

WEB-BASED REAL-TIME RAIL CARGO AND TRAIN OPERATION MANAGEMENT SYSTEM

AVANTE Rail Cargo Management System is a web-based solution designed to provide real-time visibility for all stakeholders:

- Wagon booking and payment management

GPS location of the train is communicated in real-time to both the monitoring and control center via GPRS with Satellite backup, and to other trains along the same track and nearby with long-range RFID and WiFi systems to facilitate bi-directional visibility among all trains and rail side workers.

- Train scheduling and crew management
- Industry standard automatic equipment identifier (AEI) system for rolling stock management

Industry standard passive UHF technology is used in conjunction with AVANTE active RFID technologies to provide security tracking and visibility of all rolling stock for efficient asset utilization.

- End-of-train-device (ETD) for real-time cargo wagon decoupling alert

AVANTE incorporated its patented active RFID technologies for use in ETD to enhance control and monitoring of decoupling in real-time.

- Real-Time Locating and Visibility of the goods being transported
- E-Seal for container wagon, cargo wagon and tanker car security management

AVANTE patented and proven e-Seal technologies are applicable for standard dry and closed cargo wagons, wet cargo wagons, and standard intermodal containers.

- Real time fuel usage monitoring

AVANTE developed a cost-effective digital sensor for direct and real-time fuel level and usage monitoring. Besides having real-time operational data, it also enhances efficiency management and improvement of operation.

- Moving block speed monitoring and real-time exception reporting
- Geo-fencing and route conformance for potential diversion issues

- Real-time alerts for any exceptions with geo-tagging via cellular and/or satellite communication
- Web role-based location and conditions visibility

With the real-time data of locations, instantaneous speed, the visibility of all wagons of the train, fuel level and usage in comparison to the average, real-time exceptions reporting such as speed limit violation at specific rail block, real-time communication capability via cellular-satellite platform, positive train control including automatic lowering of train speed can be exercised with the build-in capability of the AVANTE RELAYER-CONTROL module when the train engineer does not take actions upon alerts.