



## Wireless Transportation Monitoring

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### BIG DATA ANALYTICS IN RAIL WHITEPAPER

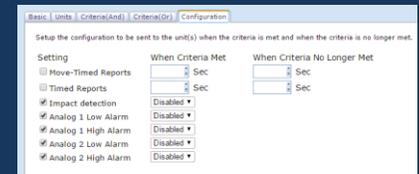
#### How to Use Data to Protect Your Assets and Grow Efficiencies

When it comes to freight rail, big data analytics has countless applications, from locating products in transit to eliminating waste to preventing damage to valuable assets. Lat-Lon customers collect more than 13 billion messages a year from their GPS devices via mobile and stationary assets, resulting in 3.3 Terabytes of data. Rail industry professionals are increasingly collecting and using such massive amounts of data to protect their assets and increase efficiency. From discovering malfunctions to detecting fraud to reducing waste, Big Data analytics is providing answers to often expensive questions that were going unanswered. Download the [Whitepaper](#).

- 📍 BIG DATA WHITEPAPER
- 📍 LMU
- 📍 CTU
- 📍 STU-HL
- 📍 SHOWS
- 📍 2G REMINDER

#### IT UPDATES

ADC – Adaptive Device Configuration (SMART Technology) is getting smarter. ADC has been expanded into Alerts. You can now set parameters to disable/enable temperature or impact alerts to focus on your priorities.



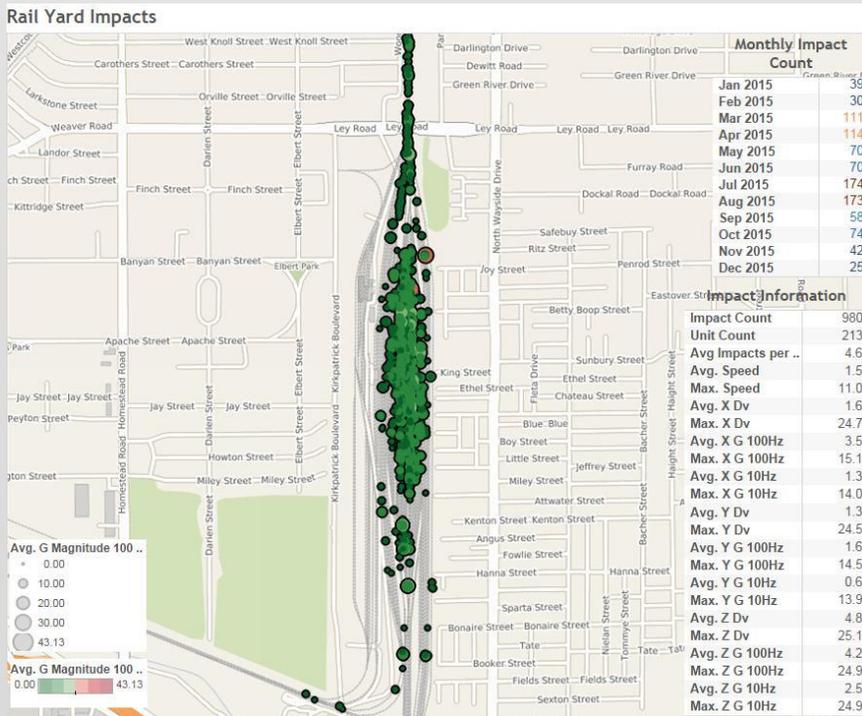
Example: Disable Impact Alerts when inside a geo-fence.

#### UPCOMING SHOWS:

**11/30/16 – 12/2/16**  
**International Workboat Show**  
 New Orleans, LA  
[More Information Here](#)

**1/30/17 – 2/2/17**  
**NITL Transportation Summit**  
 San Diego, CA  
[More Information Here](#)

Figure 1. Heat Map from the Whitepaper that shows impacts at the rail yard level.



## COMPACT TRACKING UNIT

A new smaller Solar-Powered Tracking Device, the Compact Tracking Unit (CTU) is designed to fit in small spots, even in the grooves of a container or any other non-powered asset. The CTU is pivotal in condition monitoring not only through the unit standard GPS but also customizable sensors including: impact detection, pressure, temperature, and digital input or analog input.

Dimensions of the CTU are: 11" X 2.75" X 1.5" (1/3 of a standard piece of paper) and the unit weight is a mere: 1.1 Lbs. The CTU is designed to operate the GPS module 24/7 under typical conditions and in the instance of no direct or indirect sunlight, allows for up to 5 days of messages. For more information, check out the new [video](#).

## LOCOMOTIVE MONITORING UNIT

### Fuel & Start/Stop Capabilities

The Lat-Lon Locomotive Monitoring Unit (LMU) provides you with critical information about your most valuable rail assets. Monitor the vital systems of your locomotives for optimal performance and reduce maintenance costs. The LMU helps you pinpoint the main problem areas that affect efficiency, productivity and maintenance. Every LMU unit comes standard with GPS and Engine Voltage and can be adapted to meet your specific needs including the Automatic Engine Start/Stop and Fuel Probe.

An added feature of the LMU is the Automatic Engine Start/Stop controller, an interactive, real-time locomotive control system for operators to control, monitor, and remotely set boundaries for their engines. During the upcoming winter months, maintain ideal temperatures and eliminate wasted fuel from idling by setting custom parameters. Make changes anytime from your computer, tablet, or mobile device. To learn more, check out the [LMU brochure](#).

## NEWS:

### 2G Shutdown Reminder

Just a brief reminder, and as we've mentioned before, 2G, or Second Generation Wireless Networks with AT&T will be shut down by 2017. In August 2012, AT&T announced the shutdown of these networks "In order to keep up with exploding demand for mobile broadband data." Sunset of their 2G network is approximately January 1, 2017.

When the 2G network is shutdown, any unit still transmitting in 2G will no longer be able to communicate. For more information on the shutdown, check out our [blog](#). If you are wondering if your Lat-Lon unit has been affected, please refer to your data invoice or contact Amy Boehm at [aboehm@lat-lon.com](mailto:aboehm@lat-lon.com).

Figure 2.  
Remotely control engine parameters from Lat-Lon's AESS configuration page in our web reporting system.

The screenshot displays the AESS configuration interface. At the top, there are buttons for 'Activate AESS', 'Deactivate AESS', 'Lock AESS Off', and 'Lock AESS On'. Below these are status indicators for AESS: ACTIVE (green), INACTIVE (white), LOCKED ON (blue), LOCKED ON (orange), FAILURE (red), and STATUS CHANGE PROCESSING (grey).

**Reasons to Start**  
Engine starts when ANY of these conditions are met.

When engine has been off for:	2 Days	0 Hours	0 Mins
Voltage less than	Not Used	00	
Coolant Temp less than	80.00 deg F	36	
Fuel Level less than	Not Used	00	
Ambient Temp less than	41.00 deg F	16	

**Reasons to Stop**  
Engine stops when ALL of these conditions are met.

When engine has run for	5 min
Voltage greater than	Not Used 00
Coolant Temp greater than	110.00 deg F 5f
Fuel Level greater than	Not Used 00
Ambient Temp greater than	42.00 deg F 17

**Digital Input Settings**

	Not Used	Energized / On	Unenergized / Off
Digital 1	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital 2	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital 3	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital 4	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital 5	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital 6	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital 7	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Factory Settings**  
 D10 Signals AESS Enabled: No  
 Deactivate AESS on Start/Stop Failure: No  
 AESS Logic Interval (sec): 60

Buttons: Load Configuration, Cancel



## STU-HL FOR HAZARDOUS LOCATIONS

As an option for our chemical and hazmat customers, Lat-Lon offers a STU-HL (hazardous location). When operating equipment in hazardous locations, it is important and required that the equipment is held to a certain level of safety standards. In order to appoint a product to a certain class and division and approve it for production, a thorough study and completion of tests must be done. One of the most common hazardous location certifications is the Class I, Division 2 certification that the Lat-Lon STU-HL possesses. Class I, Division 2 locations are those in which flammable liquids or gasses are handled or used, but are normally confined within closed containers or systems. This means that these vapors and gases can only escape if there was an accidental rupture, breakdown or abnormal operation of the equipment. To learn more about hazardous location equipment requirements, read our [blog](#) <sup>Ⓢ</sup>

