

## Asset Management Platform for Locomotives

The RFTrax Asset Management Platform (AMP) provides wireless monitoring and tracking of locomotives to control costs and optimize asset utilization while improving crew safety and efficiency. This industry-leading, integrated solution comprises an onboard Asset Command Unit (ACU) and optional external sensors. It is wirelessly linked to a powerful back-end IT system that collects, stores, reports and presents locomotive tracking and status data to customers via the Web.

### Customer Benefits

#### Reduce Costs

- Save fuel and reduce emissions by limiting excessive idling
- Validate crew overtime
- Monitor third-party refueling (requires digital fuel gauge)
- Minimize off-line car hire fees
- Monitor locomotive health (low temperature, low voltage)

#### Enhance Safety

- Receive automated alerts of man down and other emergencies
- Improve response to the scene by providing the exact location of incidents
- Monitor speed restrictions

#### Optimize Inventory Management

- Get a consolidated, real-time view of all locomotives – their location, status, and condition – from any Web browser
- Locate specific assets quickly and efficiently
- Improve oversight of switching yards



# About the RFTrax Solution for Locomotives

## Asset Command Unit

The ACU is a rugged, telemetry device mounted on a locomotive. This device features a microprocessor, a Global Positioning System (GPS) receiver, and a GSM/GPRS cellular modem. The power for the unit is provided by the existing locomotive 74 VDC battery with internal battery back-up. The ACU provides the GPS location, direction of travel, speed of the locomotive, and interfaces with external sensors.

## Sensors and Inputs

RFTrax offers a wide range of sensors and inputs to detect conditions including:

- Engine run
- Engine temperature (optional)
- Voltage level
- Fuel level (integration with aftermarket fuel gauges)
- Man down (optional for remote control equipped locomotives)
- Four digital inputs for your unique application
- Intelligent sensor expandability via RS-485

## Data Access and Integration

Customers can access ACU and locomotive sensor data at any time via the RFTrax Web portal, and can receive proactive alerts notifying them about a variety of scenarios.

### ▪ Web Portal

The RFTrax website is a secure portal that gives customers easy access to real-time information from any browser. This interactive site is linked to Google Maps™ mapping service for geographical information. Customers can track the location and status of their units, set parameters such as geofences (which establish virtual boundaries for locomotives), and run a variety of reports.

### ▪ Reports

Data from the ACU and its external sensors is reported at customer-specified time intervals around the clock. Reports are wirelessly transmitted in real time to the RFTrax data center and are available immediately on the Web portal.

### ▪ Alerts

The AMP system can provide custom alerting based on customer-defined business rules. Incoming ACU data can be filtered to target specific alarm conditions and perform notifications based on those conditions. Users can be notified of crew emergencies, low fuel, low engine temperature, etc., by email or text messaging.

### ▪ Data Services

Data generated from the ACU and sensors can be integrated with customers' IT systems via Web services and file-based data feeds. The RFTrax data service is compatible with most third-party logistics software.



## Installation Training

RFTrax offers a thorough training and certification program so installations can be performed at existing service shops to expedite fleet upgrades, minimize installation costs, and reduce downtime. Installations can take as little as an hour per unit depending on sensors selected, and can typically be performed during scheduled maintenance checks.

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