, awaiting repair, etc.)	F	
	✓ Item Value, if over \$2,500	F	
	✓ Replacement status of each part and reason for replacement	F	
<b>10.8.9</b>	<b>Quality Assurance Plan</b>		
	As Specified	F	
<b>10.8.10</b>	<b>Invoicing</b>		
	As Specified	F	
<b>10.8.11</b>	<b>Project Closeout</b>		
	As Specified	F	
<b>10.9</b>	<b>Warranty / Maintenance</b>	F	
<b>10.9.1</b>	<b>Installation Warranty</b>	F	
	As Specified	F	

**Agreement Between VCTC and Syncromatics Corporation  
Exhibit B - Syncromatics Proposal**

*March 3, 2017 Ventura County Transportation Commission RFP 17-90164-AVL RFP for Automatic Vehicle Location & Passenger Information System*

<b>10.9.2</b>	<b>Extended Warranty Period</b>	F	
	As Specified	F	
<b>10.9.3</b>	<b>Availability and Mean-Time-Between-Failure (MTBF) Targets</b>	F	
	As Specified	F	
<b>10.9.4</b>	<b>Chargeable and Non-Chargeable Failures</b>	F	
	As Specified	F	
<b>10.9.5</b>	<b>Diagnostics</b>	F	
	As Specified	F	
<b>10.9.6</b>	<b>Maintainability</b>	F	
	As Specified	F	
<b>10.9.7</b>	<b>Repair and Replacement of Faulty Equipment</b>	F	
	As Specified	F	
<b>10.9.8</b>	<b>On-Call Support</b>	F	
	As Specified	F	
<b>10.9.9</b>	<b>Local and Escalated Support</b>	F	
	As Specified	F	
<b>10.10</b>	<b>Spare Components</b>	F	
	As Specified	F	
<b>10.11</b>	<b>Schedule Requirements</b>	F	
	As Specified	F	Per addenda – May 2018



7/11/17

\_\_\_\_\_  
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL      DATE

Alex Fay, Vice President Business Development

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL



## 4. System Description – Optional Items

### 4-1. Next Stop Annunciator & Interior Bus Signage

#### SyncSPEAK ANNUNCIATOR

Syncromatics offers an ADA-compliant annunciator system that will automate the process of announcing arrival at each stop when a transit vehicle is in service. The AVA system is fully integrated with the on-board MDT and also with each bus's existing PA and/or speaker system.



#### Emergency Preparedness

Earthquake? Flood? Amber Alert? Syncromatics offers the industry's only AVA product that allows you to type a message at your computer and with a simple request, push that message out wirelessly and be playing in every single AVAS equipped vehicle within minutes.

## **Unique AVAS Capabilities**

While we always strive to use off-the-shelf hardware, our stop annunciator is the one exception. Syncromatics had been through an extensive period of research and we did not find a commercially available annunciator that we felt would give agencies the tools they need with the level of performance we require of our components. Our AVAS system is proprietary and we have designed it to be fully integrated with the CAD/AVL system – it will never make the stop announcements for a stop on the wrong side of the street as some are prone to doing. The SyncSPEAK Annunciator System is best in class and is a leading differentiator between us and many others in the industry.

Since the Syncromatics AVAS system is tightly integrated with a full understanding of a transit agency's routes, stops, schedules, and other CAD/AVL functions, we can offer a superior Annunciator experience on the bus.

## Use cases for Syncromatics AVAS

- Got a short term detour on a route? Simple – just drag and drop the route path in the Syncromatics Route Editor, and the AVAS software module will automatically be updated with the new route path. Go ahead and add a Route Level announcement describing the detour so that riders know what's going on. That whole process takes 5 minutes, so it can be done consistently for minor detours to keep bus riders informed.
- Sample Settings:
  - Text to speech: "Due to construction, Route B will operate on Main Street, between First and Third"
  - Start Announcement: Today
  - Expire Announcement: In One Week
  - Frequency: Every 10 minutes, only on Route B buses
  
- Severe weather issues impacting service? Push out an EMERGENCY notification to all buses advising riders of the change in normal service as soon as you decide on a contingency plan – that way no one gets stuck in the storm without a ride home.
  - Text to speech: "Severe weather will result in suspended operations today at 4pm"
  - Start Announcement: ASAP, manually push the update to all buses now.
  - Expire Announcement: Today at 4:10pm
  - Frequency: Every 5 minutes, on all buses
  
- Got an upcoming change in the routes or schedules or fares? Need to inform your riders about public hearings so they can provide input? Don't waste money advertising in the newspaper – get your message directly to the population that cares the most, the people on the bus. Syncromatics can support free form messages to be sent at regular intervals on selected routes or system wide.
  - Text to speech: "Share your input on proposed route changes at the Public Meeting on April 8<sup>th</sup> at the Library Community Room"
  - Start Announcement: Today
  - Expire Announcement: April 9
  - Frequency: Once per hour on every bus
  
- Advise riders of a local landmark or public service served by transit...
  - Text to speech: "Now approaching 1<sup>st</sup> and Main, this stop serves the County Courthouse and General Hospital"
  - Start Announcement: Now, update during normal bus startup procedure (not urgent)
  - Expire Announcement: Ongoing
  - Frequency: Every time any bus approaches the stop at 1<sup>st</sup> and Main (on all routes)

## **Annunciator Hardware**

### **Integrated Bus Announcer (IBA)**

This is what handles the audio channels and interfaces to the PA system.

### **Driver Control Panel (DCP)**

Volume preferences change alongside environmental concerns like air conditioning, neighborhood, time of day and passenger noise. The DCP allows the driver to make these changes or set a standard volume and leave it alone.

### **Interior LED Sign**

Signs display route and stop info that matches announcements to meet ADA requirements. Signs also display date/time and customer service messages.

Additional hardware may include an external speaker to be installed on vehicles that are not equipped with an external speaker. The external speaker is a key element of compliance for the Americans with Disabilities Act. Syncromatics has designed a one-piece housing in which a speaker can be installed to minimize the potential for leaks in the exterior skin of the vehicle. If you prefer to have external speakers installed on buses that do not already have them, pricing can be provided.

## Key Risks of Using Other, Unsophisticated Annunciators

**Amplification Hardware:** Does the system audio source support audio distortion control at varied volumes?

### Benefits

- ✓ Syncromatics IBA has industrial amplification and audio processing chips that clean up audio distortion along the cabling and audio source paths, to ensure a clean sound at any volume.
- ✓ Syncromatics IBA does not leave the audio channel open when the announcements are not on

### Risks

- i Without audio processing hardware, your annunciators may not be compatible or have usable sound outputs on exterior and interior channels
- i Imagine what the reaction from a rider with sensitive hearing might be to a distorted, high pitched onboard announcement played at a high volume

**Interior/Exterior:** Does the system appropriately channel, modulate, and independently adjust volume for each audio destination?

### Benefits

- ✓ Syncromatics DCP controls the IBA output volume levels independently for interior and exterior
- ✓ The driver can adjust these volumes as needed, depending on time of day and on-board conditions

### Risks

- i Inside the bus, it may be appropriate to have the volume level lower for passenger comfort, but that may not be sufficient for exterior announcements which need to compete with street noise.
- i If you share a common volume or don't have an amplification in between, you'll either be deafening riders inside the bus or not reaching riders on the curb.

**Inputs, Outputs:** Can the system support a line-in from an on-board radio or third party audio device, and can it how does it handle the existing PA system's microphone?

### Benefits

- ✓ Syncromatics IBA has an input for an XLR microphone and will give the microphone priority over any automated announcements
- ✓ Syncromatics IBA has an input for a "line in" that can be playing in the background when the annunciator is not making announcements, allowing for background music as needed

### Risks

- i If your system can't support the vehicle's existing microphones, you may lose the ability to have a manual PA system that the driver can use as needed.
- i If you have any sort of audio input that the bus provides that isn't supported by an annunciator, you may lose the ability to use that entirely or face contention between that and the annunciator for speaker priority.

- ❓ **Stop Requested:** Does the system support an input from the Stop Requested cable without the need to replace the existing light-up sign, and can it appropriately pause and time audio messages to play "Stop Requested?"

Benefits

- ✓ Syncromatics IBA fully supports existing stop requested systems without the need to replace them
- ✓ Syncromatics IBA will play the appropriate "Stop Requested" sound only once, when the cable is pulled before a stop. It will reset its logic when it arrives at the stop to allow a new request, just like the existing onboard systems many buses have.

Risks

- ❗ Without stop requested integration, you may not be fully ADA compliant and vision impaired riders may not know when the system has registered their request to stop

- ❓ **Customizable Messages and Flexibility:** Can your system support an urgent need to modify a message? How do I adjust the annunciator message if I adjust the route? What if there is an emergency?

Benefits

- ✓ Syncromatics annunciator system is based on a text-to-speech engine. You type, it talks.
- ✓ There is no need to record a human voice reading canned messages.
- ✓ Text-to-speech message updates automatically get pushed out to buses via cellular data connections each night, and they can be pushed to vehicles immediately in case of emergency.

Risks

- ❗ System that rely on recorded human voices cannot nimbly adjust to changes in service.
- ❗ The workload associated with manually uploading new recordings via a USB or other cable connection in the bus depot is a distraction from core operations.
- ❗ Voice recorded systems can't support immediate deployment of emergency messages.

- ❓ **Installation:** Who is installing your AVA system and what is their experience level?

Benefits

- ✓ AVA is the most complicated product to install among the components of the Syncromatics offering. Our on-staff field engineers have experience with OEMs, speaker systems, PA control units, gooseneck and handheld mics, audio cabling, etc. Experience matters the most here.

Risks

- ❗ If you have inexperienced personnel installing AVA, you may disable the bus's PA system inadvertently or permanently damage existing audio functionality, and this often won't be discovered until after the bus is back in service and installation technicians have left the site.

## **Web Based Annunciator Control Panel**

Stop level announcements can be controlled in a variety of ways as described below. Modifications to settings made on the web will be automatically updated on the bus the next time it powers off and on again. Or, you can push out updates on an emergency basis immediately.



Route level announcements enable quick modification to all of the stops and buses along a given route. There is no need to modify each individual stop – a single change can be pushed out to the entire route at once.

## **Text to Speech Software Engine**

Syncromatics AVAS product relies on industry leading text to speech technology to accurately and reliably render your text announcements into natural sounding speech on the bus. This underlying technology is provided by the industry leader in text to speech processing.

While many text-to-speech applications suffer from poor quality announcements that sound very robotic and disengaged, platform provides for highly naturalistic speech quality.

The process starts on both ends— voice database building language text processing —that meets in the middle to produce speech.

## 4-2. Exterior Headsign Integration

### FAREBOX/HEADSIGN INTEGRATION

Syncromatics offers integration and automation with onboard systems in the following fashion:

- ✓ Hanover, Twinvision, and Luminator Headsigns: Automated Logon/Logoff via J1708
  - Automation of destination sign population via J1708 to the sign central control unit
  - Subject to compatibility of certain variants, most models 2000 or later are compatible
  - Syncromatics' existing relationship with headsign manufacturers and our experience with their product lines makes the process easier
  - Other headsign manufacturers may be compatible if they support the J1708 protocol

Other makes and models that utilize standard vehicle communications are also compatible, but may require some engineering work to support the device specific protocols.

## 4-3. Automatic Passenger Counting (APC) System

### SyncCOUNT APC SYSTEM

Syncromatics proposes to reuse the existing UTA APC system already installed on the client's vehicles or installed new APC hardware as necessary. Syncromatics has worked with UTA hardware on previous client sites, including Connect Transit in Bloomington, IL. At that site we successfully integrated the APC components into Syncromatics' software package. It will be critical for Syncromatics to assess the health and performance of existing APC equipment during a fleet survey prior to executing a contract so we can accurately plan this work. We cannot take responsibility for the quality of the hardware or installation methods that precede our involvement, but we are confident that we can make an integration of existing APC hardware work.

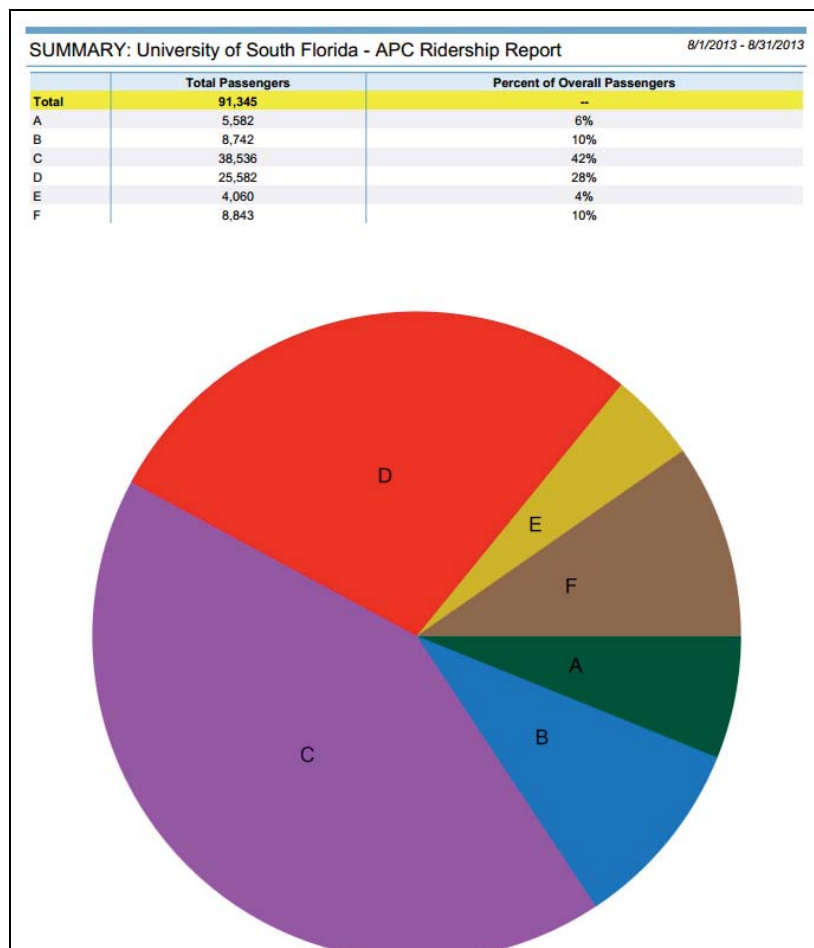
Like the other components in our system, the APC subsystem is directly integrated with all reports, stop records, and historical tools.

Syncromatics has developed its own software tools to enable advanced APC features like reporting of live bus loads and integration of APC data into standard performance reports.

## **Key Points: Software**

- Once the APC data reaches the server, there are multiple different levels at which APC data is stored on the Syncromatics ITS system:
- Vehicle level: APC data is associated with GPS points and can be viewed visually in the vehicle's breadcrumb history
- Stop level: The system uses a specific algorithm to match APC data with stops. Even if a bus opens and closes its doors multiple times at a stop, APC data can still be stored as one stop's counts.
- Route level: The system also stores the data at the route level for calculation of overall counts, daily/weekly/monthly/annual statistics and counts, activity by hour and day of week, etc.
- There are a number of reports for overall totals as well as hourly, weekday, day of week, monthly and annual data. Data is presented in percentages, average boardings/alightings per stop, and bar graphs.
- It is best to think of these reports as a flexible/modular system – you can query the data out of them in many different formats and filters, but they don't require any technical knowledge and are wizard-based.

## APC Reporting Module









## **Digital Passenger Counting to Augment APC Data**

Digital passenger counting involves the bus driver manually counting passengers as they enter the bus by tapping on the MDT screen. Digital Passenger Counting is always included, for free, as part of the base system. When used in conjunction with APC, it would not be used to count total boardings, but rather can be used to count unique values such as the number of wheelchairs or bikes that board at each stop. The Count Fares Screen is fully customizable, so the agency can set any fare/passenger types it desires to keep track of. In addition to wheelchairs and bikes, this may be students and staff, or it may be adult, child, and senior fares.

Count Fares Screen. This screen can be used in place of or in addition to Automatic Passenger Counters, allowing drivers to manually count passengers on the MDT. It also allows drivers to note whether bikes, wheelchairs, senior fares, student fares, or others board. All fare and passenger types are customizable.

## 4-4. Real-Time Arrival Signs

### SyncSIGN REAL-TIME SIGN SYSTEM

In addition to providing bus arrival info via mobile phone, it can be important to provide live data physically at high-traffic bus stops, transfer centers, or other points of interest. Syncromatics provides a variety of sign types so we can support a variety of applications and on the ground conditions.

### Proposed Approach

To meet VCTC's need to replace legacy electronic signs, Syncromatics is proposing to deploy 40 solar powered LED signs manufactured by WaySine. Syncromatics has had a very positive experience with this equipment in the past at installations in Downtown LA and Commerce, CA, and it is easy to install and maintain because it requires no wires for power or communication. All power is generated by an integral solar panel and all communication is provided by the internal cellular modem. Signs are available in 2-line and 4-line configurations

### Solar Powered LED Signs for Bus Shelters and Bus Stops



**Operating Temperature:** -20 to 70 C (-4 to 158 F)

**Humidity:** 10-100% - Non-condensing protective plate

**Housing:** IP65, UV-proof, NEMA 4X compliant, extruded aluminum with silver anodized finish

**Display:** LED, 15 x 96 pixels per display line with 4.5mm pitch, ADA compliant 2" character height for 1.

**Wind Rating:** Up to 150 mph. Wind load calculations available.

#### Key Features of Solar Powered LED Signs:

- ▶ Integrated solar panel, power electronics, and long life battery
- ▶ Can mount inside a bus shelter or atop a standard uni-strut bus stop pole
- ▶ Completely wireless – does not require any power or data infrastructure
- ▶ ADA compliance annunciator based on motion sensor
- ▶ Communications via integrated cellular radio
- ▶ Can display emergency messages and public service announcements
- ▶ Built in diagnostics to enable remote health monitoring

New Generation Solar Display (LED technology) installed in  
Commerce, CA:

(Sign text is not visible due to digital photography method)



## 4-5. Electronic Signs - Route & Stop Management

The PLAN section of our software is where routes and stops are managed. This section is where external data sources and APIs can be connected and associated with specific stops (for example, to associate a nearby bike share station with a specific transit stop) so that combined information can be used to create messages. We can import data from GTFS to populate the routes and stops within our system.

Our advances in sign management have led us to a complete rethinking of stops to go along with it. A bus stop in most CAD/AVL systems is nothing more than a location on a map, but we recognize that it is in fact a physical space in the real world with many different attributes.

Some of the attributes of a stop are:

- Latitude/Longitude location
- City, county, or other area
- Amenities (shelter, bench, trash can, sign, etc.)
- Responsible parties (for maintenance, cleaning, etc.)
- Third party API location codes (for example, if the stop is shared by another transit service, this is used to display their arrival times on a sign, if present)
- Uber/Lyft location code (for example, to show current wait times on signage)
- Custom tags (any note defined by the agency)
- Electronic sign types present at the stop

This notion of stops allows for powerful management by the agency not only of messages that can be pushed to signs, but of maintenance needs, administrative details, and more. It will be easy to make changes to stop locations, amenities, or electronic signage- because all other relevant details can be kept consistent while only the necessary items changed.

The PLAN section also ties in directly with the message management, so that you can easily navigate to any route or stop and create a message specific to that stop. With either a map-based or list-based view, it is the best place to navigate directly to specific parts of your transit system and target limited messages at those stops or routes only. The screenshot on the following page shows the stop management section of the PLAN module in more detail.

The side bar on the right shows a list of all routes/stops in the system, and will allow quick searching or filtering. Filters can be applied based on routes that serve those stops or other attributes such as amenities (does the stop have a sign, a bench, a trash can, etc.) or type of sign. If the stop has a real-time information sign, this page will show you the status of that sign, as well as give alerts for any signs that have not recently checked in with the server or have some other type of error.

The information cards on the bottom left of the screen represent the key features of this page.

On the left is the basic stop information card. The colored tags represent the routes that serve this stop. Below the routes is a set of icons representing the amenities present at the stop, and to the right of the amenities is a list of “tags” that have been applied. Tags provide agencies a way to categorize and group stops for easier management and messaging. Here, you can see this stop is tagged with “Los Angeles,” “Downtown Area,” “Shelter Clean” (for the company that performs the maintenance), and two more tags – which are viewable on a detailed tag card.

The larger “Stop Details” card allows a user to view more technical details and edit the stop’s attributes.

The icons at the top right of the detail card represent various other cards that can give a user more information or actions to perform on this stop.

Below is the “Data Display” card, which shows which data sources are “turned on” for the sign, and allows the user to edit or add data associations for the stop.

The next card is the Messages card, where a user can view all of the messages currently associated with that stop, see a preview of their formatting on a sign (if a sign exists at the stop), and create new messages or remove messages from the stop. Here we see that there are three current messages associated with this stop ("5k Detours," "Service Changes 6/1/17," and "Marathon Day") as well as two upcoming messages.

After the Messages card, the next icon represents our SyncSPEAK Automated Voice Annunciator settings. This is where a user can modify the settings for announcements that get made by buses at this stop, but it would not apply to signs.

The final card is the tags card, which would list all of the tags that have been applied to this stop and allow the user to add or remove tags and create new ones if desired. Tags are a powerful way that you can categorize and group your stops in any way you desire – and tags work throughout our system, across stops, routes, messages, and more.

We show the stop management features first because they are the base on which the messages get applied. The message management portion of the software that follows, however, is where agency users will spend most of their time creating and editing messages.



## **4-6. Electronic Signs – Message Management**

The message management portion of our software lives in the RIDE section. This is where we manage all of the ways in which we communicate with riders.

The New Message window is a simple, straightforward way for users to create messages. A user begins by filling in the top portion of the window.

The message name is for internal use only and gives the user a way to refer to message – this is seen by any user of the system.

In the message text box, a user inputs the default message that will be used as the base for all channels. As you type, we will automatically provide alerts for any channels your message won't work on (for example, if you enter a message longer than 140 characters, it will not fit on Twitter). In this example, you can see an alert over the "Twitter" box to the right.

Assignments can be made by mode, route, stop, or tag (which can include regional areas, or any other categorization). Here we have assigned the message to every route/mode/stop with the “Los Angeles” tag, plus the route 720, plus an individual stop at Figueroa / 1st St.

In the Channel Settings window, we have tabs for each of the channels selected in the previous step. Here we can edit the message or provide more information that applies only to specific channels. If there are basic formatting requirements, like message length, we will automatically apply those restrictions, but allow the user to customize the message as necessary.

In the screenshot above we have left both the “Display Text” and “Spoken Text” (if the sign has an annunciator) to match the default text entered on the previous screen. There are options to select the active days and times that the message should display, as well as specify an interval in order to give some messages more importance.

A user can move through the tabs to see the default formatted messages for each channel and change them if desired.

Every channel to which a message can be sent has its own configuration tab within settings that apply to that channel.

When the message is ready, a user can either “Save Draft” or, if they have adequate permissions they can “Publish Now,” which sends the message to each of the selected channels.

## Messages List

Now that messages have been created, we look at the messages list, which gives users a full view of all messages. The sidebar on the right allows a user to quickly search or filter by various attributes, and the list will auto-populate with relevant messages.

In the main pane there are three tabs: Current, Pending, and Archive.

The content of each tab is similar, with rows of messages and associated information, but populated by messages in each of the respective states. Clicking on any row will allow a user to view detailed information and edit or copy the message.

The tabs in this view reflect the tabs that were displayed in the create message steps, allowing a user to view the various versions of the message that were pushed out to different channels as well as all relevant details.

## 4-7. Electronic Signs – Experience with Alternative Signs

Below, we detail the variety of signs which we have experience deploying, and we would be happy to discuss the many sign options in more detail. It's possible that some of these sign types are better suited to particular sites.

### Bus Shelter LED Signs – Grid Power



This particular installation of a bus shelter LED sign shows Syncromatics' ability to integrate third party data sources – an important piece of the information puzzle in an area served by multiple transit options.. This sign at Los Angeles City Hall displays real time arrival information for multiple regional transit agencies that share a single stop, including buses that are not tracked directly by Syncromatics. Syncromatics integrated the 3<sup>rd</sup> party CAD/AVL vendor's data feed into the sign to help riders making connections between multiple transit systems. This sign was celebrated by Los Angeles Mayor Garcetti at a June 2015 press conference.<sup>1</sup>



2-line, single sided. Ideal for remote shelters, single-route stops

Power	120VAC Fixed
Dimensions	8"H x 24"L x 6"D
Comms.	Cellular
LEDs	Red or Amber
Mounting	Top or rear mounting

Usage	Indoor/Outdoor
Lines	1 or 2 LN mode
Characters	16 per line (2LN) or 8 per line (1LN)
Character Size	1.26" (2LN) or 2.7" (1LN)

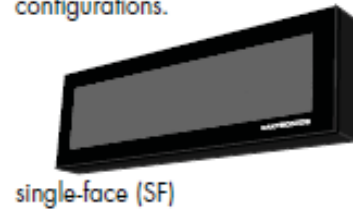
<sup>1</sup> [http://www.lamayor.org/the route to a smarter city](http://www.lamayor.org/the_route_to_a_smarter_city)

## LED Signs for Transit Centers and High Traffic Locations

Syncromatics offers a variety of signs in a variety of sizes to meet the various needs of our clients.

The Daktronics Galaxy AF-6300 series displays are the top of the line in the transit industry. They are rugged, weatherproof, easily programmable, and very flexible in their displayed messages. See the enclosed appendix for full technical details. Syncromatics will source the signs, configure them for wired or wireless communication, and manage the installation process end to end. Syncromatics will support the signs for the life of the project.

<b>Pixel pitch</b>	8 mm (0.3") center-to-center; 1,600 pixels per sq ft 12 mm (0.47") center-to-center; 646 pixels per sq ft	8 and 12 mm, monochrome, AF-6300 series displays can be ordered in single-face (SF) or double-face (DF) configurations.
<b>Color capability</b>	1 color (amber)	
<b>LEDs per pixel</b>	1 amber	
<b>Estimated LED lifetime</b>	100,000+ hours	
<b>LED Viewing angle</b>	30°	
<b>Contrast enhancement</b>	Contrast enhancing polycarbonate face	
<b>Service access</b>	Front access with removable door	
<b>Graphic capability</b>	Text, graphics, logos, multiple font styles and sizes	
<b>Control software</b>	Venus® 1500 or third-party integrators using Venus® 1500 (SDK) software developers kit	
<b>Power</b>	120 or 240 VAC single phase	
<b>Display dimming</b>	64 levels (automatic or manual control)	
<b>Communication options<sup>3</sup></b>	RS-232, RS-422 and Ethernet (wired or fiber)	
<b>Compliance information</b>	UL listed, NEMA 4X cabinet, IBC 2009, NEC	



Sizes range from 2 lines / 24 characters per line (roughly 11" x 48" x 5") to 6 lines / 40 characters per line (roughly 21" x 77" x 5"). Please see various options and pricing in the pricing proposal.

## ADA Compliant Push to Talk Button



Syncromatics can provide an ADA compliant push button assembly for each sign location, except for with sign models that include a motion sensor. The push button will be installed at the appropriate height and feature braille to inform vision impaired users of its function.

The push button is designed for long life and thousands of uses, and it is manufactured by Polara, a market leader in pedestrian signal applications.

Syncromatics' standard Push to Talk assembly can be customized to reflect client's preferred branding scheme, including custom text/braille, colors, and materials.

## LCD Screens for Transit Centers and Building Lobbies

In addition to shelter signs, Syncromatics has the ability provide digital signage solutions that display real-time arrival information in transit centers or other building lobbies.

### Summary

- Syncromatics has experience with both LCD displays and LED signage, and we recommend varying sign types based on the specific details of the installation location and use case.
- All screens Syncromatics provides presented are industrially rated for commercial use and 24x7 operation. This is a key point for the long term health of the system. However, the screens will only be on during configurable business hours, not 24x7.
- Syncromatics has installed public LED and LCD signage in the past and delivered application-level functionality.
- All signs are fully integrated and supported directly by Syncromatics.
- All LCD screens have a compact, industrially rated network video appliance specifically designed for public display applications—there are no computers or moving parts that could be damaged with industrial use.
- Electronic signs can connect via Ethernet, Wi-Fi, or cellular data for network access to reduce expensive construction and wiring costs for new installations.
- If your agency or your partners have existing screens already in place, Syncromatics can provide a simple URL which can be added to your current content playlist for displaying arrival predictions and/or a live map on the screens.

### Risk Factors

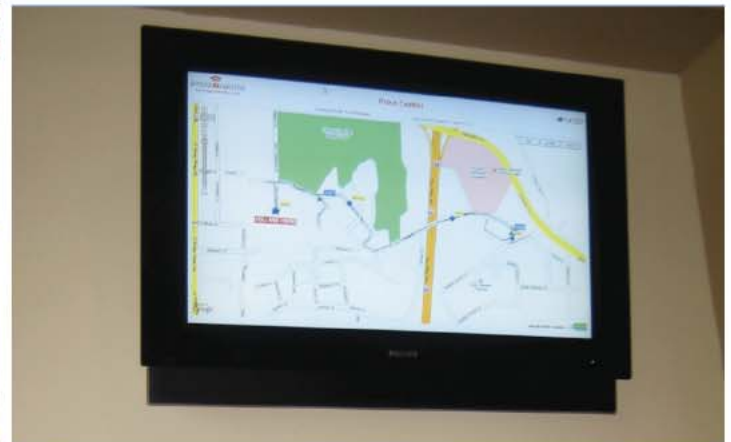
- Syncromatics encourages, in the strongest terms possible, the use of industrially rated screens for both indoor and outdoor applications. Using consumer grade screens or mounts in this application could result in short term hardware failures and considerable losses for your agency—short term cost savings could result in long term replacement costs.
- All screens proposed are suited for 24x7 operations. This is an important difference we encourage you to consider carefully – if you choose consumer grade televisions that aren't suited for continuous autonomous operation, they may experience burn-in, pixel degradation, or intolerance to temperature conditions.
- The selection and placement of screens is highly location dependent. Without knowing the specific locations and orientation of the signs, it is difficult to recommend the best option. The LED and LCD signs are highly versatile, but if the agency prefers an alternative approach, we are happy to pursue it.
- Any specific, binding proposal on signage, especially relating to installation locations and costs, would require additional information from the agency in order to submit a binding proposal on this point.



## Application Examples

### Indoor LCD Display at Dispatch or Building Lobbies

Examples follow of Syncromatics' past work with unattended LCD displays. These are very useful to replace manual dispatch boards for an overview of the system. Interior consumer flatscreen displays are significantly cheaper than the industrial exterior, weatherproof displays, but Syncromatics still recommends an industrial display to prevent "burn-in" of the map image if the same view is displayed for long periods in the dispatch area.



### LCD Tabular Passenger Information Display Indoor/Outdoor

The colors, formatting, and scrolling announcement on the user interface can be customized to match client branding. Clients have full control over the programming of the signs via Syncromatics web control panel. The tabular interface is created dynamically in HTML and hosted at a URL to which the sign content player can point. With this architecture, the tabular display is flexible and can be incorporated into a "multiple pane" display that could include additional content such as a news ticker, live TV window, weather widget, or other custom content. The tabular arrivals display can also play in a rotation, showing multiple screens to enable display of many routes without compromising ADA required font size. The screen content rotation can also include other full screen content that rotates through at configurable intervals. The design is responsive to various screen sizes and adjusts automatically to vertical/horizontal orientation.

SPORTRAIN Sports & Recreation Management, Inc.			February 20 2016, 10:10 AM		
01 - Metro Loop (Clockwise)	13 mins	25 mins			
02 - Metro Loop (Counterclockwise)	14 mins	57 mins			
03 - Queensboro	3 mins	50 mins			
04 - Fairgrounds	29 mins	64 mins			
05 - Linwood	now	35 mins			
06 - Cedar Grove	45 mins	105 mins			
Find the time for your Next Two Buses Arriving Each Route via our					

Syncromatics can provide real-time data to existing LCD screens as long as they are connected to the internet and capable of displaying a webpage full screen.

## **Network Video Controller for LCD Screens**

A critical component of the LCD screen system is the hardware that controls what content is displayed and communicates with the servers to update the sign. This industrial computer ensures high performance, reliable operation of LCD signs used for public display.

The controller product shown below is used to provide a fully autonomous, unattended display output to LCD displays of any size.

## **4-8. Equipment Service Plan**

Syncromatics offers an option to package concierge equipment service into our annual service agreement to ensure that your Intelligent Transportation System is always fully operational and tuned up to optimal efficiency without your maintenance staff getting involved.

If this optional item is selected, Syncromatics will employ a field technician in your area to ensure timely same-day response to field service requests. While the extended warranty coverage covers any issues that may develop with ITS hardware, the Equipment Service Plan will also cover all troubleshooting, inspection, removal, replacement, and calibration of ITS hardware. The designated technician will also perform proactive system reviews to identify potential issues before they affect data quality or the rider experience. For clients that lack robust maintenance crews or facilities, or clients that would rather have their technicians focus on mechanical issues, this white glove service can be a worry free way to ensure your system is regularly monitored and attended to.

The Equipment Service Plan is offered for a flat fee to include a designated number of field support hours per month. The estimated workload is based on the complexity of your ITS deployment and the size of your fleet to ensure adequate resources are available. If a client does not use all of their service hours in a given month, they can roll over and accrue up to 100 surplus hours to be used at a future date.

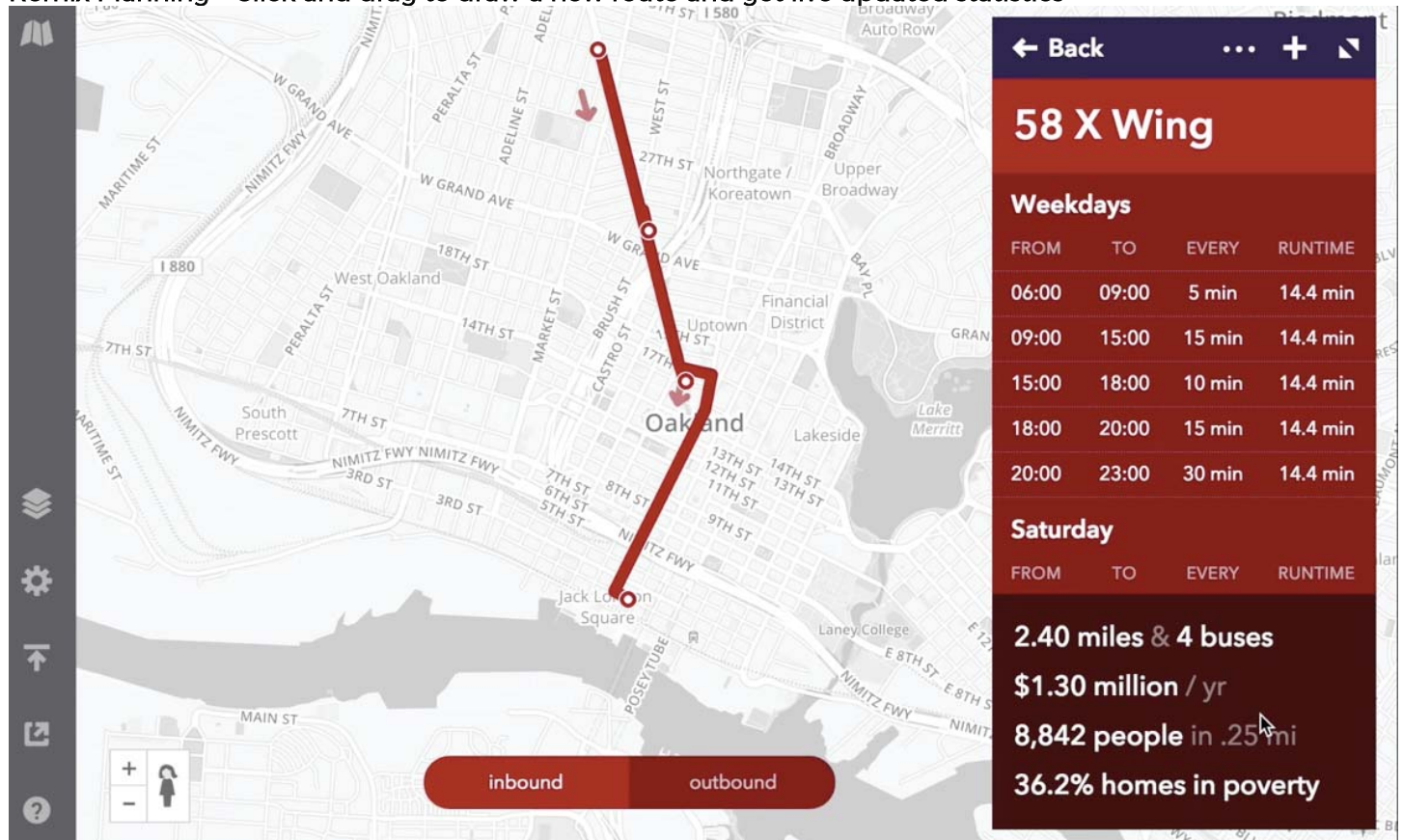
## 4-9. REMIX Planning and Scheduling Software

Through a partnership with Remix, Syncromatics is able to offer comprehensive transit planning and scheduling software as part of an integrated CAD/AVL solution. This section outlines the optional Remix software tools.

Remix offers two products to transit agencies on a Software As A Service basis: Planning and Scheduling.

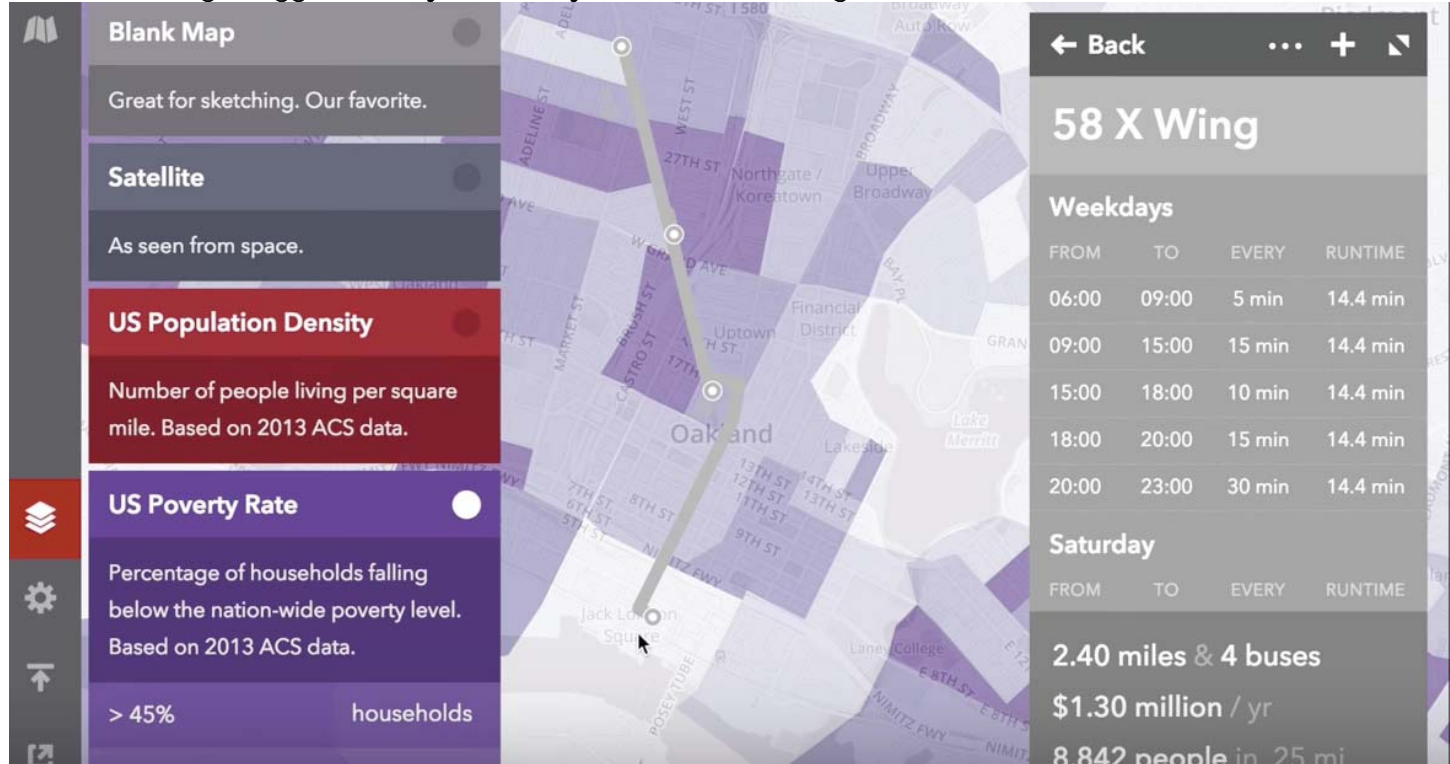
Remix Planning provides an intuitive, easy to use tool for drawing and editing routes and quickly understanding their impacts to operating costs, ridership, fleet requirements, and other parameters. As a user modifies route settings (frequency, days of the week, route shape, etc) the software automatically calculates new values in real time. Remix planning is a pre-requisite for using Remix Scheduling software.

**Remix Planning – Click and drag to draw a new route and get live updated statistics**





### Remix Planning – Toggle data layers to see your new route alongside census data



**Remix Scheduling** builds on the Remix Planning software to provide an easy to use transit scheduling tool that is geared toward transit agencies with fewer than 200 buses. Remix Scheduling provides all the core features of the more expensive, more complex scheduling programs, but presents them in an intuitive interface that any transit planner can learn.

Remix Scheduling – Dynamically edit a timetable for a route, designate layovers, and define route patterns

Remix Scheduling – Use the blocking tool to automatically carve up all of the planned work into the most efficient blocks. Blocks define the work that a specific vehicle performs during a day. The software will optimize the blocking, and a user can drag and drop blocks to modify the schedule.

Remix Scheduling – Once blocks are defined, the software will create a runcut that group blocks into runs – a run describes what an individual driver does in a given day. The software can optimize the runcut based on a number of key factors that reflect labor rules and affect operating costs, including “paid hours target,” “max runs per operator,” and “target % of straight runs.” By adjusting these values, a user can tweak the computer generated solution to meet specific needs.

Remix Scheduling is a new product that is still evolving, and the below new features are in the plan to deliver in the coming year. All clients will automatically have access to new features as they are added.



## 4-10. SyncCHECK: Pre-Trip, Post-Trip, and Maintenance Inspections



Syncromatics can offer a customizable pre- and post-trip inspection software that runs right on the MDT. While we offer a standard form inspection for drivers to check common things like headlights, taillights, turn signals, tire-pressure, and more, we also know that various states and agencies have their own policies and requirements. You can build your inspection templates off of our templates and customize them to fit your needs.

In addition to customizing the inspection items, you can set custom results – defining what constitutes a failed inspection (do not drive this vehicle) and what constitutes a warning (ok to drive, but creates an alert for the maintenance staff).

The MDT is removed from the vehicle, taken around the bus, and used as a handheld device to record inspection results. Drivers can take photos of problem areas, which are uploaded to the reports server for agency maintenance staff to view in the web portal. They can also record custom notes to detail problems that may not be visible in a photo or provide more information to any of the answers provided during the inspection.

#### Inspections

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##### » Multiple Types

- » Pre-Trip, Post-Trip, Maintenance Intervals, etc.
- » Unique to each vehicle type

##### » Reports Saved on Device

- » For easy driver access

##### » Results Instantly Transmitted

- » Maintenance dept. has immediate access to info
- » Parts and service can be prepared before bus returns

#### Master Maintenance Queue

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##### » Preventive Maintenance Schedule

- » By time or mileage

##### » Pre-Trip Inspections

- » Pass, Warn, and Fail Criteria

##### » Periodic Maintenance Inspections

- » 45-Day Inspections, Mileage-Based Inspections

## 4-11. Mobile Broadband Routers and Passenger Wi-Fi



Syncromatics offers a turnkey solution to provide Wi-Fi service to passengers and also create a secure bus network to consolidate communications and support other vehicle technology such as security cameras, voice over IP (VOIP) radios, and mobile ticketing with a single cellular connection to eliminate redundant fees. The vehicle network gateway uses one or more 4G LTE broadband data modems to connect the bus to the internet. It then splits this connection into two components: (a) unsecured public network for Wi-Fi service and (b) secure bus network for cameras, MDT connectivity, mobile ticketing, and other components. Sharing a connection saves money, while maintaining separate channels improves security and reliability.

### Key Points:

- ▶ 4G LTE wideband network connection for fast, reliable connections
- ▶ Ethernet ports to connect other bus technologies
- ▶ 4 onboard SSIDs for secured and non-secured 802.11 a/b/g/n Wi-Fi
- ▶ Wired Ethernet connection to Syncromatics MDT (no need to continue with 3G data service to MDT)
- ▶ Management tools: traffic prioritization, bandwidth throttle, content filtering, analytics
- ▶ Bandwidth and protocol throttling to prevent overages

### Wi-Fi for Passengers:

- Productive time during commute
- Customize agency splash page
- Filter inappropriate content
- Bandwidth limits per user
- Advertising revenue opportunities

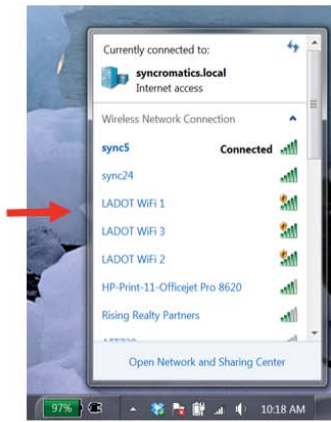
### Secure Bus Network:

- 4G network backbone
- Consolidate data network connections and antennae
- Industrial grade hardware for reliability
- Separate secure channel with transmission priority

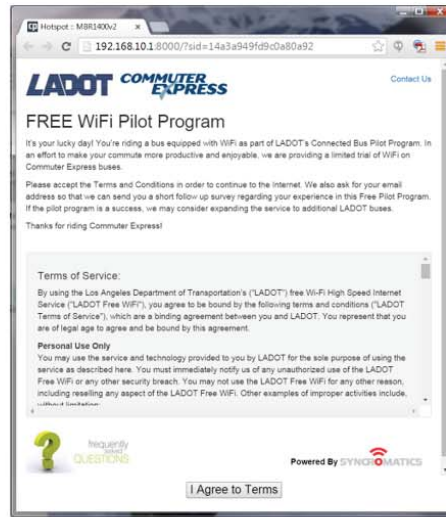


Syncromatics handles all aspects of the Wi-Fi network so there is no additional burden on your IT department. Here's the system we configured for the Los Angeles Department of Transportation. In addition to the graphical user experience below, we also set up a number of back end features:

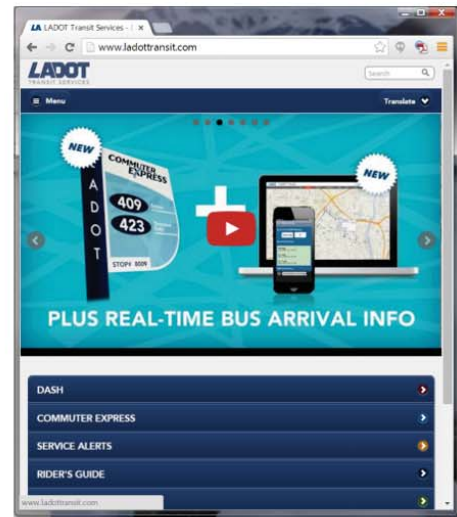
- ▶ **Load Balancing and Prioritization** ensures proper sharing of bandwidth between bus operations and public Wi-Fi. When a dispatcher wants to pull up live security video, that will take priority over passenger Wi-Fi.
- ▶ **Content Filtering** prevents inappropriate Wi-Fi usage by passengers
- ▶ **Bandwidth Throttling** ensures no single Wi-Fi user consumes too much data and provides a good experience for all users and prevents unexpected spikes in data usage from triggering high cellular data charges from the cellular carrier



Select SSID ("Network Name"):  
**LADOT WiFi #####**  
(##### = bus number)



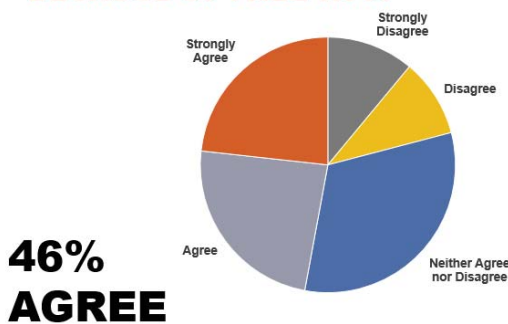
Splash Page opens  
Welcome Message  
Terms and Conditions  
Click "I Agree to Terms"



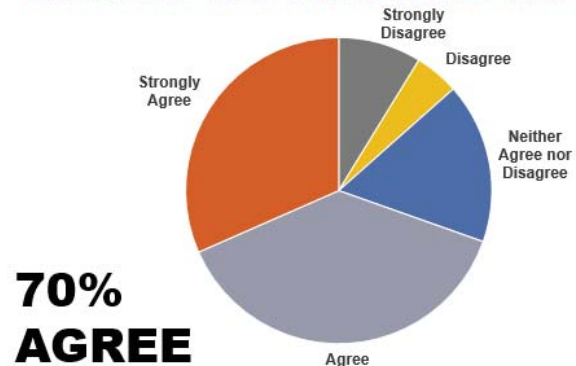
Landing Page on successful log in  
Redirects to [www.ladottransit.com](http://www.ladottransit.com)  
User continues to internet

After operating the Wi-Fi on select commuter routes, survey responses indicated that the Wi-Fi system was having a significant effect on modifying riders attitudes about their commute on public transit.

**I AM LIKELY TO DRIVE LESS  
BECAUSE OF FREE WI-FI**



**FREE WI-FI MAKES THE BUS MORE  
ATTRACTIVE THAN COMMUTING BY CAR**





## 4-12. Electronic Fare Collection via TouchPass

Syncromatics can offer a fully integrated Electronic Fare Collection system to include smart cards, mobile ticketing, and printed passes. TouchPass provides a fare collection solution that covers ALL fare media and ALL fare policies right out of the box.



TouchPass is a full-featured electronic fare collection (EFC) solution that employs fare media and fare products usable by all passengers. TouchPass Readers onboard buses accept not only a mobile app, but also smart cards and “Paper Tokens” (inexpensive printed QR-code tickets that facilitate single-ride products and can be electronically validated). They perform onboard electronic validation of all fare products, providing valuable boarding data and reducing bus operator burden. Secure, real-time, online fare processing allows TouchPass to support versatile products, such as stored value, multi-trip passes, electronic transfers, and fare capping.

TouchPass Benefits:



### Cost Reduction

- Subscription-based. "Per-tap" charges with pricing based on volume.
- Very low up-front costs.
- Pennies per transaction, substantially lowering expenses.
- Cuts losses due to fraud and fare evasion.
- Free upgrades and new features without additional equipment or configuration.



### Time Savings and Simplification

- Eliminate software/hardware development time and associated risk.
- No need for in-house infrastructure or dedicated staff.
- Implement in a matter of days rather than years.
- Easily update system configuration, change fare policies or add new fare products.
- Begin operation immediately after installing Touchpass Readers on buses or faregates.



### Versatility

- Real-time processing for unparalleled flexibility and reporting.
- Accessible and affordable for small to mid-sized transit agencies.
- Easily configured to support virtually any agency fare policy or product.

Passengers can buy fare products not only on the mobile app but also at any agency-operated ticket office, designated retail locations or on a passenger website (using any networked device). Using TouchPass, Transit agencies can serve a greater number of its passengers and access a wider variety of fare products, fare processing rules and ridership data while enhancing security and enforcement.

The TouchPass technical solution consists of four major system components:

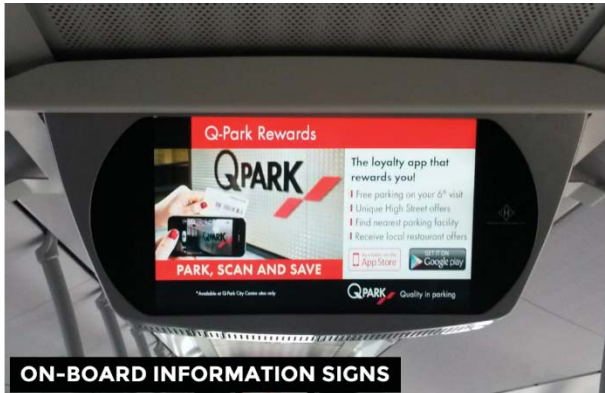
- The Fare Engine performs high-speed fare calculation and account updating to provide nearly instantaneous responses to fare payment requests received from the TouchPass Readers. Powerful cloud based servers enable TouchPass to boast the world's fastest networked "tap-to-beep" transaction times (averaging well under 300 milliseconds in actual revenue service) with incredibly high reliability.
- The Account Management System (AMS) includes the system database and controls all access to and updating of records in the database. It includes three web portals:
  - ✓ Administrative Console enables authorized users to create, view and manage records and reports for passenger accounts, vehicles, operators (drivers) and on-board readers. This tool will be used by transit agency staff to manage the fare collection system.
  - ✓ Merchant Portal provides a lightweight, mobile optimized interface for point-of-sale transactions anywhere passes are sold, include the transit office, transit center kiosk, or convenience stores.
  - ✓ Passenger Portal provides a web-based interface for passengers to buy fare products, set up and manage their accounts.
- The TouchPass Reader is the on-vehicle validator and initiates fare payments by reading fare media presented by passengers. The TouchPass Reader communicates with the Fare Engine and AMS over a virtual private network (VPN) via Wi-Fi or cellular.
- TouchPass Fare Media include three forms of media passengers can use to initiate fare payments using TouchPass Readers.
  - ✓ TouchPass Mobile App: This software application can be downloaded to any smartphone using the Android operating system, version 4.4 (KitKat) or later or the Apple operating system, iOS, version 8.0 or later.
  - ✓ TouchPass Card: A contactless smart card encoded with a secure account ID that can be linked to stored-value or monthly pass type products.
  - ✓ TouchPass Paper Token: Disposable paper card printed with a unique QR code and serial number. Each token is linked to a virtual account that includes a single fare product, such as a single ride ticket (with or without transfer rights) or a 10-trip Pass. This provides a secure, low-cost, electronically validated solution for issuing fare products where passenger use is limited to a defined number of rides.



## 4-13. Multimedia On-Board Infotainment

Syncromatics supports the deployment of interior LCD screens to inform passengers of upcoming stops, transfer points, local news/weather, community service messages, and advertising.

Syncromatics offers a 19" full color screen. The displays integrate seamlessly into bus interiors, as shown in the photos below. Other rugged LCD displays are also compatible.



Syncromatics leverages a network video controller to control the content on the onboard passenger infotainment displays. A full featured Web Hosted Content Management System makes managing the images and video content on the displays easy.

This proposed approach offers a number of benefits:

- Allows for flexible modification of content through a web interface. Modify the content as often as you like.

- Allows for live “widgets” to display weather, news, mobile advertising, and other dynamic content
- Industry standards for data transfer and display will enable the onboard system to evolve as new technologies for content management develop. If the client wants to use a different content management system, the hardware will allow a variety of inputs.

- Requires a data connection to wirelessly deliver content to the bus.

  - Can leverage Wi-Fi access at vehicle maintenance yard to update once per day

  - Can use cellular data network (additional charges apply) to update continuously if the above options are not acceptable (may require 4G broadband data service)



## 4-14. Demand Based Transit Service Expandability



### EASY RIDES DEMAND RESPONSE

Syncromatics recently acquired Mobilitat, a leader in demand response scheduling and dispatch software, to offer an integrated demand response technology solution. The Syncromatics Easy Rides software solution it includes a number of novel and very useful features, described below.

Easy Rides is available at various levels to meet the requirements and budgets of various transportation providers.

All Easy Rides versions include the following core features:

#### Scheduling:

Clients Default Data Table  
Frequented Addresses  
Single Reservation Entry Point  
Trip Tickets  
Return Trips  
Multiple Leg and Group Trips  
Subscription Trips  
Suppress Subscription Trips  
Short-Term Repeat Trips  
Temporarily Lock Out Clients  
Point-and-Click Scheduling  
Auto-complete Addresses

#### Dispatching:

Multiple Screens at the Same Time  
Undo/Redo Schedules  
Point-and-Click Dispatching  
Hide/Unhide Runs (Routes)  
Color Coded Zones  
15 Styles of Manifests  
Export Manifest Data

#### Reporting:

Comprehensive Ticket Archive  
Comprehensive Report Generator  
Export Report Data to MS Excel  
New Clients This Month  
Consolidate Redundant Addresses  
Fare Reconciliation  
Back/Up Restore Utilities  
Archiving Feature

Additional options include electronic signature capture, automated rider photo identification, self-service online trip requests for riders, odometer integration with the MDT via bluetooth module, ride reminder calls and texts, and automatic trip scheduling.

Easy Rides can be hosted by Syncromatics, or is also available in an agency-hosted, on-premise version for a discounted rate.

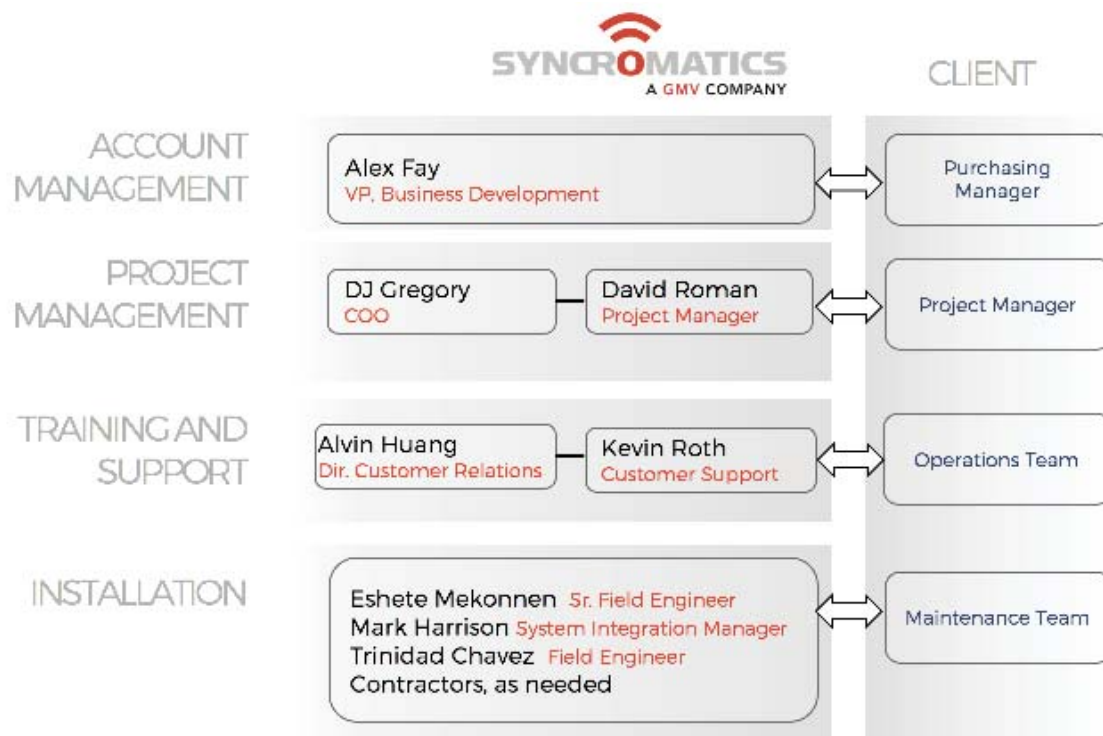
## 5. Team Overview

### 5-1. Project Team Organization

Your agency will have a full team to support your project from the initial planning stages, through installation, testing, and public launch. Once the initial setup is completed, Syncromatics' account management staff will continue to support your project throughout the contract term to ensure you maximize the utility of the system.

This team will support regular project status meetings and reports throughout the implementation phase, as well as periodic check-in meetings over the life of the project. There is no additional charge for this level of service – it is an integral part of our approach to developing long term partnerships with our clients.

We encourage you to be conscious of a sense of accountability amongst your vendors and seek comfort in the knowledge that the sales team and the deployment team make one team. If you choose Syncromatics, you'll continue to have a relationship with the folks who sold you the product, and the following section outlines how we will remain committed to the ongoing success through proactive account management.



### Professional Staff = Professional Deployment

Syncromatics has dedicated full-time staff that spend 100% of their time on planning (David Roman), installation (Eshete/Trinidad) and acceptance testing/support (Kevin Roth). There will always be things that nobody can anticipate when deploying a technology this complex—this is where having dedicated staff that are not dividing their time matters.

## 5-2. Summary of Project Team Experience

<b>David Roman</b> Project Manager	<ul style="list-style-type: none"> <li>➤ Project Manager for all reference deployments listed</li> <li>➤ (CPIM) Certification in Production and Inventory Management</li> <li>➤ Detailed knowledge of bus technology products</li> <li>➤ Supervises daily support operations</li> <li>➤ Primary trainer</li> <li>➤ 10+ years in project management, 5+ years at Syncromatics</li> </ul>
<b>Kevin Roth</b> Support Engineer	<ul style="list-style-type: none"> <li>➤ Full time dedicated to support – responsibility for RMAs, troubleshooting, installation logistics, support tickets</li> <li>➤ Experience as front-line technical support for wireless equipment resellers</li> <li>➤ Direct liaison to engineering resources for immediate resolution of operational issues</li> <li>➤ 5+ years' experience in front-line technical support</li> </ul>
<b>Eshete Mekonnen</b> Sr. Field Engineer	<ul style="list-style-type: none"> <li>➤ Installation of MDT/GFI/Luminator/APC/AVA/Wi-Fi in 800+ buses</li> <li>➤ Detailed familiarity with Gillig/New Flyer/El Dorado/MCI buses</li> <li>➤ Direct involvement in wiring/onboard architecture design, resulting from hands-on field experience</li> <li>➤ 7+ years with Syncromatics</li> </ul>
<b>Trinidad Chavez</b> Field Technician	<ul style="list-style-type: none"> <li>➤ Installation of MDT/GFI/Luminator/APC/AVA in 300+ buses</li> <li>➤ Specialty in repairs/upgrades/bus swaps</li> <li>➤ 10+ years in bus electronics installation</li> <li>➤ 4+ years with Syncromatics</li> </ul>
<b>Alex Fay</b> VP, Business Development	<ul style="list-style-type: none"> <li>➤ 10+ years managing business development and government technology projects as both vendor and public sector client</li> <li>➤ In depth knowledge of rider tools and transit tech industry trends</li> <li>➤ Primary point of contact for continuity from sales process to ongoing operations</li> </ul>
<b>DJ Gregory</b> Chief Operating Officer	<ul style="list-style-type: none"> <li>➤ Absolute executive responsibility for project success</li> <li>➤ Directly responsible for product management and improvement</li> <li>➤ Daily executive responsibility for deployment and support</li> <li>➤ Supervises operations team, project management, deployment, support</li> </ul>

## 5-3. Resumes of Key Personnel

### Alex Fay, Account Executive

#### Role on the Project Team

As the leader of the proposal development effort, Alex will continue to be involved as an account executive to provide continuity between the sales process and project implementation. Alex will participate in project kickoff and regular planning activities to monitor project performance and suggest corrective actions as needed. Any financial adjustments to the project will be coordinated by Alex and the project manager to ensure the project meets the budget. Alex will be present at key project meetings during the planning and implementation phase of the project.



### David Roman, Project Manager

#### Role on the Project Team

David Roman will be the lead project manager for the proposed project, and he will work directly with client staff to develop a project plan, review and approve deliverables, oversee installation of all equipment, configure CAD/AVL software, and perform training for client staff.



David will primarily focus on project level management tasks during the design and planning phase, and he will lead the deployment through the implementation phase.

#### Experience

David has led project management activities at Syncromatics for more than five years, and in that time he has launched more than 30 new clients and over 1,000 vehicles on the Syncromatics platform. David is a power user of the Syncromatics software in his day to day role supporting the launch of new projects and managing the configuration of current client software. Notably, David has managed the deployment real-time bus technology projects in Little Rock, Arkansas, Disneyland Resort in Anaheim, CA, and the initial deployment of Los Angeles' Department of Transportation's Syncromatics system. He is also supervising the deployment of 300 real time LED signs at bus shelters for Los Angeles Metro.

David has specific experience with the Hastus software suite through his work implementing a real time bus tracking system in Visalia, CA. On this project, Hastus software was provided to the client as a service, in partnership with CSched. David coordinated the development of interfaces between Syncromatics software and Hastus software to enable seamless exchange of schedule data.

#### Education

California State University, Northridge- B.S. Business Administration, Systems and Operations Management

#### Registrations/ Certifications

APICS Certified in Production and Inventory Management

#### Professional Experience

- Production Manager, Versa Products (Furniture Manufacturing)
- Pre-Production Manager, Volume One Apparel (Garment Manufacturing)



## Eshete Mekonnen, Senior Field Engineer

### Role on the Project Team

Eshete will lead the field installation team to install equipment on client vehicles and validate proper function of the on board systems. He will personally conduct installations and train junior staff installers and contractor installers in the correct procedures. Eshete will personally inspect vehicles for quality installation work. Eshete will spend the majority of his time on site during the installation phase of the project.



### Experience

As the third employee at Syncromatics, Eshete has been with the company for more than eight years and has personally worked on more than 1,000 transit vehicles for Syncromatics customers. He is familiar with all makes and models of transit buses built in the last 20 years. Eshete combines his engineering background with his hands on experience to assist with the design of wiring and components for factory installation of Syncromatics equipment by Gillig, New Flyer, MCI, El Dorado National, and other bus manufacturers.

### Education

B.S. Mechanical Engineering, Loyola Marymount University  
M.S. Astronautical Engineering, University of Southern California

### Registrations/ Certifications

Engineer in Training, CA Board of Professional Engineers

### Professional Experience

- Senior Field Engineer, Syncromatics, 2010-present
- Staff Engineer, Esterline Engineered Materials (formerly NMC Group), 2007-2008

## Mark C. Harrison, Ph.D.

### Role on the Project Team

Mark will serve as the System Integration & Test Manager / technical lead for all physical equipment being deployed in the proposed effort. Mark will oversee the development of all system documentation, design deliverables, and conduct hardware testing to ensure a high quality system is delivered to the client.



### Experience

Mark has worked in a research and development environment for the past seven years, leading several projects that involved integrating complex systems and technologies for novel products. During this time, he has been involved in many aspects of the product development lifecycle, including basic research, quality and reliability testing, and project management. At Syncromatics, Mark is responsible for developing and maintaining documentation and processes related to system integration and test case management. Mark's overall goal with these responsibilities is to help ensure a consistent and quality product for Syncromatics customers.

Although Mark has worked with a wide variety of technologies during his career, including optical and photonic systems, high-vacuum systems, and millimeter-wave radar, his background is in Electrical Engineering. He is well versed in the technological and physical rigors experienced by electronic equipment integrated into a heavy-duty vehicle environment such as that on a bus, and relies on this technical expertise to help improve the quality of Syncromatics systems.

### Education

University of Southern California – B.S. Electrical Engineering  
University of Southern California – M.S. Electrical Engineering  
University of Southern California – Ph.D. Electrical Engineering - Electrophysics

#### Professional Experience

- Research Scientist – Physical Optics Corporation (Research and Development Government Contractor)
- Graduate Student Researcher – Armani Research Group (Basic Engineering Research)
- Avionics Intern – Space Exploration Technologies Corp. (SpaceX) (Hardware Research and Development Group)

### **Trinidad Chavez, Field Technician**

#### Role on the Project Team

Trinidad will personally install equipment on hundreds of vehicles over the course of this project, and he will train and supervise other junior staff and contractor installers.

#### Experience

Trinidad has worked with Syncromatics for more than five years conducting field surveys and installing technology on vehicles. Trinidad has personally installed the Syncromatics technology on hundreds of transit vehicles. Prior to joining Syncromatics, he worked for five years doing other vehicle technology installations including GPS, custom audio/video systems, and vehicle security systems.

### **Commitment of Key Personnel**

Continuity of project staff is critical to the success of an ITS project implementation. Syncromatics commits that the listed personnel will be assigned to this project for the duration of the contract, and any significant changes in project staffing will be reviewed with the client prior to execution.

## 5-4. Use of Subcontractors

Syncromatics anticipates performing the work primarily using internal staff resources. We will engage contractors to support the physical installations only. Syncromatics staff will lead the installations, with an experienced Syncromatics technician leading each contractor crew and performing regular quality checks of the contractors' work.

Our preference is to perform installations with Syncromatics staff, but sometimes the cumulative workload of multiple projects leads us to work with contractors in addition to internal staff. As needed, Syncromatics may engage contractors including OnPoint Services and Transit Tech to provide additional support. Syncromatics has worked with both firms in the past and has had positive experience managing their efforts. To ensure high quality work, Syncromatics and contractors perform quality control of installations with attention to detail by completing a first article installation and obtaining client approval before continuing with the installation. In addition, we perform validation testing of the installed systems to ensure system integrity.

### On Point Services

Technicians available: 10  
Management Team: Manuel Chavez, Proprietor; Luis Rodriguez, Supervisor;  
Juan Hernandez, Supervisor

History working with Syncromatics:

On Point Services has worked with Syncromatics for over 5 years on multiple project installations of varying complexity. They have completed over 700 installations on various transit vehicles of varying age. In 2016 alone, On Point Services performed well on multiple successful Syncromatics installations including Anaheim Resort Transportation (CA); Amazon Corporate Shuttle (WA); University of California, San Diego (CA); Marin County Transit (CA); City of Commerce (CA); City of Visalia (CA); University of Iowa (IA), City of Iowa City (IA), and City of Coralville (IA).

### Transit Tech

Technicians available: 30  
Management Team: Chad Campbell, Business Development Manager; Derek Laday, Associate

Transit Tech has 18 years of experience installing technologies on transit vehicles across the United States. Their capabilities include CAD/AVL, APC, and Video Camera systems, and the firm is a certified installer of REI camera systems. Recent projects include Golden Gate Transit. The firm is anticipating DBE certification by LA Metro in summer 2017.

Syncromatics has worked with Transit Tech on a number of projects, including University of Miami, Los Angeles Department of Transportation, and more.



## 6. Implementation Plan / Project Management

### 6-1. Proposed Timeline

Considering Syncromatics' current and projected workload, we propose the following timeline. Our project manager will work directly with your agency to develop a detailed project schedule, taking into account agency requirements, vehicle availability, and more.

The ability to meet your schedule requirements may be a significant point of differentiation between vendors you are considering. We will work with you to ensure we deliver a quality system that meets your timeline. In fact, our typical deployment schedule is far shorter than the most others in the industry.

We propose to meet the core system requirements with a rapid deployment that is installed and fully tested by May 2018. Additional new feature development items will become available shortly thereafter. This modular approach to the project schedule will ensure that the core low risk elements of the system are available to meet VCTC and participating agency needs without being held up by other tasks that will take longer to implement.

The charts below represent our current plan should the contract be awarded based on the estimated timeline, but we are flexible based on your needs and the actual date of contract award.

PROJECT LEVEL TASKS	2017				2018				
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Contract Award and Execution									
Project Management	Ongoing								
Project Kickoff Meeting									
Project Design Phase									
Preliminary Documentation Deliverables									
Preliminary Design Review									
Final Documentation Deliverables									
Critical Design Review									
Hardware Procurement									

#### DEPLOYMENT OF OPERATOR SITES

Gold Coast									
Thousand Oaks									
Moorpark									
Kanan Shuttle									
Ojai Trolley									
Valley Express									
Camarillo									
Simi Valley									
VCTC									

## 6-3. Installation

Installation will take place in advance of training to allow driver training to take place with the equipment on the bus. A specific installation schedule will be coordinated with the agency to ensure that vehicles are able to be used in service as necessary and work around agency-defined maintenance or other time constraints.

### Installation Process



If you're going to install hardware in my bus, I want to make sure it is done right and I know how to maintain and replace it after you leave.

Syncromatics always installs its equipment the right way, the first time. This means the company has professional installers on staff who are always on-site supervising, even if subcontractors are engaged.

The Number One Problem that interferes with successful ITS deployments is equipment reliability in the bus, largely stemming from a poor planning and execution of the installation. The solution to this problem is making sure that the equipment is installed properly the first time.

Step	Task	Who?	What?
1	Survey	Eshete Mekonnen Staff Mechanics	<ul style="list-style-type: none"> <li>› Inspect and photograph each bus type</li> <li>› Determine APC mounting locations for each doorway</li> <li>› Inspect PA + microphone system for annunciators</li> <li>› Identify ideal MDT mounting locations</li> <li>› Determine antenna mounting type and location</li> </ul>
2	Plan	Eshete Mekonnen David Roman Kevin Roth	<ul style="list-style-type: none"> <li>› APC built to order</li> <li>› Establish AVAS wiring strategy</li> <li>› Draft installation plan for each bus</li> <li>› Factory test equipment at Syncromatics offices</li> </ul>
3	Install	Eshete Mekonnen Trinidad Chavez	<ul style="list-style-type: none"> <li>› Sr. Field Engineer performs and supervises the first installs to establish accountability with technicians</li> <li>› Technicians divide and conquer specific tasks</li> <li>› Checklists are followed for each component</li> </ul>
4	Photograph Inspect Educate	Trinidad Chavez Mechanics	<ul style="list-style-type: none"> <li>› Photos for <u>every bus</u>: installed components and their locations</li> <li>› Photograph wiring tap points and connections</li> <li>› Involve mechanics during installation as part of the training and education process</li> </ul>
5	Test	Eshete Mekonnen Trinidad Chavez	<ul style="list-style-type: none"> <li>› APC: Board and exit every door on every bus, testing for accuracy</li> <li>› AVAS: Play test sounds to each speaker channel and test mics</li> <li>› MDT: Verify ignition lines and communications connections</li> </ul>

			<ul style="list-style-type: none"> <li>› Detailed installation checklists completed on site</li> </ul>
6	Quality	Everyone	<ul style="list-style-type: none"> <li>› Fewer equipment failures, mechanic headaches, and replacement units</li> <li>› ITS System Reliability</li> </ul>

## Installation Best Practices

**Location.** For peripherals (AVAS, APC), use an equipment cabinet if possible. If not, use a location where things won't be disturbed, like the headsign compartment.

**Power.** Don't splice the manufacturer's wires or interfere with wires installed for other onboard systems. Tap directly from solenoids, and run industrial gauge wiring behind other wires to avoid future tampering.

**Doors.** When tapping the door signal for APC, make sure to account for the full range of motion of the door, and make sure you establish a solid OPEN/CLOSE signal.

**Other Equipment.** Don't tamper with the existing systems on the bus, always ask mechanics when making connections, and don't interfere with other vendors' equipment.

**Tidy Work.** Don't leave excess cable hanging, don't drill big holes if you can avoid it, and never leave a cable run unsecured; use corrugated piping. Leave the bus neater than you found it.

**Antennas.** Never drill the roof unless it is necessary. Use covert antennas inside the headsign compartment.

**Mounting.** Put the MDT in a place where The Driver can access it easily, but it won't block their line of sight or access to the radio.

**Cabling.** Don't leave cables hanging around the driver's area, especially in the footwell.

**Photos.** Take pictures of every component on every bus to assist The Mechanic later if he has questions or concerns.

## New Buses



We're planning on retiring older generation buses and replacing them with a new batch on order, or planning to expand our fleet. How does that work?

This is a request Syncromatics handles regularly. Provided your mechanics and support staff give us appropriate notice, we'll be happy to schedule the installation and/or transfer quickly, conveniently and affordably or work with the bus manufacturer to have equipment factory installed.

The transfer of equipment from old buses to new can sometimes be tricky, and requires basic information which we'll ask your mechanics to provide on standard forms. In these situations, technicians typically are handling several buses at once with a combination of new systems (sold at the unit and labor prices quoted in this proposal) and transfers (sold at the cost of any new wiring or antennas, plus labor).

We can also coordinate with bus manufacturers, such as Gillig, El Dorado National, New Flyer, MCI, BYD, Arboc, and others, to have Syncromatics' ITS equipment installed at the bus factory. This streamlines deployment and helps transit agencies leverage federal grant funding for capital purchases to include the ITS hardware.



## 7. Quality Assurance Plan

### 7-1. Ensuring a High Quality Job Every Time

#### Quality Assurance

The proposed system, including hardware, software, personnel, training, installation and warranty, has been deployed many times using the method outlined in the sections that follow. As an overview, the following are standard components of the provisioning and installation process.

**Installation Survey.** We will inspect your buses in detail prior to ordering parts and preparing a bill of materials. This is conducted with your maintenance personnel present and covers power locations, door signal locations, APC sensor mounting, PA system speaker and amplifier surveys, equipment mounting locations, and exact models of headsigns and fareboxes.

**Software provisioning.** Our system is cloud hosted, which means we will provision your instance and test your hardware against it before it leaves our offices. This includes functional validation of each component.

**Factory Acceptance Testing.** The equipment installed in your buses comes to our offices first, where it is powered on, tested for operational functionality, configured, and pre-assigned to vehicles. This ensures that any equipment problems that might exist from the factory are caught before the equipment ever makes it to your site.

**Installation Quality Assurance.** Detailed installation checklists require written approval by both your maintenance staff and our field engineers. This ensures that when we leave your site, everyone is in agreement of what was installed and what constitutes the definition of operational.

**Photos.** We install our products in your buses, alongside existing systems and hardware not provided by us. It's our job not to disturb that hardware, tap wires in places we shouldn't, or leave unsecured wiring. To make sure that happens, we photograph every area we touch on your bus, for every bus, and catalog that for quality assurance and any follow-on troubleshooting that may be required.

Perhaps the most important point to understand about the quality of the installation process is that we do it with staff engineers employed directly by Syncromatics. We can hold our people directly responsible (and their compensation reflects this), and you benefit from the experience they have installing our system hundreds of times. When subcontractors are used, they are closely managed and their work inspected by our staff, on-site. In our experience, this more than anything else ensures the long-term quality and integrity of the installation.

In addition to the above testing requirements that are part of the typical Syncromatics installation, we also fully understand the requirements for a pilot fleet installation, pilot road test, and documentation of successful completion of the tests before proceeding with the full install. Once the full installation is complete, Syncromatics will support the required 30 days of consecutive testing to validate proper function before the maintenance/warranty service period begins. These tasks are identified in the project schedule.

## System Acceptance Testing

During the implementation phase and system testing, Syncromatics produces a detailed “System Acceptance Report” for every client. This report contains actual data recorded during the final system testing and identifies the specific method of testing, expected results, actual results, and recommendations for how to correct any issues related to operational procedures.

### MDT Assignments and Stop Times

MDT Assignments are the most important step in order for our system to work. Without an assignment, the system doesn't know where to apply a given vehicle's data, meaning the public won't be able to track the vehicle or get arrival prediction information, and there won't be any data on the vehicle's activity (on-time performance, APC, etc.)

Stop time records are generated when a vehicle arrives and departs to/from a stop, on a per route and vehicle basis. Stop times are the underlying source for Arrival Predictions, Daily Schedule Performance (DSP) data, Schedule Adherence reports, and all APC reporting. If a stop time is not generated, there won't be any information for said stop on all of these reports and there won't be any historical data for the arrival engine to process an arrival prediction in the future.

In this section of the System Acceptance Report, the system's ability to process MDT sign-ins, trip switching, and sign out is evaluated. This is tested by running reports for “Empty Only” trips – which will show only trips that have no data recorded. Passing criteria is achieved when all routes have less than 10% of their daily trips without data due to operational errors, and none of these should be failures on the part of Syncromatics' system. Similarly, the system should generate stop time records for all signed in trips when the vehicle is following the correct route path and meeting stop zone conditions.

### Arrival Predictions

Arrival predictions are generated based on both real-time and historical data. Data that matches closest to the current conditions (i.e. weekday or weekend service, time of day, etc.) will be given preference. As new stop times are created, this real time data will be compared with the baseline being used, and our system will update the current travel time it takes to get from one stop to the next. This means the other vehicles ahead of a vehicle on a route will be informing the current vehicle's arrival predictions.

We divide the arrival predictions we record into four buckets: (1) <10min, (2) 11-25min, (3) 25-60min, and (4) 60+min. Of these, the first two buckets are the most important as these are the arrival predictions that the majority of the public will request. When an arrival prediction is requested, we match it up to the actual arrival of a bus and then generate the arrival accuracy data, which is presented in the System Acceptance Report.

### APC Accuracy

For the optional APC module, we also test accuracy of recorded APC data. In this test, we measure the system's ability to measure the same number of ONs and OFFs on a per vehicle bases. The test is performed by comparing the ON and OFF counts for each vehicle over the testing period. A passing result is identified as a variance of less than 5% for each vehicle.

## 7-2. Warranties

Syncromatics offers a 1-year standard warranty on all hardware at no charge. We have also included in the optional pricing additional years of warranty to cover up to five years. The warranty includes parts and shipping to the customer (Ground Service except for critical communications components) in the event of a defective unit.

The warranty does not cover damage found to be the result of negligence (e.g. liquids spilled on equipment). Warranties are relative to the date of installation unless otherwise specified.

### Installation Warranty Process

In order to ensure transparency during the installation process, Syncromatics follows a firm pre-installation, installation, post-installation and final inspection workflow process.

#### Pre-Installation

During this phase, our Operations and Engineering team will gather all the technical vehicle information (i.e. 12V/24V engine, # of doors, etc.) and will prepare a recommendation report on equipment mounting location & wiring. This report will serve as the first approval step in the installation process. Usually the Maintenance Manager and Operations Manager will sign-off on the recommendation report. This report will be provided to both the client and contract operator (if needed). Also, as requested or specified, pre-installation photographs will be taken.

#### Installation

During the installation phase, our field technician(s) will follow the mounting location and wiring specifications as approved by the client and/or contract operator. If during the installation our technician feels that changes to the specification need to be made, we will inform the client and contract operator, in writing, of the changes and wait for approval before continuing with the installation. Upon completion of an installation, our field engineer/lead technician will inspect each installation and take photographs of all installed components.

#### Post-Installation & Final Inspection

This phase serves as the closing stage for the installation process. The post-installation is the best time for clients and contract operators to review the systems installed in the fleet as well as become familiar with the systems and each different component.

Once the installation is completed, our Operations and Engineering team will schedule a date to perform an on-site final inspection with the client and operator (if needed). Once the final inspection is completed, all involved parties will sign-off on a written report that will include notes and comments provided during the inspection. This report will be provided to the client and operation (if needed). If the installation is divided into different phases (i.e. AVL+MDT first, then APC and AVAS later), there will be a walk-thru of the first phase after the installation is completed and then the final inspection will be performed once all of the different systems have been installed. This is to respect the client's and operator's time.

We also take advantage of this time to answer any questions that the client or operator may have about the equipment, wiring, troubleshooting, etc. Any corrections requested or required will be performed and additional post-correction photos will be taken and logged.

### **RMA Timelines and Procedure**

The equipment installed in your buses includes wiring diagrams and manuals. If your mechanics want to troubleshoot the issue themselves, that information is available to them anytime.

Our customer portal includes vehicle health monitoring utilities that let you see details on communications health, last GPS update, and even the real-time status of your APC door signals.

If it turns out you need replacement hardware, our customer support staff will set you up with an RMA and overnight shipping within 24-48 hours for any critical communication components. For non-communication, non-critical components, the RMA will include ground shipping. We will send you a working unit so that you can have your system back up and running immediately, rather than waiting for us to repair the current unit. The non-working unit should be returning to Syncromatics upon receipt of the replacement.

If your equipment needs on-site service, Syncromatics has in-house field technicians that can come out to your site to service the equipment. They are specifically trained on how to install, troubleshoot, replace and service every component of our system, and they can train your maintenance folks when they're on site.



## 7-3. Support

### 24/7 Support

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#### Executive Concerns



Who do my mechanics, supervisors and planners call if there's any issue?

Syncromatics has first-class customer support, a knowledgebase of common issues, and speedy turnaround time for equipment failures. Let's take a look at what you'll get with Syncromatics as a partner.

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#### How does customer support work?

You can open a support ticket by e-mailing [support@syncromatics.com](mailto:support@syncromatics.com) or logging into our customer portal any time, day or night.

Syncromatics has an online knowledgebase with training manuals, videos, and step by step guides to help your staff get educated, solve common problems, and ask questions when they need it.

Need help now? Call us at 866-383-4418.

Transit is a 24x7 operation, and so is Syncromatics. If you have a critical issue after hours, our customer support staff will get the problem fixed, fast. Our support levels are detailed further later in this section, but issues of all levels will receive a reply within one business day and Level 1 or Level 2 issues within 20 minutes.

Support is given through email, phone, and screen share as necessary.

Syncromatics doesn't charge extra for support, there isn't any limit, and our folks know what they're talking about. This proposal includes names, experience and roles of the team that you'll be working with.

#### Designated Account Representation

Your designated account representative will be Alex Fay. He will be responsible for advocating for the client concerns throughout the life of the project. For project management and support issues, David Roman and Kevin Roth will have direct responsibility for the implementation and ongoing success of the project and will be supported by the rest of the Syncromatics team.

- Our support and project team members have a wealth of data available to view the health and status of your ITS system and all its components, 24x7.

### Process for Response Procedures

If you decide to do business with Syncromatics, you are entrusting us to keep the server infrastructure that powers your transit system online 24x7x365. This section represents our promise to you that your operations will not be interrupted, and provides the remedies to which you are entitled to in the rare case that our systems are down.

All support is included in the recurring maintenance fees associated with our services (technical, help desk portal, after hours, and software upgrade). There are no per-incident or hidden support charges. We do not differentiate between technical or general questions. Instead, when a customer submits a support ticket, a category will be required (Level 1-4).

Our response time is driven by this selection.

Support Level/Issues	Support Hours & Response Type	Response Policy
Level 4 Software Issues and Questions not impacting vehicles		
Level 3 Issues impacting <3 vehicles Issues impacting operational tools like dispatch		
Level 2 Issues impacting >3 vehicles simultaneously Issues impacting more than one operational tool		
Level 1 Issues impacting all vehicles System-wide downtime preventing use of all operational tools		

Syncromatics provides its customers with a 24/7 customer support phone line that automatically routes to our office during normal business hours and to a fully staffed and trained call center after business hours. Call center representatives can categorize the support issue and take the necessary action, including calling Syncromatics on-call personnel after hours to start working on a resolution.

Syncromatics also provides a 24/7 customer support self-service portal that provides: articles with general information on all of our systems, wiring schematics, equipment pictures, equipment troubleshooting, and training videos.

This portal is also used for submitting support tickets and following up on any open tickets. This portal has automated triggers to ensure every ticket is handled in a timely manner. Respecting response times provided on the above table, the system is configured to trigger automatic escalation steps as delineated below.

#### Standard Support Escalation Policy:

- Once a support ticket is submitted, based on the above response times, an automated reminder will be sent to the support team.
- If a ticket is not replied to once the reminder is sent to the support team, within an hour, an automated message will be sent to the Operations Manager.
- If the message sent to the Operations Manager is not replied to within 1 hour, an automated message will be sent to the VP of Operations.

#### Level 1 Escalation:

- In addition to the above, in the event that any client feels the need to escalate an issue on their own regarding a Level 1 Support Issue, the company's executives contact information will be provided (including cell phone and home phone contact numbers).

In the event that on-site support is needed, Syncromatics maintains relationships with field service contractors all over the country, and can have personnel on-site typically within 48hrs (depending on contractor's availability). Our reputation for excellent field service is one of the reasons why our system is so reliable. Hardware support scenarios and policies are listed below. It is important to note that 90% of the time, the most common cause of equipment failure is routine maintenance by mechanics inadvertently disconnecting or damaging wiring.

Issue	Resolution
Equipment Installation Corrections	Any equipment and/or installation issue within 30 days of installation is fully covered by Syncromatics including dispatching technicians to your site and no-questions-asked parts replacement.
Vehicle Equipment Failures (more than 30 days from installation)	<p>Step 1: Our support staff will run diagnostic assessments internally and query your maintenance staff with any questions that need clarification or more information.</p> <p>Step 2: We'll support your local maintenance staff to do on-site assessment, diagnostics and troubleshooting.</p> <p>Step 3: If we determine the device has failed, we will provide you with a Return Merchandise Authorization (RMA#) to be used for the return. Once we issue an RMA# we will process and ship a replacement unit. For critical communications components we will ship the replacement overnight.</p>

#### Software Updates and Documentation

Syncromatics and our clients don't make a big deal out of version numbers for our software because all clients are automatically updated to the latest version and there is never a charge to upgrade. All Syncromatics clients benefit from the wisdom and experience of each other because the Syncromatics software is constantly evolving and improving. Our software is updated every two weeks to improve functionality, eliminate software bugs, and expand the capabilities of the software to meet the novel requests of our clients. When we make an improvement for one client, all of our clients share the benefit at no additional cost.

These upgrades are delivered over the air, and require no action or downloads on the part of the client.

This approach to software development is fundamentally different from that of other ITS vendors who subscribe to antiquated notions of version numbers, upsells for additional features, and planned obsolescence. Many other ITS vendors offer a “vendor hosted” option by simply taking software designed for a local server and running it remotely. This approach is actually worse than running the software on a local server because it introduces delays from the remote access application. Syncromatics’ system has been designed for the cloud from day one, and we leverage the cloud architecture to offer advanced features and service. Our approach to software matches our commitment to customer service, and both are aligned to enhance long term customer relationships.

When upgrades include only back-end improvements, documentation is kept internally. This documentation is not published because the changes do not affect the usage of the system by the end-user. When updates include additional features, reports, or a change in behavior of the dispatch software or driver interface, updates are documented and published via email to registered users.

### Tracking Support Tickets

Syncromatics’ support portal is available 24/7 and accessible within our software to all registered users.

Users can create and edit tickets directly within the portal, or by emailing [support@syncromatics.com](mailto:support@syncromatics.com). All tickets will be assigned a number, and status can always be viewed within the portal. Users will receive an email notification anytime the status changes or the ticket is updated.

Internally, Syncromatics staff can track the tickets and filter by customer or severity to make sure that all issues are addressed in a timely fashion.





## 8. Training

### 8-1. Training, Implementation, and Documentation

Syncromatics has included in this proposal a complete in-person training program – including having our trainers on site to train bus operators one-on-one for all pull-outs during the training days right on the bus. We have both classroom programs as well as online tutorials to suit the individual learning needs of a wide variety of your staff. The proposed system is supported by our STAT – Support Ticketing and Training system. STAT is a web-based system accessible from any device that can access the internet.

The classroom and in-vehicle training will be performed immediately upon the final inspection of the hardware installations, testing of the single sign on (if optioned) and validation of the schedule data imported.

#### Training must be continuous

Syncromatics understands that deploying an ITS system is a process, not an event. Our staff will conduct initial training sessions with the stakeholders who are available and on staff at the time, but long term value is established by conducting refresher sessions for new staff and providing daily support to the folks on the front lines.

Because ongoing training is so fundamental to the success of an ITS deployment, Syncromatics doesn't charge for it and we are happy to provide it any time to any audience.

The Syncromatics training program is typically administered over a one-week period and a specific schedule will be determined based on the time periods for which staff is made available. We have trained all of our clients reliably in this amount of time and we believe that it will be sufficient for the initial training period, though a specific plan will be created with your agency.

Because Syncromatics believes that training does not end when our field team departs, we offer recurring live web training sessions upon request for no additional charges, and have made available the STAT system available to view content, watch training videos and to gain valuable information 24x7 through an easily accessible web-browser interface.

Training is critical to the success of an ITS deployment, but it is important to understand that training is a continuous process and must be supported by

manuals, refreshed periodically, and available to new personnel. This is where our online, 24x7 knowledge base comes into play. Syncromatics will of course provide a rigorous on-site, classroom style training program during our initial deployment, but for refresher training, new employees and for information on the latest updates, Syncromatics provides online video tutorials in addition to written articles.

For the deployment and initial training, Syncromatics will provide onsite, classroom style workshop programs for the training of all stakeholders in the ITS system. We'll cover the individual types of training and how we conduct them in the following sections, but first let's understand the things that are part of each training session.

### **Training + Support Components**

- Step-by-step PDF and printed manuals
- Online support portal with videos and knowledgebase articles
- Professional instructors with substantial subject matter expertise
- Train with the actual product, at the actual point of usage. Example: train the drivers and mechanics in the bus.
- Reinforce training with how-to guides inline, making transit easy

Syncromatics does not charge for training on a per-hour basis, and we do not limit our initial training to a certain number of hours. Our flat initial training fee includes unlimited training to ensure that all the stakeholders in your agency are comfortable and familiar with our system. Generally, training works best when it is delivered in small amounts, so we keep the information concise and allow students who need additional time and support to come back for follow up sessions. We structure our training to match your requirements, and every deployment has a customized training program to meet the clients' needs. We understand that training is expensive for you – not the direct cost of training paid to your CAD/AVL vendor, but the cost of pulling your staff out of their regular jobs for a day or even a few hours can cause a major disruption. As such, we can break up our training into small pieces if you like, we can condense it into a few full day sessions, or anything in between.



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## Driver Training



It's 6:30AM and I need to make pull-out. How do I use this MDT to log-in quickly, and how can I use it effectively once I'm out there driving?

Drivers need to focus on the road and their passengers. Syncromatics driver training sessions focus on the basics: logging in, switching routes, exchanging information with dispatch, and responding to incidents.

This is usually conducted in an actual bus so they can practice it then and there.

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## Driver Training Highlights

**Onboard.** Drivers respond best when they are engaged, one by one, on the actual bus. "Train-the-trainer" works and Syncromatics is happy to offer it, but experience has shown that sometimes the most effective training is conducted with a trainer there at 630AM to do pull-out with a group of drivers, focusing attention on the drivers who require more assistance, while letting the folks who already get it be on their way.

**Turnover.** After our staff trains most of your drivers, there will inevitably be new drivers, and those folks need to know how to use the system. If your staff needs refresher training sessions, they are included free of charge.

**One Page Handouts.** Sometimes the most useful training aid for a driver is a one-page laminated guide on how to perform basic tasks on the MDT.

**Sign-Ins Matter.** Driver training is the most important training there is, because signing in is the most important thing an ITS system must get right every time, and sign-ins happens on the bus.

**Safety.** Teaching the driver how to safely operate the MDT is important, because the MDT is meant to be a tool, not a distraction.

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## Maintenance Training



I want to know how the equipment on my buses works, how the components fit together, and how to diagnose and replace problematic equipment.

Mechanics have a busy job, and they don't want to be constantly calling support queues to find out the answers to simple questions. Syncromatics takes the time to involve and educate maintenance personnel during the installation process, and provides detailed wiring diagrams and manuals so mechanics can get the job done quickly when something breaks.

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## Maintenance Training Highlights

**Involvement.** Nothing irritates mechanics more than finding poorly installed equipment in their bus without their approval or involvement. Building rapport with the mechanics means asking them questions and getting their approval. Where would you like us to tap the power?

**Components.** Mechanics want to know how the pieces fit together. Following installation, maintenance training will occur inside the bus, showing the mechanics what our technicians installed, how it fits together with the other pieces, how to know when it is broken, how to avoid breaking it, and how to replace it if someone else does.

**Diagrams.** Mechanics are usually trying to fix a problem. If a wire was snipped accidentally, they can probably fix it pretty quickly if they have the right wiring diagram. Making sure mechanics have this is a fundamental part of their training.

**Supplies.** Mechanics like to have spare wires, plugs and even equipment on hand in case something breaks; it makes it easier to get the job done without waiting for an RMA. Syncromatics will work cooperatively with mechanics to make sure they have the right parts on hand.

**Diagnosis.** Perhaps the most important thing mechanics need to know is how to tell what isn't working and why. Is the rear APC door signal disconnected? How do I tell?

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## Dispatch & Customer Service/Call Center Training

What's the problem, and how can I fix it?



Dispatchers want to get down to business. They've got incidents to respond to and drivers to manage, and the ITS system should be designed to help them reduce their problems, not add to them.

Syncromatics keeps it simple and straight to the point with dispatch training.

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### Dispatcher Training Highlights

Environment. Dispatchers operate in the same place at the same time, every day. Taking the time to train them in their environment, at their desk, on their computer is important.

Responsive. Syncromatics has implemented The Proactive Model for dispatch, and making sure the dispatcher knows how to spot the incidents and dismiss or act as appropriate is the focus with dispatcher training.

Forensic. CSRs frequently have to respond to day to day complaints. Did that bus really skip the rider's stop? If so, who was driving?

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## Planner & Administrator Training



I want to know how to run the reports I need to make informed decisions.

Transit Planners are charged with inspecting, analyzing, reporting and responding. The planner's job is both analytical and creative. Their training focuses on bottom line measurements combined with fine-grained analysis.

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### Planner Training Highlights

Interactive. Syncromatics' reports are wizard based, allowing the planner maximum flexibility to query and analyze data by route, stop, driver, date, time of day, day of week, and bus. Planner training focuses on use case scenarios, showing them how to run reports specific to their needs. Planners often run the same reports repeatedly once they know what they want.

Conclusive. The planner has to make decisions. Do we change the schedules? Should we cut this stop? Why? Planner training focuses on accessing this information in decision-oriented fashion.

## Training Manuals

During the course of the deployment, Syncromatics will develop a customized set of documents that reflects all of the key assumptions, completed tasks, summaries of key progress meetings (preliminary design review, system acceptance), testing procedures and results, technical drawings, training materials, training attendance logs, and procedures related to your system. We will deliver this documentation package in a binder for your records.

However, we know that binders end up sitting on shelves, so we prefer to emphasize a more interactive way to document how our system works. System documentation describing the key components is built into our web based software tools. Each client has a customized profile that reflects that hardware package installed, 3<sup>rd</sup> party software integrations, software licenses, and other unique elements of the system. This will always be accessible in the Syncromatics software for reference.

With respect to ongoing support, we will provide a binder full of static drawings and self-help guides, but modern interactive video technology can be a more effective way to communicate how our system works. Our videos enable refresher training as well as first time training for new hires that will be using the system.

We will also produce ongoing training aids that can be quick references for users in the field. If a driver forgets how to access a feature on the MDT, he can refer to the laminated driver cheat sheet during his next layover for a refresher. Each stakeholder in the system will have their own customized training aid tailored to their particular role.

## Data Conversion

### SCHEDULE IMPORTER

All initial data import of routes, stops, and schedule information will be done by Syncromatics staff.

If you have some form of route and stop data – GTFS, a geocoded database, an Excel file – we will take that and import it directly into our database.

If you don't have any data on the latitude/longitude of your routes and stops, there are two options:

- A) We will draw the routes in for you, based on the stop-by-stop information you supply us
- B) We will give you a device (tablet) that your drivers can take with them during one shift, that will automatically supply the data to our servers

For schedules, it depends on how you keep your schedule data at present

- If you use common scheduling systems like Hastus, Master Scheduler or Trapeze, we can take the exported data directly from them and import it
- If you perform run and block cutting manually in Excel or on paper, we will take those files and merge them into a standard format excel file that we will work with your staff to prepare

Bottom line: the initial data import process will be handled as much as is possible by our staff, not yours. Please speak to our references about this; it's part of our commitment to top notch customer service.

The Syncromatics CAD-AVL system has transit scheduling components as core building blocks around which the entire system functions.

Trips  
Runs  
Blocks

Patterns  
Directions

Layovers  
Interlining

To support this functionality, Syncromatics has developed specific import functions for various transit scheduling software vendors, including support for The Master Scheduler and Enghouse Sched21. We also have generic excel-based templates that allow agencies that do their schedules manually or use an export from another scheduling software tool to provide us their data for efficient and expedient data exchange.

Once that data is in the system, it is used for a variety of purposes throughout the integrated ecosystem:

- On-Time performance by run/trip/block/driver

- Onboard data integrity maintenance—using the trip and run information on MDTs to ensure the drivers are signing into valid pieces of work

- Integration with fareboxes to populate extended information at single point of sign-on

- Service planning changes as a result of data and conclusions drawn from our reporting system

## 9. Commission / Operator Roles and Responsibilities

### 9-1. Overview

Syncromatics provides all of the services, equipment, training, and follow up support to launch the system and use it on an ongoing basis. There will never be any hidden additional charges. However, we do require our clients to be partners in implementing and operating the system. Our project manager will expect client staff to participate in meetings and provide data and information to help launch the system. Our support team will expect local maintenance / operations staff to provide meaningful feedback to support troubleshooting efforts (which we can supplement with the Equipment Service Plan if local staff are not available). And we need drivers, supervisors, and operations management to use the system as its designed in order to get value out of it – CAD/AVL is not a magic wand that fixes transit agencies, rather it is a tool to help transit agencies improve their own operations and performance. Beyond these basic commitments, there is very little we need from the client to make the system work.

### 9-2. Cellular Network Preference

If the client has a preference for AT&T or Verizon as a means of providing the most reliable cellular coverage, Syncromatics expects this to be expressed during the contracting phase of the project, before hardware is procured and installed. The OpenMDT is capable of operating on either network and if no network is specified, Syncromatics will determine the network by evaluating the cellular coverage of the area and the carrier agreements we have in place.

### 9-3. Workstation Requirements

Below are Dispatcher and Planner workstation technical requirements to ensure a fast, responsive, and consistent experience accessing web based software. These are simply guidelines for best performance, and the web-accessible software will run on nearly any computer or tablet with a web browser, whether in a dispatch office or in the field.

#### Computer Hardware:

Intel Core i5 processor or better  
8GB RAM  
Windows 7 or newer  
Google Chrome Browser

Any modern graphics card  
Minimum 1280px width monitor resolution.  
1600px or higher (e.g. 1920x1280)  
recommended.

#### Internet Bandwidth Speeds:

Recommendations vary based on numbers of users/machines. Keep in mind other office users on the same connection can affect experience with their internet usage.

For 1-4 users: Cable/DSL Broadband of 20Mb/s (2.5MB/s)

4+ users: Cable/DSL Broadband of 30Mb/s or higher

## **9-4. Availability of Vehicles and Staff**

The client is expected to make vehicles and staff available for installation and training based on the agreed-upon schedule. This schedule will be tied to payment milestones during the contracting phase. Syncromatics will be paid for hardware installation based on work completed, but will rely on availability of vehicles from the client in order to complete that work.

## **9-5. Provision of Route and Stop Information**

Syncromatics expects the client to provide route and stop information currently available in the most digitally-accessible format possible. If you currently have GTFS files for routes and stops, we will use those for importing the route lines into our system. If you have other GIS data for this information, that will be the second-priority, followed by PDF maps or other visual route information. In all cases, Syncromatics will review and clean up the data before finalizing the routes information in the system.

## **9-6. Notification of Route and Schedule Changes**

For major route and schedule changes (not including temporary detours, short term/minor updates to a single route or stop) we request two weeks' notice. The Route Editor detailed in section 4-2 is designed to be simple and user friendly so that agency staff can make changes just as Syncromatics staff can, but we are available to assist and perform complex changes as necessary. Even if you make your own changes, we recommend keeping us in the loop so we can ensure all stop data remains correctly assigned.

For complex changes, we will re-import digital files or draw routes from updated maps, as long as changes are delivered to Syncromatics project manager with a two week lead time.



## 10. Experience

### 10-1. Syncromatics by the Numbers

**10**

Years Serving  
Transit Industry

**27**

Full-Time  
Employees

**50+**

Customers

**0**

Failed Deployments

## 10-2. Marquee Projects



In 2016, **Los Angeles Metro**, the 2<sup>nd</sup> largest bus fleet in North America, selected Syncromatics to implement a real time electronic signage program at 300 bus shelters across Los Angeles County. This \$4M project will combine real time bus arrival data and schedule data from more than 20 regional transit operators in Southern California to provide a seamless user experience for bus riders, 60% of whom do not have a smartphone.

The **Los Angeles Department of Transportation** has partnered with Syncromatics since 2008 to provide Intelligent Transportation Systems technology to millions of bus passengers on the DASH community bus service. In 2013, Syncromatics expanded the relationship to include all LADOT Commuter Express vehicles, for a total of over 300 vehicles. The fleet is managed and dispatched from 4 different bus yards by 2 different operating contractors. LADOT requires controlled software access that limits contract operators to only their own division while ensuring that headquarters staff have full visibility of the entire system.



In the summer of 2016 Syncromatics provided GPS tracking, dispatch software, and real time passenger information for over 400 official buses at the **Democratic National Convention** in Philadelphia. Syncromatics DNC solution provided Secret Service, FBI, Department of Homeland Security, and Philadelphia Police with real time situational awareness for all delegate, staff, and media transportation vehicles. Syncromatics also operated a mobile website for participants to track the buses and get bus arrival predictions. Despite significant protests, severe weather, and record crowds, the transportation ran smoothly. Due to the short term nature of the event, Syncromatics had to deploy all 400 tracking units in less than 48 hours and remove all equipment after the event in under 24 hours.

## 10-3.Value Proposition

Syncromatics' fully integrated ITS solution provides value to small and mid-sized transit agencies that seek tools for internal operations and real time passenger information from a single vendor. We take full responsibility for the function of the technology on the bus and on the backend, even for 3<sup>rd</sup> party integrations – we provide a solution with one party responsible to ensure things are operating well.

With an intuitive, web based software interface, the solution is especially attractive to transit agencies that do not have significant IT resources to manage technology in house or agencies with IT teams who are already spread too thin. The hardware configuration is straightforward with as few components as possible, and the modularity of the system enables clients to expand their technology incrementally as budgets/grants allow.

## 10-4. Mission Statement and Core Values

Syncromatics' Mission is to improve public transportation by solving clients' problems with useful & reliable technology. Any new project we pursue must align with this focus.

Syncromatics' fully integrated ITS solution provides value to small and mid-sized transit agencies that seek tools for internal operations and real time passenger information from a single vendor. We take full responsibility for the function of the technology on the bus and on the backend, even for 3<sup>rd</sup> party integrations – we provide a solution with one party responsible to ensure things are operating well.

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Syncromatics' core values, the benchmarks we consider when we hire and fire employees, and what we expect of every member of our team, are to:

- Deliver on Our Promises
- Solve Problems
- Share Knowledge

These core values manifest themselves in every interaction we have with clients, colleagues, and suppliers to ensure we have healthy and productive relationships. Only once a strong relationship is present can we proceed with the technical and operational work of Intelligent Transportation Systems.

## 10-5.Organizational Culture

### The Long View

Syncromatics is a business that prioritizes sustainable growth and long term relationships, not quarterly earnings reports. Privately held throughout its history, Syncromatics founder and current owner understand that in the government services business, our reputation is our most valuable asset. We protect our reputation by choosing selectively which projects to pursue. We operate under a Software as a Service business model that prioritizes annual customer renewals over sales of equipment. Our philosophy is to do whatever it takes to get the job done and keep our customers satisfied, and we know that this business strategy will pay dividends in the long run.

### Open Innovation

We don't believe that we have all the answers, so we willingly partner with other technologies in the commercial and transportation sectors to deliver a fully integrated solution for our clients. We design our tools on top of industry standards like the Android mobile operating system, Google Maps, and the General Transit Feed Specification to ensure that our open architecture can welcome third party innovation. We avoid building our own hardware wherever possible and instead focus on sourcing the best commercially available equipment from expert manufacturers.

We recognize that our clients can be our greatest source of innovation to drive product development. We host an annual user conference to invite our clients to gather informally to share ideas and best practices, and serendipitously great new product ideas emerge from these events. We work closely with clients to develop new features to ensure the result of our labor will be useful to our current clients, and in turn to our future clients.

### Our Office: No Walls, Dog Friendly

We don't let corporate bureaucracy constrain our teams, and we don't let walls prevent collaboration between our staff. Syncromatics' open office layout is designed to encourage interaction and cross pollination between our engineers, project managers, customer service reps, account managers, and everyone in between. Furthermore, we want our people to be happy at work because happy people provide great customer service. To this end we provide free snacks and encourage staff to bring their furry family members to the office.

### A Transit Oriented Company

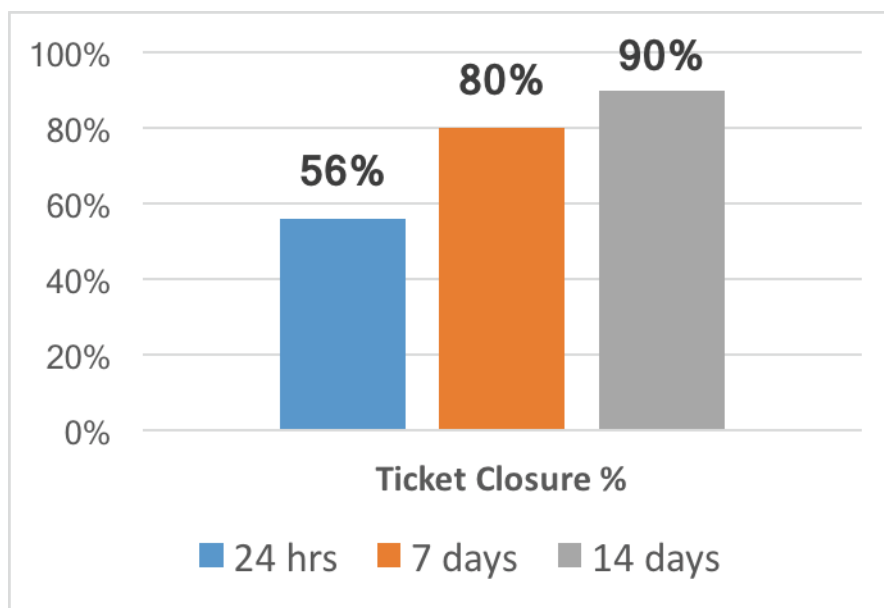
Syncromatics walks the walk when it comes to public transit. In 2014 we relocated our offices to Downtown Los Angeles to provide more convenient accessibility to our staff that commute via public transportation. Los Angeles is a car town, but more than half of our employees commute via bus and rail every day. We provide transit subsidies for 100% of the cost of employees who commute by transit.

This is good for business because it helps us recruit and retain employees that don't want to spend hours each day commuting in a car. It's good for our community because we are helping reduce traffic and pollution by taking cars off the road. But most importantly, this is good for our clients, because our staff know the transit experience first-hand from their daily commutes, and they bring this experience to help solve problems for our clients.

## Customer Satisfaction

Syncromatics uses a variety of continuous feedback loops to monitor customer satisfaction and respond when issues arise. All of these data sources feed into regular management reviews of customer health.

- We regularly conduct a one-question Net Promoter Score survey: “On a scale of 1-10, would you recommend Syncromatics to a friend or colleague?” of all software users at regular intervals. We consider an average rating of 8 to be acceptable at present, and our executive team monitors results in a weekly management meeting. Any specific negative outlier responses indicate particular heartburn at a specific client, and we can investigate these on a case by case basis.
- We track Support Ticket Resolution Metrics to identify trends related to customer service inquiries or technical support requests. We have established targets for closing out a certain percentage of support tickets in 24 hours, 7 days, and 14 days. While the majority of support tickets are closed to the customer's satisfaction within 24 hours, the 20% that take over 7 days are generally the result of waiting for client feedback or vehicle availability.



- We monitor customer retention trends and swarm on any customers that have indicated that they are dissatisfied or considering other options. To date, we have never lost a client due to performance or price issues because of our relentless focus on customer satisfaction and retention. In some cases, we have lost a client due to a change in prime operating contractor (where Syncromatics was a subcontractor) or the dissolution of a university shuttle service.
- Syncromatics conducts an annual User Conference to get face time with our clients and get their feedback on desired improvements to the technology that guide our product roadmap. This also provides clients an opportunity to share their ideas with each other – spreading knowledge throughout the industry.
- Sales people that work on a given deal transition into an Account Management role once a contract is signed, so we have continuity in relationships and accountability for the ongoing success of our projects and happiness of our clients. Our sales team knows that unhappy clients will not come back to us for future technology needs, and this is a strong incentive to monitor client satisfaction on a person to person level. We regularly conduct account management checkups by phone, through client site visits, and at industry conferences around the country.
- Field Service Visits provide us with the opportunity to get feedback from operators and maintenance personnel, not just agency management or planning staff. While our employee field technicians are

on site for maintenance of expansion work, they are our eyes and ears to watch for problems before they grow too large.

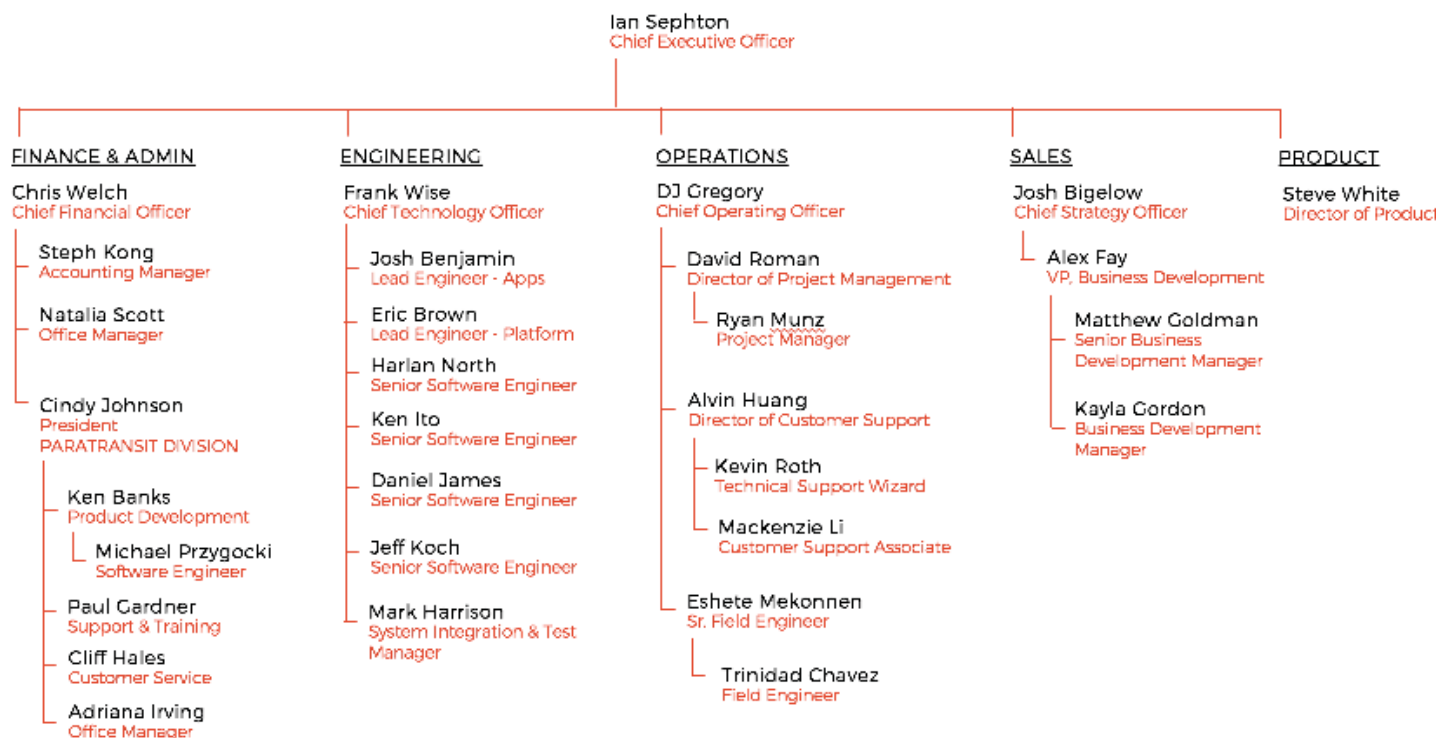
## 10-6. Syncromatics Organization and Management Team



GMV is Syncromatics' parent company, providing financial and technical resources and decades of ITS experience to support Syncromatics growth.



Syncromatics is an independently managed company focused exclusively on Intelligent Transportation Systems in the North American market.





Chris Welch – Chief Financial Officer

Background	Chris has over 30 years of management-level experience and has guided five companies as a C-level executive. His has served in industries including transportation, automotive services, education and retail food & beverage and has been with Syncromatics for over five years.
Syncromatics	<ul style="list-style-type: none"> <li>• Executive responsibility for the success of all Syncromatics projects, including costing, deployment, and ongoing management</li> <li>• Top-level oversight of project management, finance, and operations</li> </ul>
Other Relevant Experience	<ul style="list-style-type: none"> <li>• Chairman – City of Glendale Transportation Commission</li> <li>• Chief Financial Officer – Baromitor Petroleum</li> <li>• Chief Operating Officer – Freshi Films</li> </ul>
Education	<ul style="list-style-type: none"> <li>• University of California, Los Angeles – M.B.A., Finance</li> <li>• University of California, Berkeley – A.B., Architecture</li> </ul>



D.J. Gregory – Chief Operating Officer

Background	D.J. has over 6 years of executive-level business leadership experience. With experience guiding growth and operations, he leads the teams at Syncromatics responsible for the ultimate success of each project.
Syncromatics	<ul style="list-style-type: none"> <li>• Primary point of contact for clients in the deployment and continuous operations phase</li> <li>• Oversees the operations team, responsible for over 1200 vehicles nationwide</li> <li>• Leads the product development team, incorporating client and sales team feedback into future product updates</li> </ul>
Other Relevant Experience	<ul style="list-style-type: none"> <li>• Co-Founder and Chief Operating Officer – The Kalish Institute</li> <li>• Extern for the Honorable Marjorie O. Rendell – US Court of Appeals for the 3<sup>rd</sup> Circuit</li> <li>• Sales Coordinator – Linear City Development, Biscuit Company Lofts</li> </ul>
Education	<ul style="list-style-type: none"> <li>• The University of Pennsylvania – B.S., Economics; Concentration, Marketing &amp; Communications</li> <li>• Pepperdine University School of Law – Juris Doctor</li> </ul>





Frank Wise – Chief Technology Officer

Background	Frank is an entrepreneurial software engineer/architect with 10+ years of web application development experience. He has a history of leading and contributing to cross-functional teams throughout the full application lifecycle.
Syncromatics	<ul style="list-style-type: none"> <li>• Supervises the software engineering team</li> <li>• Manages hardware and software requirements and identifies off-the-shelf products to integrate into Syncromatics' platform at scale</li> <li>• Responsible for all aspects of data center operations, including system design, hardware provisioning, and system optimization</li> <li>• Integrates networks of video devices, LCD screens, and other visual display endpoints into the Syncromatics passenger information system</li> </ul>
Other Relevant Experience	<ul style="list-style-type: none"> <li>• Senior Software Engineer, Platform Team Lead – Daptiv, Inc.</li> <li>• Lead Software Engineer – Construction Exchange, Inc.</li> </ul>
Education	<ul style="list-style-type: none"> <li>• California Polytechnic State University, San Luis Obispo – B.S., Computer Science</li> </ul>



Alex Fay – VP, Business Development

Background	With more than 10 years' experience in government and business operations, Alex approaches each project with experience on multiple fronts. He is responsible for ongoing relationships with Syncromatics' customers and vendors, and he oversees new business opportunities and marketing efforts.
Syncromatics	<ul style="list-style-type: none"> <li>• Leads the sales and marketing departments including proposal writing, client account management, and sales presentations</li> <li>• Responsible for forecasting, budgeting, and strategic planning</li> </ul>
Other Relevant Experience	<ul style="list-style-type: none"> <li>• Senior Business Development Manager – Quallion</li> <li>• Senior Director, Clean Technology – Los Angeles Mayor Antonio R. Villaraigosa's Office of Economic Development</li> <li>• Legislative and Environmental Deputy – Los Angeles City Councilmember Bill Rosendahl</li> </ul>
Education	<ul style="list-style-type: none"> <li>• University of California, Los Angeles – B.A., History; Minor, Public Affairs</li> </ul>



## **10-9. Additional Company Details**

Please find the basic points you need to know in evaluating our firm's competence and credibility summarized below.

- Syncromatics was incorporated in 2006 and has enjoyed 10 years of steady growth and deployment excellence. Syncromatics has never laid off staff or had a workforce reduction.
- Syncromatics has provided references for current clients similar in size and scope as well as a complete list of our municipal transit agency clients.
- Syncromatics has never failed to complete a deployment, has never had any client take remedial action of any kind in response to underperformance, and has a 100% successful deployment record.
- No executive, officer, or director has been involved in any firm that failed to complete a contract.
- No staff member of Syncromatics has had any license, permit or certification revoked.
- Syncromatics has 50+ customers and has never lost a customer for performance or service quality reasons.
- Syncromatics is a California corporation (ID#C2891361). The corporation was legally incorporated in California in 2006 and has been in continuous operation since then. The corporation is in good standing nationwide and with the State of California.
- The company's federal tax identification number is: 20-5349016; our State Board of Equalization number is: AS 101-043737; our State Department of Employment (EDD) number is: 279-5859-4; Our DUNS number is: 78 530 1347.
- Syncromatics has or will procure all necessary business licenses, insurance coverage, and certifications that may be required to do business in the event of an award. This includes certificates meeting all coverage minimums and naming appropriate agency entities as an additional insured.
- The company has never filed for bankruptcy, nor has the company ever been involved in any current or pending litigation.
- Syncromatics is located at 523 West Sixth Street, Suite 444, Los Angeles, CA 90014.

## 10-10. References

Los Angeles Department of Transportation

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<sup>2</sup> [http://www.lamayor.org/the route to a smarter city](http://www.lamayor.org/the_route_to_a_smarter_city)

## **Route and Schedule Planning at Merced County Transit**

Syncromatics tools helped make this improvement possible by providing intelligence about the Merced operations, and Syncromatics' reporting tools also helped document these improvements and demonstrate the return on investment from the ITS system.

Merced Change from 2012 to 2014

Ridership increased 15%

On Time Performance improved 7%

Passenger Engagement increased by 300%

## **Marin Transit – San Rafael, CA**



**City of Commerce, CA Transportation Department**

## **10-11. Complete List of Municipal Public Transit Clients**

Syncromatics is proud of our track record of successful deployments. In addition to the specific case studies presented above, which have been selected for their similarity to the present opportunity, we also are providing a comprehensive list of our municipal transit customers. We encourage your agency to conduct thorough reference checks as part of the procurement process in order to get objective feedback from your peers in the transit community. This is our complete list of municipal public transit clients – and we can provide additional information about our university and private customers if desired.

We approach every new project with an eye towards the future, knowing that all of our new clients will someday become references for future clients. With that in mind, we do our best to do whatever it takes to ensure client success. Whether that means hustling to meet a tight deadline, repeatedly updating routes and schedules to match changing operations, or integrating a new 3<sup>rd</sup> party technology into our system.



## **Financial Statements**

Financial statements are provided by GMV, a privately held company of which Syncromatics is the US operating division for public transit projects. GMV will provide all necessary financial guarantees to ensure the successful implementation of this project. GMV has an annual revenue in excess of \$100M USD, and employs more than 1,000 professionals globally.



## 11. Pricing

Please see the separate Pricing Volume for detailed project financials

## **12. Required Forms**

Please see the required forms beginning on the following page.



March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

## ***Attachment E - Certification of Restrictions on Lobbying***

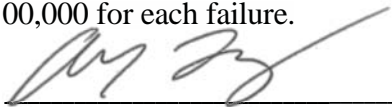
### **RETURN THIS FORM WITH YOUR BID**

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

### **Lobbying Certification**

As required by U.S. DOT regulations, "New Restrictions on Lobbying," at 49 CFR 20.110, I certify to the best of my knowledge and belief that for each application for federal assistance exceeding \$100,000: (1) No Federal appropriated funds have been or will be paid, by or on behalf of Syncromatics, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress pertaining to the award of any Federal assistance, or the extension, continuation, renewal, amendment, or modification of any Federal assistance agreement; and (2) If any funds other than Federal appropriated funds have been or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any application to FTA for Federal assistance, I assure that Standard Form-LLL, "Disclosure Form to Report Lobbying," would be submitted and would include all information required by the form's instructions.

I understand that this certification is a material representation of fact upon which reliance is placed and that submission of this certification is a prerequisite for providing Federal assistance for a transaction covered by 31 U.S.C. 1352. I also understands that any person who fails to file a required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.



Vice President

Signature & Title of Authorized Official

7/11/17

Date

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

## ***Attachment F - Disadvantaged Business Enterprise (DBE)***

### **RETURN THIS FORM WITH YOUR BID**

\_\_\_\_\_  
Syncromatics (firm name) hereby certifies that:

(check one)

☐

our firm's Bid does include committed DBE participation, which will account for  
\_\_\_\_ % of the total project amount;

OR

☒

our firm's Bid does not include any committed DBE participation.

BY:



Authorized Official

\_\_\_\_\_  
Vice President

Title

***If applicable***, please include on a separate sheet the names, addresses of all DBEs ~~contacted~~  
~~or~~ that will participate in the contract, the scope of work, dollar amount of for each participating  
DBE. ~~Also describe all efforts which have been made to secure maximum DBE participation.~~

**All participating DBEs must complete the DBE affidavit, attached.**

***(REVISED)***

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

## **Affidavit of Disadvantaged Business Enterprise**

### **RETURN THIS FORM WITH YOUR BID**

I hereby declare and affirm that I am a qualifying DBE as describe in 49 CFR part 26 and that I will provide information to document this fact.

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE FOREGOING STATEMENTS ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF THE ABOVE FIRM, TO MAKE THIS AFFIDAVIT.**

BY: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

n/a - no DBE participation proposed

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

***Attachment G - Certification of Primary Participant Regarding  
Debarment, Suspension, and other Responsibility Matters***

**RETURN THIS FORM WITH YOUR BID**

**CERTIFICATION OF PRIMARY PARTICIPANT REGARDING  
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY  
MATTERS**

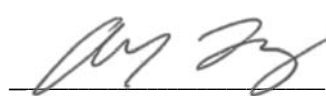
The Primary Participant (applicant for an FTA grant or cooperative agreement, or Potential Contractor for a major third party contract), certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency,-
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction,- violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICATION FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD PARTY CONTRACT), Syncromatics

CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET. SEQ. ARE APPLICABLE THERETO.



Signature of Contractor's Authorized Official

7/11/17

Date

Alex Fay, Vice President

Typed Name and Title of Contractor's Authorized Official

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**Attachment I - Bid Form**

**VENTURA COUNTY TRANSPORTATION COMMISSION**  
**Automated Vehicle Location & Passenger Information System**  
**Request for Proposals No. 17-90164-AVL**

**BID FORM**

To: Ventura County Transportation Commission

Pursuant to and in compliance with your Request for Proposals, calling for bids and related documents, the undersigned bidder, having familiarized himself with the terms and conditions of the contract, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated; including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with this proposal and all in strict conformity with the drawings and specifications and other contract documents, including addenda number 1-6.

The bidder has carefully examined the plans and specifications for this project prepared and furnished by Ventura County Transportation Commission and acknowledge their sufficiency.

It is understood and agreed that the work under the contract shall commence by the bidder, if awarded the contract, on the date to be stated in Ventura County Transportation Commission's "Notice to Proceed."

I, the bidder identified below, declare under penalty of perjury, that the information provided and representations made in this bid are true and correct and that this declaration was executed on:

11th day of July, 2017

NAME OF BIDDER: Syncromatics

CORPORATE OR  
COMPANY NAME: Syncromatics

ADDRESS: 523 W 6th Street, Suite 444

TELEPHONE: 213-973-1209 FAX: \_\_\_\_\_

SIGNATURE:  DATE: 7/11/17

## ***Attachment J - Federally Required & Other Model Contract Clauses***

### **No Obligation by the Federal Government** *(Required for all Contracts)*

The VCTC and the Contractor acknowledge and agree that, notwithstanding any occurrence by the Federal Government in or approval of this solicitation or award of this Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to VCTC, the Contractor, or any other party (whether or not a party to this Contract) pertaining to any matter resulting from this Contract.

The Contractor agrees to include the above clause in each subcontract financed in whole or part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

### **Program Fraud and False Or Fraudulent Statements And Related Acts** *(Required for all Contracts)*

The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. 3801 et seq. And U.S. Department of Transportation (DOT) regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to this Contract. Upon execution of this Contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to this Contract or the FTA assisted project for which this Contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. 5307, the Government reserves the right to impose the penalties of 18 U.S.C. 1001 and 49 U.S.C. 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

### **Access to Records** *(Required for all Contracts)*

The Contractor agrees to provide VCTC, the FTA Administrator, the Comptroller General of the United States or of any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this Contract for the purposes of making and conducting audits, inspections, examinations, excerpts, and transcriptions.

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

The Contractor also agrees, pursuant to 49 CFR 633.1.7, to provide the FTA Administrator or his or her authorized representatives, including any Project Management Oversight (PMO) contractor, access to the Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described in 49 U.S.C. 5307, 5309 or 5311. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to maintain all books, records, accounts and reports required under this Contract for a period of not less than three years after the date of termination or expiration of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case the Contractor agrees to maintain such books, records, account and reports until the VCTC, the FTA Administrator, the Comptroller general, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

**Federal Changes**    *(Required for all Contracts)*

The Contractor shall at all times comply with all applicable Federal Transit Administration (FTA) regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the grant agreements between the Ventura County Transportation Commission (VCTC) and FTA, as they may be amended or promulgated from time to time during the term of this contract. Failure by the Contractor to so comply shall constitute a material breach of this contract. In the event any such changes significantly affect the cost or the schedule to perform the work, the Contractor shall be entitled to submit a claim for an equitable adjustment under the applicable provisions of this contract.

**Termination**    *(Required for all projects over \$10,000)*

**Termination for Convenience** - The VCTC, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the Recipient shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

**Termination for Default [Breach or Cause]** - If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the VCTC may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the VCTC that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the VCTC, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

**Opportunity to Cure (General Provision)** - The VCTC in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in



March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to VCTC's satisfaction the breach or default or any of the terms, covenants, or conditions of this Contract within ten (10) days after receipt by Contractor or written notice from VCTC setting forth the nature of said breach or default, VCTC shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude VCTC from also pursuing all available remedies against Contractor and its sureties for said breach or default.

**Waiver of Remedies for any Breach** - In the event that VCTC elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by VCTC shall not limit VCTC's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

**Title VI Of The Civil Rights Act Of 1964** *(Required for all Contracts)*

During the performance of this Contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor"), and subcontractors agree as follows:

- A. Compliance with Regulations.** The Contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- B. Nondiscrimination.** In accordance with Title VI of the Civil Rights act, as amended, 42 U.S.C. 200d section 3 03 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. 12132, and Federal Transit laws at 49 U.S.C. 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- C. Equal Employment Opportunity.** The following equal employment opportunity requirements apply to this Contract:
  - 1. Race, Color, Creed, National Origin, Sex** – In accordance with title VII of the Civil Rights Act, as amended, 42 U.S.C. 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of the U.S. Department of Labor (USDOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 CFR Parts 60 et seq., (which implement Executive Order No. 11246 Relating to Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order No. 11246 Relating to Equal Employment Opportunity," 42 U.S.C. 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the project for which this Contract work is being performed. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment of recruitment advertising, layoff or termination; rates

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the contractor agrees to comply with any implementing requirements FTA may issue.

2. **Age** – In accordance with section 4 of the Age discrimination in Employment Act of 1967, as amended, 29 U.S.C. 623 and Federal Transit laws at 49 U.S.C. 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reasons of age. In addition, the contractor agrees to comply with any implementing requirements FTA may issue.
  3. **Disabilities** – In accordance with Section 102 of the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, “ Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act,” 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
  4. **Immigration and Naturalization Act of 1986** – In connection with the execution of this Contract, the Contractor must comply with all aspects of the federal Immigration and Naturalization Act of 1986.
- D. Solicitations for Subcontractors, Including Procurement of Materials and Equipment.** In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to non-discrimination on the grounds of race, color, or national origin.
- E. Information and Reports.** The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by City or the Federal Transit Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to City or the Federal Transit Administration as appropriate, and shall set forth what efforts it has made to obtain the information.
- F. Sanctions for Noncompliance.** In the event of the Contractor's noncompliance with nondiscrimination provisions of this contract, City shall impose contract sanctions as it or the Federal Transit Administration may determine to be appropriate, including, but not limited to:
1. withholding of payments to the Contractor under the contract until the Contractor complies; and/or
  2. cancellation, termination, or suspension of the contract, in whole or in part.
- G. Subcontracts.** The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

**Disadvantaged Business Enterprises**     *(Required for all Contracts)*

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

The Ventura County Transportation Commission (VCTC) has established a DBE Program pursuant to 49 C.F.R. Part 26, which applies to this Agreement. The requirements and procedures of VCTC's DBE Program are hereby incorporated by reference into this Agreement. Failure by any party to this Agreement to carry out VCTC's DBE Program procedures and requirements or applicable requirements of 49 C.F.R. Part 26 shall be considered a material breach of this Agreement, and may be grounds for termination of this Agreement, or such other appropriate administrative remedy. Each party to this Agreement shall ensure that compliance with VCTC's DBE Program shall be included in any and all sub-agreements entered into which arise out of or are related to this Agreement.

CONTRACTOR's failure to make good faith efforts to comply with VCTC's DBE Program shall be considered a material breach of this AGREEMENT and may give rise to certain administrative penalties and proceedings, including, but not limited to, those set forth in 49 C.F.R. Part 26.107.

No later than Thirty (30) working days after receiving payment of retention from City for work satisfactorily performed by any of its subcontractors for services rendered arising out of or related to this Agreement, CONTRACTOR shall make full payment to its subcontractors of all compensation due and owing under the relevant subcontract agreement, unless excused by City for good cause pursuant to provisions of Section 1.1 below.

No later than Thirty (30) days after receiving payment of retention from City for work satisfactorily performed by any of its subcontractors for services rendered arising out of or related to this Agreement, CONTRACTOR shall also make full payment to its subcontractors of all retentions withheld by it pursuant to the relevant subcontract agreement, unless excused by City for good cause pursuant to provisions of Section 5.1 below.

There shall be no substitution of any DBE subcontractors subsequent to award of this Contract without the written approval of the City's DBE Officer.

**Incorporation of Federal Transit Administration (FTA) Terms**    *(Required for all Contracts)*

The Contractor shall take such action with respect to any subcontract or procurement as VCTC or the Federal Transit Administration may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request VCTC, and in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**Debarment and Suspension**    *(Required by all projects greater than \$25,000)*

- A.** The Contractor shall include in each subcontract exceeding \$25,000, regardless of tier, a clause requiring each lower tiered subcontractor to provide the certification set forth in paragraph B of this section. Each subcontract, regardless of tier, shall contain a provision that the subcontractor shall knowingly enter into any lower tier subcontract exceeding \$25,000 with a person who is disbarred, suspended or declared ineligible from obtaining federal assistance funds. If a proposed subcontractor is unable to certify to the statements in the following certification, the Contractor shall promptly notify VCTC and provide all applicable documentation.

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**B.** Each subcontractor with a subcontract exceeding \$25,000 shall certify as follows  
(**COMPLETE ATTACHMENT “G” FOR CERTIFICATION FORM**):


**CERTIFICATION OF PRIMARY PARTICIPANT REGARDING  
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY  
MATTERS**

The Primary Participant (applicant for an FTA grant or cooperative agreement, or Potential Contractor for a major third party contract), certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency,-
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction,- violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICATION FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD PARTY CONTRACT), Syncromatics  
CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET. SEQ. ARE APPLICABLE THERETO.

  
\_\_\_\_\_  
Signature of Contractor's Authorized Official

7/11/17  
\_\_\_\_\_  
Date

Alex Fay, Vice President  
\_\_\_\_\_  
Typed Name and Title of Contractor's Authorized Official

**Buy America** (Required for Construction Projects and Materials and Supplies greater than \$100,000)

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

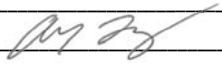
RFP 17-90164-AVL

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification (below) with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

**BUY AMERICA CERTIFICATION REQUIREMENT FOR PROCUREMENT OF  
STEEL, IRON, OR MANUFACTURED PRODUCTS.**

***Certificate of Compliance with 49 U.S.C. 5323(j)(1)*** The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 CFR Part 661.5.

Date 7/11/17  
Signature   
Company Name Syncromatics  
Title Vice President

***Certificate of Non-Compliance with 49 U.S.C. 5323(j)(1)*** The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 C.F.R. 661.7.

Date \_\_\_\_\_  
Signature \_\_\_\_\_  
Company Name \_\_\_\_\_  
Title \_\_\_\_\_

**Breach of Contract** *(Required for Contracts Greater than \$100,000)*

**Disputes** - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of (Recipient)'s [title of employee]. This decision shall be final and conclusive unless within [ten (10)] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the [title of employee]. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the [title of employee] shall be binding upon the Contractor and the Contractor shall abide by the decision.

**Performance During Dispute** - Unless otherwise directed by (Recipient), Contractor shall continue performance under this Contract while matters in dispute are being resolved.

**Claims for Damages** - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others



March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

**Remedies** - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the (Recipient) and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the (Recipient) is located.

**Rights and Remedies** - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the (Recipient), (Architect) or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

**Clean Air**    *(Required for Projects greater than \$100,000)*

The contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 1 1017 of the California Government Code. All Contractors and suppliers shall be required to submit evidence, if requested, to City that the governing air pollution control criteria will be met.

The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 under this Contract.

**Clean Water**    *(Only required for projects over \$100,000)*

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq . The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

**Lobbying**    *(Required for all FTA Contracts over \$100,000)*

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

### Lobbying Certification

As required by U.S. DOT regulations, "New Restrictions on Lobbying," at 49 CFR 20.110, I certify to the best of my knowledge and belief that for each application for federal assistance exceeding \$100,000: (1) No Federal appropriated funds have been or will be paid, by or on behalf of Syncromatics, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress pertaining to the award of any Federal assistance, or the extension, continuation, renewal, amendment, or modification of any Federal assistance agreement; and (2) If any funds other than Federal appropriated funds have been or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any application to FTA for Federal assistance, I assure that Standard Form-LLL, "Disclosure Form to Report Lobbying," would be submitted and would include all information required by the form's instructions.

I understand that this certification is a material representation of fact upon which reliance is placed and that submission of this certification is a prerequisite for providing Federal assistance for a transaction covered by 31 U.S.C. 1352. I also understand that any person who fails to file a required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.

  
\_\_\_\_\_  
Signature & Title of Authorized Official

7/11/17  
\_\_\_\_\_  
Date

### **Cargo Preference** *(Required for Rolling Stock Purchase, Construction and Materials and Supplies which includes transport by an ocean vessel)*

The contractor agrees:

- a. *to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;*
- b. *to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.)*
- c. *to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.*



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

March 3, 2017

Ventura County Transportation Commission  
RFP For Automatic Vehicle Location & Passenger Information System

RFP 17-90164-AVL

**Attachment A - Acknowledgement of Receipt Form**

In acknowledgement of receipt of this Request for Proposal: 17-90164-AVL, "AVL / Passenger Information System," the undersigned agrees that he / she has received:

☒ Complete copy of the Request for Proposal beginning with the Title Page and ending with page 241.

☒ Addendum No: 1

☒ Addendum No: 4

☒ Addendum No: 2


☒ Addendum No: 5

☒ Addendum No: 3

☒ Addendum No: 6

*(Bidders are to modify this sheet and Insert Additional Addenda references as necessary)*

The acknowledgement of receipt should be filled out completely and submitted to the Ventura County Transportation Commission's Maintenance Manager prior to the bid deadline (date and time). It is ultimately your responsibility to check and acknowledge all amendments and addendums.

FIRM:	Syncromatics				
REPRESENTATIVE:	Alex Fay				
TITLE:	Vice President		PHONE NO:	213-973-1209	
E-MAIL:	alex@syncromatics.com		FAX NO:		
ADDRESS:	523 W 6th Street, Suite 444				
CITY:	Los Angeles		STATE:	CA	ZIP CODE: 90014
SIGNATURE:				DATE:	7/11/17

This name and address will be used for all correspondence related to the Request for Proposal.

Firm **does / does not** (circle one) intend to respond to the Request for Proposal.

## 13. Appendices

### 13-1. Request for Notification of Shortlist/Award

Syncromatics has taken great care in preparing a responsive proposal at our expense with the hope of earning your business. We would like to request that your procurement department provide us the following notifications proactively – we would be much obliged if we could receive a call or e-mail when these decisions are made:

Notice when a list of shortlisted bidders has been determined, regardless of whether our proposal has been deemed competitive

Notice when a final award, or no award, has been made, regardless of whether that award is made to our firm or not

Notification via phone or e-mail per below contact information

### 13-2. Designated Point of Contact

Please inquire with the individual below for all notifications, questions and requests related to this proposal.

#### Sales Contact

Alex Fay  
Vice President, Business Development  
[alex@syncromatics.com](mailto:alex@syncromatics.com)  
Direct: 213-973-1209  
Cell: 530-906-8774

#### Corporate Headquarters

523 West Sixth Street  
Suite 444  
Los Angeles, CA 90014  
[www.syncromatics.com](http://www.syncromatics.com)  
[sales@syncromatics.com](mailto:sales@syncromatics.com)  
Sales Direct: 855-792-7962



RFP 17-90164-AVL  
Automatic Vehicle Location &  
Passenger Information System

# Price Proposal

July 11, 2017

PREPARED FOR:  
Ventura County Transportation  
Commission  
950 County Square Drive, Suite 207  
Ventura, CA 93003

SUBMITTED BY:  
Alex Fay  
VP, Business Development



# 1. Price Proposal

## 1-1. Pricing Notes

- ▶ The pricing provided below is fixed for the term of the initial contract, and the pricing is binding for 120 days.
- ▶ There are no fees for the listed services beyond what is shown in this proposal. These costs include everything necessary to deploy the system including all Syncromatics staff time for planning, installation, training, and support. We will not charge for follow on training or customer support.
- ▶ We have not included pricing for many of the optional items discussed in the proposal, and would be happy to provide more information as part of a “best-and-final-offer” stage if you desire to include any of those options in the initial scope of work.
- ▶ Due to the nature of various sign configurations (LED, LCD, solar, etc.) and installation locations (shelter, pole, wall mount), we have provided technical information for our signage hardware and software, but recommend comparing all vendors with specific “apples-to-apples” requirements in a best-and-final offer stage if you desire to launch signs with the initial deployment.
- ▶ In the event of any inconsistencies in totals, Syncromatics and the client shall review unit based pricing to revise the proposal for modest scope changes
- ▶ The annual maintenance/support fee will be fixed for the term of the initial contract (up to 5 years) and subject to a maximum 3% annual escalation each year thereafter.
- ▶ We have included a 2-year standard warranty on the OpenMDT Plus system, and a 1-year standard warranty on all other hardware at no additional cost. Extended warranties are available as optional items for up to 5 years total at the prices noted below.
- ▶ Any future fleet replacements can swap system hardware from an old bus to a new bus, incurring only the equipment removal/installation charges. Fleet expansions will be charged at the per unit prices in the proposal, for hardware and software. We can work with OEM bus manufacturers to have new buses “pre-wired” at the factory, and then equipment can be swapped over easily from old buses slated for retirement.
- ▶ Note that we have not included sales or use tax in the agency pricing form document in order to facilitate a fair comparison with out of state vendors. Syncromatics’ vendor format pricing does include sales tax for reference.
- ▶ SMS and IVR services listed below include initial configuration and a standard allowance of usage that is consistent with similarly sized transit agencies. Excess usage will be billed at actual costs.

We understand the challenge you face of making a fair comparison on price between vendors who use different terminology, different pricing strategies and tactics, and different technical approaches. We have included pricing in our preferred format, showing the breakdowns by modular systems on a per-vehicle basis.

Be cautious for dirty pricing tricks from vendors who lump lots of items into a broad category without breaking out components. Some vendors are prone to request change orders and scope increases once the contract is awarded, and this drives up the total project cost. This can even result in a project costing more than if another (initially more expensive) vendor was selected.

We are happy to revise or explain our pricing approach on any of the listed systems.

## **1-2. Sales Tax**

Syncromatics is a California based business, and as such it is responsible for collecting sales tax on tangible property sold in California. For purposes of a fair comparison with out of state vendors (in which case the County may be subject to pay Use Tax on purchases even though the vendor doesn't disclose this amount), we have excluded sales tax from the official pricing forms.

Here's a summary of the sales tax liability associated with the base system:

Vehicle Equipment: \$28,070 sales tax

Electronic Signage: \$14,805 sales tax

See the vendor format pricing to see a breakout of sales tax by each agency (each of which has a different sales tax rate!)

## **1-3. Client Format Pricing**

We have completed the RFP pricing forms, please find them on the following pages. In some cases, modifications were necessary to accurately describe our pricing and reflect the proposed system.

We recommend using the client pricing forms only as a means of gross comparison between vendors, but ultimately you should evaluate the vendor's internal pricing forms to really understand how different items are priced. This will become especially important as the scope of work inevitably changes – this will be compounded by the participation of 9 transit agencies. It will be critical to have a good paper trail that can adapt to the changing scope of work.

We have also submitted Syncromatics internal worksheets for your review. These worksheets follow the client pricing format.



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

**C - PRICE SUMMARY FORM**

Prices shown here are exclusive of sales tax to ensure a fair comparison with out of state vendors.  
 Syncromatics Vendor Format Pricing shows totals with sales tax

<b>A. Fixed Route Fleet Implementation</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? Indicate Yes or No)</b>
10.1	Design for each vehicle type	\$ -			\$ -	
10.1	Cabling and wiring of vehicle	incl			\$ -	
8.2	GPS Antenna	incl			\$ -	
8.2	Vehicle Logic Unit (VLU) / Mobile Data Terminal (MDT)	\$ 2,650.00	140	\$ 45,500.00	\$ 416,500.00	
8.2	Covert Alarm	\$ 325.00	58	\$ 31,500.00	\$ 50,350.00	
<del>8.7</del> 8.4	Cellular Communications Network	\$ 300.00	140		\$ 42,000.00	Annual recurring cost
10.4	Operator / Dispatch Training	incl. in Project Mgmt			\$ -	
10.7	Installation of all hardware in each vehicle	see above			\$ -	
	Removal of legacy CAD/AVL technology from the vehicle, as needed	\$ 135.00	140	\$ -	\$ 18,900.00	
	Capital software license, per vehicle	\$ 950.00	140		\$ 133,000.00	
	Other – please describe				\$ -	
<b>Fixed Route Implementation Subtotal</b>					\$ 660,750.00	

Notes

Hardware only charged for buses that don't have existing switch. Integration charges apply to all vehicles. Assumes that existing switches are compatible. If not compatible, a replacement may be

<b>B. System Initiation Requirements</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>(Recurring Cost? Indicate Yes or No)</b>
8.2	Database Conversion	incl in Project Mgmt				
8.5	GTFS Conversion	incl in Project Mgmt				
<del>8.10.8.</del> 6	Server Site Equipment Acquisition and Setup (servers: application, database, communications, reports, SNMP, etc.; necessary routers / firewalls, redundancies and environments. Please itemize!	Hosted system, no equipment necessary				
	Other – please describe					
<b>System Initiation Subtotal</b>					0	



<b>C. Passenger Information System</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design at each location				\$ -	
10.7	Cabling and wiring at each location	\$ -	40		\$ -	
<del>8.9.8</del> -5	Multiple Line (Terminal) Passenger Information System Display(s) (ML CMS')	\$ 8,750	4	\$ 1,400	\$ 36,400	
<del>8.9.8</del> -5	Single Line (Bus stop) Passenger Information System Displays (SL CMS')	\$ 4,700	36	\$ 12,600	\$ 181,800	
8.9	<del>CMS Audible Component (Requirement removed, no longer a min. requirement)</del>				\$ -	
<del>8.9.8</del>	CMS' Cellular Communications Network	\$ 150	40	\$ -	\$ 6,000	annual recurring
<del>8.9.8</del> -5	Passenger Information Data Management and Dissemination	\$ 4,500			\$ -	one time setup fee
<del>8.9.8</del> -5	Passenger Information System Hardware and / or Software License	\$ 295	40		\$ 11,800	annual recurring
8.5	GTFS Realtime feed	incl			\$ -	
<del>8.9.8</del> -5	Passenger Information System Website (desktop and mobile)	incl			\$ -	
	Passenger Information System Mobile Apps - initial setup	\$ 29,900	1		\$ 29,900	
	Passenger Information System Mobile Apps - recurring	\$ 6,950	1		\$ 6,950	

solar signs require no cabling

Installation is an estimate only based on standard bus shelter or uni-strut pole mount. A detailed site

Installation is an estimate only based on standard bus shelter or uni-strut pole mount. A detailed site

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**Exhibit B - Syncromatics Proposal**

<del>8.9</del>	Customer Trip Planner	incl in mobile			\$ -	
10.7	Installation of all hardware at each location <i>(if not included above)</i>	incl above.	<b>40</b>		\$ -	
<b>8.5</b>	<b>Single Line (Bus stop) Passenger Information System Displays (SL CMS)*</b> <b>[Hardware/Equipment ONLY. Does not include installation.]</b>	\$ 4,700	<b>20</b>		\$ 94,000	
	SMS and IVR service for bus arrival predictions - initial configuration	\$ 45,650	1		\$ 45,650	one time setup fee per agency fee varies by fleet size. Shown as a single total for all agencies here.
	SMS and IVR service for bus arrival predictions - annual service fee	\$ 20,000	1		\$ 20,000	annual recurring per agency fee varies by fleet size. Shown as a single total for all agencies here.
	Other – please describe				\$ -	
<b>Passenger Information System Subtotal</b>					\$ 432,500	

<b>D. Spare Components (Describe the types and quantities of spares, along with cost and total cost, as per RFP Section 10.10)</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
	MDT	\$ 2,650.00	14		\$ 37,100	
	Bus Stop CMS (2-line)	\$ 4,700	4		\$ 18,800	
	Terminal CMS (4-line)	\$ 8,750	1		\$ 8,750	
	Does not include spares for optional hardware listed below for each operator					
<b>Spare Components Subtotal</b>					\$ 64,650	

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

<b>E. Additional Items</b>						
<b>RFP Section</b>		<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Costs? (Indicate Yes or No)</b>
10.1	AVL Analytics	incl				
10.2	Reports (customized)	incl				
10.3	Transit Analytics (Dashboard)	incl				
10.4	Training	incl				
10.5	Testing	incl				
10.6	Documentation	incl				
10.7	Design / Implementation	incl				
10.8	Project Management	\$ 100,000.00	1		\$ 100,000.00	
10.9	Service / Warranty (YEAR ONE)	480	140		\$ 67,200.00	annual recurring fee
	Service / Warranty (YEAR TWO)	480	140		\$ 67,200.00	annual recurring fee
	Other – please describe (use more lines as needed)					
<b>Additional Items Subtotal</b>					\$ 234,400.00	

Amount per operator varies based on complexity, total shown here.

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

<b>F. Extended Service / Maintenance (out years): Including Fixed Route, Integration, and Passenger Information System</b>				
<b>Item</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>
Extended Service / Maintenance, Year Three (Required)	\$ 480	140	0	\$ 67,200
Extended Service / Maintenance, Year Four (Required)	\$ 480	140	0	\$ 67,200
Extended Service / Maintenance, Year Five (Required)	\$ 480	140	0	\$ 67,200
<b>Additional Service / Maintenance Out Year Sub-Total Cost</b>				\$ 201,600

Includes annual service fees, unlimited training, unlimited customer support, hosting, and software license renewal

Does not include extended warranty coverage on equipment beyond Year 2. Extended warranty on equipment is available as an

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

Price Summary				
Item	Unit Cost	# of Units	Installation Cost for All Units	Total Cost
Table A – Fixed Route Vehicles				\$ 660,750
Table B - System Initiation				\$ -
Table C – Passenger Information System				\$ 432,500
Table D - Spare Components				\$ 64,650
Table E - Additional Items				\$ 234,400
Table F - Extended Maintenance (Years 3-5)				\$ 201,600
<b>Total Cost</b>				\$ 1,593,900



\_\_\_\_\_  
**SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL**

7/11/17  
**DATE**

Alex Fay, Vice President  
 \_\_\_\_\_  
**NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL**

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**Exhibit B - Syncromatics Proposal**

<b>FORM C-I. Optional Technologies for Fleet No 1: VCTC INTERCITY</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type	\$ -				
10.7	Cabling and wiring of vehicle	\$ -				
9.1	Automated Voice Annunciators System (AVA)	\$ 5,915	33	incl	\$ 195,195	
9.1	Automated Voice Annunciators (AVA) / System Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counter System (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration	\$ 440	33		\$ 14,520	
9.3	Farebox (GFI) Integration	\$ 670	33		\$ 22,110	
9.4	Headsign control Integration	\$ 355	33		\$ 11,715	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	AVA - Annual Service Fee	\$ 90	33		\$ 2,970	annual recurring
	APC - Annual Service Fee	\$ 112	33		\$ 3,696	annual recurring
	Other – please describe	112				
<b>Optional Technologies Total for Operator</b>					\$ 55,011	

Incl. new interior LED sign



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**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 5,500	1		\$ 5,500	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 36,300	1		\$ 36,300	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	33		\$ 80,685	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	10		\$ 18,900	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	33		\$ 3,135	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	33		\$ 7,920	annual recurring

does not include per transaction fees which are deducted from electronic fare revenue collected qty estimated based on fleet size and system complexity

<b>FORM C-I. Optional Technologies for Fleet No. 2: VALLEY EXPRESS</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators System (AVA)	6490	5	incl	32,450	one time
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)	3,675	5	incl	18,375	one time
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration	\$ 670	5		\$ 3,350	
9.4	Headsign control Integration	\$ 355	0		\$ -	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	AVA - Annual Service Fee	\$ 90	5		\$ 450	annual recurring
	APC - Annual Service Fee	\$ 112	5		\$ 560	annual recurring
	Other – please describe					
<b>Optional Technologies Total for Operator</b>					55,185	

incl. new exterior speakers, new interior LED signs

per RFP, no headsigns are compatible with J1708

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**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>							
	Remix Planning and Scheduling Software - Implementation	\$ 5,500	1		\$ 5,500	one time	
	Remix Planning and Scheduling Software - Annual Software License	\$ 26,400	1		\$ 26,400	annual recurring	varies by fleet size/complexity of routes
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	15		\$ 36,675	one time	does not include per transaction fees which are deducted from electronic fare revenue collected
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	5		\$ 9,450	annual recurring	qty estimated based on fleet size and system complexity
	Pre/Post Trip Inspection, initial setup	\$ 95	15		\$ 1,425	one time	
	Pre/Post Trip Inspection, annual service fee	\$ 240	15		\$ 3,600	annual recurring	

FORM C-I. Optional Technologies for Fleet No 3: GOLD COAST TRANSIT DISTRICT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators System (AVA)	\$ 4,720	56	incl	\$ 264,320	one time
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration	440	56	incl	\$ 24,640	
9.3	Farebox (GFI) Integration	\$ 670	56	incl	\$ 37,520	
9.4	Headsign control Integration	\$ 355	56	incl	\$ 19,880	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	Other – please describe					
<b>Optional Technologies Total for Operator</b>					\$ 346,360	

assumes existing interior LED signs

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**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 5,500	1		\$ 5,500	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 46,200	1		\$ 46,200	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	56		\$ 136,920	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	15		\$ 28,350	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	56		\$ 5,320	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	56		\$ 13,440	annual recurring

Gold Coast is an existing Remix planning customer, so this reflects a does not include per transaction fees which are deducted from electronic fare revenue collected qty estimated based on fleet size and system complexity

<b>FORM C-I. Optional Technologies for Fleet No. 4: SIMI VALLEY TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators System (AVA)	5915	11		65,065	
9.1	Automated Voice Annunciators (AVA) Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration	\$ 670	11	incl	\$ 7,370	
9.4	Headsign control Integration	\$ 355	11	incl	\$ 3,905	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	Other – please describe					
<b>Optional Technologies Total for Operator</b>					76,340	

total would be: 36,575 for 11 units

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**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 5,500	1		\$ 5,500	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 27,225	1		\$ 27,225	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	11		\$ 26,895	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	5		\$ 9,450	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	11		\$ 1,045	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	11		\$ 2,640	annual recurring

does not include per transaction fees which are deducted from electronic fare revenue collected  
 qty estimated based on fleet size and system complexity



<b>FORM C-I. Optional Technologies for Fleet No. 5: THOUSAND OAKS TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators System (AVA) (Most buses do not have AVA)	5915	9		\$ 53,235	
9.1	Automated Voice Annunciators (AVA) Integration (Some buses have AVA)	0	0	0	0	
9.2	Automatic Passenger Counters (APC)	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters (APC) System Integration	440	9		\$ 3,960	
9.3	Farebox (GFI) Integration	\$ 670	9	incl	\$ 6,030	
9.4	Headsign control Integration	\$ 355	9	incl	\$ 3,195	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	Other – please describe					
<b>Optional Technologies Total for Operator</b>					66,420	

assumes all buses will get new AVS or switch to Syncromatics AVA  
assumes all buses will get new AVS or switch to Syncromatics AVA

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**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 1,100	1		\$ 1,100	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 26,235	1		\$ 26,235	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	9		\$ 22,005	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	5		\$ 9,450	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	9		\$ 855	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	9		\$ 2,160	annual recurring

does not include per transaction fees which are deducted from electronic fare revenue collected  
 qty estimated based on fleet size and system complexity

<b>FORM C-I. Optional Technologies for Fleet No. 6: MOORPARK CITY TRANSIT</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators (AVA)	N/A	N/A	N/A	N/A	N/A
9.1	Automated Voice Annunciators (AVA) / System Integration	0	0	0	0	0
9.2	Automatic Passenger Counters System (APC)	0	0	0	0	0
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration	\$ 670	6	incl	\$ 4,020	
9.4	Headsign control Integration	\$ 355	6	incl	\$ 2,130	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	Other – please describe					
<b>Optional Technologies Total for Operator</b>					6150	

Per Addendum 5, Moorpark is not seeking AVA or APC

Per Addendum 5, Moorpark is not seeking AVA or APC

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 1,100	1		\$ 1,100	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 18,150	1		\$ 18,150	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	6		\$ 14,670	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	3		\$ 5,670	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	6		\$ 570	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	6		\$ 1,440	annual recurring

does not include per transaction fees which are deducted from electronic fare revenue collected  
 qty estimated based on fleet size and system complexity

**FORM C-I. Optional Technologies for Fleet No. 7: OJAI TROLLEY**

<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>	
10.7	Integration Design for each vehicle type	incl					
10.7	Cabling and wiring of vehicle	inc.					
9.1	Automated Voice Annunciators System (AVA)	5490	5	incl	27450	onetime	Incl interior LED sign and new Exterior Speakers
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A	
9.2	Automatic Passenger Counters System (APC)	3,325	5	incl	16,625		
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A	
9.3	Farebox (GFI) Integration	\$ 670	5	incl	\$ 3,350	one time	
9.4	Headsign control Integration	\$ 355	0	incl	\$ -		not J1708 compatible
9.5	Single Point Log-on for integrated systems	incl			\$ -		
10.7	Installation of all hardware in each vehicle	incl			\$ -		
	Other – please describe						
<b>Optional Technologies Total for Operator</b>					47425		

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 1,100	1		\$ 1,100	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 16,500	1		\$ 16,500	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	5		\$ 12,225	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	3		\$ 5,670	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	5		\$ 475	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	5		\$ 1,200	annual recurring

does not include per transaction fees which are deducted from electronic fare revenue collected  
 qty estimated based on fleet size and system complexity

FORM C-I. Optional Technologies for Fleet No. 8: CAMARILLO AREA TRANSIT						
RFP Section	Component	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Cost? (Indicate Yes or No)
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators System (AVA)	6490	1		6,490	
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)	3,325	1		3325	
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration	\$ 670	1	incl	\$ 670	
9.4	Headsign control Integration	\$ 355	0	incl	\$ -	
9.5	Single Point Log-on for integrated systems	incl			\$ -	
10.7	Installation of all hardware in each vehicle	incl			\$ -	
	Other – please describe					
<b>Optional Technologies Total for Operator</b>						

not J1708 compatible



**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 1,100	1		\$ 1,100	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 13,200	1		\$ 13,200	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	1		\$ 2,445	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	3		\$ 5,670	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	1		\$ 95	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	1		\$ 240	annual recurring

does not include per transaction fees which are deducted from electronic fare revenue collected  
 qty estimated based on fleet size and system complexity

<b>FORM C-I. Optional Technologies for Fleet No. 9 – KANAN SHUTTLE</b>						
<b>RFP Section</b>	<b>Component</b>	<b>Unit Cost</b>	<b># of Units</b>	<b>Installation Cost for All Units</b>	<b>Total Cost</b>	<b>Recurring Cost? (Indicate Yes or No)</b>
10.7	Integration Design for each vehicle type	incl				
10.7	Cabling and wiring of vehicle	incl				
9.1	Automated Voice Annunciators System (AVA)		0			
9.1	Automated Voice Annunciators (AVA) / Integration	N/A	N/A	N/A	N/A	N/A
9.2	Automatic Passenger Counters System (APC)		0			
9.2	Automatic Passenger Counters (APC) Integration	N/A	N/A	N/A	N/A	N/A
9.3	Farebox (GFI) Integration	670	4		2680	
9.4	Headsign control Integration		0			
9.5	Single Point Log-on for integrated systems	incl				
10.7	Installation of all hardware in each vehicle	incl				
	Other – please describe					
<b>Optional Technologies Total for</b>					2680	

Per RFP Addenda, Kanan is not seeking AVA, APC, or Headsign  
Per RFP Addenda, Kanan is not seeking AVA, APC, or Headsign  
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Per RFP Addenda, Kanan is not seeking AVA, APC, or Headsign

Per RFP Addenda, Kanan is not

**Agreement Between VCTC and Syncromatics Corporation**  
**Exhibit B - Syncromatics Proposal**

<b>Unsolicited Options: (excluded from total to ensure fair evaluation)</b>						
	Remix Planning and Scheduling Software - Implementation	\$ 1,100	1		\$ 1,100	one time
	Remix Planning and Scheduling Software - Annual Software License	\$ 17,600	1		\$ 17,600	annual recurring
	TouchPass Electronic Fare Collection and Mobile Ticketing System	\$ 2,445	4		\$ 9,780	one time
	Equipment Service Plan (qty = hrs per month of onsite technician service)	\$ 1,890	3		\$ 5,670	annual recurring
	Pre/Post Trip Inspection, initial setup	\$ 95	4		\$ 380	one time
	Pre/Post Trip Inspection, annual service fee	\$ 240	4		\$ 960	annual recurring

does not include per transaction  
fees which are deducted from  
electronic fare revenue collected  
qty estimated based on fleet size  
and system complexity

**PROPOSER SIGNATURE FOR FORM C-I ALL FLEETS 1 - 9:**



\_\_\_\_\_  
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL

7/11/17

\_\_\_\_\_  
DATE

Alex Fay, Vice President

\_\_\_\_\_  
NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

## Notes on Pricing Clarification

- In its initial price proposal, Syncromatics included the following annual recurring fees in Table A and Table C:
  - Table A:
    - cellular data costs for the vehicle MDTs (Fixed Route Fleet Implementation) – One Year Only (\$42,000)
  - Table C:
    - cellular data for the CMS – One Year Only (\$6,000)
    - annual software licenses for the CMS - One Year Only (\$11,800)
    - annual software license for the Mobile Apps – One Year Only (\$6,950)
    - SMS and IVR Service Fee – One Year Only (\$20,000)
  - These fees total to: \$86,750
- In order to provide you with an accurate figure for the two-year base period, we have added \$86,750 to the previous submission to cover the 2<sup>nd</sup> year's annual fees. The amount shown in the clarification includes all fees (one-time and recurring) to operate the system for two years.
- In order to provide an accurate figure for a five-year term, we have added \$86,750 to the annual total for each of Year 3, Year 4, and Year 5. This includes all fees to operate the system for five years total.
- In Reviewing the pricing, I uncovered an error in our original Table C. We charged \$46,650 for the SMS and IVR initial configuration. This amount should be \$15,750. (A savings to VCTC of \$30,900). The error was due to an excel formula error that was double counting some costs associated with the Mobile Apps. The corrected amount is now reflected in the TABLE C Line on the PRICE SUMMARY table on p3 of the PRICING CLARIFICATION FORM.

E. Additional Items						
RFP Section		Unit Cost	# of Units	Installation Cost for All Units	Total Cost	Recurring Costs? (Indicate Yes or No)
10.1	AVL Analytics	incl				
10.2	Reports (customized)	incl				
10.3	Transit Analytics (Dashboard)	incl				
10.4	Training	incl				
10.5	Testing	incl				
10.6	Documentation	incl				
10.7	Design / Implementation	incl				
10.8	Project Management	n/a			\$100,000	
10.9	Service / Warranty (2 years)	n/a			\$221,150	
	Other – please describe (use more lines as needed)					
Additional Items Subtotal					\$321,150	

Bidders are to update only those lines highlighted above and as instructed in the attached August 17, 2017, VCTC letter re Request For Clarification; Proposal for VCTC RFP No. 17-90164-AVL. All other pricing information shall remain the same as originally submitted. - VCTC

F. Extended Service / Maintenance (out years): Including Fixed Route, Integration, and Passenger Information System				
Item	Unit Cost	# of Units	Installation Cost for All Units	Total Cost
Extended Service / Maintenance, Year Three (Required)	n/a			\$153,950
Extended Service / Maintenance, Year Four (Required)	n/a			\$153,950
Extended Service / Maintenance, Year Five (Required)	n/a			\$153,950
<b>Additional Service / Maintenance Out Year Sub-Total Cost</b>				\$461,850

Bidders are to update only those lines highlighted above and as instructed in the attached August 17, 2017, VCTC letter re Request For Clarification; Proposal for VCTC RFP No. 17-90164-AVL. All other pricing information shall remain the same as originally submitted. - VCTC



Price Summary					
Item	Unit Cost	# of Units	Installation Cost for All Units	Total Cost	
Table A – Fixed Route Vehicles				\$660,750	
Table B - System Initiation				\$0	
Table C – Passenger Information System				\$402,600	
Table D - Spare Components				\$64,650	
Table E - Additional Items				\$321,150	
Table F - Extended Maintenance (Years 3-5)				\$461,850	
<b>Total Cost</b>				\$1,911,000	

  
 \_\_\_\_\_ 8/24/17  
 SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL DATE

Alex Fay, Vice President  
 \_\_\_\_\_  
 NAME AND TITLE OF CONTRACTOR'S AUTHORIZED OFFICIAL

Bidders are to update only those lines highlighted above and as instructed in the attached August 17, 2017, VCTC letter re Request For Clarification; Proposal for VCTC RFP No. 17-90164-AVL. All other pricing information shall remain the same as originally submitted. - VCTC