

SERIAL 14091 RFP

GLOBAL POSITIONING SYSTEM FOR VEHICLES

DATE OF LAST REVISION: August 27, 2015

CONTRACT END DATE: August 31, 2018

CONTRACT PERIOD THROUGH AUGUST 31, ~~2016~~ 2018

TO: All Departments

FROM: Office of Procurement Services

SUBJECT: Contract for **GLOBAL POSITIONING SYSTEM FOR VEHICLES**

Attached to this letter is published an effective purchasing contract for products and/or services to be supplied to Maricopa County activities as awarded by Maricopa County on **August 27, 2015**.

All purchases of products and/or services listed on the attached pages of this letter are to be obtained from the vendor holding the contract. Individuals are responsible to the vendor for purchases made outside of contracts. The contract period is indicated above.

Wes Baysinger, Chief Procurement Officer
Office of Procurement Services

NP/at
Attach

Copy to: Office of Procurement Services
Various Departments

(Please remove Serial 09040 –RFP from your contract notebooks)



CONTRACT PURSUANT TO RFP

SERIAL 14091-RFP

The Contract is entered into this 27th day of August, 2015 by and between Maricopa County ("County"), a political subdivision of the State of Arizona, and CalAmp Radio Satellite Integrators, Inc., a Delaware corporation ("Contractor," or "Offeror," or "Respondent," or "CalAmp") for the purchase of vehicle global positioning system devices and related services.

1.0 CONTRACT TERM:

- 1.1 This Contract is for a term of one (~~3~~) year, beginning on the 27th day of August, 2015 and ending the 31st day of August, ~~2016~~ **2018**.
- 1.2 The County may, at its option and with the agreement of the Contractor, renew the term of this Contract for additional terms up to a maximum of **two (2)**, ~~four (4)~~ years, (or at the County's sole discretion, extend the Contract on a month-to-month basis for a maximum of six (6) months after expiration). The County shall notify the Contractor in writing of its intent to extend the Contract term at least sixty (60) calendar days prior to the expiration of the original Contract term, or any additional term thereafter.

2.0 FEE ADJUSTMENTS:

- 2.1 Any request for a fee adjustment must be submitted sixty (60) days prior to the current Contract expiration. Requests for adjustment in cost of labor and/or materials must be supported by appropriate documentation. If County agrees to the adjusted fee, County shall issue written approval of the change. The reasonableness of the request will be determined by comparing the request with the Consumer Price Index or by performing a market survey.

3.0 PAYMENTS:

- 3.1 As consideration for performance of the duties described herein, County shall pay Contractor the sum(s) stated in Exhibit "A."
- 3.2 Payment shall be made upon the County's receipt of a properly completed invoice.

3.3 INVOICES:

- 3.3.1 The Contractor shall submit one (1) legible copy of their detailed invoice before payment(s) can be made. Incomplete invoices will not be processed. At a minimum, the invoice must provide the following information:

- Company name, address and contact
- County bill-to name and contact information
- Contract Serial Number
- County purchase order number
- Invoice number and date
- Payment terms
- Date of service or delivery
- Quantity (number of days or weeks)

- Contract Item number(s)
- Description of Purchase (product or services)
- Pricing per unit of purchase
- Freight (if applicable)
- Extended price
- Mileage w/rate (if applicable)
- Arrival and completion time (if applicable)
- Total Amount Due

3.3.2 Problems regarding billing or invoicing shall be directed to the using agency as listed on the Purchase Order.

3.3.3 Payment shall be made to the Contractor by Accounts Payable through the Maricopa County Vendor Express Payment Program. This is an Electronic Funds Transfer (EFT) process. After Contract Award the Contractor shall complete the Vendor Registration Form located on the County Department of Finance Vendor Registration Web Site (<http://www.maricopa.gov/Finance/Vendors.aspx>).

3.3.4 Discounts offered in the Contract shall be calculated based on the date a properly completed invoice is received by the County (ROI).

3.3.5 EFT payments to the routing and account numbers designated by the Contractor will include the details on the specific invoices that the payment covers. The Contractor is required to discuss remittance delivery capabilities with their designated financial institution for access to those details.

3.4 APPLICABLE TAXES:

3.4.1 **Payment of Taxes:** The Contractor shall pay all applicable taxes. With respect to any installation labor on items that are not attached to real property performed by Contractor under the terms of this Contract, the installation labor cost and the gross receipts for materials provided shall be listed separately on the Contractor's invoices.

3.4.2 **State and Local Transaction Privilege Taxes:** Maricopa County is subject to all applicable state and local transaction privilege taxes. To the extent any state and local transaction privilege taxes apply to sales made under the terms of this contract_it is the responsibility of the seller to collect and remit all applicable taxes to the proper taxing jurisdiction of authority.

3.4.3 **Tax Indemnification:** Contractor and all subcontractors shall pay all Federal, state, and local taxes applicable to its operation and any persons employed by the Contractor. Contractor shall, and require all subcontractors to hold Maricopa County harmless from any responsibility for taxes, damages and interest, if applicable, contributions required under Federal, and/or state and local laws and regulations and any other costs including transaction privilege taxes, unemployment compensation insurance, Social Security and Worker's Compensation.

3.5 TAX: (SERVICES)

No tax shall be levied against labor. It is the responsibility of the Contractor to determine any and all taxes and include the same in proposal price.

3.6 STRATEGIC ALLIANCE for VOLUME EXPENDITURES (\$AVE):

3.6.1 The County is a member of the \$AVE cooperative purchasing group. \$AVE includes the State of Arizona, many Phoenix metropolitan area municipalities, and many K-12 unified school districts. Under the \$AVE Cooperative Purchasing Agreement, and with the concurrence of the successful Respondent under this solicitation, a member of \$AVE may access a contract resulting from a solicitation issued by the County.

3.7 INTERGOVERNMENTAL COOPERATIVE PURCHASING AGREEMENTS (ICPA's)

3.7.1 County currently holds ICPA's with numerous governmental entities throughout the State of Arizona. These agreements allow those entities, with the approval of the Contractor, to purchase their requirements under the terms and conditions of the County Contract. Please indicate on Attachment A, County's acceptance or rejection regarding such participation of other governmental entities. County's response will not be considered as an evaluation factor in awarding a contract

4.0 AVAILABILITY OF FUNDS:

4.1 The provisions of this Contract relating to payment for services shall become effective when funds assigned for the purpose of compensating the Contractor as herein provided are actually available to County for disbursement. The County shall be the sole judge and authority in determining the availability of funds under this Contract. County shall keep the Contractor fully informed as to the availability of funds.

4.2 If any action is taken by any state agency, Federal department or any other agency or instrumentality to suspend, decrease, or terminate its fiscal obligations under, or in connection with, this Contract, County may amend, suspend, decrease, or terminate its obligations under, or in connection with, this Contract. In the event of termination, County shall be liable for payment only for services rendered prior to the effective date of the termination, provided that such services are performed in accordance with the provisions of this Contract. County shall give written notice of the effective date of any suspension, amendment, or termination under this Section, at least ten (10) days in advance.

5.0 DUTIES:

5.1 The Contractor shall perform all duties stated in Exhibit "B", or as otherwise directed in writing by the Procurement Officer.

5.2 During the Contract term, County may provide Contractor's personnel with adequate workspace for consultants and such other related facilities as may be required by Contractor to carry out its contractual obligations.

6.0 TERMS and CONDITIONS:

6.1 INDEMNIFICATION:

To the fullest extent permitted by law, and to the extent that claims, damages, losses or expenses are not covered and paid by insurance purchased by the Contractor, the Contractor shall defend indemnify and hold harmless the County (as Owner), its agents, representatives, agents, officers, directors, officials, and employees from and against all claims, damages, losses, and expenses (including, but not limited to attorneys' fees, court costs, expert witness fees, and the costs and attorneys' fees for appellate proceedings) arising out of, or alleged to have resulted from the negligent acts, errors, omissions, or mistakes relating to the performance of this Contract.

Contractor's duty to defend, indemnify, and hold harmless the County, its agents, representatives, agents, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss, or expense that is attributable to bodily injury, sickness, disease, death or injury to, impairment of, or destruction of tangible property, including loss of use resulting there from, caused by negligent acts, errors, omissions, or mistakes in the performance of this Contract, but only to the extent caused by the negligent acts or omissions of the Contractor, a subcontractor, any one directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder.

The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

The scope of this indemnification does not extend to the sole negligence of County.

NOTWITHSTANDING ANYTHING TO THE CONTRARY, IN NO EVENT SHALL CONTRACTOR BE LIABLE TO COUNTY, OR ANY OTHER PERSON OR ENTITY, UNDER THIS CONTRACT OR OTHERWISE, FOR ANY SPECIAL, COLLATERAL, INDIRECT, EXEMPLARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, ANY DAMAGE FOR LOSS OF GOODWILL, LOSS OF PROFITS, OR LOSS OF USE. IN NO EVENT WILL THE AGGREGATE LIABILITY OF CONTRACTOR TO COUNTY OR ANY THIRD PARTY ARISING UNDER THIS CONTRACT, REGARDLESS OF THE CAUSE OF ACTION OR THEORY OF LIABILITY, EXCEED THE GREATER OF (A) \$2,000,000; OR (B) THE ACTUAL AMOUNT PAID BY COUNTY TO CONTRACTOR UNDER THIS CONTRACT OVER THE PRIOR 12 MONTHS (“Contractor’s Liability Cap”).

6.2 INSURANCE

6.2.1 Contractor, at Contractor’s own expense, shall purchase and maintain the herein stipulated minimum insurance from a company or companies duly authorized by the State of Arizona and possessing a current A.M. Best, Inc. rating of B++. In lieu of State of Arizona licensing, the stipulated insurance may be purchased from a company or companies, which are authorized to do business in the State of Arizona. The form of any insurance policies and forms must be acceptable to County.

6.2.2 All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Contract is satisfactorily completed and formally accepted. Failure to do so may, at the sole discretion of County, constitute a material breach of this Contract.

6.2.3 Contractor’s insurance shall be primary insurance as respects County, and any insurance or self-insurance maintained by County shall not contribute to it.

6.2.4 Any failure to comply with the claim reporting provisions of the insurance policies or any breach of an insurance policy warranty shall not affect the County’s right to coverage afforded under the insurance policies.

6.2.5 The insurance policies may provide coverage that contains deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to County under such policies. Contractor shall be solely responsible for the deductible and/or self-insured retention and County, at its option, may require Contractor to secure payment of such deductibles or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

6.2.6 The insurance policies required by this Contract, except Workers’ Compensation and Errors and Omissions, shall include County, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

6.2.7 The policies required hereunder, except Workers’ Compensation and Errors and Omissions, shall contain a waiver of transfer of rights of recovery (subrogation) against County, its agents, representatives, officers, directors, officials and employees for any claims arising out of Contractor’s work or service.

6.2.8 **Commercial General Liability.**

Commercial General Liability insurance and, if necessary, Commercial Umbrella insurance with a limit of not less than \$2,000,000 for each occurrence, \$4,000,000 Products/Completed Operations Aggregate, and \$4,000,000 General Aggregate Limit.

The policy shall include coverage for premises liability, bodily injury, property damage, personal injury, products and completed operations and contractual coverage. There shall be no endorsement or modifications of the CGL limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

6.2.9 **Automobile Liability.**

Commercial/Business Automobile Liability insurance and, if necessary, Commercial Umbrella insurance with a combined single limit for bodily injury and property damage of not less than \$1,000,000 each occurrence with respect to any of the Contractor's hired, and non-owned vehicles assigned to or used in performance of the Contractor's work or services or use or maintenance of the Premises under this Contract.

6.2.10 **Workers' Compensation.**

Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work or services under this Contract; and Employer's Liability insurance of not less than \$1,000,000 for each accident, \$1,000,000 disease for each employee, and \$1,000,000 disease policy limit.

Contractor, its contractors and its subcontractors waive rights against Contract and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the Workers' Compensation and Employer's Liability or commercial umbrella liability insurance obtained by Contractor, its contractors and its subcontractors pursuant to this Contract.

6.2.11 **Errors and Omissions (Professional Liability) Insurance.**

Errors and Omissions (Professional Liability) insurance which will insure and provide coverage for errors or omissions or professional liability of the **CONTRACTOR**, with limits of no less than \$2,000,000 for each claim.

6.2.12 **Professional Liability.**

Contractor shall maintain Professional Liability insurance which will provide coverage for acts arising out of the work or services performed by the Contractor under the terms of this Contract, with a limit of not less than \$1,000,000 for each claim, and \$3,000,000 aggregate claims.

6.2.13 **Cyber.**

Policy Limit:

The policy shall be issued with minimum limits of \$100,000.

The policy shall include coverage for all directors, officers, agents and employees of the Contractor.

The policy shall **include coverage for third party fidelity.**

The policy shall **include coverage for theft.**

The policy shall **contain no requirement for arrest and conviction.**

The policy shall cover loss outside the premises of the **Named Insured.**

ADDITIONAL INSURANCE REQUIREMENTS: The policies shall include, or be endorsed (**Blanket Endorsements are not acceptable**) to include, the following provisions:

The Contractor's policies shall stipulate that the insurance afforded the Contractor shall be primary insurance and that any insurance carried by the Department, its agents, officials, employees or the State of Arizona shall be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

Coverage provided by the Contractor shall not be limited to the liability assumed under the indemnification provisions of this Contract.

6.2.14 Certificates of Insurance.

Prior to Contract **AWARD**, Contractor shall furnish the County with valid and complete certificates of insurance, or formal endorsements as required by the Contract in the form provided by the County, issued by Contractor's insurer(s), as evidence that policies providing the required coverage, conditions and limits required by this Contract are in full force and effect. Such certificates shall identify this contract number and title.

In the event any insurance policy (ies) required by this contract is (are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of Contractor's work or services and as evidenced by annual Certificates of Insurance.

If a policy does expire during the life of the Contract, a renewal certificate must be sent to County within five (5) days of the expiration date.

6.3 WARRANTY OF SERVICES:

6.3.1 The Contractor warrants that all services provided hereunder will conform to the requirements of the Contract, including all descriptions, specifications and attachments made a part of this Contract. County's acceptance of services or goods provided by the Contractor shall not relieve the Contractor from its obligations under this warranty.

6.3.2 In addition to its other remedies, County may, at the Contractor's expense, require prompt correction of any services failing to meet the Contractor's warranty herein. Services corrected by the Contractor shall be subject to all the provisions of this Contract in the manner and to the same extent as services originally furnished hereunder.

6.4 INSPECTION OF SERVICES:

6.4.1 The Contractor shall provide and maintain an inspection system acceptable to County covering the services under this Contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to County during contract performance and for as long afterwards as the Contract requires.

6.4.2 County has the right to inspect and test all services called for by the Contract, to the extent practicable at all times and places during the term of the Contract. County shall perform inspections and tests in a manner that will not unduly delay the work.

6.4.3 If any of the services do not conform to Contract requirements, County may require the Contractor to perform the services again in conformity with Contract requirements, at no cost to the County. When the defects in services cannot be corrected by re-performance, County may:

6.4.3.1 Require the Contractor to take necessary action to ensure that future performance conforms to Contract requirements; and

6.4.3.2 Reduce the Contract price to reflect the reduced value of the services performed.

6.4.4 If the Contractor fails to promptly perform the services again or to take the necessary action to ensure future performance in conformity with Contract requirements, County may:

6.4.4.1 By Contract or otherwise, perform the services and charge to the Contractor, through direct billing or through payment reduction, any cost incurred by County that is directly related to the performance of such service; or

6.4.4.2 Terminate the Contract for default.

6.5 REQUIREMENTS CONTRACT:

- 6.5.1 Contractors signify their understanding and agreement by signing a bid submittal, that the Contract resulting from the bid is a requirements contract. However, the Contract does not guarantee any minimum or maximum number of purchases will be made. It only indicates that if purchases are made for the materials or services contained in the Contract, they will be purchased from the Contractor awarded that item if the Contractor can meet all the delivery requirements of the County. Orders will only be placed when the County identifies a need and proper authorization and documentation have been approved.
- 6.5.2 County reserves the right to cancel Purchase Orders within a reasonable period of time after issuance. Should a Purchase Order be canceled, the County agrees to reimburse the Contractor for actual and documentable costs incurred by the Contractor in response to the Purchase Order. The County will not reimburse the Contractor for any costs incurred after receipt of County notice of cancellation, or for lost profits, shipment of product prior to issuance of Purchase Order, etc.
- 6.5.3 Contractors agree to accept verbal notification of cancellation of Purchase Orders from the County Procurement Officer with written notification to follow. By submitting a bid in response to this Invitation for Bids, the Contractor specifically acknowledges to be bound by this cancellation policy.

6.6 Suspension of Work

The Procurement Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Procurement Officer determines appropriate for the convenience of the County. No adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor. No request for adjustment under this clause shall be granted unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

6.7 Stop Work Order

The Procurement Officer may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this contract for a period of 90 days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be specifically identified as a stop work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within a period of 90 days after a stop-work is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the Procurement Officer shall either:

- 6.7.1 Cancel the stop-work order; or
- 6.7.2 Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the County clause of this Contract.

The Procurement Officer may make an equitable adjustment in the delivery schedule and/or contract price, or otherwise, and the contract shall be modified, in writing, accordingly, if the Contractor demonstrates that the stop work order resulted in an increase in costs to the Contractor.

6.8 UNCONDITIONAL TERMINATION FOR CONVENIENCE:

Maricopa County may terminate the resultant Contract for convenience by providing sixty (60) calendar days advance notice to the Contractor.

6.9 TERMINATION FOR DEFAULT:

The County may, by written notice of default to the Contractor, terminate this Contract in whole or in part if the Contractor materially fails to:

6.9.1 Deliver the supplies or to perform the services within the time specified in this Contract or any extension;

6.9.2 Make progress, so as to endanger performance of this Contract; or

6.9.3 Perform any of the other material provisions of this Contract.

6.9.4 The County's right to terminate this Contract under these subparagraphs may be exercised if the Contractor does not cure such failure within 30 days (or more if authorized in writing by the County) after receipt of the notice from the Procurement Officer specifying the failure.

6.10 STATUTORY RIGHT OF CANCELLATION FOR CONFLICT OF INTEREST:

Notice is given that pursuant to A.R.S. § 38-511 the County may cancel any Contract without penalty or further obligation within three years after execution of the contract, if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the County is at any time while the Contract or any extension of the Contract is in effect, an employee or agent of any other party to the Contract in any capacity or consultant to any other party of the Contract with respect to the subject matter of the Contract. Additionally, pursuant to A.R.S § 38-511 the County may recoup any fee or commission paid or due to any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the County from any other party to the contract arising as the result of the Contract.

6.11 CONTRACTOR LICENSE REQUIREMENT:

6.11.1 The Contractor shall procure all permits, insurance, licenses and pay the charges and fees necessary and incidental to the lawful conduct of its business, and as necessary complete any required certification requirements, required by any and all governmental or non-governmental entities as mandated to maintain compliance with and in good standing for all permits and/or licenses. The Contractor shall keep fully informed of existing and future trade or industry requirements, Federal, State and Local laws, ordinances, and regulations which in any manner affect the fulfillment of a Contract and shall comply with the same. Contractor shall immediately notify both Office of Procurement Services and the using agency of any and all changes concerning permits, insurance or licenses.

6.11.2 Contractors furnishing finished products, materials or articles of merchandise that will require installation or attachment as part of the Contract, shall possess any licenses required. A Contractor is not relieved of its obligation to possess the required licenses by subcontracting of the labor portion of the Contract. Respondents are advised to contact the Arizona Registrar of Contractors, Chief of Licensing, at (602) 542-1525 to ascertain licensing requirements for a particular contract. Respondents shall identify which license(s), if any, the Registrar of Contractors requires for performance of the Contract.

6.12 SUBCONTRACTING:

6.12.1 The Contractor may not assign to another Contractor or Subcontract to another party for performance of the terms and conditions hereof without the written consent of the

County. All correspondence authorizing subcontracting must reference the Bid Serial Number and identify the job project.

6.12.2 The Subcontractor's rate for the job shall not exceed that of the Prime Contractor's rate, as bid in the pricing section, unless the Prime Contractor is willing to absorb any higher rates or the County has approved the increase. The Subcontractor's invoice shall be invoiced directly to the Prime Contractor, who in turn shall pass-through the costs to the County, without mark-up. A copy of the Subcontractor's invoice must accompany the Prime Contractor's invoice.

6.13 AMENDMENTS:

All amendments to this Contract shall be in writing and approved/signed by both parties. Maricopa County Office of Procurement Services shall be responsible for approving all amendments for Maricopa County.

6.14 ADDITIONS/DELETIONS OF SERVICE:

6.14.1 The County reserves the right to add and/or delete materials and services to a Contract. If a service requirement is deleted, payment to the Contractor will be reduced proportionately, to the amount of service reduced in accordance with the bid price. If additional materials or services are required from a Contract, prices for such additions will be negotiated between the Contractor and the County.

6.14.2 The County reserves the right of final approval on proposed staff for all Task Orders. Also, upon request by the County, the Contractor will be required to remove any employees working on County projects and substitute personnel based on the discretion of the County within two business days, unless previously approved by the County.

6.15 VALIDITY:

The invalidity, in whole or in part, of any provision of this Contract shall not void or affect the validity of any other provision of the Contract.

6.16 SEVERABILITY:

The invalidity, in whole or in part, of any provision of this Contract shall not void or affect the validity of any other provision of this Contract.

6.17 RIGHTS IN DATA:

The County shall have the use of data and reports resulting from a Contract without additional cost or other restriction except as may be established by law or applicable regulation. Each party shall supply to the other party, upon request, any available information that is relevant to a Contract and to the performance thereunder.

6.18 NON-DISCRIMINATION:

CONTRACTOR agrees to comply with all provisions and requirements of Arizona Executive Order 2009-09 including flow down of all provisions and requirements to any subcontractors. Executive Order 2009-09 supersedes Executive order 99-4 and amends Executive order 75-5 and may be viewed and downloaded at the Governor of the State of Arizona's website <http://azmemory.azlibrary.gov/cdm/singleitem/collection/execorders/id/680/rec/1> which is hereby incorporated into this contract as if set forth in full herein. During the performance of this contract, CONTRACTOR shall not discriminate against any employee, client or any other individual in any way because of that person's age, race, creed, color, religion, sex, disability or national origin.

6.19 CERTIFICATION REGARDING DEBARMENT AND SUSPENSION

- 6.19.1 The undersigned (authorized official signing for the Contractor) certifies to the best of his or her knowledge and belief, that the Contractor
 - 6.19.1.1 is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency;
 - 6.19.1.2 have not within 3-year period preceding this Contract 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;
 - 6.19.1.3 are not presently indicted or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
 - 6.19.1.4 have not within a 3-year period preceding this Contract had one or more public transaction (Federal, State or local) terminated for cause of default.
- 6.19.2 The Contractor agrees to include, without modification, this clause in all lower tier covered transactions (i.e. transactions with subcontractors) and in all solicitations for lower tier covered transactions related to this Contract.

6.20 VERIFICATION REGARDING COMPLIANCE WITH ARIZONA REVISED STATUTES §41-4401 AND FEDERAL IMMIGRATION LAWS AND REGULATIONS:

- 6.20.1 By entering into the Contract, the Contractor warrants compliance with the Immigration and Nationality Act (INA using e-verify) and all other federal immigration laws and regulations related to the immigration status of its employees and A.R.S. §23-214(A). The contractor shall obtain statements from its subcontractors certifying compliance and shall furnish the statements to the Procurement Officer upon request. These warranties shall remain in effect through the term of the Contract. The Contractor and its subcontractors shall also maintain Employment Eligibility Verification forms (I-9) as required by the Immigration Reform and Control Act of 1986, as amended from time to time, for all employees performing work under the Contract and verify employee compliance using the E-verify system and shall keep a record of the verification for the duration of the employee's employment or at least three years, whichever is longer. I-9 forms are available for download at USCIS.GOV.
- 6.20.2 The County retains the legal right to inspect contractor and subcontractor employee documents performing work under this Contract to verify compliance with paragraph 6.20.1 of this Section. Contractor and subcontractor shall be given reasonable notice of the County's intent to inspect and shall make the documents available at the time and date specified. Should the County suspect or find that the Contractor or any of its subcontractors are not in compliance, the County will consider this a material breach of the contract and may pursue any and all remedies allowed by law, including, but not limited to: suspension of work, termination of the Contract for default, and suspension and/or debarment of the Contractor. All costs necessary to verify compliance are the responsibility of the Contractor.

6.21 INFLUENCE

As prescribed in MC1-1202 of the Maricopa County Procurement Code, any effort to influence an employee or agent to breach the Maricopa County Ethical Code of Conduct or any ethical conduct may be grounds for Disbarment or Suspension under MC1-902.

An attempt to influence includes, but is not limited to:

- 6.21.1 A Person offering or providing a gratuity, gift, tip, present, donation, money, entertainment or educational passes or tickets, or any type valuable contribution or subsidy,
- 6.21.2 That is offered or given with the intent to influence a decision, obtain a contract, garner favorable treatment, or gain favorable consideration of any kind.

If a Person attempts to influence any employee or agent of Maricopa County, the Chief Procurement Officer, or his designee, reserves the right to seek any remedy provided by the Maricopa County Procurement Code, any remedy in equity or in the law, or any remedy provided by this contract.

6.22 ACCESS TO AND RETENTION OF RECORDS FOR THE PURPOSE OF AUDIT AND/OR OTHER REVIEW:

- 6.22.1 In accordance with section MCI 371 of the Maricopa County Procurement Code the Contractor agrees to retain all books, records, accounts, statements, reports, files, and other records and back-up documentation relevant to this Contract for six (6) years after final payment or until after the resolution of any audit questions which could be more than six (6) years, whichever is latest. The County, Federal or State auditors and any other persons duly authorized by the Department shall have full access to, and the right to examine, copy and make use of, any and all said materials.
- 6.22.2 If the Contractor's books, records, accounts, statements, reports, files, and other records and back-up documentation relevant to this Contract are not sufficient to support and document that requested services were provided, the Contractor shall reimburse Maricopa County for the services not so adequately supported and documented.
- 6.22.3 If at any time it is determined by the County that a cost for which payment has been made is a disallowed cost, the County shall notify the Contractor in writing of the disallowance. The course of action to address the disallowance shall be at sole discretion of the County, and may include either an adjustment to future invoices, request for credit, request for a check or deduction from current billings Submitted by the Contractor by the amount of the disallowance, or to require reimbursement forthwith of the disallowed amount by the Contractor by issuing a check payable to Maricopa County.

6.23 AUDIT DISALLOWANCES:

If at any time, County determines that a cost for which payment has been made is a disallowed cost, such as overpayment, County shall notify the Contractor in writing of the disallowance. County shall also state the means of correction, which may be but shall not be limited to adjustment of any future claim submitted by the Contractor by the amount of the disallowance, or to require repayment of the disallowed amount by the Contractor.

6.24 OFFSET FOR DAMAGES;

In addition to all other remedies at Law or Equity, the County may offset from any money due to the Contractor any amounts Contractor owes to the County for damages resulting from breach or deficiencies in performance of the Contract.

6.25 PUBLIC RECORDS:

Under Arizona law, all Offers submitted and opened are public records and must be retained by the Records Manager at the Office of Procurement Services. Offers shall be open to public inspection and copying after Contract award and execution, except for such Offers or sections thereof determined to contain proprietary or confidential information by the Office of Procurement Services. If an Offeror believes that information in its Offer or any resulting Contract should not be released in response to a public record request under Arizona law, the Offeror shall indicate the specific information deemed confidential or proprietary and submit a statement with its offer detailing the reasons that the information should not be disclosed. Such reasons shall include the specific harm or prejudice which may arise from disclosure. The Records Manager of the Office of Procurement Services shall determine whether the identified information is confidential pursuant to the Maricopa County Procurement Code.

6.26 INTEGRATION:

This Contract represents the entire and integrated agreement between the parties and supersedes all prior negotiations, proposals, communications, understandings, representations, or agreements, whether oral or written, express or implied.

6.27 RELATIONSHIPS:

In the performance of the services described herein, the Contractor shall act solely as an independent contractor, and nothing herein or implied herein shall at any time be construed as to create the relationship of employer and employee, co-employee, partnership, principal and agent, or joint venture between the County and the Contractor.

6.28 GOVERNING LAW:

This Contract shall be governed by the laws of the state of Arizona. Venue for any actions or lawsuits involving this Contract will be in Maricopa County Superior Court or in the United States District Court for the District of Arizona, sitting in Phoenix, Arizona.

6.29 ORDER OF PRECEDENCE:

In the event of a conflict in the provisions of this Contract and Contractor's license agreement, if applicable, the terms of this Contract shall prevail.

6.30 INCORPORATION OF DOCUMENTS:

The following are to be attached to and made part of this Contract:

6.30.1 Exhibit A, Pricing;

6.30.2 Exhibit B, Scope of Work;

NOTICES:

All notices given pursuant to the terms of this Contract shall be addressed to:

For County:

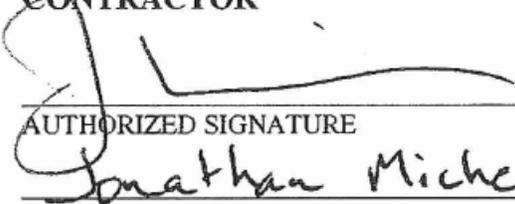
Maricopa County
Office of Procurement Services
ATTN: Contract Administration
320 West Lincoln Street
Phoenix, Arizona 85003-2494

For Contractor:

CalAmp Corp.
ATTN: Government Contracts
19144 Van Ness Ave.
Torrance, CA 90501
Phone: 310-564-8500
Fax: 310-787-7435

IN WITNESS WHEREOF, this Contract is executed on the date set forth above.

CONTRACTOR



AUTHORIZED SIGNATURE

Jonathan Michels, VP

PRINTED NAME AND TITLE

1944 Van Ness, Torrance, CA

ADDRESS

8/25/15

DATE

MARICOPA COUNTY



CHIEF PROCUREMENT OFFICER,
OFFICE OF PROCUREMENT SERVICES

9/4/15

DATE

APPROVED AS TO FORM:



LEGAL COUNSEL

GAIL I. COHEN, DCA

9.2.15

DATE

Exhibit A
Pricing

SERIAL 14091-RFP

RESPONDENT'S NAME: CalAmp Radio Satellite Integrators, Inc.

COUNTY VENDOR NUMBER : W000007084 X

ADDRESS: 19144 Van Ness Ave
Torrance, CA 90501

P.O. ADDRESS: _____

TELEPHONE NUMBER: 310-564-8500

FACSIMILE NUMBER: 310-787-7435

WEB SITE: www.calamp.com

CONTACT (REPRESENTATIVE): Brett Lim

REPRESENTATIVE'S E-MAIL ADDRESS: blim@calamp.com

	<u>YES</u>	<u>NO</u>	<u>REBATE</u>
WILL ALLOW OTHER GOVERNMENTAL ENTITIES TO PURCHASE FROM THIS CONTRACT	[X]	[]	
WILL ACCEPT PROCUREMENT CARD FOR PAYMENT:	[X]	[]	
WILL OFFER REBATE (CASH OR CREDIT) FOR UTILIZING PROCUREMENT CARD:	[]	[X]	_____ %

RESPONDENT IS REQUIRED TO PICK ONE OF THE FOLLOWING PAYMENT TERMS.
FAILURE TO INDICATE PAYMENT TERMS WILL RESULT IN A DEFAULT TO NET 30 DAYS.
RESPONDENT MUST INITIAL THEIR SELECTION BELOW.

[X] NET 30 DAYS

1.0 Global Positioning System (GPS) Hardware	Estimated Units	Cost	
-			
1.1 GPS Tracking device with diagnostics	382	\$ 160.00	per unit
-			
1.2 GPS Only tracking device with switch capability	17	\$ 140.00	per unit
-			
1.3 Self contained, battery operated non-motorized unit using Satellite or cellular communications	61	\$ 635.00	per unit
-			
1.4 Alternative Hardware Pricing: (Please describe)	SEE ADDITIONAL PRICING SHEET		

		Monthly Price Per Reporting Cycle		
		2 minutes	1 minute	30 seconds
2.0 GPS Integration/Tracking Service				
-				-
-				-
-				-
2.1 Diagnostic Service Fee	382	\$ 20.00	\$ 22.00	\$ 23.00
-				-
2.2 Non-Diagnostic Service Fee (2-minute reporting cycle)	17	\$20.00	\$ 22.00	\$23.00
-				-
2.3 Non-Motorized Service Fee (12-hour reporting cycle)	61	\$ 55.00	(satellite, pricing may vary)	-
-				-
2.4 Vehicle Change Fee (when GPS hardware is transferred from one vehicle or piece of equipment to another of the same class)	20	\$ 95.00	per transfer	-
-				-
2.5 Deactivation Fee (if the County elects to deactivate a unit within the first 12 months)		\$ 75.00	per vehicle	-
-				-
2.6 Training		\$ 100.00	per hour onsite, 8 hr min	-
-				-
2.7 Installation charge		\$75.00	per vehicle	-
-				-
2.8 Alternative Integration/Tracking Service Pricing: (Please describe)		SEE ADDITIONAL PRICING SHEET		-

ADDITIONAL SYSTEM OPTIONS

TBD quantity		per unit		total
-				-
+	Sensor Integration to existing on-vehicle sensor (broom, plow, PTO, etc)	\$ 50	each	\$ 50
-				-
+	MOBILE UNIT (FTU)(Battery powered asset tracker)	\$ 245	each	\$ 245
-				-
+	MOBILE UNIT (LMU 3030)(OBD-II plug & play)	\$ 175	each	\$ 175
-				-
+	MOBILE UNIT (LMU 5000) (High Speed Router)	\$ 595	each	\$ 595
-	<i>Requires separate broadband wireless account.</i>			-
-				-
+	MDT 7 (7" MOBILE DATA TERMINAL) or GARMIN	\$ 450	each	\$ 450
-				-
+	ENGINE DIAGNOSTIC DATA INTERFACE ADD-ON	\$ 75	each	\$ 75
-				-
+	Emergency Buttons	\$ 95	each	\$ 95
-	Hard-wired On-Vehicle Button			-
-				-

1	Emergency Buttons	\$ 150	each	\$ 150
-	Wireless Handheld Medallion			-
-				-
1	RF ID Reader (Driver ID)	\$250	each	\$ 250
-				-
1	Magnetic Card Stripe Reader (Driver ID)	\$125	each	\$ 125
-				-
1	iButton/Key Fob Reader (Driver ID)	\$95	each	\$ 95
-				-
1	ONSITE TRAINING (\$100/hour, 8 hour day)	\$ 800	each	\$ 800
-				-
1	LOT TRAVEL	\$ 750	each	\$ 750
399	EXTENDED ANNUAL WARRANTY ON CELL HARDWARE (per unit)	\$ 20	each	\$ 7,980
-	Past year one.			-
-				-
61	EXTENDED ANNUAL WARRANTY ON SAT HARDWARE (per unit)	\$ 40	each	\$ 2,440
-	Past year one.			-

****EFF. 09/02/15****

1.0 Global Positioning System (GPS) Hardware		Estimated Units	Cost	
1.1	GPS Tracking device with diagnostics	382	\$ 150.00	per unit
1.2	GPS Only tracking device with switch capability	17	\$ 135.00	per unit
1.3	Self-contained, battery operated non-motorized unit using cellular or Satellite communications	61	\$ 610.00	per unit
1.4	Alternative Hardware Pricing: (Please describe)	SEE ADDITIONAL SYSTEM OPTIONS		
2.0 GPS Integration/Tracking Service		Monthly Price Per Reporting Cycle		
		2 minutes	1 minute	30 seconds
2.1	Diagnostic Service Fee	\$ 19.00	\$ 22.00	\$ 23.00
2.2	Non-Diagnostic Service Fee (2 minute reporting cycle)	\$19.00	\$ 22.00	\$23.00
2.3	Non-Motorized Service Fee (12 hour reporting cycle)	\$ 55.00	(satellite, pricing may vary)	
2.4	Vehicle Change Fee (when GPS hardware is transferred from one vehicle or piece of equipment to another of the same class)	\$ 95.00	per transfer	

2.5 Deactivation Fee (if the County elects to deactivate a unit within the first 12 months)	\$ 75.00	per vehicle
2.6 Training	\$ 100.00	per hour onsite, 8 hr min
2.7 Installation charge	\$75.00	per vehicle
2.8 Alternative Integration/Tracking Service Pricing: (Please describe)	SEE ADDITIONAL SYSTEM OPTIONS	

ADDITIONAL SYSTEM OPTIONS

TBD quantity		per unit		total
1	Sensor Integration to existing on-vehicle sensor (broom, plow, PTO, etc)	\$ 50	each	\$ 50
1	MOBILE UNIT (TTU)(Battery powered asset tracker)	\$ 245	each	\$ 245
1	MOBILE UNIT (LMU 3030)(OBD-II plug & play)	\$ 175	each	\$ 175
1	MOBILE UNIT (LMU 5000) (High Speed Router) <i>Requires separate broadband wireless account.</i>	\$ 595	each	\$ 595
1	MDT-7 (7" MOBILE DATA TERMINAL) or GARMIN	\$ 450	each	\$ 450
1	ENGINE DIAGNOSTIC DATA INTERFACE ADD-ON	\$ 75	each	\$ 75
1	Emergency Buttons Hard-wired On-Vehicle Button	\$ 95	each	\$ 95
1	Emergency Buttons Wireless Handheld Medallion	\$ 150	each	\$ 150
1	RF ID Reader (Driver ID)	\$250	each	\$ 250
1	Magnetic Card Stripe Reader (Driver ID)	\$125	each	\$ 125
1	iButton/Key Fob Reader (Driver ID)	\$95	each	\$ 95
1	ONSITE TRAINING (\$100/hour, 8 hour day)	\$ 800	each	\$ 800
1	LOT TRAVEL	\$ 750	each	\$ 750
399	EXTENDED ANNUAL WARRANTY ON CELL HARDWARE (per unit)	\$0 (no charge)	each	\$ 7,980

Years 1-3 only.

61	EXTENDED ANNUAL WARRANTY ON SAT HARDWARE (per unit) <i>Years 1-3 only.</i>	\$0 (no charge)	each	\$	2,440
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Exhibit B
Scope of Work

1.0 **GPS Hardware and Related Services:**

1.1. GPS tracking device via current AIMS diagnostic system:

1.1.1. Compatible with Light & Medium Vehicles 2001 and newer

Comply. As an option, an interface to engine diagnostics can be added to the CalAmp LMU Mobile Unit giving County real-time access to engine trouble codes and other available vehicle information for either light duty (OBD-II) or heavy duty (JBus) vehicle types. Diagnostic data available from the diagnostic interface varies greatly depending on the specific vehicle make, model, and year. Basic Diagnostic Trouble Codes (DTC), and mileage are typically available from most vehicles but it is not absolutely guaranteed. The availability of data for such things as Fuel Economy and seat belt usage varies greatly and is not available on many vehicle types.

CalAmp can provide an optional Y-cable to allow unfettered access to the diagnostic port without physically disconnecting anything.

1.1.2. Compatible with Heavy Vehicles 2003 and newer

Comply. As an option, an interface to engine diagnostics can be added to the CalAmp LMU Mobile Unit giving County real-time access to engine trouble codes and other available vehicle information for either light duty (OBD-II) or heavy duty (JBus) vehicle types. Diagnostic data available from the diagnostic interface varies greatly depending on the specific vehicle make, model, and year. Basic Diagnostic Trouble Codes (DTC), and mileage are typically available from most vehicles but it is not absolutely guaranteed. The availability of data for such things as Fuel Economy and seat belt usage varies greatly and is not available on many vehicle types.

CalAmp can provide an optional Y-cable to allow unfettered access to the diagnostic port without physically disconnecting anything.

1.1.3. Self-contained, terrestrial cellular coverage/Satellite communication capable of maintaining service levels in areas defined by EXHIBIT 5, battery operated GPS tracking device:

Comply. The standard CalAmp LMU Mobile Unit is a self-contained “black box” device integrating GPS location and sensor technologies, as well as wireless communications. CalAmp can use virtually any wireless carrier for the communications portion of this system, however CalAmp highly recommend the Verizon CDMA for the best coverage and value.

CalAmp also has a satellite/cellular hybrid LMU for vehicles that often go outside of cellular coverage.

CalAmp has worked with more communications technologies in CalAmp’s 20+ years of technology leadership than any other vendor in this marketplace. CalAmp GovOutlook systems can use any type of public data network (cellular) including: GPRS, GSM, EV-DO, Nextel/iDEN, CDMA, 3G, 4G/LTE, and many others. Using various types of mobile units, CalAmp also has the capability to field hybrid solutions, which use a combination of multiple communications mediums simultaneously such as satellite, WiFi, and others.

1.1.4. Compatible with Non-Motorized vehicles/assets – any year/make/model.

Batteries shall be rechargeable and shall remain charged for a minimum of 6 months. Vendor shall propose additional pricing for optional methods of keeping batteries charged, such as solar panel. System shall be capable of alerting a system user that the batteries need to be charged via e-mail or text message.

Comply. CalAmp has weatherproof rechargeable battery powered mobile devices designed specifically for tracking non-powered equipment such as containers or trailers. CalAmp has a variety of battery powered devices (TTUs) designed for different uses and time periods. Some of CalAmp's TTU devices can go for over 5 years on one battery.

- 1.1.5. Vector Control Foggers – Monitors when the foggers are turned on and off by color coding on map indicating foggers are on and off.

Comply. The CalAmp LMU mobile Unit will be connected to the on-board vehicle power ignition, and any sensor signals, to capture idle time, engine on/off, vehicle speed, travel/stop, location, odd hours, PTO, Foggers on/off, Auxiliary systems etc. Reports can be generated to cover these vehicle activities.

The vehicle icons shall be configured to indicate (using colors, directional symbols, labels, and size) various vehicle attributes (such as ID, status, speed, heading, etc.). All of the vehicle attribute data shall be instantly queried and displayed in a pop-up box using a standard identify tool. Further, alarm and event notification shall be set to notify the user of a status change for a particular vehicle.

- 1.1.6. Heavy Equipment GPS Tracking device with switch capabilities:

- 1.1.6.1 Compatible with motorized Heavy Equipment-any year/make/model, including a single switch.

Comply. Each CalAmp LMU will be equipped with a state-of-the-art 50 channel, WAAS enabled, all-in-view GPS receiver. This GPS receiver delivers superior performance and field-proven reliability and provides for fast signal reacquisition, position accuracy, and the filtering of spurious and erroneous data. The GPS accuracy is 2 meters (7 feet).

CalAmp can offer multiple types of LMU mobile units with similar functionality that shall support different wireless technologies as well as quantities and types of inputs/outputs.

- 1.1.6.2 System shall be capable of alerting a system user that the master power switch has been disconnected and include a backup system so the GPS can continue to function.

Comply. Typically the mobile unit is only installed up under the dashboard or in the trunk and is only connected with power, ground, and ignition (and optionally diagnostics). CalAmp's standard devices have internal batteries for short term reporting when power is cut to the unit. The device has a built-in tamper alert battery that can send a real time notification to any user if power to the vehicle is disconnected.

- 1.1.7. GPS Universal vehicle tracking device with switch capabilities:

- 1.1.7.1 Compatible with any year/make/model vehicle or Heavy Equipment and up to 4 switches.

Comply. CalAmp can offer multiple types of LMU mobile units with similar functionality that shall support different wireless technologies as well as quantities and types of inputs/outputs. CalAmp's standard LMU device has

5 sensor inputs, and have a device that can support up to 16 sensor inputs if desired.

- 1.1.7.2 Switches must be capable of accepting input from a Panic Button and/or wireless Panic Device. Unit must have an expansion port to accommodate current or future **interface** capabilities to include RS-232 serial communication, USB, Bluetooth, up to 16 switches and engine diagnostics.

Comply. CalAmp can offer multiple types of LMU mobile units with similar functionality that shall support different wireless technologies as well as quantities and types of inputs/outputs.

The CalAmp LMU Mobile Unit can be equipped with an emergency panic button configuration that is a dashboard-mounted button that sends a priority signal over-the-air to the dispatch interface or real-time alert. CalAmp can also offer a wireless handheld panic button that can be activated up to 300 feet from the vehicle.

- 1.1.8. System/Equipment Options:

- 1.1.8.1 CDL walk-around sensors located on the vehicle for the operator to activate sensor using the key fob or other technology before the vehicle is started.

CalAmp can provide an optional driver interface to the system via MDT or customized Garmin that can have a simple driver inspection through the messaging function.

- 1.1.8.2 In-vehicle WI-FI or Bluetooth connection or Hot Spot for mobile device and computer connectivity.

Comply. CalAmp can offer multiple types of mobile units with similar functionality that shall support different wireless technologies as well as quantities and types of inputs/outputs. CalAmp have high-speed mobile router devices that can provide an in-vehicle wireless gateway with Ethernet, USB or WiFi hotspot. Any device using high-speed data will need a separate broadband data plan.

- 1.1.8.3 Geo-fencing capability in order to assign a piece of equipment to a fixed location, and to have the system automatically generate an email alert if the equipment is moved beyond a preset distance from the prescribed location.

Comply. As a standard feature, the CalAmp GovOutlook™ system uniquely allows the user to set highly advanced geo-fences on the map display because of the powerful underlying GIS engine in CalAmp's AVL application. Geo-borders can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS. The geo-borders will create an alert and/or exception report when breached. CalAmp's geo-fencing tool allows the user to create and manage their geo-fences as well.

- 1.1.8.4 Key Valet for efficient and secure pool vehicle key storage and distribution. Key Valet shall dispense keys for the selected piece of equipment using employee ID badge or key fob, and shall keep track of the user of that vehicle for the time frame during which the key is dispensed from the valet. System should generate reports for each key valet detailing vehicle time out, time in, and employee responsible for equipment during that time.

CalAmp does not offer any key valet function. CalAmp offers a variety of Driver ID solutions including readers that are compatible with existing customer ID cards such as RF ID and magnetic stripe cards. In addition CalAmp can offer an iButton key fob solution for unique stand-alone driver identification with a key fob and reader.

1.1.9. Coverage Options:

1.1.8.5 Terrestrial GPRS/GSM Cellular Coverage

Comply. CalAmp can use virtually any wireless carrier for the communications portion of this system, however CalAmp highly recommend the Verizon (CDMA) network for the best coverage and value. CalAmp has worked with more communications technologies in CalAmp's 20+ years of technology leadership than any other vendor in this marketplace. If desired CalAmp can use virtually any wireless carrier. CalAmp GovOutlook systems can use any type of public data network (cellular) including: CDMA, GPRS/HSPA, GSM, EV-DO, Nextel/iDEN, 3G, 4G/LTE, and many others.

1.1.8.6 Satellite Coverage

Comply. CalAmp specializes in engineering customized AVL systems that can use a combination of wireless communications technologies. CalAmp's mobile units can support any combination of: cellular, satellite, WiFi, as several others. CalAmp has unparalleled experience in the design and implementation of these complicated customized hybrid systems. For satellite coverage CalAmp highly recommend the use of the Iridium satellite network. CalAmp will work with the County to determine the best satellite data plans for the unique needs of County's various fleets. The best value pricing for satellite data might entail the County contracting for the data directly.

CalAmp has worked with more communications technologies in CalAmp's 20+ years of technology leadership than any other vendor in this marketplace. There are several options for wireless communications and CalAmp is proficient with all of them.

1.2. **GPS Integration/ Tracking Service:**

1.2.1. Back-end Application: Web-Based Solution

Comply. CalAmp GovOutlook is an enterprise level SaaS Web browser based AVL system that is accessed via Internet Explorer or Chrome using unique login and password.

1.2.2. Hosted Application – ASP Model (requires no additional software)

Comply. Since CalAmp GovOutlook is a Web based SaaS AVL system hosted by CalAmp, no software installation. CalAmp GovOutlook is hosted in CalAmp's state of the art colocation facility which is purpose built for hosting Web servers. Databases are backed up nightly off site. The hosting facility is certified SSAE 16 Soc 2 Type 2.

1.2.3. Accessible 24/7 from any computer or mobile device with internet access

Comply. CalAmp GovOutlook is an enterprise level Web browser based AVL system that is accessed via Internet Explorer or Chrome using unique login and password. The CalAmp GovOutlook Application displays the current location and

status of the vehicle fleet 24/7. Mobile devices will access a mobile friendly interface with a subset of the full application functionality.

1.2.4. Cell phones basic e-mail or text alerts

Comply. The CalAmp GovOutlook system allows authorized administrators extensive control over system features including alerts and alarms. The system can be configured to notify selected users when specific events occur with any of the vehicles. This includes geo-borders, hours of operation, idle, panic buttons, etc. Notifications can be sent as an e-mail, SMS, or to the alert screen on the software.

1.2.5. Three (3) years of online access to information. See **Historical Data section.**

Comply. CalAmp archives all data indefinitely and typically keeps 6 months live for instant reporting, but can negotiate different periods. Any time increment can be quickly restored upon request. The CalAmp GovOutlook Base database is based on SQL Server and manages all fleet data and archives and distributes the vehicle location and status information. All vehicle data and reports can be exported to CSV/Excel/SQL files for additional reporting capability. Data can be provided to the customer at any time and frequency via FTP or other data transfer method.

1.2.6. Google Earth 3D Mapping/ESRI support for real time and historical location (**preferred**)

Comply. The CalAmp GovOutlook Mapping application is actually based on mapping and GIS engines from ESRI- ArcGIS Server! The CalAmp GovOutlook system can use virtually any type of map data, but in particular CalAmp's software can overlay CalAmp's AVL information on County's own ESRI GIS maps within CalAmp's application.

The map window can be set to display a particular area, route, stop, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to an individual vehicle). The CalAmp GovOutlook system relates real-time vehicle location and status data to the infrastructure, assets, boundaries, updates, routes, parcels, landmarks, and other critical elements of County's constantly changing GIS map data. A satellite view is included. CalAmp GovOutlook can interface to County's ESRI GIS in real time using Map Services.

The CalAmp GovOutlook system has a feature that leverages the highly useful Google Maps Street View tool from the CalAmp GovOutlook system interface. This CalAmp Google Street View Tool allows the user to click anywhere on the GIS map data within the CalAmp GovOutlook Map window, and CalAmp GovOutlook will hyperlink that location to a new pop-up window showing the Google Maps Street View of that exact location. This function allows the CalAmp GovOutlook user to see the typical real world surroundings of a specific place from their GIS. The Google Maps Street View shows images of the area recently captured (not real-time) by Google's mobile cameras.

1.2.7. Google Earth 3D Mapping/ESRI support for landmarks and polygon shaped geo fences (**preferred**)

Comply. The CalAmp GovOutlook system uniquely allows the user to set highly advanced geo-fences on the map display because of the powerful underlying ESRI GIS engine in CalAmp's AVL application. Geo-borders can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS. The geo-borders will create an alert and/or exception report when breached. CalAmp's geo-fencing tool allows the user to create and manage their geo-fences as well.

1.2.8. **Support integration with the latest ESRI technology**

Comply. The CalAmp GovOutlook Mapping application is actually based on mapping and GIS engines from ESRI- ArcGIS Server! The CalAmp GovOutlook system can use virtually any type of map data, but in particular CalAmp's software can overlay CalAmp's AVL information on County's own ESRI GIS maps within CalAmp's application. The CalAmp GovOutlook system relates real-time vehicle location and status data to the infrastructure, assets, boundaries, updates, routes, parcels, landmarks, and other critical elements of County's constantly changing GIS map data. A satellite view is included. CalAmp GovOutlook can interface to County's ESRI GIS in real time using Map Services.

1.2.9. Map and satellite view choice

Comply. The CalAmp GovOutlook Mapping application is actually based on mapping and GIS engines from ESRI- ArcGIS Server! The CalAmp GovOutlook system can use virtually any type of map data, but in particular CalAmp's software can overlay CalAmp's AVL information on County's own ESRI GIS maps. The CalAmp GovOutlook system relates real-time vehicle location and status data to the infrastructure, assets, boundaries, updates, routes, parcels, landmarks, and other critical elements of County's constantly changing GIS map data. A satellite view is included. CalAmp GovOutlook can interface to County's ESRI GIS in real time using Map Services.

1.2.10. GPS tacking should provide sub-meter accuracy

The GPS location accuracy with CalAmp's standard 50 channel GPS receiver is about 2 meters CEP. It is highly probable that any commercially available map data source will not even have sub meter accuracy to reference against.

1.3. **User-Defined Dashboard Interface:**

All hardware types required must interface with all reporting and mapping features within one, single software application. Multiple hardware types must be visible through one interface, including all future hardware releases. Individual application capabilities must be available in a dashboard interface and shall be added, resized, deleted, and saved in multiple versions, and shared among users and departments. Any additional licensing cost incurred for installing or using the mapping components must be stated clearly.

The GovOutlook interface has both a real time map and corresponding vehicle table/dashboard that shows current vehicle data such as address, speed, and heading at a glance. The user can configure which vehicle, group, or subgroup to display. CalAmp GovOutlook has extensive grouping and subgrouping capabilities that allow/limit specific user access to specific vehicles/groups. The CalAmp GovOutlook system can support unlimited simultaneous users and provides for multiple access levels for users. The CalAmp GovOutlook system can be configured so that specific users only have access to specific functionality or vehicle information.

The CalAmp GovOutlook system is highly customizable and allows the user to display/add/edit/remove vehicle units and users as well as ID numbers, alias, name, route, driver, VIN, license plate, etc.

The CalAmp GovOutlook application is based on the actual ESRI ArcGIS Server software, but no licenses are needed by the customer.

1.4. **Web Services:**

1.4.1. Application Programming Interface which supports:

1.4.1.1 Option – Publish to Web for consumption as a GIS Map Service

Comply! The CalAmp GovOutlook Mapping application is actually based on mapping and GIS engines from ESRI- ArcGIS Server! The CalAmp GovOutlook system can use virtually any type of map data, but in particular CalAmp’s software can overlay CalAmp’s AVL information on County’s own ESRI GIS maps. The CalAmp GovOutlook system relates real-time vehicle location and status data to the infrastructure, assets, boundaries, updates, routes, parcels, landmarks, and other critical elements of County’s constantly changing GIS map data. A satellite view is included. CalAmp GovOutlook can interface to County’s ESRI GIS in real time using Map Services.

1.4.1.2 SOAP or REST XML protocol

Comply. CalAmp is able to leverage its vast engineering experience to allow for the easy integration and real-time sharing of all system data with third party applications and databases. CalAmp has written interface programs specific to a number of applications and databases (using methods such as Web Services, ESRI Map Services, COM/DCOM, ODBC, XML, SOAP, REST, TCP/IP sockets, CORBA, Oracle databases, data queues in an AS/400 environment, network files, etc.).

1.4.1.3 Current vehicle status

Comply. CalAmp is able to leverage its vast engineering experience to allow for the easy integration and real-time sharing of all system data with third party applications and databases. CalAmp has written interface programs specific to a number of applications and databases (using methods such as Web Services, ESRI Map Services, COM/DCOM, ODBC, XML, SOAP, REST, TCP/IP sockets, CORBA, Oracle databases, data queues in an AS/400 environment, network files, etc.).

1.4.1.4 Current fleet odometer readings

Comply. Actual odometer readings can typically be captured with a diagnostic interface, however it is not available in all makes/models/years. CalAmp can gather highly accurate mileage data calibrated from an initial odometer reading. CalAmp can then hand off this mileage data to any third party application in various ways. CalAmp is able to leverage its vast engineering experience to allow for the easy integration and real-time sharing of all system data with third party applications and databases. CalAmp has written interface programs specific to a number of applications and databases (using methods such as Web Services, ESRI Map Services, COM/DCOM, ODBC, XML, SOAP, REST, TCP/IP sockets, CORBA, Oracle databases, data queues in an AS/400 environment, network files, etc.).

1.4.1.5 Current closest vehicles within configurable number of miles to a known point, landmark, or address

Comply. The map window can be set to display a particular area, route, stop, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to an individual vehicle). In CalAmp GovOutlook the map display window possesses a full-set of map manipulation and query functionality. Map manipulation tools and buttons are available to zoom, pan, and center the display on a particular vehicle, route, stop, or address. Additional tools are available to enable or disable labeling, to customize the map display according to user preferences, and to enter points and

attributes (for incidents, etc.). Map query options include the ability to locate an address, vehicle, or stop, along with the capability to identify the closest available vehicle(s) to any entered point, address, or incident.

1.4.1.6 Configurable alerts via API, email, or cell phone text message to notify of:

Comply. The CalAmp GovOutlook system allows authorized administrators extensive control over system features including alerts and alarms. The system can be configured to notify selected users when specific events occur with any of the vehicles. This includes geo-borders, hours of operation, idle, panic buttons, etc. Notifications can be sent as an e-mail, SMS, or to the alert screen on the software. The GovOutlook system shows driver behavior such as speeding, idle time, unauthorized vehicle use, and harsh braking/acceleration.

1.4.1.6.1 Long Stops

Comply.

1.4.1.6.2 Speeding

Comply. Speeding can be determined based on a global speed limit (ie 70mph) or referenced against speed limit data from County's GIS (if available).

1.4.1.6.3 Off-hours activity

Comply.

1.4.1.6.4 In-or-out of a Geo fence activity

Comply.

1.4.1.6.5 Long idling times

Comply.

1.4.1.6.6 Fast Stop

Comply.

1.4.1.6.7 Fast Acceleration

Comply.

1.4.2. Managed Access:

Group vehicles based on how each county department views and reports on its fleet. Grant customized access and roles to multiple users.

Comply. CalAmp GovOutlook has extensive grouping and subgrouping capabilities that allow/limit specific user access to specific vehicles/groups. The CalAmp GovOutlook system can support unlimited simultaneous users and multiple access levels for users. The CalAmp GovOutlook system can be configured so that specific users only have access to specific functionality or vehicle information.

1.5. **GPS Tracking:**

1.5.1. Vehicle Location:

- 1.5.1.1 Pinpoint and view the current location of any vehicle within County fleet by county department

Comply. The map window can be set to display a particular area, route, stop, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to groups, subgroups, or an individual vehicle).

- 1.5.1.2 View one map of entire fleet indicating vehicle location and key on status

Comply. The map window can be set to display a particular area, route, stop, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to an individual vehicle). The vehicle icons shall be configured to indicate (using colors, directional symbols, labels, and size) various vehicle attributes (such as ID, status, speed, heading, etc.). All of the vehicle attribute data shall be instantly queried and displayed in a pop-up box using a standard identify tool.

- 1.5.1.3 View the location history of any vehicle

Comply. The CalAmp GovOutlook system allows County to watch a historical “replay” of any portion of a vehicle’s activity history at various speeds. Controls let County play, pause, rewind, and fast forward the replay allowing County to watch the vehicles’ movement and behavior including location, device activities, alerts, status changes, events, etc. Each breadcrumb icon represents a vehicle position and all its underlying data including address, direction, speed, and status. Breadcrumb icons can be customized to represent various statuses and events, such as ignition off/on, or a device is activated (broom, plow, armature, PTO, etc.)

- 1.5.1.4 Frequent GPS update rates, 1 or 2 minutes for vehicles and 30 seconds for Foggers (satellite units) with onscreen refresh timer. Respondent shall also list other variable update rates for stationary units.

Comply. The CalAmp GovOutlook system can update at virtually any rate and update rates can adjust dynamically depending on factors such as vehicle status or the triggering of an on-board sensor. CalAmp typically recommends a 30-60 second update rate, plus all events such as starts, stops, turns, ignition, sensors, etc.

Each device can be configured to report at any update rate.

Satellite Devices:

Since satellite data is much more expensive than cellular data, CalAmp can configure the satellite/cellular hybrid devices to report at different rates based on network availability and specific events to keep costs down without losing any critical functionality. For example, one configuration CalAmp can discuss is a hybrid device configured with Verizon cellular and Iridium satellite that when it is out of cellular coverage the device will store location/status data at a 30 second rate, but only send a snapshot of real-time location via satellite every 15 minutes. When the device is back in cell coverage it will forward the stored 30 second data to fill in the historical database. CalAmp can also configure the device so that if the driver hits a panic button while out of cell coverage, it will send a priority distress signal via satellite immediately.

- 1.5.1.5 View when the vehicle was last operated

Comply. The CalAmp GovOutlook system comes with a suite of standard graphical and tabular reports that covers trips, idle, speed, stops, hours,

mileage, etc. Reports shall be exported into virtually any format including PDF format, MS Excel files and SQL format, etc.

1.5.1.6 Store and forward Feature (up to 120 hours of actual key-on time)

Comply. If the mobile unit goes out of cellular coverage area, the device has store and forward capability for up to 20,000 positions. All data points will time tagged and stored and uploaded over the air once connectivity is restored.

1.5.1.7 Find the 10 closest vehicles to an address or landmark

Comply. The map window can be set to display a particular area, route, stop, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to an individual vehicle). In CalAmp GovOutlook the map display window possesses a full-set of map manipulation and query functionality. Map manipulation tools and buttons are available to zoom, pan, and center the display on a particular vehicle, route, stop, or address. Additional tools are available to enable or disable labeling, to customize the map display according to user preferences, and to enter points and attributes (for incidents, etc.). Map query options include the ability to locate an address, vehicle, or stop, along with the capability to identify the closest available vehicle(s) to any entered point, address, or incident.

1.5.1.8 Table view of the current operating status and location of vehicles

Comply. The GovOutlook interface has both a real time map and corresponding vehicle table/dashboard that shows current vehicle data such as address, speed, and heading at a glance. Reports can be searched for additional information. The user can configure which vehicle, group, or subgroup to display. All of the vehicle attribute data shall be instantly queried and displayed in a pop-up box using a standard identify tool.

1.5.2. Landmarking:

1.5.2.1 Plot and view unlimited landmarks (icons representing a particular address):

Comply. The CalAmp GovOutlook system uniquely allows the user to set highly advanced geo-fences and landmarks on the map display because of the powerful underlying GIS engine in CalAmp's AVL application. Geo-borders and landmarks can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS. The geo-borders will create an alert and/or exception report when breached. CalAmp's geo-fencing tool allows the user to create and manage their geo-fences as well.

1.5.2.2 Different color and shape of landmark flags configurable by the user

Comply. The CalAmp GovOutlook system uniquely allows the user to set highly advanced geo-fences on the map display because of the powerful underlying GIS engine in CalAmp's AVL application. Geo-borders can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS.

1.5.2.3 Upload any current data available for establishing landmarks (at no cost)

Comply. Geo-borders can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS. Ideally CalAmp will be accessing County's ESRI GIS map data in real time via Map Services so "refreshing" will be instant.

- 1.5.2.4 Create various types of landmarks (standard circular or polygon landmarks minimum

Comply. The CalAmp GovOutlook system uniquely allows the user to set highly advanced geo-fences on the map display because of the powerful underlying GIS engine in CalAmp's AVL application. Geo-borders can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS. The geo-borders will create an alert and/or exception report when breached. CalAmp's geo-fencing tool allows the user to create and manage their geo-fences as well.

- 1.5.2.5 Users shall import spreadsheets of their own landmarks **and addresses (latitude and longitude)**, as well as user-defined categories and attributes for those landmarks such as gate codes, maintenance frequency, phone number, or any useful information to be associated or used to restrict or categorize landmarks. Landmarks may be shared or hidden among multiple users.

Comply. The CalAmp GovOutlook system uniquely allows the user to set highly advanced geo-fences on the map display because of the powerful underlying GIS engine in CalAmp's AVL application. Geo-borders can be created as infinite-sided polygons, a configurable radius from a specific point, deviation from a line (ie route), and most importantly: created from existing boundaries, landmarks or zones within County's GIS. The geo-borders will create an alert and/or exception report when breached. CalAmp's geo-fencing tool allows the user to create and manage their geo-fences as well.

- 1.5.3. Directions (Optional):

- 1.5.3.1 View driving directions from any vehicle's current location to a specific destination

As an option, CalAmp can provide driving directions/navigation in the vehicle through the optional Garmin or MDT device.

- 1.5.4. User Label Configuration:

- 1.5.4.1 Ability to label vehicles with a number, name, or other county department designation.

Comply. The CalAmp GovOutlook system is highly customizable and allows the user to display/add/edit/remove vehicle units and users as well as ID numbers, alias, name, route, driver, VIN, license plate, etc.

- 1.5.4.2 Ability to include vehicle information in background table that can be extracted as part of reports (e.g. make, model, year, color).

Comply. The vehicle icons shall be configured to indicate (using colors, directional symbols, labels, and size) various vehicle attributes (such as ID, make/model, status, speed, heading, VIN, license, driver, alias, etc.). All of

the vehicle attribute data shall be instantly queried and displayed in a pop-up box using a standard identify tool.

1.5.4.3 Ability to color code different groups.

Comply. The vehicle icons shall be configured by CalAmp to indicate (using colors, directional symbols, labels, and size) various vehicle attributes (such as ID, status, speed, heading, etc.). All of the vehicle attribute data shall be instantly queried and displayed in a pop-up box using a standard identify tool. Further, alarm and event notification shall be set to notify the user of a status change for a particular vehicle.

1.6. **Remote Diagnostics:**

1.6.1 Problem Alerts:

1.6.1.1 Receive diagnostic trouble code alerts via email or cell phone text message

Comply. As an option, an interface to engine diagnostics can be added to the CalAmp LMU Mobile Unit giving County real-time access to engine trouble codes and other available vehicle information for either light duty (OBD-II) or heavy duty (JBus) vehicle types.

Diagnostic data available from the diagnostic interface varies greatly depending on the specific vehicle make, model, and year. Basic Diagnostic Trouble Codes (DTC), and mileage are typically available from most vehicles but it is not absolutely guaranteed. The availability of data for such things as Fuel Economy and seat belt usage varies greatly and is not available on many vehicle types.

Typically CalAmp interface the system with a Fleet Management system that handles alerting and reporting, using valuable real time vehicle data from CalAmp's AVL system, such as mileage, engine hours, diagnostic trouble codes.

1.6.1.2 Receive device tampering alerts via email or cell phone text message

Comply. The device has a built-in tamper alert battery that can send a real time notification to any user if power to the vehicle is disconnected.

1.7. **Reporting Suite:**

All following required reporting features must be exportable to HTML/XML documents as well as Microsoft Excel or CSV format. Reports and their data fields shall be customizable to allow for each county department's individual needs (e.g. when Foggers were on/off map after the fogging has occurred). Any and all reports should be available to run by the county 24x7 without assistance from the contractor. The reports should be available by department, and by individual for a day or date range. In addition, the county should be able to download all data at any time.

Comply. The CalAmp GovOutlook system comes with a suite of standard graphical and tabular reports that covers trips, idle, speed, stops, hours, mileage, etc. Reports shall be produced for selected vehicles (or groups of vehicles). The CalAmp GovOutlook Base database is based on SQL Server and manages all fleet data and archives and distributes the vehicle location and status information. All vehicle data and reports can be exported to CSV/Excel/SQL files for additional reporting capability.

1.7.1 Drive Time Summary Report:

- 1.7.1.1 Access daily, weekly, and monthly statistics-total mileage, maximum speed reached total number of stops-on an entire fleet or drill down to an individual vehicle (customizable option).

Comply. CalAmp GovOutlook comes with a suite of standard reports covering all of the most common reports. Reports shall be produced for selected vehicles (or groups of vehicles) providing time, location, mileage, speed, status criteria, etc.

- 1.7.2 Speed Data:

Track current speed, average speed and maximum speed, with a three (3) year history.

Comply. The CalAmp GovOutlook system comes with a suite of standard graphical and tabular reports that covers trips, idle, speed, stops, hours, mileage, etc. The CalAmp GovOutlook database is based on SQL Server and manages all fleet data and archives and distributes the vehicle location and status information. All vehicle data and reports can be exported to CSV/Excel/SQL files for additional customized reporting capability.

- 1.7.3 Idle Time:

- 1.7.3.1 Monitor and view idle time information for each vehicle

Comply. The CalAmp GovOutlook system comes with a suite of standard graphical and tabular reports that covers trips, idle, speed, stops, hours, mileage, etc. The CalAmp GovOutlook Base database is based on SQL Server and manages all fleet data and archives and distributes the vehicle location and status information. All vehicle data and reports can be exported to CSV/Excel/SQL files for additional reporting capability.

- 1.7.4 Odd Hours Report:

- 1.7.4.1 Identify vehicles being used during unauthorized hours defined by customer.

Comply The CalAmp LMU mobile Unit will be connected to the on-board vehicle power ignition, and any sensor signals, to capture idle time, engine on/off, vehicle speed, mileage, heading, travel/stop, location, odd hours, PTO, Auxiliary systems etc. Reports can be generated to cover these vehicle activities during on/off hours.

- 1.7.5 Speed Violations Report:

Monitor speed violations within County fleet, shown in report format or on the map to identify violations on highway or within a residential area. Maps of speeding activity, as well as the ability to restrict the report to a given polygon Geo fence, must be available (e.g. construction zones). **Speed limits for roads will be provided by the Contractor and updated as required.** System shall have the ability to send an email notification to supervisor when specified 'triggers' such as speed, out of area, etc. have been met.

Comply. CalAmp can provide alerts and reports on speeding relative to a global setting (ie 75mph) or CalAmp can create speed reports related to actual speed limits. If County possess street segment speed attribute data in County's GIS CalAmp can utilize this data. CalAmp can also provide the speed limit data sourced from a third party as an option. Notifications can be sent as an e-mail, SMS, or to the alert screen on the software. Reports can be generated to cover these vehicle activities

1.7.6 Soft Stop Report:

1.7.6.1 Monitor trip/stop details, highlighting soft (idle) stops

Comply. CalAmp GovOutlook comes with a suite of standard graphical and tabular reports covering all of the most common reports. Reports shall be produced for selected vehicles (or groups of vehicles) according to time, location, mileage, speed, status criteria, etc.

1.7.7 Scheduled Maintenance Alerts:

1.7.7.1 Receive scheduled maintenance alerts via email

Comply. CalAmp have a simple preventative maintenance function that keeps track of mileage increments for service/maintenance. Typically CalAmp interface the system with a Fleet Management system that handles alerting and reporting, using valuable real time vehicle data from CalAmp's AVL system, such as mileage, engine hours, diagnostic trouble codes.

1.7.8 Begin/End of Day Report:

1.7.8.1 Identify the begin and end movement for each vehicle per day, with totals for week/month

Comply. The CalAmp GovOutlook system comes with a suite of standard graphical and tabular reports that covers trips, idle, speed, stops, hours, mileage, etc.

1.7.9 Activity Graph:

1.7.9.1 Graphical "swim lane chart" of vehicle utilization with color coding of movement/speeding/idling/stop/long stop/overnight activity for easy user visualization

Comply. The CalAmp GovOutlook system allows County to watch a historical "replay" of any portion of a vehicle's activity (breadcrumb) history at various speeds. Controls let County play, pause, rewind, and fast forward the replay allowing County to watch the vehicles' movement and behavior including location, device activities, alerts, status changes, events, etc. Each breadcrumb icon represents a vehicle position and all its underlying data including address, direction, speed, and status. Breadcrumb icons can be customized to represent various statuses and events, such as ignition off/on, or a device is activated (broom, plow, armature, PTO, etc.)

1.7.10 Activity Detail Report:

1.7.10.1 2 minute-by-2 minute activity with speed and address, by vehicle

Comply. The CalAmp GovOutlook system can update at virtually any rate and update rates can adjust dynamically depending on factors such as vehicle status or the triggering of an on-board sensor. CalAmp typically recommends a 30-60 second update rate, plus all events such as starts, stops, turns, ignition, sensors, etc. These configurations are controlled by CalAmp and can be changed/configured at the client's request.

1.7.10.2 1 minute-by-1 minute activity with speed and address, by vehicle

Comply. The CalAmp GovOutlook system can update at virtually any rate and update rates can adjust dynamically depending on factors such as vehicle status or the triggering of an on-board sensor. CalAmp typically recommends a 30-60 second update rate, plus all events such as starts, stops, turns, ignition, sensors, etc. These configurations are controlled by CalAmp and can be changed/configured at the client's request.

1.7.10.3 30 second-by-30 second activity for Foggers

Comply. The CalAmp GovOutlook system can update at virtually any rate and update rates can adjust dynamically depending on factors such as vehicle status or the triggering of an on-board sensor. CalAmp typically recommends a 30-60 second update rate, plus all events such as starts, stops, turns, ignition, sensors, etc. These configurations are controlled by CalAmp and can be changed/configured at the client's request.

1.7.11 Landmark Report:

1.7.11.1 Details activity by all (or subset of) vehicles within all (or subset of) landmarks

Comply. The CalAmp GovOutlook system is highly configurable and allows users to label and group vehicles into various levels of subgroups. Drivers can be assigned to vehicle through a simple administrative interface. Geofences can be configured to apply to specific groups or vehicles.

1.8. **SECURITY:**

The Contractor shall ensure an extremely high level of security by keeping all server/networking patches updated, proactively monitoring all security vectors and finding and fixing all security threats. Security services shall include:

1.8.1 Physical data center security

Comply. CalAmp hosts all servers at a highly secure purpose-built server farm in Los Angeles. The hosting facility is a SSAE 16 SOC 2 Type 2 compliant facility with such features as back up diesel generators, biometric security access, and multiple high-capacity fiber connections. CalAmp's SOC 2 Type 2 audit report is performed annually by Digital Realty covering CalAmp's collocation facility and represents the latest industry standard security certification from SSAE-16 covering security policies for non-financial applications.

1.8.1.1 System access controls

Comply. The GovOutlook software is a secure (128 bit encryption) Web browser based application typically accessed using the Internet Explorer or Chrome web browsers. Users are assigned unique usernames and passwords for secure access to the application. System administrators are able to configure the system to assign individual users specific roles and limited access to system functions.

1.8.1.2 OS and LAMP stack security patch management

Comply.

1.8.1.3 Antivirus upload scanning

Comply.

1.8.1.4 SSL and HTTPS

Comply. CalAmp GovOutlook is a highly secure (using HTTPS and SSL) Web based SaaS AVL system hosted by CalAmp. The CalAmp GovOutlook system uses Microsoft operating system and products and accessed via Web browser using a unique login and password.

1.8.1.5 Logging for post-event forensic analysis

Comply.

1.8.1.6 Network security and dedicated firewall

Comply.

1.8.1.7 Network Intrusion Detection Services (NIDS)

Comply.

1.8.1.8 Host Intrusion Detection Services (HIDS)

Comply.

1.8.1.9 Denial of Service (DOS/DDOS) protection on transport

Comply.

1.9. **DISASTER RECOVERY:**

The Contractor shall submit their System Disaster Recovery Plan to the purchaser. The Contractor shall be responsible for planning, development, testing, and implementation of the System disaster recovery, according to their System Disaster Recovery Plan. The Contractor shall provide for disaster recovery services including facilities, hardware, software, maintenance and support for the System which will reside in Contractor's hosted environment. The Contractor shall provide a copy of their disaster recovery plan annually to the purchaser.

CalAmp GovOutlook is a Web based SaaS AVL system hosted by CalAmp System uptime is above 99.9% and has the occasional scheduled maintenance which CalAmp will notify clients in advance. CalAmp have constant automation checking the condition of all CalAmp's servers and applications to provide timely support and service for any issues. CalAmp have back up failover servers for catastrophic events to minimize any downtime and recovery time.

1.10. **USAGE REPORT:**

The Contractor shall furnish the County an annual usage report delineating the acquisition activity governed by the Contract. The format of the report shall be approved by the County and shall disclose the quantity and dollar value of each contract item by individual unit.

Comply.

1.11. **ACCEPTANCE:**

For Customer's Initial purchase of each Equipment and Software product. Licensor shall provide an acceptance test period (the "Test Period") that commences upon Installation. Installation shall be defined as:

- a.) the Equipment, if any, is mounted;
- b.) the Software is installed on the data base server(s) and/or personal computer(s); and

c.) implementation team training, if any, is complete.

During the Test Period, Customer shall determine whether the Equipment and Software meet the Licensor published electronic documentation, (“Specifications”). The Test Period shall be for 90 days. If Customer has not given Licensor a written deficiency statement specifying how the Equipment or Software fails to meet the Specification (“Deficiency Statement”) within the Test Period, the Equipment and Software shall be deemed accepted. If Customer provides a Deficiency Statement within the Test Period, Licensor shall have 30 days to correct the deficiency, and the Customer shall have an additional 60 days to evaluate the Equipment and Software. If the Equipment or Software does not meet the Specifications at the end of the second 30 day period, either Customer or Licensor may terminate this Contract. Upon any such termination, Customer shall return all Equipment and Software to Licensor, and Licensor shall refund any monies paid by Customer to Licensor therefore. Neither party shall then have any further liability to the other for the products that were the subject of the Acceptance Test.

Comply. CalAmp is willing to provide an ATP period. During the Acceptance Testing the performance of the System will also be evaluated, with regard to the ability of the system to respond in a timely and efficient manner to customer oversight and customer requests.

1.12. **TRAINING:**

The Contractor shall provide a minimum of twenty (20) hours to completely train all County personnel in the use and care of the equipment. Training is to occur during normal business hours and shall be conducted at each County using department location of choice. Training may vary depending on the required skill level of the county user. The Contractor shall propose training that is structured to capture the specific needs of County using **department** needs for administrative users (super and read/reporting only users) and training for technical personnel for installation, troubleshooting and removal of equipment.

Comply. CalAmp will provide live training sessions on the entire AVL system sufficient to ensure complete understanding and operations proficiency by the desired client staff and administrative personnel. The training sessions shall be held at locations specified by the client for administrative, driver, dispatch, executive, maintenance, and all other relevant parties. CalAmp and the other team members will work with the customer’s team to define the required courses and a reasonable number of attendees/course duration during the implementation phase of the project. All materials and manuals will be provided in both printed and electronic format. See Training.

1.13. **MAINTENANCE, SERVICE AND SUPPORT:**

The selected Proposer will be required to develop, obtain approval for and support a comprehensive maintenance, service and support plan to ensure the timeliness and completeness of the installation of the system **prior to final acceptance by The County**. This plan will cover both the initial warranty period and chargeable services after expiration of the warranty. The selected Proposer, at a minimum, must as part of such plan:

- 1.13.1 Provide help desk support of the proposed solution twenty-four (24) hours a day, seven (7) days a week.

Comply. CalAmp will provide telephone and email support to help ensure smooth operation of the system. During the warranty period, CalAmp will provide unlimited phone support via CalAmp’s toll-free number [(866) 869-7700]. After hours support is available 24/7 through the 911 option on CalAmp’s telephone system.

- 1.13.2 Provide software/hardware maintenance support for the proposed solution during the warranty period. Spare units should be provided to reduce downtime if needed.

Comply. CalAmp will work with the County to establish a part replacement plan for all system hardware. CalAmp typically recommend a pool of spare units and parts

to minimize vehicle downtime. All hardware comes with a 1 year warranty and optional extended annual warranties are available.

- 1.13.3 Provide maintenance, service and support for the proposed system after warranty expiration.

Comply. CalAmp can offer maintenance and support at any time. Extended annual warranties are available as an option.

- 1.13.4 Provide upgrades to newer versions of the system.

Comply. Since it resides in a SaaS configuration, the CalAmp GovOutlook AVL system is constantly being upgraded and updated with new and improved features and available options. Customers will be notified of any major releases or updates. Firmware upgrades will be provided at no extra charge.

- 1.13.5 Provide written notification of major product release ninety (90) days prior to release.

Comply. Customers will be notified of any major releases or updates.

- 1.13.6 Provide updates through an annual maintenance agreement.

Comply.

- 1.13.7 Provide notification of system vulnerabilities via e-mail

Comply.

1.14. **DOCUMENTATION AND MANUALS:**

The Contractor shall provide complete, accurate, and structured technical system and operations documentation for the completed turnkey GPS system in printed form **and** in electronic format, (PDF format on Disk) **upon contract award.** The documentation must enable County staff to operate the system independent from the Contractor.

Comply. All materials and manuals will be provided in both printed and electronic format.

1.15. **HISTORICAL DATA:**

All data should be available to the county for the full term of the contract. Data will be stored by service provider at no additional cost to the purchaser, plus downloaded to a DVD and sent to county departments monthly at their request. In addition, the downloaded data should be available in SQL database format with a database schema included.

CalAmp archives all data indefinitely and typically keeps 6 months live for instant reporting but can discuss alternative time frames for this project if desired. Any time increment can be quickly restored upon request. The CalAmp GovOutlook Base database is based on SQL Server and manages all fleet data and archives and distributes the vehicle location and status information. All vehicle data and reports can be exported to CSV/Excel/SQL files for additional reporting capability. Data can be provided to the customer at any time and frequency via FTP or other data transfer method.

1.16. **INSTALLATION:**

- 1.16.1 Prior to installation of the GPS system, vendor shall remove the existing GPS equipment from all vehicles so equipped and return the removed equipment to the county department.

Comply. CalAmp can remove the existing device. CalAmp will not be responsible for any damage or repairs to the vehicles from the result of the previous GPS device installation and removal

- 1.16.2 The installation of the GPS system shall include all necessary hardware, operating software, application software, interface software and cards, reporting, cables, antennas and connectors as applicable in an all-inclusive fee. The equipment may be installed and serviced at county department location or other county facility if requested for an additional fee. All hardware components must have the ability to be installed and maintained by Maricopa County at all times. No additional costs are to be associated with maintenance unless otherwise stated in approved terms and conditions. User maintenance and/or installation will not void warranty. (Note: Need to make sure when wiring into the main wiring harness that the vehicles or equipment's computer does not detect a voltage drop. After market equipment sometimes causes problems with the vehicle computer giving a check engine light or the vehicle won't start / shut off.)

Comply. CalAmp can train County's staff, and/or perform the installation and provide local support if desired. CalAmp will require the client's cooperation and assistance in coordinating vehicle access and availability. The CalAmp LMU Mobile Unit comes with all bracketing, cabling, and connectors required for full installation. CalAmp configures the system so it cannot be easily disabled by the driver and/or user. See Installation.

- 1.16.3 Systems installed by vendor shall not interfere with the operation of the vehicle, and shall be installed in an inconspicuous location to ensure no interference with vehicle controls may occur.

Comply. Typically the mobile unit is installed up under the dashboard, in the vehicle passenger compartment/cab, away from direct exposure to the elements. It can be virtually undetectable to the driver and does not void any vehicle warranty. CalAmp configures the system so it cannot be easily disabled by the driver and/or user.

2.0 Key Contractor Personnel

Project Manager

Brian Burda, Sr. Director

Education: B.S. Computer Science, University of Southern California

Experience:

Consultant, Process Control and Software Development, Clients include H.J. Heinz, United Airlines, ORE-IDA Foods, Weight Watchers, and the Marriott Hotel Corporation

*Brian has 22 years of experience implementing AVL and tracking systems using GPS.

Brian will serve as the lead project manager for the AVL implementation. Brian has extensive experience implementing AVL systems and will oversee the development of the Scope of Work and Implementation Work Plan.

Lead Software and Hardware Integration Manager

Mark Holzworth, Director of Software Engineering

Education: B.S. Electrical Engineering, University of California at Santa Barbara

Experience: Software engineer, Professional Products, Magellan Systems Corporation

*Mark has over 20 years of experience in developing software to interface GPS and GIS, and embedded network communications control systems for AVL.

Mark will oversee all integration efforts for this system. Mark has extensive experience interfacing various backend applications with the CalAmp GovOutlook system.

Executive Contact

Jonathan Michels, VP of Government Business

Education: B.S. Economics, Wharton School of the University of Pennsylvania
M.B.A., AGSM, University California at Los Angeles

Experience: Director, Professional Products Division, Magellan Systems Corporation (GPS Manufacturer)
Vice President, Cellularm, radio frequency data network operator
GIS Analyst, Toyota Motor Sales, USA
*Jon has over 25 years of experience in GIS, 24 years in RF communications and data, and 23 years in GPS technology.

Jon will serve as the main point of contact for all contractual and administrative matters for this system.

3.0 Contractor Scope of Work Detail

CalAmp Mobile Units

CalAmp can offer a wide variety of the newest state-of-the-art AVL devices for various customer needs. The CalAmp LMU series of mobile GPS devices can be equipped with a variety of networks, options, serial ports and sensors that integrate to virtually any devices and external status signals, such as ignition on/off, door open/shut, armature, PTO, lights, plow, engine diagnostics, data terminal, ID reader, etc. Additionally CalAmp's in-vehicle routers offer high-speed connectivity in the mobile environment in addition to vehicle tracking.

CalAmp's **GovOutlook Application** is based on ESRI ArcGIS Server and can be implemented in a variety of configurations and typically is a hosted Web browser based application. Users interact with the system through industry-standard AVL mapping tools as well as customized reporting applications. The base application servers are typically hosted off-site by CalAmp.

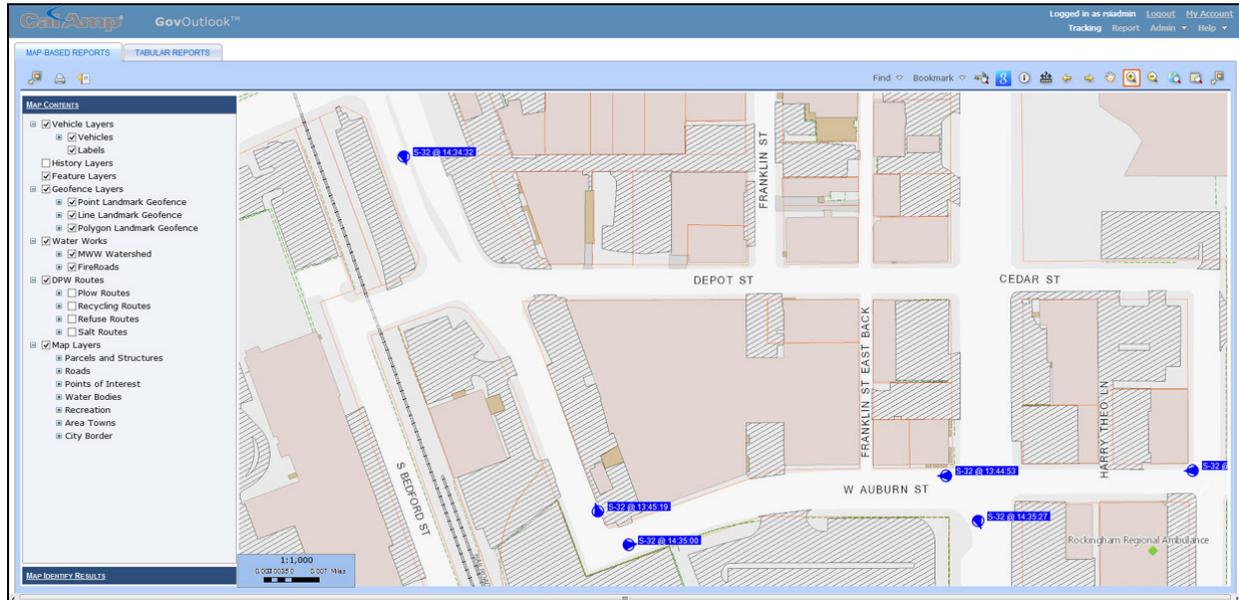
The In-Vehicle Equipment and Base Application are linked via two-way cellular wireless communications, allowing for timely data transmission between the field and software.

Wireless Communications

CalAmp can use virtually any wireless carrier for the communications portion of this system, however CalAmp highly recommend the Verizon CDMA for the best coverage and value. CalAmp has worked with more communications technologies in CalAmp's 20+ years of technology leadership than any other vendor in this marketplace. CalAmp GovOutlook systems can use any type of public data network (cellular) including: GPRS, GSM, EV-DO, Nextel/iDEN, CDMA, 3G, 4G/LTE, and many others. Using various types of mobile units, CalAmp also has the capability to field hybrid solutions, which use a combination of multiple communications mediums simultaneously such as satellite, WiFi, and others. **Please see the Wireless Communications Section in the proposal.**

Third Party System Integration

One of the main differences between CalAmp and other AVL providers is CalAmp's unparalleled experience with integrating CalAmp's AVL and mobile data systems with third party applications. CalAmp has worked with dozens



of third party providers of scheduling, dispatch, work order management, maintenance, as well as “home-grown” applications for various agencies.

CalAmp has extensive experience interfacing with all types of third party applications such as:

- Work Orders
- Maintenance
- Scheduling
- Computer Aided Dispatch
- Routing
- ESRI GIS
- Third Party Databases

The CalAmp GovOutlook system is based on ESRI ArcGIS Server and has been engineered to share data with third party applications in a variety of ways.

CalAmp is able to leverage its vast engineering experience to allow for the easy integration and real-time sharing of all system data with third party applications and databases. CalAmp has written interface programs specific to a number of applications and databases (using methods such as Web Services, ESRI Map Services, COM/DCOM, ODBC, XML, SOAP, REST, TCP/IP sockets, CORBA, Oracle databases, data queues in an AS/400 environment, network files, etc.).

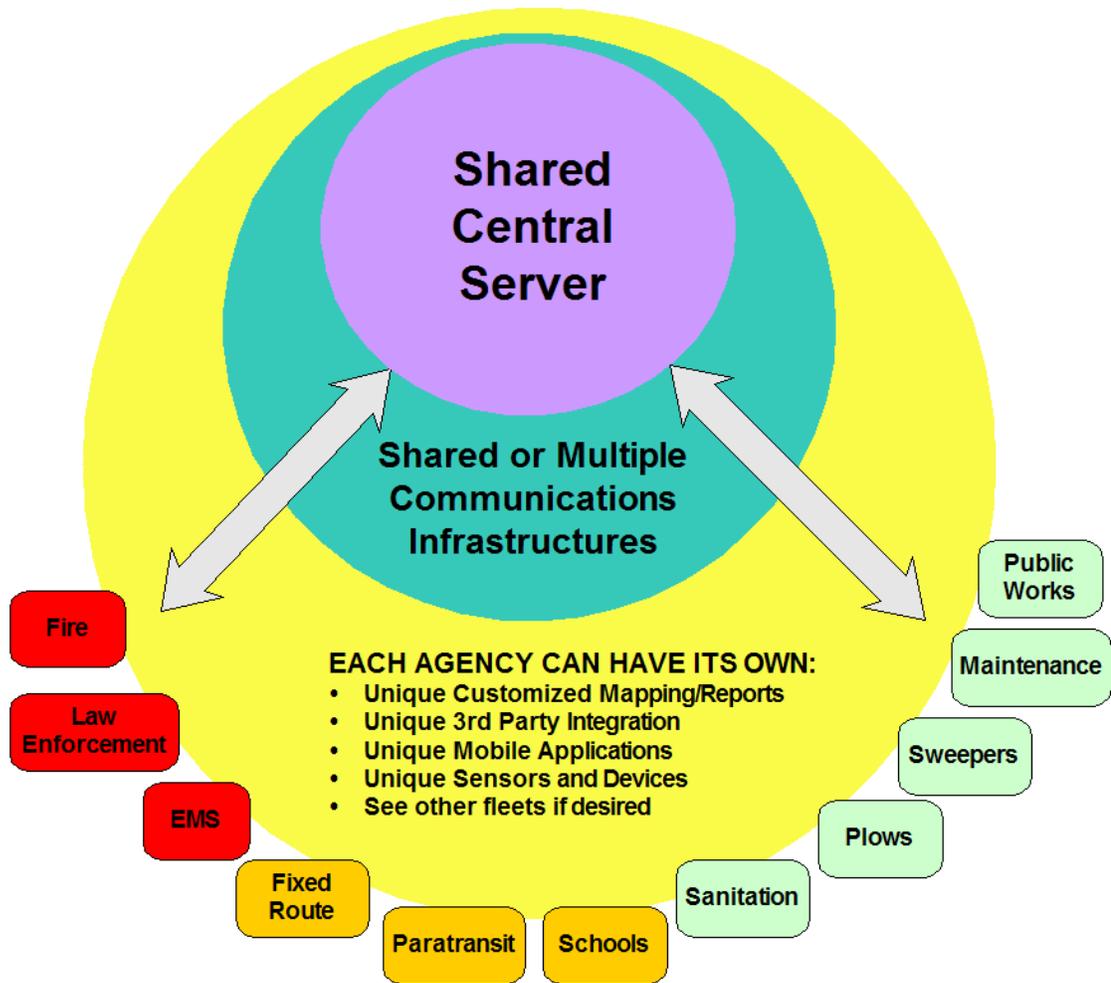
With dozens of customized integrated systems in place throughout the world, full system integration is just par for the course with the CalAmp system.

Enterprise Shared Multi-Agency Systems

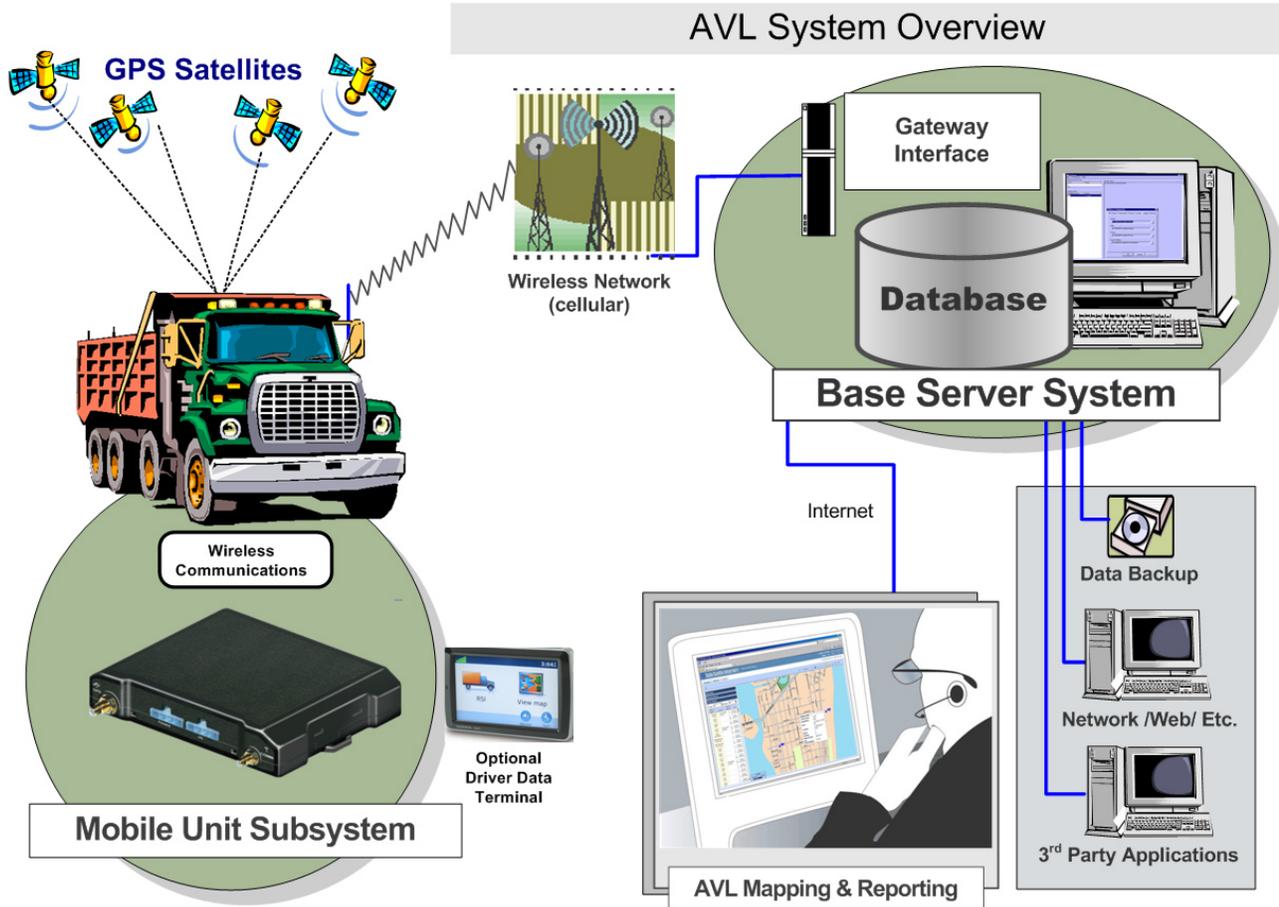
CalAmp has extensive experience implementing large enterprise systems that can be shared by several agencies within one organization, city, county, etc. The CalAmp system can be configured so that specific users only view their own vehicle fleet group, but the system will share the same backbone, servers, communications, etc.

For instance a city shall only have to invest in one system yet their fire, transit, and public works departments can all use and share that same system.

CalAmp has implemented these shared enterprise systems for a variety of cities and counties throughout the country including many of the largest metro governments in the country.



Technical Overview



CalAmp's GovOutlook AVL System

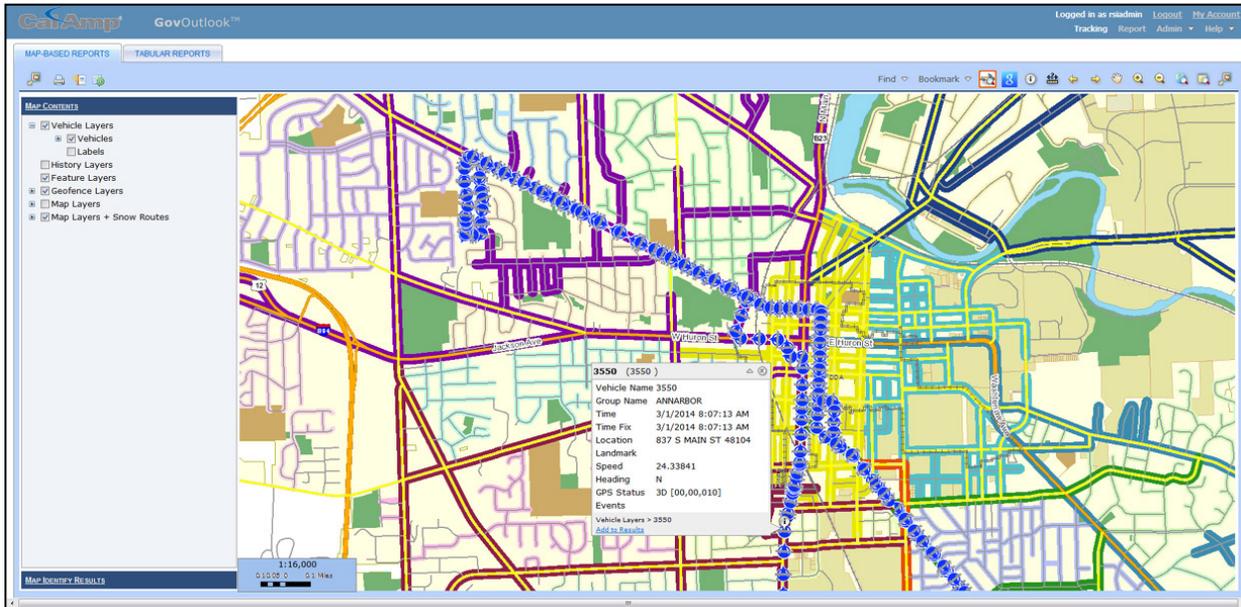
The CalAmp GovOutlook solution consists of in-vehicle equipment and base applications and equipment.

The **In-Vehicle Equipment** is centered on the **CalAmp LMU Mobile Unit**, a self-contained "black box" device integrating GPS location and sensor technologies, as well as wireless communications. The mobile device can be connected to any device or sensor including lights, ignition, doors open/closed, alarms, etc. In addition, any variety of in-vehicle computing devices such as laptops or MDT's can be connected to the unit and mounted for a driver interface to the system.

The LMU is responsible for the reporting of vehicle location and status information in addition to acting, if desired in the future, as a transparent communications gateway between the Base and Mobile Data or other onboard devices such as alarms, etc.

The GovOutlook **Base Application** will be a configurable Web-browser based application based on ESRI ArcGIS Server hosted offsite by CalAmp. Users interact with the system through industry-standard mapping tools as well as customized reporting applications. The CalAmp GovOutlook program will use the client's existing ESRI GIS map data if it's available.

The Base Server manages all fleet communications and configuration, acts as a messaging and data transfer gateway between base-side applications and in-vehicle devices, and archives and distributes the vehicle location and status information to the mapping application over the Internet. The Base Server will be hosted by CalAmp in CalAmp's state-of-the-art server hosting facilities.



Wireless Communications Options

Wireless data will be bundled into the monthly AVL system services fees to provide simple single point of contact and responsibility for all hardware, service, support, and billing issues related to all elements of the CalAmp system.

CalAmp can use virtually any cellular wireless carrier for the communications portion of this system. CalAmp recommends using Verizon CDMA technology for the best combination of value, coverage, and longevity. CalAmp has partnerships and capabilities with every major wireless carrier, so if an alternative carrier is required, this is an option.

Update Rate

CalAmp typically recommends a one minute or thirty second update rate. The Unit will report at this default reporting rate **in addition** to the position/status data sent upon: ignition on/off, stops, starts, turns, and events. The update rate County need will depend on how frequently County want County's location and other data from the vehicles. Update rates can adjust dynamically depending on factors such as vehicle status or the triggering of an on-board sensor. CalAmp will work with County to help determine an update rate for County as CalAmp have extensive experience implementing AVL systems with fleets just like yours.

Hybrid Communications Options

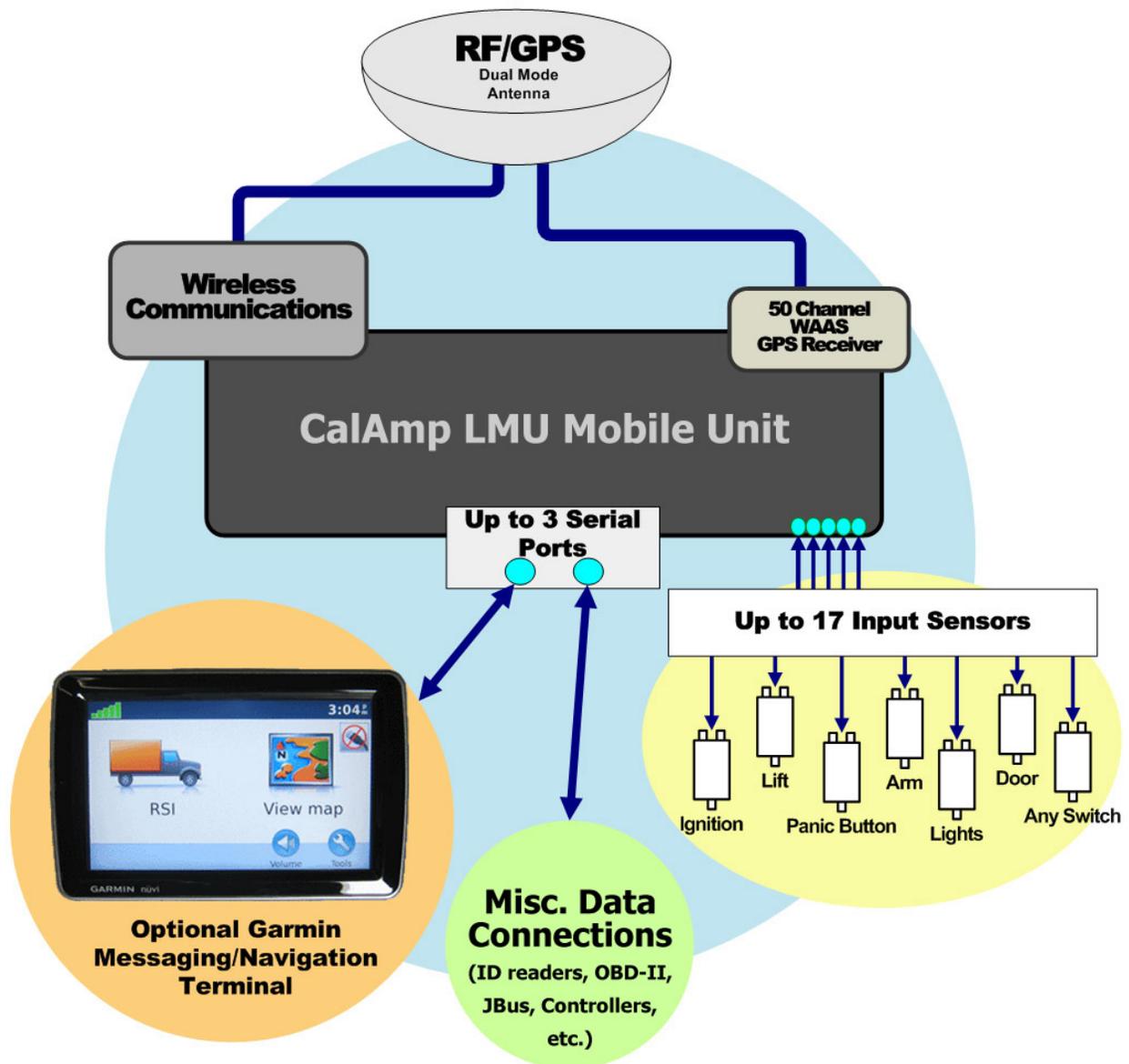
CalAmp specializes in engineering customized AVL systems that can use a combination of wireless communications technologies. CalAmp's mobile units can support any combination of: cellular, satellite, WiFi, as several others. CalAmp has unparalleled experience in the design and implementation of these complicated customized hybrid systems.

Satellite Communications

Since satellite data is much more expensive than cellular data, CalAmp can configure the satellite/cellular hybrid devices to report at different rates based on network availability and specific events to keep costs down without losing any critical functionality. For example, one configuration CalAmp can discuss is a hybrid device configured with Verizon cellular and Iridium satellite that when it is out of cellular coverage the device will store location/status data at a 30 second rate, but only send a snapshot of real-time location via satellite every 15 minutes. When the device is back in cell coverage it will forward the stored 30 second data to fill in the historical database. CalAmp can also configure the device so that if the driver hits a panic button while out of cell coverage, it will send a priority distress signal via satellite immediately.

CalAmp has worked with more communications technologies in CalAmp's 20+ years of technology leadership than any other vendor in this marketplace. There are several options for wireless communications and CalAmp is proficient with all of them.

CalAmp LMU Mobile Units



CalAmp LMU - AVL Mobile Units

The recommended CalAmp LMU Mobile Unit includes a dual-mode GPS and RF antenna and associated cabling (if necessary).

Each CalAmp LMU Mobile Unit contains a 50 channel GPS receiver (or greater), wireless communications, and optional multiple external data and sensor ports. To ensure reliability and availability of the entire system, the critical mobile units are built to exacting military standards to resist vibration, climate, and electromagnetic interference. First-quality components, extensive RF/EMI shielding, and specialty power conditioning circuits protect the GPS receiver and micro-controller in the “computer hostile” vehicular environment.

Each CalAmp LMU will be equipped with a state-of-the-art 50 channel, WAAS enabled, all-in-view GPS receiver. This GPS receiver delivers superior performance and field-proven reliability and provides for fast signal reacquisition, position accuracy, and the filtering of spurious and erroneous data. The GPS accuracy is 2 meters (7 feet).

CalAmp can offer multiple types of LMU mobile units with similar functionality that shall support different wireless technologies as well as quantities and types of inputs/outputs.

The CalAmp LMU product line offers a wide variety of the newest state-of-the-art AVL devices for various customer needs. The CalAmp LMU mobile GPS devices can be equipped with a variety of networks, options, serial ports and sensors that integrate to virtually any devices and external status signals, such as ignition on/off, door open/shut, lights, plow, engine diagnostics, data terminal, ID readers, etc.

Some of the options that are available with CalAmp GovOutlook hardware are:

- Different wireless carriers.
- Various wireless networks: 2G (GPRS or CDMA), 3G (HSPA or EVDO Rev A), 4G/LTE or WiFi
- Engine Diagnostics (Light Duty OBD-II or Heavy Duty JBus)
- Customized Garmin Driver Interface for messaging, login, and navigation
- Driver ID Readers (RF ID, magnetic stripe cards, or iButton)
- Emergency Panic Buttons (dash mounted or wireless handheld buttons)
- Inputs/Outputs (sensors, serial ports, USB ports, Ethernet ports, WiFi hot spot)

Interface to Devices and Sensors

The CalAmp LMU Mobile Unit is optionally capable of interfacing to a wide variety of external mobile data terminals, mobile computing devices, in-vehicle peripherals, and various sensor systems. The CalAmp LMU Mobile Unit serves as a mobile gateway, paying particular attention to supporting a variety of devices. The CalAmp LMU Mobile Unit will be connected to the on-board vehicle power and optionally to any sensor signals as desired such as:

- Ignition on/off
- Door open/locked
- Lights on/off
- Any device/event/switch/data source
 - Armature/device up/down
 - RF ID, Card Swipe Reader, iButton Driver ID
 - Vehicle Engine Diagnostics
 - Brooms/Plows/Spreader Controllers
 - Landmarking
 - Siren/Light Bar/Flashers
 - PTO

Panic Button Option

The CalAmp LMU Mobile Unit can be equipped with an emergency panic button configuration that is a dashboard-mounted button that sends a priority signal over-the-air to the dispatch interface or real-time alert. CalAmp can also offer a wireless handheld panic button that can be activated up to 300 feet from the vehicle.

Driver ID Readers

CalAmp offers a variety of Driver ID solutions including readers that are compatible with existing customer ID cards such as RF ID and magnetic stripe cards. In addition CalAmp can offer an iButton key fob solution for unique stand-alone driver identification with a key fob and reader.

Antennas, Cables, and Connectors

The high gain antenna increases the ability for the GPS to receive weak signals under trees or canopy, while its very small design presents little or no profile for tampering or inadvertent damage. The CalAmp LMU Mobile Unit can use any type of GPS antenna that is required or specified. The CalAmp LMU Mobile Unit comes with all bracketing, cabling, and connectors required for full installation. CalAmp configures the system so it cannot be easily disabled by the driver and/or user.

Engine Diagnostics

As an option, an interface to engine diagnostics can be added to the CalAmp LMU Mobile Unit giving County real-time access to engine trouble codes and other available vehicle information for either light duty (OBD-II) or heavy duty (JBus) vehicle types.

Diagnostic data available from the diagnostic interface varies greatly depending on the specific vehicle make, model, and year. Basic Diagnostic Trouble Codes (DTC), and mileage are typically available from most vehicles but it is not absolutely guaranteed. The availability of data for such things as Fuel Economy and seat belt usage varies greatly and is not available on many vehicle types.

The LMU with optional diagnostic interface is capable of capturing all basic (and non-proprietary) diagnostic data that is made available on each specific vehicle. Diagnostic data and trouble codes are far from standard, so certain data may/may not be available on every vehicle depending on make/model/year. This is a universal issue for all AVL providers.

CalAmp LMU 2720 Mobile Unit (Standard)



Specifications Subject to Change.

- GSM/GPRS or CDMA 1xRTT radio configurations
- Internal or External Cellular and GPS antenna options for easy installation
- High Sensitivity GPS
- 3-Axis Precision Accelerometer
- 20,000 Buffered Message Log
- 32 Geo-fence capability
- 5 Inputs/3 Outputs/1-wire® Interface for Driver ID, Temperature Sensors, and more.
- Dual serial ports
- Garmin® FMI support
- Power management sleep modes
- Automatic, over-the-air configuration, firmware download, and device management

Communication Specifications

GSM/GPRS Quad-Band	850/900/1800/1900 MHz
GSM/GPRS Output Power	850: 2 Watts (Class 4)
	900: 2 Watts (Class 4)
	1800: 1 Watt (Class 1)
	1900: 1 Watt (Class 1)
CDMA Dual-Band	800/1900 MHz
CDMA Output Power	800: +24 dBm
	1900: +24 dBm
Data Support	SMS, GPRS or CDMA 1xRTT packet data

Certifications

Fully certified FCC, CE, IC, PTCRB, Cellular Carriers

Location Specifications

Location Technology	50 Channel GPS
	SBAS: WAAS, EGNOS, MSAS
Location Accuracy	2.0 meter CEP (with SBAS)
Tracking Sensitivity	-162 dBm
Acquisition Sensitivity	-147 dBm
AGPS capable	

Comprehensive I/O

Inputs	5 (2 fixed bias low, 3 fixed bias high)
Outputs	3 Relay Driver (150 mA)
Serial Interfaces	2 (1 TTL serial, 1 switched power TTL)
A/D Inputs	2 (1 internal, 1 external)
1-Wire® Interface	Driver ID
	Temperature Sense
Status LEDs	GPS and Cellular

Connectors, SIM Access

I/O, Power, Programming	20-pin Molex-type fused power harness
GPS Antenna	External SMA (w/ tamper monitoring, 3V) or Internal
Cellular Antenna	External SMC or Internal
SIM Access	Internal (GSM/GPRS variant only)

Electrical Specifications

Operating Voltage	6-32 VDC
Power Consumption	<3 mA @ 12 V (Deep Sleep)
	<10 mA @ 12 V (Sleep on Network with SMS)
	<20 mA @ 12 V (Sleep on Network with GPRS)
	<70 mA @ 12 V (Active Tracking)

Physical Specifications

Dimensions	2.0 x 4.0 x 0.85 inches (51 x 102 x 22 mm)
Weight	74 g (external), 85 g (internal)

Environmental Specifications

Operating Temperature	-30° to +75° C
Storage Temperature	-40° to +85° C
Humidity	95% R.H. @ 70° C non-condensing
Shock and Vibration	U.S. Mil. Std. 202G and 810F, SAE J1455
EMC/EMI:	SAE J1113

Mounting

Tie-wrap, Adhesive, or Velcro
Screw Mounting Bracket

Optional Features/Functions

- Driver ID with 1-Wire® protocol
- Temperature Sensing via 1-Wire® protocol
- Backup Battery
- External GPS and Cellular Antennas
- Internal GPS and Cellular Antennas
- NMEA data via serial
- External A/D input
- Serial Cables
- jPOD™ truck ECU interface
- Garmin® FMI compatible interface cable
- Piezo speaker, panic button, and privacy button
- Power harness with two (2) 3A Fuses

CalAmp LMU 4220 Advanced Mobile Unit (Additional Inputs)



GPS

Location Technology	50 channel GPS (with SBAS) SBAS: WAAS, EGNOS, MSAS, GAGAN
Location Accuracy	2.0 meter CEP (with SBAS)
Tracking Sensitivity	-162dBm
Acquisition Sensitivity	-147dBm
Kick Start	3 sec @ -130 dBm
AGPS Capable	

CELLULAR

Data Support	SMS, GPRS, CDMA 1xRTT or HSPA packet data	
Operating Bands (MHz)		
GSM/GPRS	850/900/1800/1900	
CDMA/1XRTT	850/1800	
HSPA/UMTS	800(VI)/850(V)/900(VIII)/ 1700(IV)/1900(II)/2100(I)	
Transmitter Power		
GSM/GPRS	850/900	32.5 dBm
	1800/1900	29.3 dBm
CDMA/1XRTT	850	24 dBm
	1800	23 dBm
HSPA/UMTS	(all bands)	23 dBm
HSPA data rates	5.6 Mbps upload/7.2 Mbps download	
HSPA fallback	EDGE/GPRS/GSM quad band EDGE MCS1-MCS9 3GPP Release 6	

COMPREHENSIVE I/O

Digital Ignition Inputs	1 fixed bias
Digital Inputs	7 (high/low selectable 0-30 VDC)
Digital Outputs	5 (open collector relay 150mA)
Current Limited Outputs	2 (20mA)
A/D Inputs	4 (0 - 30VDC, +/-0.1V accuracy)
1-Wire® Interface	2 (driver ID, temperature sense)
Status LEDs	GPS and cellular

ENVIRONMENTAL

Temperature	-30° to +75° C (operating) -40° to +85° C (storage)
Humidity	95%RH @ 50° C non-condensing
Shock and Vibration	U.S. Military Standards 202G and 810F, SAE J1455
EMC/EMI	SAE J1113

Operating Voltage	6-32 VDC
Power Consumption	4 mA @ 12 V (deep sleep) 10 mA @ 12 V (sleep on network with SMS) 20 mA @ 12 V (sleep on network with GPRS) 70 mA @ 12 V (active tracking)

PHYSICAL

Dimensions	4.3 x 3.2 x 0.86", (110 x 81 x 22mm)
Weight	4 oz, (113 g)

CONNECTORS, SIM ACCESS

SIM Access	Internal
External Cellular	SMC
External GPS	SMA (with tamper monitoring, 3.0v)
WiFi Option	RP-SMA
Vehicle Bus Option	DB-15
4-Pin Molex	Power, ground, ignition, A/D
Two 5-Pin Molex	Switched power serial
16-Pin Molex	Expansion port
22-Pin Molex	I/O connection

CERTIFICATIONS

Fully certified FCC, CE, IC, PTCRB, Applicable Carriers

MOUNTING

Tie-wrap, adhesive, or velcro
Screw mounting bracket

OPTIONAL FEATURES/FUNCTIONS

- External antennas (GPS, cellular, combined GPS/cellular)
- Serial adapter cable RS-232 8-wire (PPP, AT cCommands, NMEA GPS output)
- jPOD dongle for truck ECU interface
- Connectorized I/O wiring harnesses
- Built-in or external backup batteries

DEVELOPMENT SUPPORT OPTIONS

- Customized hardware and software development available on request

CalAmp LMU 4520 (Satellite + Cellular Hybrid)

- Heavy Duty weatherproof IP67 rated enclosure
- Built-in 3-axis accelerometer for driver behavior, motion sensing hard breaking, impact detection
- Dual reporting 20,000 event buffered message logs to manage Cellular, Satellite or Wifi communications channels
- Low Power sleep modes
- Backup battery
- 32 built-in geo fences, plus any combination of circle or polygon zones, up to 5,400 points
- Optional built-in heavy Duty engine Control Interface
- Optional built in Satellite Iridium modem
- Comprehensive I/O system
- Over-the-air configuration and firmware download



LMU-4520 SPECIFICATIONS

GPS

Location Technology	50 channel GPS (with SBAS) SBAS:WAAS, EGNOS, MSAS, GAGAN
Location Accuracy	2.0 meter CEP (with SBAS)
Tracking Sensitivity	-162 dBm
Acquisition Sensitivity	-147 dBm
AGPS Capable	

CELLULAR

Data Support	SMS, IP Packet Data		
Operating Bands:	MHz (Band)		
GSM/GPRS	850/900/1800/1900		
CDMA/1XRTT	850/1900		
HSPA/UMTS	800(V)/850(V)/900(VIII)/1700(IV)/1900(II)/2100(I)		
Transmitter power:			
GSM/GPRS	850/900	32.5	dBm
	1800/1900	29.5	dBm
CDMA/1XRTT	850	24	dBm
	1900	23	dBm
HSPA/UMTS	(all bands)	23	dBm
HSPA data rates	5.6 Mbps upload / 7.2 Mbps download		
HSPA fallback	EDGE/GPRS/GSM quad band		

COMPREHENSIVE I/O

Ignition Input	1 (fixed low bias)
Digital Inputs	7 (selectable high/low bias, 0-30 VDC)
Digital Outputs	5 (open collector 200mA relay driver) 2 (20mA current source / LED drivers)
A/D Inputs	4 (0 – 30 VDC, +/- 0.1V accuracy)
1-wire® Interface	2 (Temperature Sense, Driver ID)
Status LEDs	GPS and Cellular

ENVIRONMENTAL

Temperature	-30° to +75° C (operating) -40° to +85° C (storage)
Humidity	0 to 95% RH at 50° C non-condensing
Shock and Vibration	MIL 202G and 810F, SAE J1455
EMC/EMI	SAE J1113

ELECTRICAL

Operating Voltage	7-32 VDC
Power Consumption	Typical 3.3mA @ 12V (deep sleep) Typical 23mA @ 12V (radio-active sleep) Typical 29mA @ 12V (SMS+UDP connection, GPS off)
Backup Battery	Typical 90mA @ 12V (continuous transmit)

CONNECTORS AND SIM

Cellular Antenna	SMA
GPS Antenna	SMA
Power, GND, Ignition, ADC	34-pin JAE Weatherproof Connector
I/O Connections, Serial Ports	
Vehicle Bus Option	12-pin JAE Weatherproof Connector
Wi-Fi Option Antenna	RP-SMA
SIM Access	Internal

SERIAL INTERFACES

2 Switched Power TTL level Interaces

PHYSICAL

Dimensions	4.3 x 3.2 x 0.9" (110 x 81x 22 mm)
Weight	4 oz (113g)
Environmental	IP67 Rating

MOUNTING

Molded mounting feet

CERTIFICATIONS

Fully certified FCC, IC, CE, PTCRB, GCF, and Applicable Carriers

OPTIONAL FEATURES/FUNCTIONS

- Built-in Q9602 Iridium modem
- Built-in J1939/J1708 Vehicle Bus reader
- Built-in Wifi modem
- External Antennas (GPS, Cellular, combined GPS/Cellular)
- Serial RS232 Adapter Cable
- Connectorized I/O wiring harnesses

DEVELOPMENT SUPPORT OPTIONS

- Customized hardware and software development available on request

CalAmp TTU Mobile Unit (Weather-Proof+Battery Powered)



- 500 message cycles on fully charged battery pack
- 18 months with 0 messages until a final 30 min tracking session
- 6 months with single message cycle per day on fully charged battery pack

General

Communication Modes	GPRS packet data and SMS
Location Technology	50 Channel GPS
Operating Voltage	6-32 VDC

Location Specifications

Location Technology	50 Channel GPS (with SBAS) SBAS: WAAS, EGNOS, MSAS, GAG
Location Accuracy	2.0 meter CEP (with SBAS)
Tracking Sensitivity	-160dBm
Acquisition Sensitivity	-147dBm
AGPS capable	

Battery Pack Specifications

Battery Capacity	3.8 Amp Hour
Battery Operating Voltage	3.6 Volts
Battery Technology	Lithium Ion

GSM Specifications

Data Support	SMS, GPRS (UDP)
Cellular/PCS:	FCC– Parts 22, 24; PTCRB
GPRS	Up to class 10
Quad-Band	850/900/1800/1900 MHz
Output Power	850 (Class 4) 2W 900 (Class 4) 2W 1800 (Class 1) 1W 1900 (Class 1) 1W

Comprehensive I/O

Inputs	3
Outputs	3 Relay Driver (150mA)
Status LEDs	GPS & Cellular

Electrical Specifications

Operating Voltage	6-32 VDC
Power Consumption	< 1 mA @ 12V (Deep Sleep) < 10 mA @ 12V (Sleep on Network) < 70 mA @ 12V (Active Standby)

Physical Specifications

Dimensions	4.3 x 3.2 x 1.6", (110 x 80 x 40 mm)
Weight	9.6 oz, (272 g)

Environmental Specifications

Operating Temperature	-30° to +75° C
Storage Temperature	-40° to +85° C
Humidity	95%RH @ 50° C non-condensing (verify)
Shock and Vibration	U.S. Military Standards 202G and 810F, SAE J1455
EMC/EMI:	SAE J1113; FCC–Part 15B; Industry Canada
RoHS Compliant	

Connectors, SIM Access

SIM Access	Internal
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Mounting

Screw Mount
Magnet Mount
Tie Wrap

Key Features

- 6 months with single message cycle per day on fully charged batteries
- 3.8 AH Lithium Ion re-chargeable battery pack
- IP66 sealed enclosure
- GPRS and SMS-Based Messaging
- Internal GSM and GPS Antennas
- Super Sensitive GPS (-160 dBm tracking)
- Ultra-Low Power Safe Mode (<1mA)
- 3 axis accelerometer for motion sensing
- 3 inputs/3 outputs
- Voltage Monitoring and Low Battery Notification
- 2,000 Buffered Messages
- 4 Built-in Geo-fences

CalAmp LMU 5000 Mobile Unit (3G/4G w Ethernet Port)



Processor Specifications

Processor	ARM9 32bit MCU
Speed	400 MHz
Flash	128M Bytes
RAM	64M Bytes @ 133 MHz bus speed
Real Time Clock	

Operating Voltage	7-32 VDC (running), 9-30 VDC (starting)
Power Consumption	10 mW (deep sleep) 1 W (sleep on GPRS network) 2.4 W (active tracking)

Operating System, Software Interfaces, Security

Operating System	E Linux 2.6
Application Interfaces	TCP/IP, UDP/IP, DHCP, HTTP, IP Router, PPP, HTTP Web server, Telnet DHCP server, DDNS, DDNS Client, NAT, NMEA, TAIP, TSIP, GPS, TFTP, IP port forwarding
Security	VPN (SSL v2, TLS v1) SSH server, SCP, SFTP

Environmental Specifications

Temperature	-30° C to 70° C (operating) -40° C to 85° C (storage)
Humidity	95% R.H. @ 50° C non-condensing
Shock and Vibration	U.S. Military Standard 202G and 810G, SAE J1455
EMC/EMI	SAE J1113

GPS Specifications

Location Technology	50-channel GPS with SBAS, DGPS
Location Accuracy	2.0 meter CEP (with SBAS)
Tracking Sensitivity	-162 dBm
Acquisition Sensitivity	-147 dBm
Kick Start	3 sec @ -130 dBm
AGPS Capable	

Connectors, SIM Access

SIM Access	Slot access
Cellular	SMA main, SMA diversity
External GPS	SMA (with tamper monitoring, 3.0v)
Ethernet	10/100 Base-T RJ45
USB	Host (standard), device (mini)
Serial	DB-9 (RS232), 5-Pin Molex (switch power TTL levels)
4-Pin Molex	Power, ignition, I/O
22-Pin Molex	I/O connections

Cellular Specifications

HSPA Tri-Band	850/1900/2100 MHz diversity capability Downlink up to 7.2 Mbps Uplink up to 5.76 Mbps Fallback to HSDPA/UMTS/EDGE/GPRS
EVDO Rev A Dual-Band	800/1900 MHz diversity capability Downlink up to 3.1 Mbps Uplink up to 1.8 Mbps Fallback to CDMA 1X Rev 0 and CDMA 1XRTT

Mounting

Tie wraps or adhesive	
Screw mounting bracket	

Certifications

Fully certified FCC, CE, IC, PTCRB, Applicable Carriers

Comprehensive I/O

Digital Inputs	7 high/low selectable inputs, 0-30 VDC
Digital Outputs	5 relay driver outputs (200mA) 2 low current LED outputs (20mA)
Voltage A/D input	4 +/-0.1 V accuracy and voltage range 0-30 VDC
1-Wire® Interface	2 (driver ID, temperature sense)
Ground	2
Status LEDs	Status, COMM, and GPS

Physical Specifications

Dimensions	5.2 x 2.7 x 1
Weight	5.4 oz, (153)

Specifications

subject to change





Optional Customized Garmin Messaging Terminal

For systems that require integrated messaging and navigation capabilities for its drivers, CalAmp offers a customized Garmin navigation solution. This customization process allows CalAmp to use the Garmin unit as a messaging terminal providing both free form and pre-programmed status messages between the driver and the dispatch user. Leveraging the universally familiar Garmin color touch screen interface, CalAmp creates a powerful messaging and data terminal for County's drivers. In addition to providing the standard Garmin navigation tools, the CalAmp customization allows the mobile user to do two-way messaging and view dispatched destinations, way points and custom routes (optional). Drivers can login to the system using a Driver and Route Login form, as well as send any variety of free form or preprogrammed status message to the base. CalAmp will work with County to determine how CalAmp can implement a system that fits County's needs at the lowest cost possible.



The CalAmp Garmin Unit can be configured to provide a simple two-way messaging interface between the driver and AVL mapping operator. All messages sent by the driver are time and location tagged and can be used for a variety of status updates and activity reporting.



Messaging can be either free form text messages or preprogrammed (canned) status messages.



Canned messages can be custom created by CalAmp for any of County's fleet's unique operations, priorities, and terminology. The driver simply selects a preprogrammed message to be sent back to the operator and system.



The CalAmp Garmin Unit also retains its core Garmin navigation functionality that provides voice guided turn by turn directions to the desired destination. The CalAmp Garmin Unit has multiple settings for a viewing the map and route as the driver is guided to the destination.



The CalAmp Garmin Unit allows the driver to log in to a vehicle with a unique ID as well as status.

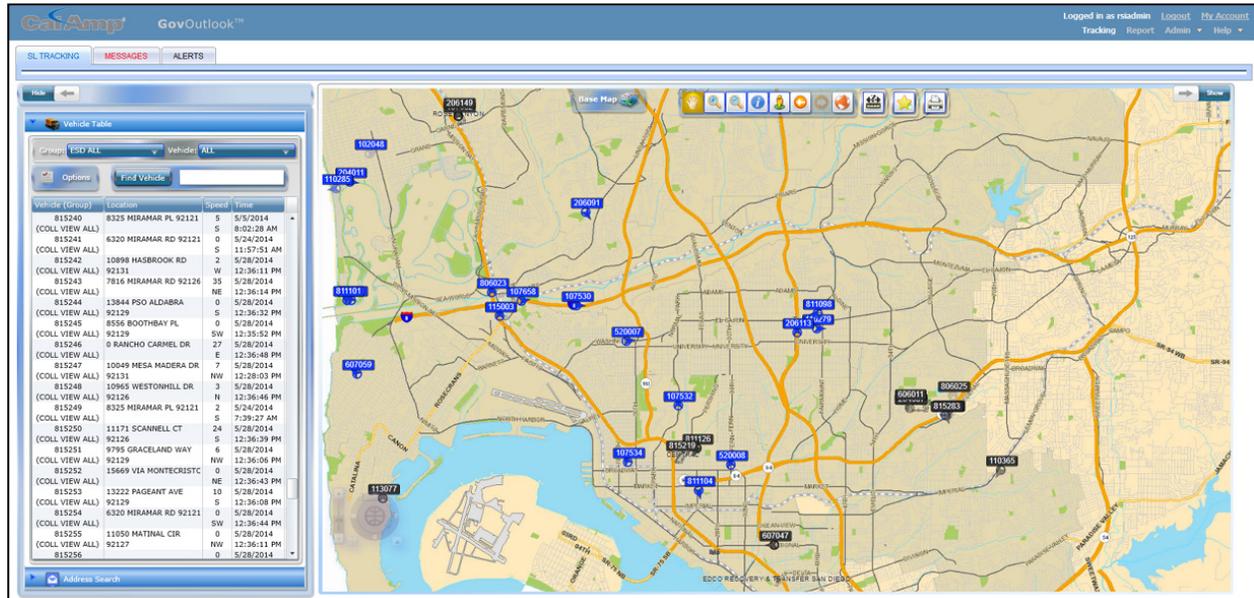
Mapping and Display Application

Our powerful Web-Based mapping and display application, CalAmp GovOutlook, will provide operations personnel the capability to rapidly, geographically analyze the GPS information and make critical decisions. This application is based on an [ESRI ArcGIS Server](#) Geographic Information System (GIS), which displays data collected from the mobile units at the Base Server. They run the tools and controls that enable the operations personnel to quickly adapt the information they are collecting and analyzing the views they are using to manage evolving situations.

The Mapping and Display Application provides valuable AVL Management tools:

- Real-Time Vehicle Tracking (map-based)
- Report Generation (tabular or map-based)

The assignment of user-permission levels allows access to appropriate sub-sets of the installed functionality.
Note: County's user interface will differ depending on customized configuration and preferences.



Real-Time Vehicle Tracking

The CalAmp GovOutlook Application displays the current location and status of the vehicle fleet, along with address, route, and other attribute information, over both raster and vector-based maps (as desired). The use of a powerful ESRI ArcGIS Server engine along with the incorporation of vector map data allows for almost endless display and analysis possibilities. A wide variety of customizable functionality is available and is described below. The vehicle icons shall be configured to indicate (using colors, directional symbols, labels, and size) various vehicle attributes (such as ID, status, speed, heading, etc.). All of the vehicle attribute data shall be instantly queried and displayed in a pop-up box using a standard identify tool. Further, alarm and event notification shall be set to notify the user of a status change for a particular vehicle.

Clicking on a vehicle from the menu bar list will reveal more options for that specific vehicle.

The screenshot displays the CalAmp GovOutlook application interface. On the left, there is a 'Vehicle Table' with columns for Vehicle (Group), Location, Speed, and Time. The table lists various vehicles with their respective details. On the right, a map shows the location of vehicle 815250. A pop-up window provides detailed information for this vehicle, including its group, route, driver, status, time of fix, location, landmark, speed, heading, status/events, age, VIN, license, and GPS status.

Vehicle (Group)	Location	Speed	Time
815275 (COLL VIEW ALL)	13140 RUSSET LEAF LN 92129	0	5/28/2014 12:41:51 PM
815276 (COLL VIEW ALL)	10935 JANICE CT 92126	0	5/28/2014 12:42:01 PM
815277 (COLL VIEW ALL)	17146 PACATO WAY 92128	0	5/28/2014 12:41:08 PM
815278 (COLL VIEW ALL)	6336 FEDERAL BLVD 92114	0	5/28/2014 9:20:29 AM
815279 (COLL VIEW ALL)	17547 DEVEREUX RD 92129	0	5/28/2014 12:41:36 PM
815280 (COLL VIEW ALL)	9195 WESTVALE RD 92129	13	5/28/2014 12:42:04 PM
815281 (COLL VIEW ALL)	8713 CETUS RD 92126	0	5/28/2014 12:42:07 PM
815282 (COLL VIEW ALL)	12430 MEANDRO RD 92126	0	5/28/2014 12:27:35 PM
815283 (COLL VIEW ALL)	6336 FEDERAL BLVD 92114	0	5/28/2014 11:36:33 AM
815284 (COLL VIEW ALL)	13659 TORREY GLENN RD 92129	0	5/28/2014 12:42:04 PM
815285 (COLL VIEW ALL)	11871 MORNING CREEK N DR 92128	0	5/28/2014 12:42:09 PM
815286 (COLL VIEW ALL)	9195 WESTVALE RD 92129	12	5/28/2014 12:41:13 PM
815287 (COLL VIEW ALL)	15561 MATUREN DR 92127	0	5/28/2014 12:42:11 PM
815288 (COLL VIEW ALL)	12498 BRICKELLIA ST 92129	0	5/28/2014 12:35:06 PM
815289 (COLL VIEW ALL)	0 GINGER GLEN RD 92126	0	5/28/2014 12:41:54 PM
815291 (COLL VIEW ALL)	7516 NORTHROP DR 92126	0	5/28/2014 12:41:54 PM
815293 (COLL VIEW ALL)	71586 ALBORADA DR 92126	0	5/28/2014 12:41:54 PM

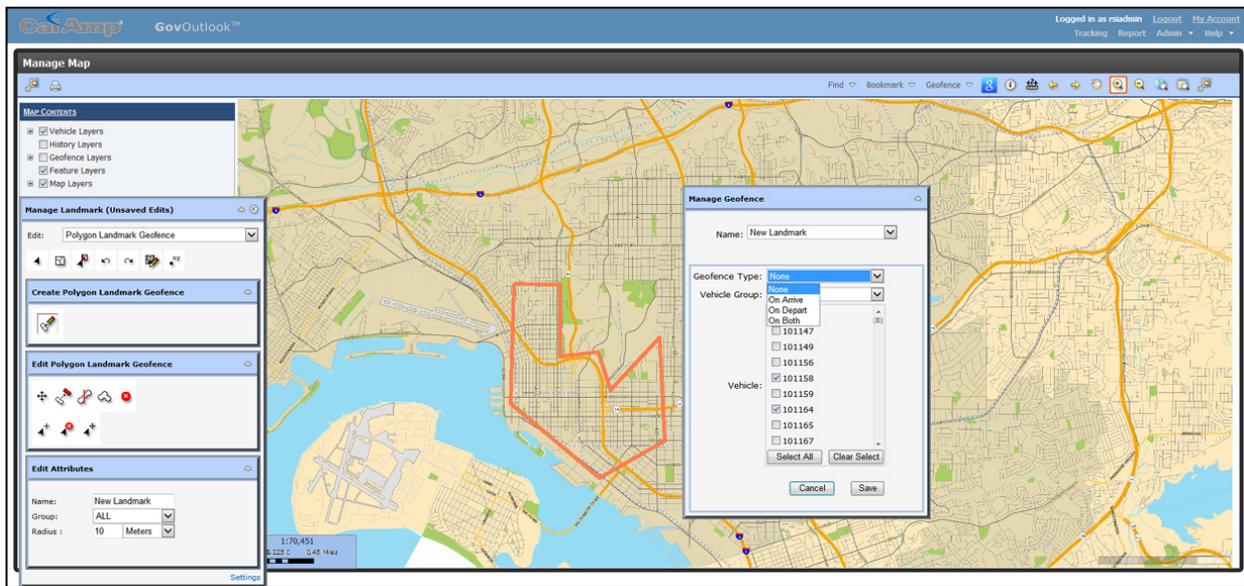
Vehicle: 815250
Group: COLL VIEW ALL
Route:
Driver:
Status:
Time of Fix: 5/28/2014 12:41:43 PM
Location: 9368 REAGAN RD 92126
Landmark:
Speed: 0
Heading: N
Status/Events: Ignition On Armature
Age (dd:hh:mm:ss): 00:00:00:10
VIN: 3BP2L00X38F717842
License:
GPS Status: 3D [00,00,000]
Other Attributes:

Map Viewing Features

The CalAmp GovOutlook Application displays the vehicle data in a “map window.” The map window can be set to display a particular area, route, stop, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to an individual vehicle). In CalAmp GovOutlook the map display window possesses a full-set of map manipulation and query functionality. Map manipulation tools and buttons are available to zoom, pan, and center the display on a particular vehicle, route, stop, or address. Additional tools are available to enable or disable labeling, to customize the map display according to user preferences, and to enter points and attributes (for incidents, etc.). Map query options include the ability to locate an address, vehicle, or stop, along with the capability to identify the closest available vehicle(s) to any entered point, address, or incident.

Geo-Borders

The CalAmp GovOutlook system allows the user to set geo-fences on the map display. This geo-borders will create an alert and/or exception report when breached and will appear as another item of status data with each vehicle position report. Geo-borders can be created as polygons or a configurable radius from a specific point, as well as created from existing boundaries, landmarks or zones within County’s GIS.



Real-Time Alerts

The CalAmp GovOutlook system allows authorized administrators extensive control over system features including alerts and alarms. The system can be configured to notify selected users when specific events occur with any of the vehicles. This includes geo-borders, hours of operation, idle, panic buttons, etc. Notifications can be sent as an e-mail, SMS, or to the alert screen on the software.

TRACKING			MESSAGES			ALERTS		
VEHICLE	ALERT TEXT		DATE					
20333	▲	0644030 (WasteWater) Depart Geofence Line Maintenance	2/1/2011 5:17:16 PM					
20332	▲	0644030 (WasteWater) Arrive Geofence Line Maintenance	2/1/2011 5:02:59 PM					
20330	▲	0244202 (WasteWater) Arrive Geofence Line Maintenance	2/1/2011 1:23:46 PM					
20331	▲	0933275 (Water) Arrive Geofence Line Maintenance	2/1/2011 1:23:23 PM					
20329	▲	0831445 (Bulky) Depart Geofence Solid Waste Management	1/21/2011 6:50:30 AM					

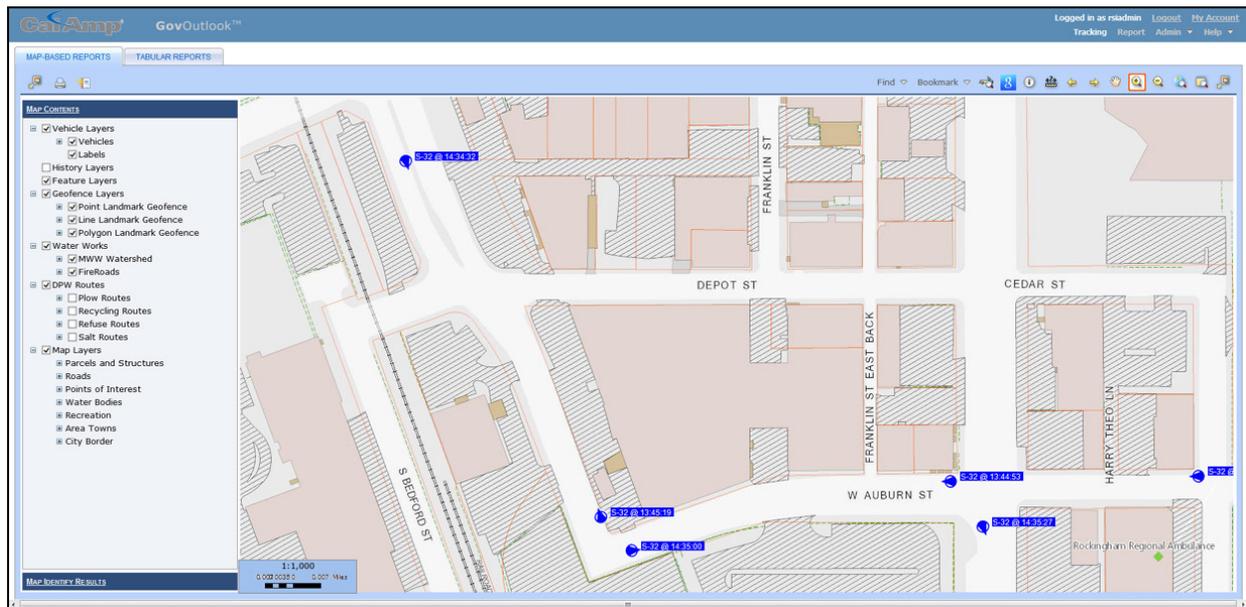
ESRI

The CalAmp GovOutlook Mapping application is based on mapping and GIS engines from ESRI, the largest GIS software vendor in the world, and a pioneer of the technology. Their systems are in use throughout the world by utilities, governments, and large companies, in thousands of applications, which rely on analysis of spatially referenced data. CalAmp GovOutlook was the first system in the world to implement a real-time GPS interface into ArcView. The CalAmp GovOutlook application is based on the actual ESRI ArcGIS Server software, but no licenses are needed by the customer.



Using County's Map Data

The CalAmp GovOutlook system can use virtually any type of map data, but in particular CalAmp's software can overlay CalAmp's AVL information on County's own ESRI GIS maps. CalAmp allows County to utilize County's existing investment of time and labor that went into County's ESRI map data. The CalAmp GovOutlook system relates real-time vehicle location and status data to the infrastructure, assets, boundaries, updates, routes, parcels, landmarks, and other critical elements of County's constantly changing GIS map data. CalAmp has extensive experience working with ESRI data and environments in all forms (.shp files, SDE, etc.). As an option, CalAmp can actually access County's GIS map data in real time via Map Services.



Leveraging GIS Technology

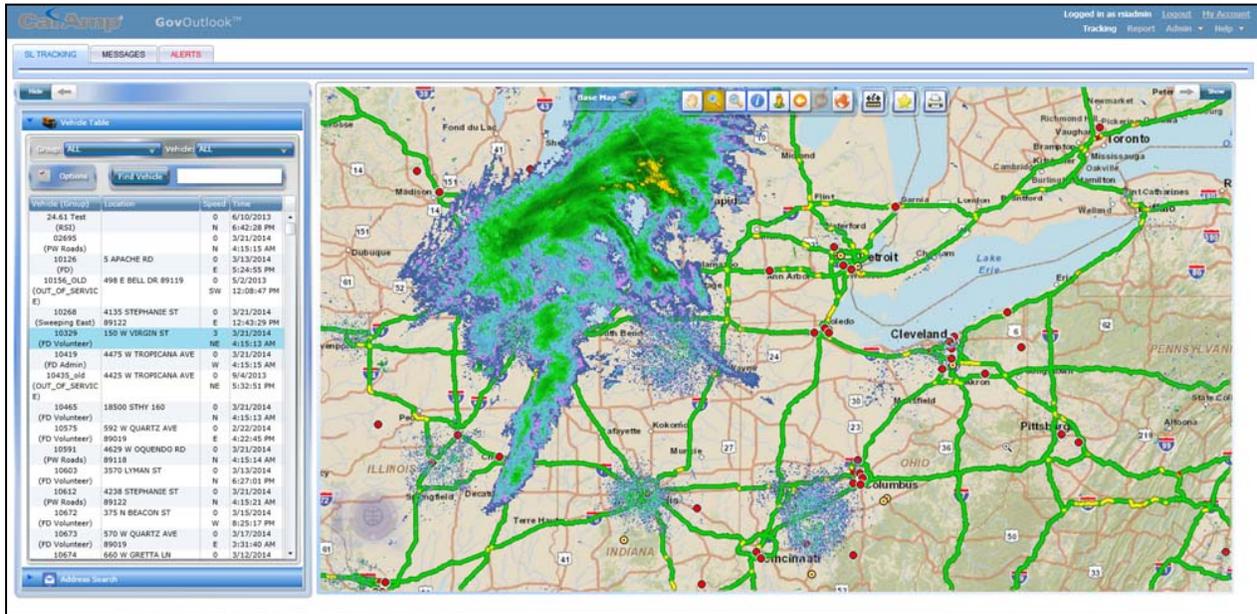
Because CalAmp uses a powerful ESRI GIS as the basis for both display and analysis, operations has the capability to perform complex “spatial query” analysis that capitalizes on the geographic referencing or correlation of the GPS location and velocity data collected with the base map. CalAmp's use of vectorized maps allows the user to analyze space and time components in entirety. Query capabilities are virtually unlimited. For example, GovOutlook includes a unique algorithm developed by CalAmp, which selects and recommends a vehicle for dispatch based on real-time location.

All of the real-time tracking functionality is available through the menus, buttons, and tools of the graphical user interface (which is easily customized to accommodate specific desires and requirements).

External Data Overlays

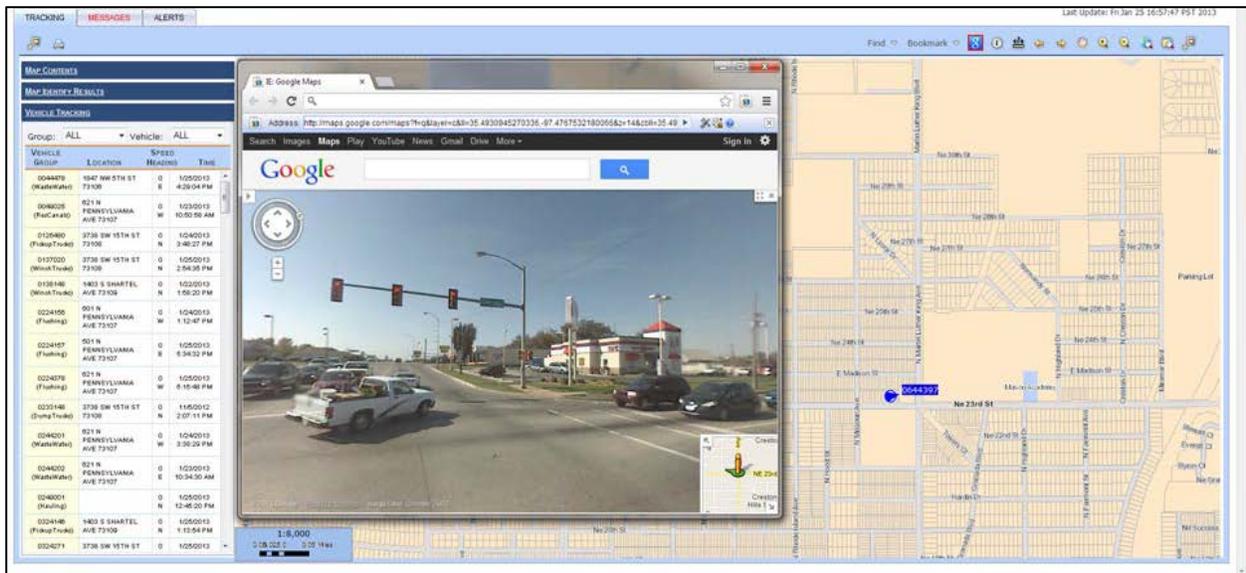
Because of CalAmp's powerful universally used ESRI GIS mapping engine, CalAmp can display external data from other map data sources as an option. Data can come from County's own GIS sources or external sources and used as a layer in CalAmp's AVL mapping. **Some examples of these optional sources/feeds are:**

- Real-Time Weather
- Real-Time Traffic
- Real-Time Radar



Google Maps Street View Tool

The CalCamp GovOutlook system has a feature that leverages the highly useful Google Maps Street View tool from the CalCamp GovOutlook system interface. This CalCamp Google Street View Tool allows the user to click anywhere on the GIS map data within the CalCamp GovOutlook Map window, and CalCamp GovOutlook will hyperlink that location to a new pop-up window showing the Google Maps Street View of that exact location. This function allows the CalCamp GovOutlook user to see the typical real world surroundings of a specific place from their GIS. The Google Maps Street View shows images of the area recently captured (not real-time) by Google’s mobile cameras. It allows the users to see things like buildings, road signs, lanes, businesses and other permanent structures that exist at that location that their GIS data does not have.



Instruction Manuals

User/Operating Procedure manuals, specific to the CalAmp GovOutlook System, will be provided to each trainee. The User/Operating Procedure manuals will consist of the generic capabilities for each component as well as all the necessary amendments that describe customer's specific modifications and enhancements. Course Training Manuals, for each functional or technological area of training, will be provided to the customer Project Manager, along with master copies of all training and orientation documents in order to facilitate duplication of materials for future training purposes. Vendor equipment manuals relating to the specific software and hardware utilized in the project will also be delivered to the customer's Project Manager. (Note: Any duplication of materials is for internal use on the CalAmp GovOutlook Project and shall NOT be distributed to outside sources without the written approval of the vendor.)

All such printed training/orientation materials will be:

- Approved by the customer Project Manager prior to their use or distribution
- Customized and specific to the CalAmp GovOutlook Project and the products used therein and the systems operating therein.
- Complete and current as of the date of Substantial Completion of the CalAmp GovOutlook Project.
- Easily understandable, detailed and focused to the inherent knowledge levels of each of the below-described staff categories based on their individual 'need to know'.
- Updated, as necessary, consistent with any maintenance and support agreements to this Project.

Personnel To Be Trained

There will be several levels of staffing associated with the CalAmp GovOutlook operation; therefore, the training and orientation program will focus on both the required ('need to know') and inherent technical expertise of each of the employee groups or individuals, as follows:

Drivers

Anticipated staff (final count TBD)

An in depth orientation in the AVL System function, usage, and dispatching requirements at the vehicle level.

A basic orientation in AVL System functionality and trouble shooting (when to ask for help).

A practical orientation in System capabilities as they relate to overall operations and customer services.

Dispatchers

Anticipated staff (final count TBD)

An in-depth orientation in the usage and a practical orientation in the features relating to operations and customer services of all AVL equipment at the vehicle and Dispatch Center levels.

A basic orientation in function trouble shooting (when to ask for help) at both the vehicle and dispatch center levels.

An in-depth orientation in data entry and retrieval, report design, generation and production.

Supervisors

An anticipated staff (final count TBD)

An in-depth orientation in the usage and a practical orientation in the features relating to operations and customer services of all AVL equipment at the vehicle and Dispatch Center levels.

A basic orientation in function trouble shooting (when to ask for help) at both the vehicle and Dispatch Center level.

The ability to train new drivers, dispatchers and supervisors in the use of and overall understanding of system functionality as it relates to all components and features of the CalAmp GovOutlook technology.

Operator Management

An anticipated staff (final count TBD)

An in-depth orientation in the usage and a practical orientation in the features relating to operations and customer services of all AVL equipment at the vehicle and Dispatch Center levels.

A basic orientation in function trouble shooting (when to ask for help) at both the vehicle and Dispatch Center levels.

An orientation in systems management, the interoperability of the overall CalAmp GovOutlook system capabilities, customer service features and potential report development and generation.

Maintenance monitoring requirements of the equipment and software and system repair and service procedures.

Client Management

An anticipated staff (final count TBD), including the Director, Information Systems Manager and administrative staff. (final count TBD)

An in-depth orientation in the usage and a practical orientation in the features relating to operations and customer services of all AVL equipment at the vehicle and Dispatch Center levels.

A basic orientation in function trouble shooting (when to ask for help) at both the vehicle and Dispatch Center levels.

An orientation in systems management, the interoperability of the overall CalAmp GovOutlook system capabilities, customer service features and potential report development and generation.

Maintenance monitoring requirements of the equipment and software and system repair and service procedures.

Note: The Information Systems Manager will be trained to a significantly higher technical level. This individual will perform technical maintenance, hardware repair/replacement, troubleshoot problems, investigate communication system problems (LAN, WAN, etc.) and deal with all technical problems and upgrades in cooperation with CalAmp.

Test and Implementation Plan

The major purpose of the Implementation Plan is to define a process for deploying the technical elements of the CalAmp GovOutlook Project, and then schedule the integration of these elements into each agency's operating system. This transition not only calls for a partial re-deployment and enhancement of the current rolling stock, but also for the smooth integration and deployment of the AVL technology that is specified in the Scope of Work. In order to make the transition as smooth as possible and overcome any functional, technical, operational, and communication difficulties as they arise, CalAmp will utilize a phased approach.

At the same time, in order to ensure the final delivery of a system that conforms to the Project requirements, significant emphasis will be placed on the importance of achieving the operational and technological functionality defined in this Scope of Work and other 'Contract Documents'. The Implementation and Test Plan represents the vehicle through which CalAmp shall examine each operating function of the CalAmp GovOutlook system to:

- Verify compliance with the system specifications, level of service standards and operating performance criteria
- Obtain client's acceptance.

CalAmp will be responsible for component specific testing. As integration of the technical components begins, client's Project Manager (& necessary staff) will oversee and coordinate the implementation of the integration testing in order to ensure compliance with the overall project and performance objectives set forth herein. The anticipated dates for conducting the required testing are defined in the Project Work Plan and will be finalized during the Design Review.

Two levels of system testing will be employed during the course of the CalAmp GovOutlook Project, as follows:

Laboratory: individual module testing followed by integration testing to ensure the functionality of the components and the interoperability of the data interfaces between each component prior to deployment.

Acceptance Testing: the final test to ensure that each technical component of the system as well as the total system (technical components and operating services) conforms to system specifications, level of service standards and operating performance criteria.

As each service element comes on-line during the Test, it will remain on-line at the conclusion of the test and be operated in parallel by the Dispatch Center with the other elements that are already operational. The same will hold true for the activated functionalities of the project technologies mentioned above. Due to the linear approach of the project plan, if any of the elements fail during testing, further elements cannot be deployed until the problem has been resolved.

At the conclusion of each formal testing phase, CalAmp will provide client with written certification of the test results and performance compliance for each of the system components. In the event of testing problems, client, CalAmp and the appropriate agencies will meet and confer on the results of the testing performed. Subsequent decisions to proceed with the project must be approved by all parties. All the participants must attend scheduled meetings through means of conference calls or on-site visitations.

Also, final details of the Laboratory and Acceptance Tests will be confirmed with the Stakeholders before implementation of the testing in order to ensure client service level does not degrade below current service levels during the testing process.

Finally, in addition to the above formal testing procedures, there will be a comprehensive demonstration of the operating system to client. This demonstration (Acceptance Test) is necessary in order to satisfy the parties that Substantial Completion has been achieved.

Acceptance Testing

There are two fundamental aspects to the Acceptance Testing – functional and operational. The functionality of the CalAmp GovOutlook System will have been completely tested by the Test phase of the project. To a lesser extent, the ability of the user to change the operational parameters in order to change the service provided will have also been demonstrated. As a consequence, the Acceptance Test is largely a confirmation of the functional requirements and a stress / full loading test of the operation as the service parameters are changed based upon real time public demand.

Because of the inherent inability to predict the need for service changes, it is only by observing the system over a period of time that CalAmp can be reasonably assured that all the possible combinations and scenarios have been considered. During the Acceptance Testing the performance of the System will also be evaluated, with regard to the ability of the system to respond in a timely and efficient manner to customer oversight and customer requests.

Installation

If desired, CalAmp can be responsible for the installation of all equipment furnished under this contract. CalAmp can perform the installation and provide local support. CalAmp will require the client's cooperation and assistance in coordinating vehicle access and availability.

All work will be executed in the manner best calculated, according to local conditions, to promote rapidity and accuracy; to secure safety to life, personnel and property; to assure safe and continuous operation of the existing dispatch, computer, and daily operations; and, to reduce to a minimum any interference with the public and with other contractors in or about the property.

Management and Installation

The installation team manages all aspects of the installation of these units by working closely with client representatives. Together, the installation team and client will identify vehicles and schedule installations on a non-intrusive basis. Installation of CalAmp LMU Mobile hardware units will be verified by inspections. Typically, CalAmp perform a physical checkout of the installation, which includes ensuring proper form, fit, security, and location of the unit. In addition, a communications check is performed to ensure that the modem is operational.

Operational Checkout

Upon completion of a small subset of the entire installation, CalAmp will perform a complete operational checkout of the hardware and firmware. This checkout will ensure bi-directional communication between the CalAmp LMU Mobile hardware unit and CalAmp GovOutlook Base Server and verify the accuracy of receive/transmit (RX/TX) event data shared between the CalAmp LMU Mobile hardware units and The CalAmp GovOutlook Base Server software. Upon successful completion of this test, the units and vehicles are tagged as "ready for integration."

4.0 Additional Contractor Performance Detail

The discussion questions below are intended to further clarify expectations of performance from Contractor for goods and services rendered.

Question 1

Is the in-vehicle Wi-Fi capability available only via the cell network, or is this capability available via satellite as well?

Unfortunately providing WiFi with a satellite connection is not an option. While technically possible to provide WiFi capability added to a satellite enabled device, CalAmp do not think it is a particularly feasible solution. The throughput of the proposed satellite link is designed and priced for small, short burst data packets for telemetry data only. Things like Internet/web surfing or database queries are not feasible with the satellite solution CalAmp have proposed.

Question 2

The county has included its security report that was performed by the Security Team within CalAmp's Office of Enterprise Technology. Please tell CalAmp when/if County will address the security findings.

CalAmp has examined the security report findings and will address the points that need to be brought up to standard. Upon award of the contract CalAmp will provide an estimated time-line and scope of the changes to be made. It is not anticipated that any required fixes will be time consuming to implement, and they will not impact the project timeline.

Question 3

Please confirm which items are included and which items would require additional costs for a live data feed.

CalAmp will provide a live data feed in the form of a Web Service or a Map Service for no additional cost. CalAmp will also make available automatic/periodic FTP of database files (daily, weekly, etc.) at no additional cost. If a customized data interface must be created beyond a Web Service, additional costs shall be necessary, on a case by case basis.

Question 4

Please explain the available options for a 2-5 year extended hardware warranty.

The standard warranty on hardware is one year. Optional extended annual warranties are available at the customer's option for each year, after year one.

Question 5

Can the warranty be extended, longer than one year, without a cost to the county?

All of CalAmp's hardware products come with a one year warranty, and "no-cost" extended warranties are not CalAmp's standard practice. However, if CalAmp are selected, extended warranty costs shall be taken into consideration during contract negotiation.

Security Assessment-

In reference to the Security Assessment findings provided by the County on 5/19/15, CalAmp commits that CalAmp will address and resolve the identified medium severity vulnerability for full system deployment at Maricopa County. In addition CalAmp will work with the County to address any medium and high level vulnerabilities that shall be identified in the future, as well as make CalAmp's best efforts to address any lower severity vulnerabilities whenever feasible, as determined by CalAmp.

Project Timeline Documents



AMENDMENT No. 1

To
SERIAL 14091-RFP GPS for Vehicles

Between

CalAmp Radio Satellite Integrators, Inc.
 &
 MARICOPA COUNTY, ARIZONA

WHEREAS, Maricopa County, Arizona (“County”) and CalAmp Radio Satellite Integrators, Inc. (“Contractor”) have entered into a Contract for the purchase of vehicle global positioning systems and related devices dated August 27, 2015 (“Agreement”) County Contract No: 14091-RFP.

WHEREAS, County and CalAmp Radio Satellite Integrators, Inc. have agreed to further modify the Agreement by changing certain terms and conditions;

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. The term of the contract shall be extended to three (3) years, expiring August 31, 2018.
2. Exhibit A – Pricing shall be replaced with new pricing figures attached to this Amendment below:

1.0 Global Positioning System (GPS) Hardware	Estimated Units	Cost		
1.1 GPS Tracking device with diagnostics	382	\$	150.00	per unit
1.2 GPS Only tracking device with switch capability	17	\$	135.00	per unit
1.3 Self-contained, battery operated non-motorized unit using cellular or Satellite communications	61	\$	610.00	per unit
1.4 Alternative Hardware Pricing: (Please describe)	SEE ADDITIONAL SYSTEM OPTIONS			
2.0 GPS Integration/Tracking Service	Monthly Price Per Reporting Cycle			
		2 minutes	1 minute	30 seconds
2.1 Diagnostic Service Fee	382	\$ 19.00	\$ 22.00	\$ 23.00
2.2 Non-Diagnostic Service Fee (2 minute reporting cycle)	17	\$19.00	\$ 22.00	\$23.00
2.3 Non-Motorized Service Fee (12 hour reporting cycle)	61	\$ 55.00	(satellite, pricing may vary)	
2.4 Vehicle Change Fee (when GPS hardware is transferred from one vehicle or piece of equipment to another of the same class)	20	\$ 95.00	per transfer	
2.5 Deactivation Fee (if the County elects to deactivate a unit within the first 12 months)		\$ 75.00	per vehicle	

2.6 Training	\$ 100.00	per hour	onsite, 8 hr min
2.7 Installation charge	\$75.00	per vehicle	
2.8 Alternative Integration/Tracking Service Pricing: (Please describe)	SEE ADDITIONAL SYSTEM OPTIONS		

ADDITIONAL SYSTEM OPTIONS

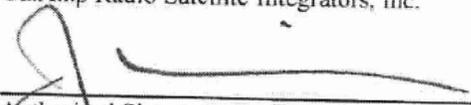
TBD quantity		per unit		total
1	Sensor Integration to existing on-vehicle sensor (broom, plow, PTO, etc)	\$ 50	each	\$ 50
1	MOBILE UNIT (TTU)(Battery powered asset tracker)	\$ 245	each	\$ 245
1	MOBILE UNIT (LMU 3030)(OBD-II plug & play)	\$ 175	each	\$ 175
1	MOBILE UNIT (LMU 5000) (High Speed Router) <i>Requires separate broadband wireless account.</i>	\$ 595	each	\$ 595
1	MDT-7 (7" MOBILE DATA TERMINAL) or GARMIN	\$ 450	each	\$ 450
1	ENGINE DIAGNOSTIC DATA INTERFACE ADD-ON	\$ 75	each	\$ 75
1	Emergency Buttons Hard-wired On-Vehicle Button	\$ 95	each	\$ 95
1	Emergency Buttons Wireless Handheld Medallion	\$ 150	each	\$ 150
1	RF ID Reader (Driver ID)	\$250	each	\$ 250
1	Magnetic Card Stripe Reader (Driver ID)	\$125	each	\$ 125
1	iButton/Key Fob Reader (Driver ID)	\$95	each	\$ 95
1	ONSITE TRAINING (\$100/hour, 8 hour day)	\$ 800	each	\$ 800
1	LOT TRAVEL	\$ 750	each	\$ 750
399	EXTENDED ANNUAL WARRANTY ON CELL HARDWARE (per unit) <i>Years 1-3 only.</i>	\$0 (no charge)	each	\$ 7,980

61 EXTENDED ANNUAL WARRANTY ON SAT \$0 (no
HARDWARE (per unit) charge) each \$ 2,440
Years 1-3 only.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED

IN WITNESS WHEREOF, this Contract Amendment is executed on the date set forth below when executed by Maricopa County Office of Procurement Services.

CalAmp Radio Satellite Integrators, Inc.



Authorized Signature

Jonathan Michels, VP Government

Printed Name and Title

19144 Van Ness, Torrance, CA

Address

9/2/15

Date

MARICOPA COUNTY:



Chief Procurement Officer

9/2/15

Date

CALAMP RADIO SATELLITE INTEGRATORS, INC., 19144 VAN NESS AVE., TORRANCE, CA 90501

PRICING SHEET: NIGP CODE 05535, 05567, 05568, 20464, 20564, 20654, 20664, 20854, 20949, 20954, 96164, 31840, 42550, 72543, 72651, 83833, 83883, 90980, 91551, 95847, and 96141.

Terms: NET 30

Vendor Number: W000007084 X

Certificates of Insurance Required

Contract Period: To cover the period ending **August 31, 2016 2018.**