

Vehicle/Track Interaction (V/TI) Monitor



A proactive, autonomous maintenance planning system that provides continuous safety monitoring of track conditions without impacting revenue service

ENSCO Inc., employs engineers on the leading edge of progressive technology for the rail transportation industry. This is exemplified by the development of the Vehicle/Track Interaction (V/TI) Monitor. This compact accelerometer measurement system can be mounted to any rail vehicle and is capable of detecting track irregularities that can lead to poor vehicle performance or derailment. The V/TI Monitor increases the speed of exception reporting by transmitting data in real time using wireless networks that are automatically forwarded to field personnel. Additionally, exceptions can be reviewed in Track/IT[®], ENSCO's web-based application.

Autonomous

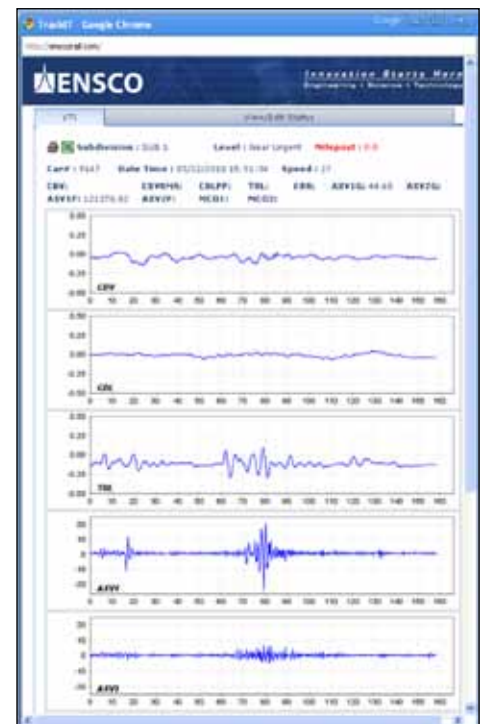
Because the V/TI Monitor is an autonomous inspection system it can be implemented on revenue trains and operated without a dedicated crew. Inspecting track autonomously does not impede normal train operations and reduces costs by removing non-revenue vehicles from the railway.

Real time

V/TI alerts are transmitted in real time to the appropriate field personnel via email, cell phone, text/SMS message or pager. This allows personnel to immediately inspect, slow order and/or repair the track before disaster strikes.

Accessible

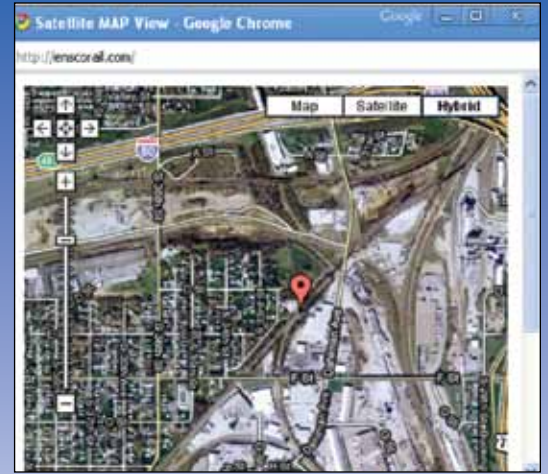
The V/TI Monitor uses Track/IT, a web-based application that operates on any web browser. Track/IT allows the user to review exception types, waveforms and mapped locations. Additionally, it has summary reports to assess line performance. Track/IT has the added benefit that it can show V/TI exceptions with track charts and exceptions from other inspection vehicles such as track geometry measurement systems (TGMS) and ultrasonic rail flaw indications.



Exceptions measured by V/TI Monitor can be viewed in Track/IT[®].



V/TI exceptions can be correlated to specific track conditions.



Exceptions can also be plotted in Google Maps.

Additional features

Other features that distinguish the V/TI Monitor include:

- Self-reporting and diagnostics capabilities
- Compliance with the FRA high-speed track safety standard for carbody and truck acceleration (49 CFR 213.333)
- Capable of measuring carbody vertical, lateral and roll motions to detect locations of significant vehicle response from track perturbations
- Able to locate problems that can cause equipment and lading damage
- Can detect battered and broken joints, damaged frogs and switch points with axle impact measurement
- Able to measure vertical track profile conditions such as mud spots and pumping joints with 10-foot mid-chord offset

Systems in action

The V/TI Monitor has more than a decade-long history of effective service in the industry. There are currently over 200 V/TI Monitor systems operating throughout North America on:

- Class I Railroads: BNSF, CP, CSX, NS, and UP
- Amtrak's Northeast corridor high-speed line
- Amtrak intercity routes
- Maryland Area Regional Commuter (MARC) rail
- Metrolink (the Los Angeles commuter rail system)



A Product of FRA Research • Federal Railroad Administration,
Office of Research and Development



800-ENSCO-VA
info@ensco.com
www.ensco.com