

State of Tennessee
Sourcing Event # 32110-11783
Specifications for Telematics Hardware, Services, & Accessories

1.0 Scope

1.1 The purpose for these specifications is to establish a Statewide Contract to be used as a source of supply for Telematics Products, Services, and Accessories to be installed in eligible vehicles for the purpose of tracking vehicle location and vehicle system diagnostic reporting. This contract is intended to be used for the purchase of Telematics Hardware, Installation, training, and monthly service. This monthly service includes vehicle tracking and reporting.

2.0 Definitions

Agency - the term "Agency" shall refer to each State board, commission, committee, department, officer, or any other unit of State government.

API System - (Application Programming Interface) is a set of functions that allows applications to access data and interact with external software components, operating systems, or microservices. This system delivers a user response to a system and sends the system's response back to a user.

Bid Discount - a competitive discount for a product or service offered during a Sourcing Event.

Business Day (State of Tennessee) - Monday through Friday (7:00 am through 4:30 pm Central), except State holidays.

Catalog - a complete list of items available for purchase from the supplier within a contract. Often organized by product category.

Catalog Pricing - the price of an item in a Catalog where the purchase price has volume or other discounts deducted and charges for specific services.

Contractor - the company that undertakes a contract to provide materials or labor to perform a service or do a job.

Evaluation Model - a document which allows suppliers to provide their pricing for services or products the State of Tennessee wishes to procure. This document is then analyzed to determine the lowest cost for said products and/or services.

GPS - a satellite-based radionavigation system owned by the United States government.

Hardware - the physical parts of a computer, such as the case, central processing unit, monitor, mouse, keyboard, computer data storage, graphics card, sound card, speakers and motherboard.

Installation - the action or process of installing Telematics/GPS Hardware and/or accessories.

Nights or after normal business hours (State of Tennessee) - Monday through Thursday (4:31 pm through 6:59 am Central), except State holidays.

On-Site Technical Support - technical support provided by the supplier that is conducted, performed, or completed at the location in which the device is being used/housed.

Order - a written direction to purchase goods or services.

Service Calls - a request for service from the State to the Contractor to engage their services to resolve a technical issue or equipment failure, possibly utilizing an ITSM platform.

Solicitation - the act of asking for or trying to obtain a good or service.

Sourcing Event - an event held by the Central Procurement Office in which Suppliers are invited to bid on products or services the State of Tennessee wishes to purchase. May also be referred to as an ITB within this document.

State - refers to the State of Tennessee, including its departments, agencies, and entities that fall under its purview.

Statewide Contract - The term "Statewide Contract" refers to a contract for goods or services established by the Central Procurement Office that all executive branch State agencies must utilize and that may be used by local governments, higher education and not-for-profit entities.

Telematics - a vehicle tracking device installed in a vehicle that allows the sending, receiving and storing of telemetry data.

Telephone Technical Support - technical support provided by the supplier via phone call.

Time - all references made to Time in this Solicitation refer to local Time within the Time zone of the Agency destination (Central Standard Time/Daylight Savings Time or Eastern Standard Time/Daylight Savings Time).

Units - Telematics/GPS or any accessory Hardware devices installed.

3.0 Contractor Requirements

3.1 Contractor must provide all necessary Hardware, installation, training, and managed services throughout the term of the contract.

3.2 Contractor must have customer service representatives knowledgeable of the State's applicable equipment and services who possess the appropriate tools to provide timely and accurate responses to requests for information about Hardware, orders, order status, delivery, invoices, and issues related to vehicle reporting. Contractor must provide twenty-four (24) hour, seven (7) days a week telephone technical support.

Contractor must provide web-based technical support twenty-four (24) hours a day, seven (7) days a week. Response Time for toll free telephone support and web-based technical support shall be within three (3) hours of the initial request from the State. Technical support must continue from the moment of the initial request until a solution satisfactory to the State is provided. Contractor must also provide email addresses for person-to-person interaction involving customer services and inquiries about contract orders, order status, billing and invoicing.

- 3.3 Contractor must provide a toll-free telephone number available to contract customers for person-to-person interaction involving inquiries about contract orders, order status, billing, and invoicing during normal business hours of 8:00 am to 4:30 pm central time, excluding legal holidays.
- 3.4 Contractor must designate a person as the single point of contact between the Contractor's organization and the State. This representative of the Contractor must be technically competent in the technology this contract addresses and must understand the State's requirements defined in this Invitation to Bid (ITB) and the Contractor's proposal in response. The single point of contact must notify the State of the Contractor's progress toward resolving contract product shipment issues and the Contractor's and/or manufacturer's plans for changes in the products affecting the contract.
- 3.5 Contractor must notify the Central Procurement Office of any open orders that are going to be delayed due to industry wide constraints or unforeseen circumstances that impact the specified contract delivery Time as they occur. The notification must include the specified Hardware product name, customer's name, department/location, and purchase order number affected.
- 3.6 Contractor must notify the State in writing of any changes in product that will affect or modify the contract products. This notification must be made within thirty (30) days of proposed contract implementation to allow the State Time for review of the impact these changes will incur, approval of the proposed changes, and notification to all departments.

4.0 Telematics System Requirements

- 4.1 Contractor must make available for purchase various Telematics hardwired Units capable of transmitting the precise location of State vehicles throughout the entire State of Tennessee where cellular coverage is available. In the event that the Units are outside the coverage area, the Units must store the vehicle data and transmit the data as soon as the Units re-enter a coverage area. The hardwired Units must be capable of providing the reporting services specified in **Section 5.6**. The hardwired device must be 3G, 4G, or 5G capable.
- 4.2 The State requires the awarded supplier to submit a Catalog that contains the available accessories compatible with the hardwired units mentioned in **Section 4.1** and any other Hardware offerings. Accessories that do not support that unit will not be permitted to be listed in the Catalog. The Contractor cannot sell GPS devices or

accessories that are not listed in the Catalog. The pricing for the accessories shall not be higher than their commercially available price.

4.3 System Feature Requirements

- The system shall support at least 16MB flash memory for storage of data over extended periods of connectivity loss. (This allows for storing all readings until 802.11b or GPRS coverage is re-established then transmitting the stored data to provide an updated history of the vehicle.)
- System shall provide Store and Forward capabilities. (System collects vehicle activity data and geo-stamp data and stores onboard until data can be securely transmitted to provide a detailed historical record of activity while in the field.)
- The system shall provide ability to detect and report previous power loss if unit is disconnected then reconnected. (This reports if someone was to disable the system during their shift whether inadvertent or intentional.)
- GPS receiver shall be accurate to less than 5 meters, for at least 90% of readings. Less than 2.5 meters 80% of the Time.
- System shall have less than 10mA typical current draw in key-off mode. (Provides minimal battery discharge when not in use.)
- System shall meet SAE J1455 environmental specifications and provide +/- 25g shock rating (Provides a ruggedized solution in the high abuse environment that system will be used in.)
- System shall support over-the-air firmware updates. (This allows for updating the system without the need to return to the district shop to be updated.)
- System shall support the sensors (wireless and wired) via plug and play directly to the device itself and support the air temp/road temp/relative humidity/dew point and frost point messages.
- System shall support over-the-air configuration updates for the following:
 1. Start Time report intervals
 2. Reporting transmit intervals
 3. Reporting power up/down
 4. Setting GPS database triggers for distance, Time, speed and angle.
- System shall include notifications when a vehicle is due for preventive maintenance based on engine hour readings.
- The system shall provide hourly usage reports to reflect how many minutes in each hour a vehicle was in use.
- The system shall provide mileage reports to reflect how many miles in each day, month, and year vehicle drove.
- The system shall provide the ability to draw geo-fences, label fences, and show the accumulation of Time and mileage within said fence.
- System shall provide user-configurable notifications for excess speeds, excess idle Times, and operation after normal operating hours, previous power loss, maintenance exceptions, and battery voltage.
- The system shall provide user-configurable odometer and hour meter synching to the vehicle's actual odometer and hour meter. System shall also include the ability to readjust both odometer and hour meters if a variance occurs.
- Vehicle Telematics system shall be of rugged design, constructed of components intended and suitable for the mobile equipment market. To ensure longevity in harsh

mobile environments, the system shall conform to SAE1455 for chassis-mounted devices, as well as not be damaged by mechanical shock of +/- 25g. For guaranteed low-temperature operation, the device must operate without degradation of performance in ambient temperatures of -30°C to 60°C.

- The Telematics system shall be protected and immune to over-voltage conditions and reverse polarity. System shall utilize a live 12V connection to the vehicle battery. To minimize vehicle battery drain, unit typical current draw shall not exceed 9mA during sleep mode (key off).
- The system shall contain all necessary Hardware and on-board memory to log GPS coordinates including (latitude/longitude), speed, heading and Time, engine hours (ignition "on" Time) and other external data feeds.
- Data strings of outputting data collected by the system from the on-board electronic spreader control shall include comprehensive spreader activity including spreader status, material feed rates, actual materials applied, operating modes, and warning and error conditions and be capable of supporting new spreader functions and features as added. Spreader event data shall be produced and collected based on programmable event triggers that can be based on a field status change. This is to reduce the flow of data and monthly charges due to larger volumes of data being transmitted.
- The Telematics system shall also log the status change of (6) discrete digital inputs to allow for monitoring the condition of various optional vehicle sensors. Connections to unit shall be made with plug-in connectors (not hardwired) to facilitate simple field replacement of components.
- The Contractor shall provide an open API for accessing and sharing raw vehicle related data. The System should be capable of exporting vehicle location data to other programs thru an API. (example of receiving program ActiveITS)

- Each Home Page for each User needs to be customizable based upon the available applications to the Home Page. The applications need to include:
 - Full Screen Map
 - Seven Day Total Distance
 - Seven Day Total Idle
 - Seven Day Engine Hours
 - Seven Day Driving Percentage
 - Maintenance Report (Hourly)
 - Maintenance Report (Distance)
 - Seven Day Speeding Exceptions
 - Seven Day Idle Exceptions
 - Seven Day Input Usage
 - Monthly Calendar
 - Days Since Last Report
 - Over 30 Minutes since last GPS Report
 - Seven Day Input to Engine Hours Report
 - Routing
 - One Day Total Distance
 - One Day Driving Percentage
 - One Day Total Idle
 - One Day Idle Exceptions

- One Day Engine Hours
- One Day Input Usage
- One Day Input to Engine Hours
- One Day Speeding Exceptions

Application needs to provide the following reports and/or information:

- Last known location map view
- Dispatch map (full screen)
- Last location relative to home (pre-determined address)
- Odometer readings
- Total engine hours
- Last Time asset reported in
- Last known location (map view)
- Historical trip report (map view)
- Raw data report
- Exception reports
- Battery voltage
- Speed
- Idling
- Operating during “off” hours
- Maintenance
- Power
- Geo fence (in/out)
- Temperature (Air and Ground)
- Zone/Route report (Geo fence application)
- Material Usage Report
- Idle report
- Engine Data Report
- Fleet Stop report
- State Summary report
- Road Condition report
- Individual Vehicle Mileage Report
- Daily Asset Usage report
- Weekly Asset Usage report
- Monthly Asset Usage report
- Custom Asset Usage report
- Custom Input Usage report
- Custom Input Distance report
- Asset Distance report
- View Maintenance History/Update Maintenance Record
- Fleet Summary report
- Zone Cycle Time report
- Ping Asset (SMS report)
- Health Check report
- GPS Lost for over 30 Minutes report
- Fuel Consumption Data
- ***Note: Each Telematics GPS Tracking unit must have the ability to “turn-off” or deactivate the location tracking function***

5.0 Monthly Service Requirements

- 5.1 Contractor must have the capabilities to provide monthly monitoring service, which includes GPS Location and Reporting Services. The cost for the hardwired device must be a flat-rate fee for all applicable device reporting capabilities. Updates to software and firmware must be included in the monthly service charge. All network data transmission charges must be included in the monthly service charge. No taxes may be charged as the State of Tennessee does not pay tax.
- 5.2 Contractor must provide a web portal, available twenty-four (24) hours a day, seven (7) days a week, in which authorized State users can log-in a password protected site that displays the precise location of all eligible State vehicles. The vehicles' locations must be refreshed at least every two (2) minutes. The Contractor must also provide a monthly add-on charge to upgrade the refresh rate to every thirty (30) seconds for select vehicles.
- 5.3 Contractor must provide the State the ability to generate reports with sort features, such as Excel and/or PDF, on the Contractor's web portal which display all of the reporting services listed in **Section 5.6**. The information shall be stored for no more than six (6) months and shall purge completely after the required retention period. The Contractor must store the data in accordance with the requirements listed in **Section 8.0**.
- 5.4 Each State Agency or other eligible purchasing entity will only be allowed to view the vehicle data from their own fleet of vehicles.
- 5.5 Contractor must provide a mobile application or mobile-compatible browser, available twenty-four (24) hours a day, seven (7) days a week, in which authorized State users can log-in via password verification and display the precise location of eligible State vehicles in real-time.
- 5.6 Contractor must provide as part of the monthly service (**Section 5.1**), the following reporting services:
- Provide vehicle Start/Stop Times and track vehicle mileage
 - Vehicle utilization reports to determine under or over utilization
 - Non-work hours and weekend utilization report
 - Idle Time reports for all vehicles and system alerts for excessive idling (greater than 5 minutes)
 - Vehicle speed and system alerts for excessive speed
 - Geo-fencing
 - Ability to create custom vehicle groups for reporting and security purposes

6.0 Installation/Training Requirements

- 6.1 Contractor must offer on-site Installation, throughout the entire State of Tennessee, for hardwired GPS Units and associated accessories. The Contractor will bid a price for Installation that is measured on a per vehicle basis. The cost for shipping the hardwired device must be included in the per vehicle Installation rate. Contractor must ensure the GPS unit and accessories are physically installed properly and are transmitting properly to be considered correctly installed. The unit must be transmitting in accordance with the requirements set forth in **Section 4.0**. If additional accessories are needed to ensure that the hardwired device meets the requirements set forth in **Section 4.0**, then the Contractor must provide the accessories to the State at no additional cost. This Installation rate can also be applied to removing GPS Units and accessories from wrecked, lost, or stolen vehicles as specified in **Section 6.3**.
- 6.2 The State users have the option to self-install the GPS tracking devices and accessories. The Contractor must provide a self-install kit that includes Installation instructions, all necessary Hardware, and Installation support via toll-free telephone or online. Shipping costs for Hardware must be included in the bid price.
- 6.3 Contractor must make available training for State employees. Training personnel must explain the functions and features of the GPS unit as well as provide instruction on utilizing the website and mobile application. The Contractor must bid a price per student for each training session for remote instructor-led training. Contractor may also provide self-service web-based training in addition to instructor-led training. The cost for web-based training must be included in the monthly service charge.

7.0 Warranty/Unit Replacement Requirements

- 7.1 Contractor must replace all defective/deficient purchased or serviced hardwired devices during the manufacturer warranty period. The State will not pay additional Installation charges or fees for defective/deficient Hardware.
- 7.2 The State will only pay for replacement accessories if the accessories are lost, stolen, or damaged. The Contractor must replace all defective/deficient accessories during the manufacturer warranty period. The State will not pay additional charges or fees for defective/deficient accessories.

8.0 Information Security Compliance

- 8.1 Contractor warrants to the State that it is familiar with the requirements of the State of Tennessee Enterprise Information Security Policies and has measures in place that ensure that all data records are transported, stored, and accessed in a secure manner. All data is property of the State of Tennessee. The system or Contractor must meet or exceed the State of Tennessee's information security requirements for access control, authentication, storage, data destruction, system maintenance and patching and must be compliant with best practices for secure application development as defined in

SO/IEC 27000 or later series. Contractor may request the latest version of the information security policies from the Contract Administrator.

- 8.2 Contractor warrants that it will cooperate with the State agencies in the course of performance of the Contract so that both parties will be in compliance with State Enterprise Information Security Policies requirements and any other State and federal computer security regulations including cooperation and coordination with State of Tennessee computer security officials and other compliance officers required by its regulations. Contractor shall bear the expense of and require any staff that has access to systems or data that the State of Tennessee designates as sensitive or protected to undergo background checks that are inclusive of both criminal and financial history and shall provide proof of satisfactory results.
- 8.3 Contractor agrees to abide by the following:
- i. Contractor will not install or utilize remote control or file sharing software unless explicitly approved by the State of Tennessee; and
 - ii. Utilize best practice authentication methods to prevent access from unauthorized individuals and entities.

9.0 Catalog Requirements

- 9.1 All catalog pricing will be based on pricing as published in the manufacturer's catalog. Contractor shall also extend to the State any promotional pricing being currently offered that would result in more advantageous pricing for the State than would otherwise be available through this Contract.
- 9.2 The Contractor must apply their bid discount percentages to the manufacturer catalog submitted to Bid Event.
- 9.3 The Contractor must supply the State with the most current Price List within 10 business days when requested by the Contract Administrator.
- 9.4 The Catalog may be updated, as required, and approved by the State, to remain technologically current.