CalAmp iOn Light duty standard Bundle with **WIFI** and 3240 hardware is a complete **all-inclusive** bundle used for tracking **Light Duty vehicles,** with zero upfront cost and simple pricing per vehicle, per month.
The system includes CalAmp's award winning iOn software with industry leading mapping, reporting, alerts and integration to most CAD systems and a host of law enforcement applications.

Benefits include improving deputy safety and reducing vehicle operating costs.

Highlights of our all-inclusive offers:

- Industry-leading LTE CalAmp AVL devices with diagnostic connections
- CalAmp iOn Telematics software platform
- Free on-site spare devices
- Free Unlimited live online training
- Life of contract hardware warranty
- Dedicated customer service and 24/7 support
- CalAmp initial installation included
- Integration with most law enforcement software included

Our Commitment

CalAmp has provided Automatic Vehicle Location (AVL) and telematics systems that work to the highest levels of performance, reliability, and scalability since 1990. We are one of the most experienced GPS vehicle tracking system providers in the industry and have manufactured millions of GPS units fielded throughout the world. **CalAmp has notable experience with government, almost every county in North Carolina currently uses CalAmp solutions in their school bus fleet and maintenance vehicles. One NC School district saves over one million per year using our solution.** CalAmp stands ready to continue to support our services and products for sophisticated government agencies with the high standards expected of the industry's leading manufacturer and provider of telematics technology.

CalAmp iOn Telematics Solution

CalAmp's iOn Telematics application incorporates mapping technology using Esri ArcGIS and is a hosted Web browser-based software as a service. Engineered and designed as an enterprise-level AVL solution, the CalAmp iOn Telematics system is a powerful tool for fleet managers and is uniquely effective for specific end-user departments (such as Public

Safety). The CalAmp in-vehicle mobile units and CalAmp Telematics Cloud (CTC) are linked via two-way LTE wireless communications, allowing for timely data transmission between the field and software.

CalAmp Mobile Units

The CalAmp iOn Telematics solution provides valuable AVL Management tools:

- Vehicle Utilization
- Identifying Vehicle Misuse, Unit Tampering and Fraud
- Real-Time Vehicle Tracking (map-based)
- Custom Reporting (breadcrumbing, tabular, scheduled, exportable)
- Real-Time Alerts (e-mail and text)
- Dashboarding (KPIs and trends)

The assignment of user-permission levels allows access to appropriate sub-sets of the installed functionality.
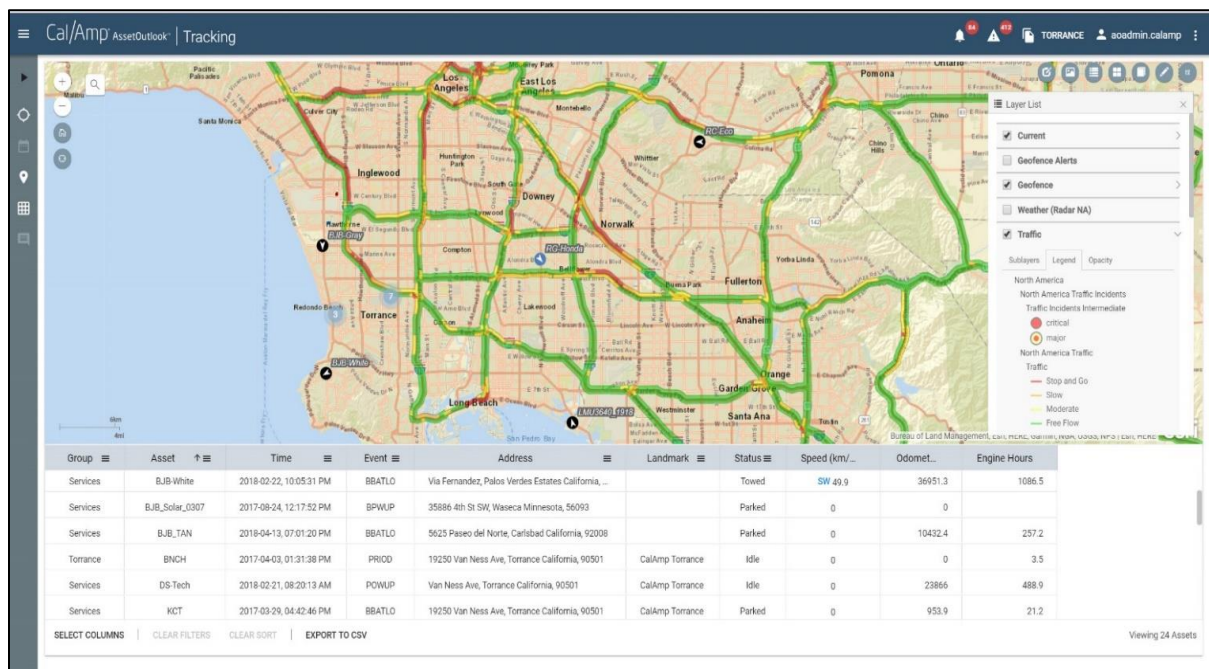
Note: Your user interface may differ from screen shots provided.

Real-Time Vehicle Tracking

The CalAmp iOn Telematics application displays the current location and status of the vehicle fleet, along with address, landmark, and other attribute information, over your proprietary and publicly available Esri GIS map data. The use of a powerful Esri ArcGIS Server mapping along with the incorporation of vector map data allows for almost endless display and analysis possibilities.

The vehicle icons indicate (using colors, directional symbols, and labels) various vehicle attributes (such as ID, status, ignition, heading, etc.). All of the vehicle attribute data may be instantly queried and displayed in a pop-up box with a simple click. Further, collapsible information windows show in-depth data on the selected vehicle including usage, diagnostics, background info, and actionable tools.

Map Viewing Features

The CalAmp iOn Telematics Application displays the vehicle data in a "map window." The map window can be set to display a particular area, region, or address, or to track a specific sub-set of the entire fleet (from the entire fleet to an individual vehicle). In CalAmp iOn Telematics 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 or address. Additional tools are available to enable or disable labeling, and to adjust the map display according to user needs or preferences. Map query options include the ability to locate an address, vehicle, or landmark.

Dashboard

CalAmp iOn Telematics' Dashboard provides a quick view into the real-time status and trending of the utilization of your assets. The Dashboard presents Asset Utilization Range, Asset Utilization Trend, Asset Key Performance Indicator Ranking and Asset Key Performance Indicator Trend. The various dashboard charts can be configured to display data based on the user-defined criteria and updates automatically.
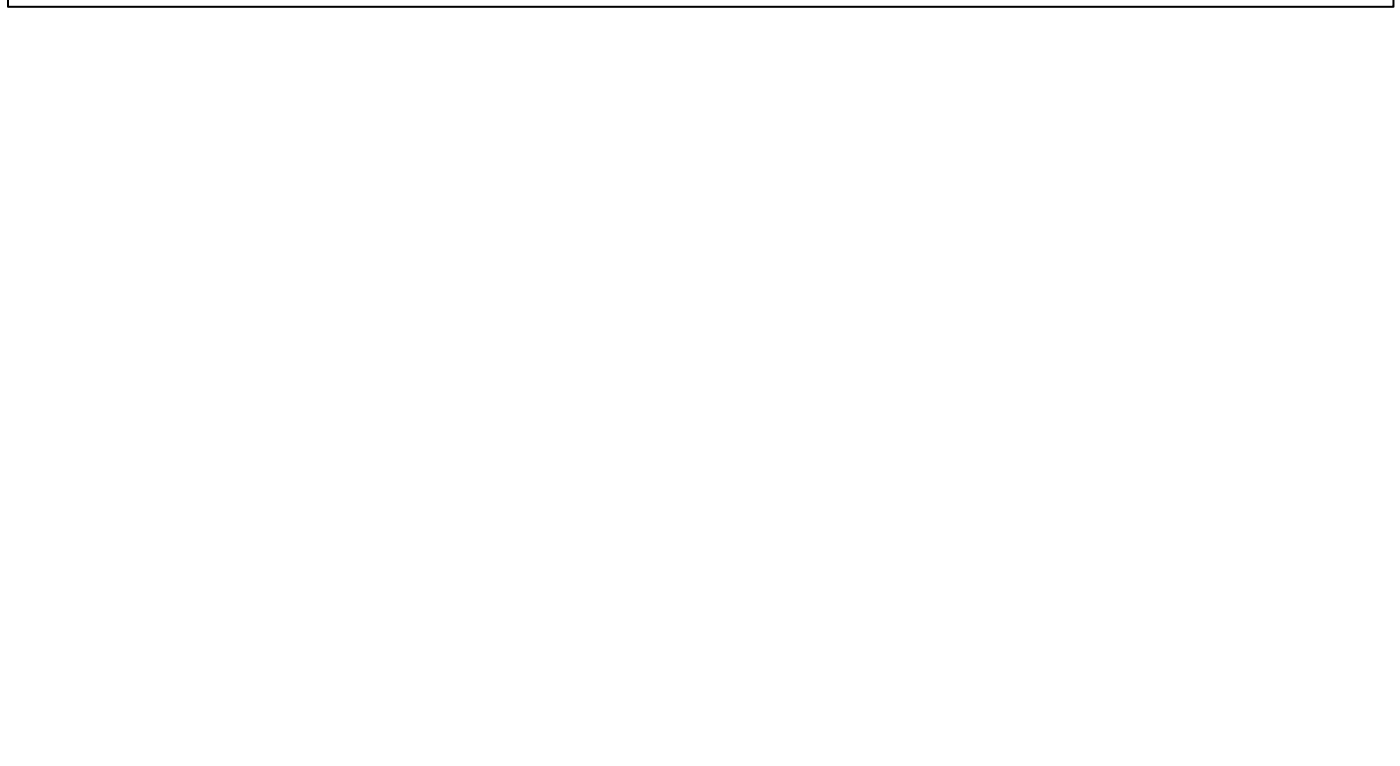
Reporting Functions

The Reporting module can generate both extensive tabular and detailed graphical map breadcrumb reports using archived vehicle location and status data. Reports may be produced for selected vehicles (or groups of vehicles) according to time, location, and status criteria. The **breadcrumb reports** allow users to visually display or re-trace a vehicle's route and status and include the same map manipulation and query functionality as the real-time vehicle tracking displays. **Tabular reports** display unit location and activity in configurable, sortable, and filterable tables. Reports can be configured, saved, scheduled, etc. Such reports may be exported into virtually any format including .CSV and MS Excel files as well as scheduled and sent to any recipients.

Reports

CalAmp iOn Telematics provides a highly customizable and flexible report module for generating reports to help you monitor asset operations and performance. The CalAmp iOn Telematics system comes with a suite of standard graphical and tabular reports that cover all the main vehicle activities that one would expect from an industry leading AVL system. After you generate a report, you can customize the look and feel, save, and schedule. You may want to filter or remove columns from the report, change the sort order or highlight actionable data. Once finalized, you may opt to display report data directly within CalAmp iOn Telematics or export to standard file formats such as PDF, Excel, or CSV.

We have spent years working with hundreds of fleet customers to refine our report offerings to encompass the most useful and important reports.

Some of the data in our standard reports are:

- Vehicle Activity,   Travel & Stop

- Driver Performance,   Over Speed

- Harsh braking/acceleration,   Idle Reports

- Geo-fences   Vehicle Inactivity

- Vehicle Usage (Mileage, Idle Time & Engine Hours)

- Sensor Reports (lights, sirens, emergency, etc.)

- Diagnostic Trouble Codes (if equipped)

Sample Report List

Asset Usage Reports

Asset Daily View
Basic utilization and usage data for selected assets for each day

Asset Summary View
Basic utilization and usage data for selected assets over a date range

Idle Detail Report
Details and duration of each idle event that occurred for assets over a date range

Idle Summary Report
Summary of all idle events over a date range for assets/operators

Maintenance Management Interface
Generate data for integration with maintenance management software

Vehicle Daily View
Basic vehicle usage data for selected vehicles for each day

Vehicle Metrics Analytics View Report
In-depth vehicle usage data for export to user pivot software

Vehicle Metrics Detail Report
In-depth vehicle usage data for each day

Vehicle Metrics Summary Report
In-depth vehicle usage data over a date range

Vehicle Summary View
Basic vehicle usage data over a date range

Dashboard Charts

Asset KPI Ranking
Asset KPI bar chart

Asset KPI Trend
Asset KPI trend line

Asset Utilization Range
Asset Utilization pie chart

Asset Utilization Trend
Asset Utilization grouped bar chart

Engine Diagnostic Reports

J1939 DTC View
DTC alerts for J1939 assets

J1939 Fault Lamp View
Fault lamp status for J1939 assets

OBD-II DTC View
DTC alerts for OBD-II assets

OBD-II MIL View
MIL status for OBD-II assets

Exception Reports

Alert Notifications Report
Overview of alert notifications received

Device Communication
Device details and communication status

Device Input Report
Device input event details

Device Installation Report
Installation/configuration details for devices and their associated assets

Driver Vehicle History Report
History of operator assignment to assets over a date range

Invalid Keyfob Report
Displays usage of unregistered key fobs over a date range

Posted Speed Violation Detail View
Details of each posted speed violation that occurred

Posted Speed Violation Summary View
Summary of all posted speed violations over a date range for assets/operators

Tag Inventory Report
Associations and status of iOn tags

Towing Report
Towing Report

Unauthorized Usage Detail
Details of asset usage events outside of scheduled hours

Unauthorized Usage Summary
Summary of asset events and usage outside of scheduled hours

User Login Detail Report
Each user login attempt by iOn users

User Login Summary Report
User login count and latest login for iOn users

Geofence Reports

Geofence Detail Report
Usage data for assets that passed through a geofence

Geofence Equipment Count Report
Snapshot of number of assets located in geofences by asset category/type

Geofence Event Report
Details of each geofence event

Jobsite/Landmark Summary Report
Usage data for assets that passed through a geofence over a date range and shown on a day-by-day basis

Maintenance Reports

Maintenance History Report
Record of logged maintenance

Periodic Scheduled Maint Due Report
Record of upcoming scheduled maintenance

Trip, Stop, Location Reports

Asset History Report
Details of each event that occurred for assets over a date range

Driver Scorecard Detail Report
Driver Scorecard Detail Report over a date range

Driver Scorecard Summary Report
Driver Scorecard Summary Report over a date range

Fuel Efficiency Detail View
Fuel efficiency over a date range by asset

Fuel Efficiency Summary View
Fuel efficiency over a date range by group

Input Usage Detail
Details for each instance of input usage over a date range

Input Usage Summary
Input usage data aggregated over a date range

Location Activity Asset List
Vehicles that have been to a location during a date range

Location Activity Event Details
Events that occurred in a location during a date range

Operator Performance Detail View
Operator performance metrics for each day

Operator Performance Summary View
Operator performance metrics over a date range

State Mileage Detail View
Distance traveled in each state by asset

State Mileage State Summary View
Distance traveled in each state for all assets in group

State Mileage Vehicle Summary Report
Distance traveled by each asset by state over a date range

Stop Detail View
Data for each stop event by assets/operators/routes

Stop Summary View
Stop event data for each asset/operator/route over a date range

Trip Detail View
Data for each trip by assets/operators

Mobile App- Mobile Device Compatible

The standard CalAmp iOn Telematics application can be accessed in any web browser including mobile phones and tablets.

Using the latest web programming technology (HTML5 Javascript) allows the application to automatically configure its menus, buttons, orientation, and font size to be user-friendly and navigated with any mobile device, screen size, or operating system.

- No cumbersome apps to download and constantly update.

- No compatibility or functionality issues between operating systems or device types.

- Major tracking functions of the system on any mobile device.
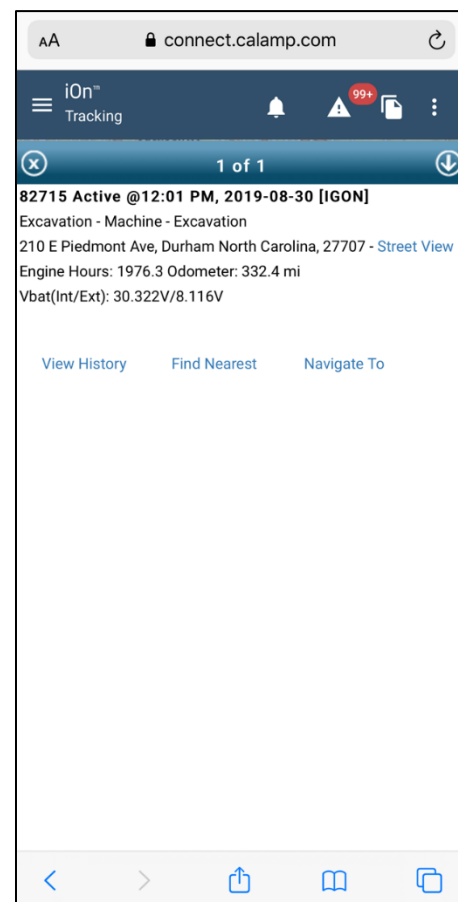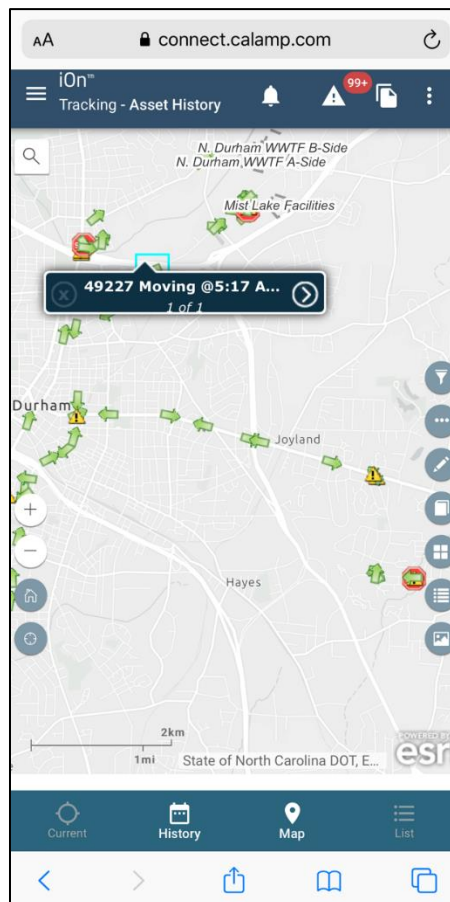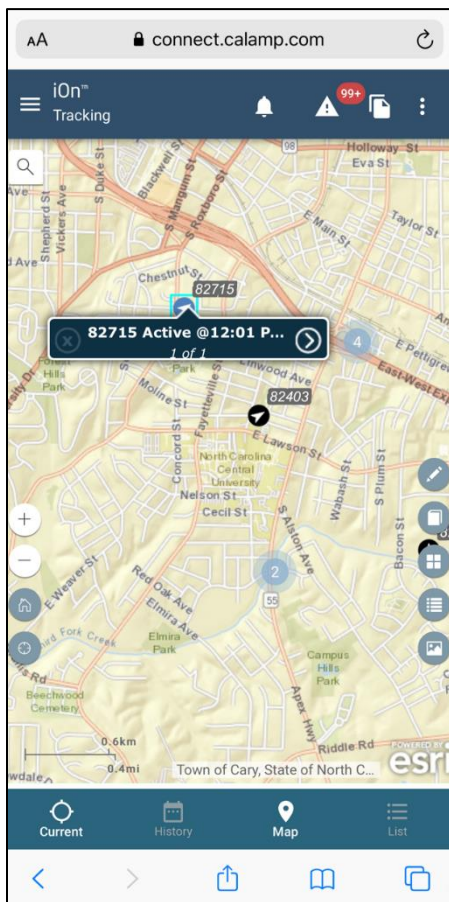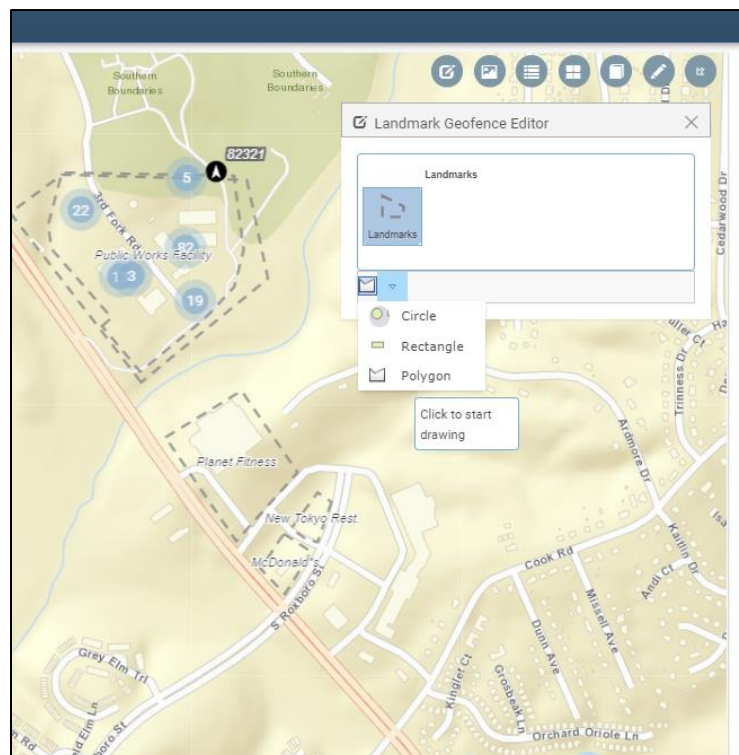
Geo-Fencing

The CalAmp iOn Telematics Solution allows the user to set geo-fences on the map display. The geo-fences 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-fences can be created as polygons or a configurable radius from a specific point, as well as created from existing boundaries, landmarks or zones within your GIS.

Real-Time Alerts

The CalAmp iOn Telematics 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-fences, idle, panic buttons, speeding, harsh driving, etc. Notifications can be sent as an e-mail, SMS, or to the alert screen on the software.

Esri GIS Mapping

The CalAmp iOn Telematics mapping application is compatible with Esri ArcGIS Server, the mapping and GIS engine 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.

Using YOUR Map Data

The CalAmp iOn Telematics system can use virtually any type of map data, and we provide updated worldwide maps, but our software can overlay our AVL information on your own Esri GIS maps WITHIN our application. CalAmp allows you to utilize your existing investment of time and labor that went into your Esri map data. The CalAmp iOn Telematics system displays real-time vehicle location and status data in relation to the infrastructure, assets, boundaries, updates, routes, parcels, landmarks, and other critical elements of your 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,
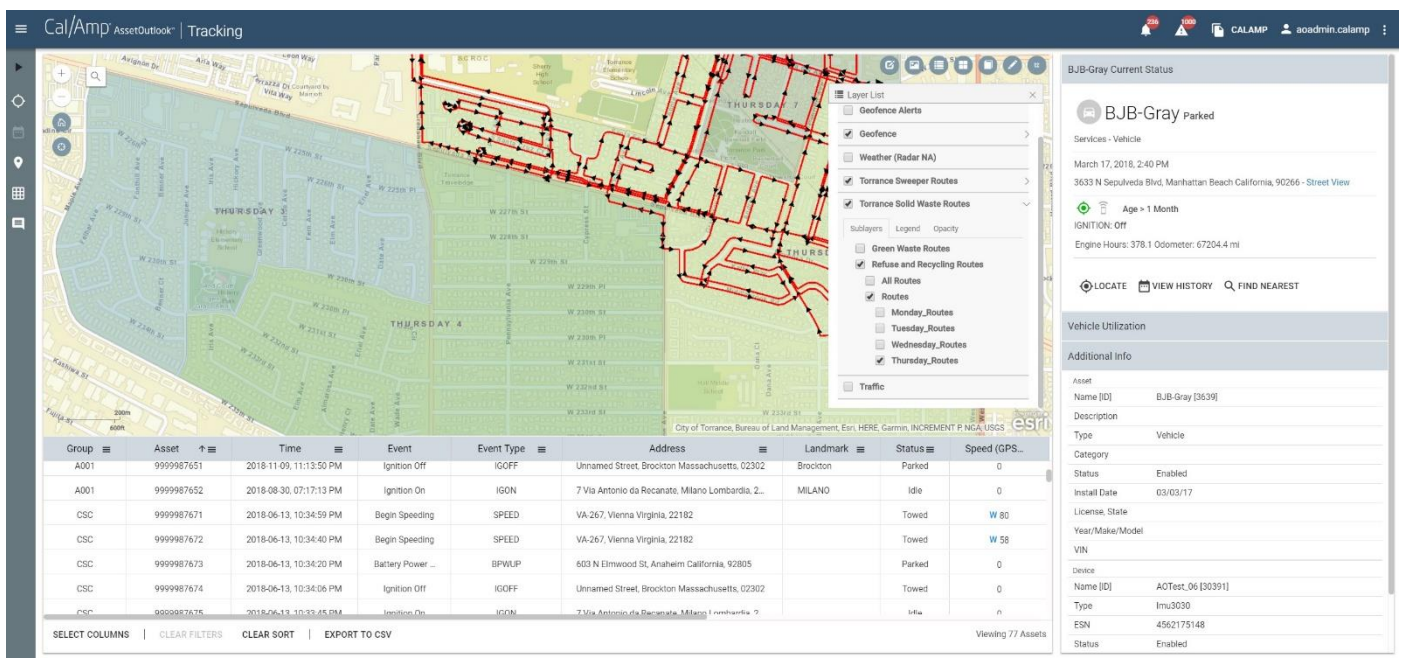
CalAmp can actually access your GIS map data in real time via Map Services.

Example Zone and Turn by Turn Route Overlays

Exchanging Data with GIS

In addition to bringing your GIS data into our AVL application in real-time, we can also provide AVL data outward to your GIS, or any Esri GIS based application using a variety of interface protocols such as Map Services and Esri GeoEvent Server.

External Data Overlays

Because of our powerful universally used Esri GIS mapping technology, we can display external data from other map data sources as an option. Data can come from your own GIS sources or external sources and used as a layer in our AVL mapping. Some examples of these sources/feeds are:

- **Real-Time Weather**

- **Real-Time Radar**

- **Real-Time Traffic**
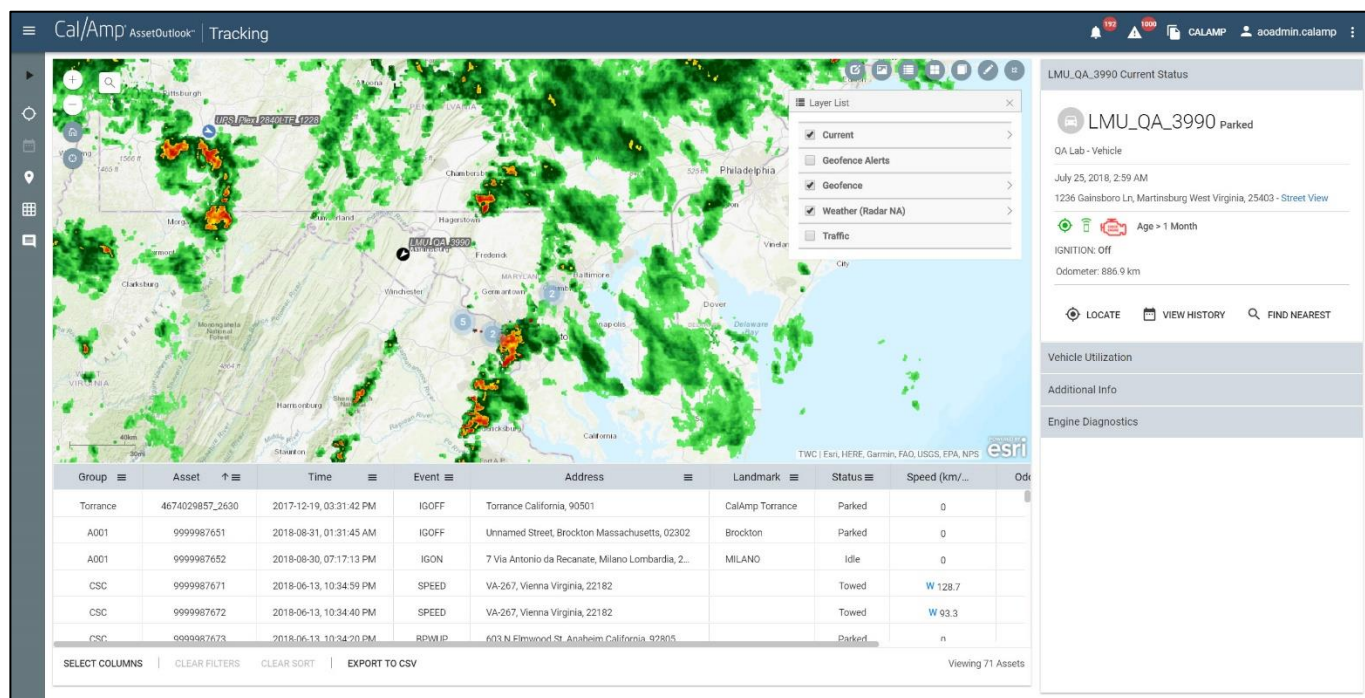
Google Maps Street View Tool

The CalAmp iOn Telematics system has a feature that leverages the highly useful Google Maps Street View tool from the CalAmp iOn Telematics system interface. This CalAmp Google Street View Tool allows the user to click anywhere on the GIS map data within the CalAmp iOn Telematics Map window, and CalAmp iOn Telematics 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 iOn Telematics 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.
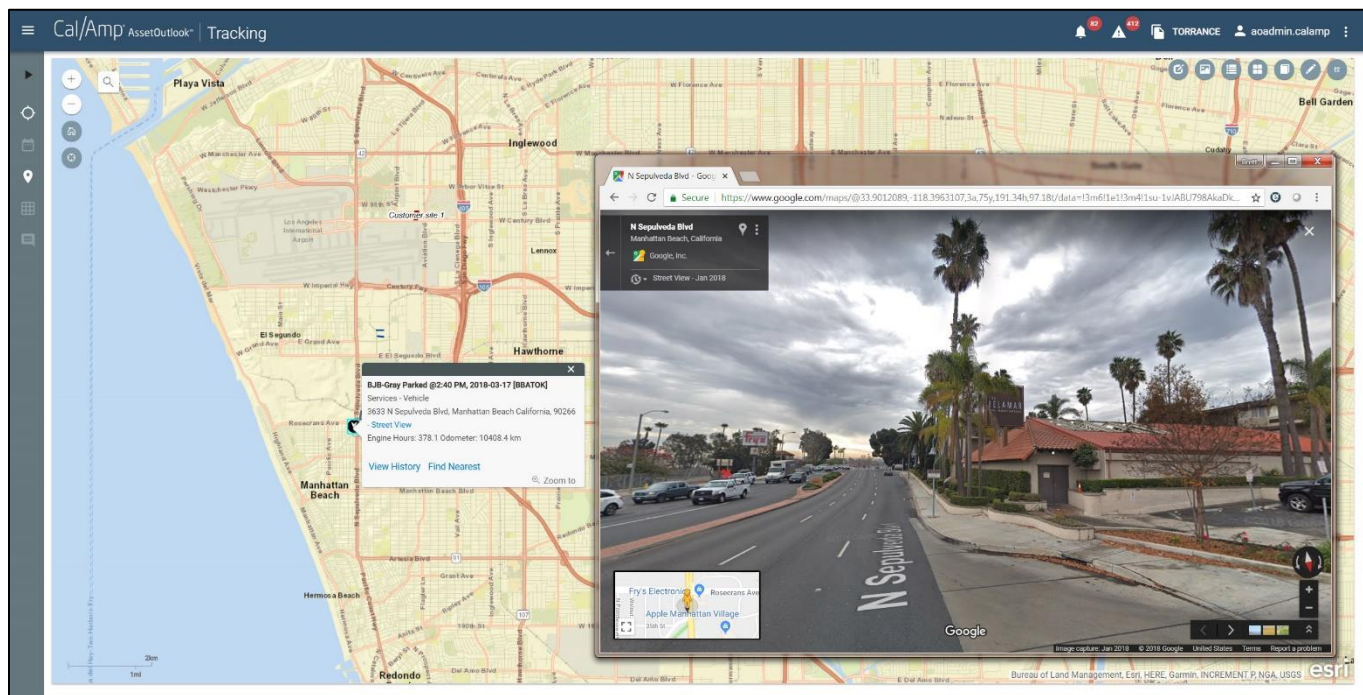
Historical Breadcrumb Replay Feature

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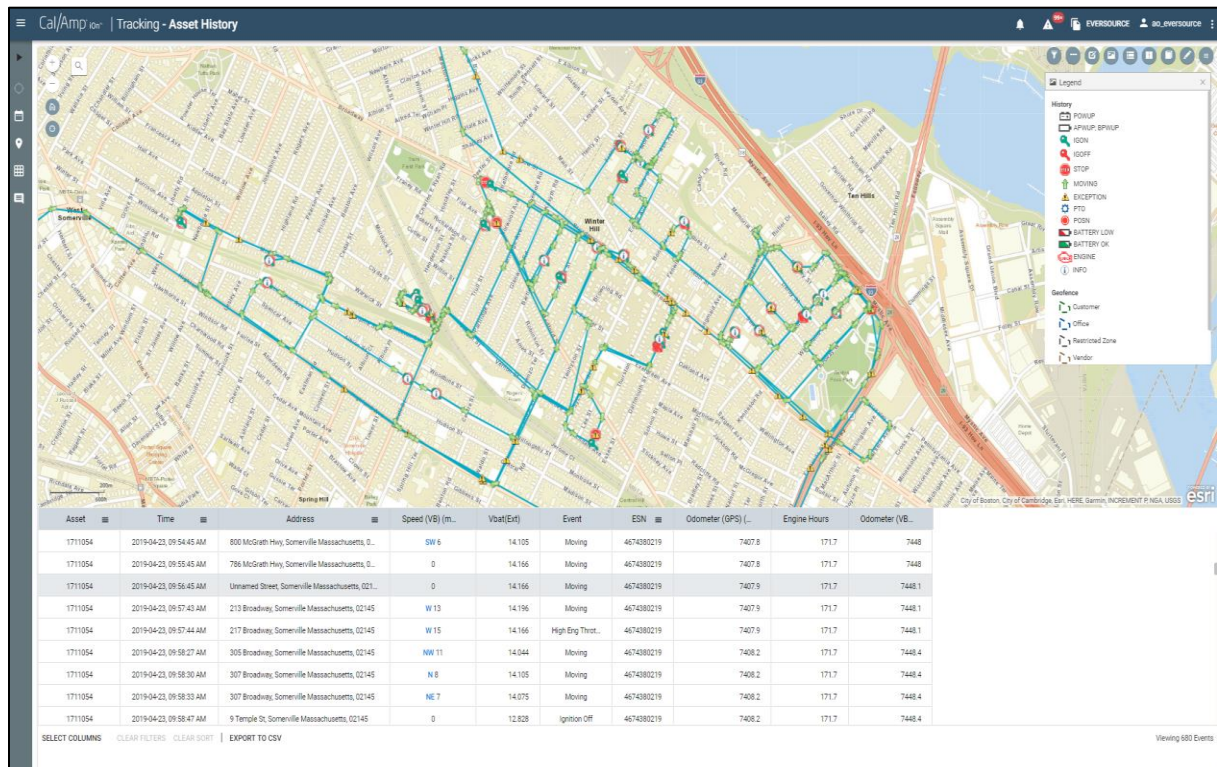
Report Examples

Vehicle Daily View

From Date: 2018-09-10 00:00:00 - **To Date:** 2018-09-16 23:59:59

Group Name	Date	Asset Name	Asset Type	Asset Category	Distance Driven (Miles)	Total Stops	Engine On Time (Hrs)	Total Idle Time (Hrs)	Idle % of Engine Time	Initial On Time Stamp	Last Off Time Stamp	Asset Time Zone
Development	2018-09-10	MRH	Vehicle		0.0	0	0.0	0.0	0.0			America/Los_Angeles
Development	2018-09-11	MRH	Vehicle		4.2	4	0.2	0.1	30.7	2018-09-11 12:24:50 PM	2018-09-11 09:22:01 PM	America/Los_Angeles
Development	2018-09-12	MRH	Vehicle		87.6	4	2.5	0.5	19.1	2018-09-12 11:58:44 AM	2018-09-12 08:50:40 PM	America/Los_Angeles
Development	2018-09-13	MRH	Vehicle		91.7	4	1.8	0.3	14.1	2018-09-13 11:23:59 AM	2018-09-13 09:29:57 PM	America/Los_Angeles
Development	2018-09-14	MRH	Vehicle		0.0	0	0.0	0.0	0.0	2018-09-14 07:34:01 AM	2018-09-14 07:39:08 AM	America/Los_Angeles
Development	2018-09-15	MRH	Vehicle		3.9	2	0.2	0.0	27.6	2018-09-15 06:52:01 PM	2018-09-15 08:23:35 PM	America/Los_Angeles
Development	2018-09-16	MRH	Vehicle		11.6	7	0.9	0.5	35.9	2018-09-16 09:36:40 AM	2018-09-16 08:01:58 PM	America/Los_Angeles

Trip Detail View

From Date: 2018-09-13 00:00:00 - **To Date:** 2018-09-14 23:59:59

Group	Asset Name	Asset Type	Asset Category	Trip Start Location	Starting Location Landmark	Starting Landmark Category	Start Time	Trip End Location	Destination Landmark
Development	MRH	Vehicle		716 Garnet St, S Irena Ave, Los Angeles, California, Redondo Beach,			2018-09-13 11:28:23 AM	87 Pacifica, Alton Pkwy, Orange, California, Irvine, 92618, US	
Development	MRH	Vehicle		2050 W 190th St, Gramercy Pl, Los Angeles, California, Torrance,			2018-09-13 11:38:02 AM	87 Pacifica, Alton Pkwy, Orange, California, Irvine, 92618, US	
Development	MRH	Vehicle		I-405, 27, Los Angeles, California, Long Beach, 90815, US			2018-09-13 11:48:54 AM	87 Pacifica, Alton Pkwy, Orange, California, Irvine, 92618, US	
Development	MRH	Vehicle		I-405, 159, Orange, California, Huntington Beach, 92647, US			2018-09-13 11:58:30 AM	87 Pacifica, Alton Pkwy, Orange, California, Irvine, 92618, US	
Development	MRH	Vehicle		I-405, 4, Orange, California, Irvine, 92612, US			2018-09-13 12:08:30 PM	300 S Prospect Ave, S Maria Ave, Los Angeles, California, Redondo Beach,	
Development	MRH	Vehicle		85 Pacifica, Gateway Blvd, Orange, California, Irvine, 92618, US			2018-09-13 07:41:33 PM	300 S Prospect Ave, S Maria Ave, Los Angeles, California, Redondo Beach,	
Development	MRH	Vehicle		I-405, 7, Orange, California, Irvine,			2018-09-13 07:48:01 PM	300 S Prospect Ave, S Maria Ave, Los

Operator Performance Summary View

From Date: 2018-09-10 00:00:00 - **To Date:** 2018-09-16 23:59:59

First Name	Last Name	Active Days	Work Stops	Total Stops	Total Stop Time	Total Idle Time	Engine Hours	Distance (Miles)	# Speeding Events	Rapid Acceleration Events	Hard Braking Events	Hard Cornering Events	Time Zone
Mark	Holzworth	7	7	16	11h:53m	0h:49m	1h:41m	25.1	0	3	0	1	America/Los_Angeles

Vehicle Summary View

From Date: 2018-09-10 00:00:00 - **To Date:** 2018-09-16 23:59:59

Group Name	Asset Name	Active Days	Distance Driven (Miles)	Total Stops	Engine On Time	Total Idle Time	Avg. Initial On Time	Avg Last off Time	Asset Time Zone	Ending Odometer (Miles)	Last Reported Location	Geofence
Development	RC-Eco	2	0.0	0	0.0	0.0			America/Los_Angeles	121335.8		
Development	RG-Honda	7	93.9	31	5.8	2.5	12:43 PM	05:40 PM	America/Los_Angeles	45592.6		
Development	MRH	7	198.9	21	5.9	1.7	11:58 AM	06:37 PM	America/Los_Angeles	39539.5		

CalAmp is happy to offer an in-depth analysis of your organization and provide a comprehensive solution that best meets your needs. Please reach out to me directly for any other information.

Peter *Nemeth*
SE Regional Manager
Municipal Government

Cal/Amp

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