



smarTrain®

RAIL MANAGEMENT SYSTEM

maximum integration
increased asset value
exceptional results

SmarTrain® Rail Management System (RMS) is an integrated, real-time railway management system that provides monitoring and control of the rail operation by integrating major subsystems such as signaling, trackside devices, maintenance and corporate systems. SmarTrain® RMS offers a powerful, flexible solution for railway operational management to plan, monitor, and dispatch the movement of all trains within the system.

Platform independent technology allows the SmarTrain® system to grow with the railway. Using a dynamic architecture, the SmarTrain® RMS can be deployed as just the Control Center to integrate existing systems or combined with the Onboard Computer component for even further value. This allows you to add functionality as needed, avoiding costly upfront investments.

And by utilizing integrated GPS and flexible communications options, SmarTrain® RMS extracts the maximum value from your existing rail assets and leverages system efficiencies to generate real results—results you can count on—such as increased transportation capacity and reduced infrastructure investment.

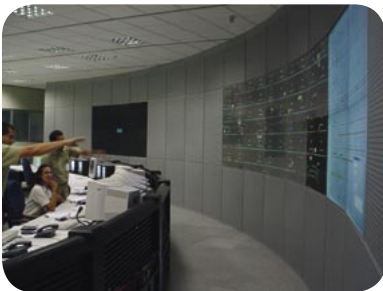
Key SmarTrain® features include auto-dispatching, train plan optimization and deviation monitoring, rule-based configuration of dispatcher and signaling commands and alarms, extensible track building and configuration, graphical playback audits, and scenario-based simulation training. Additionally SmarTrain® RMS is designed to be compatible with future Communications-Based Train Control (CBTC) railway implementations.

SmarTrain® RMS integrates and monitors signaling, movement, and detector information from current and legacy systems and displays a single, high-level, integrated view of the railway system. In addition, maintenance personnel, vehicles, and activities can be monitored as well as the health of all locomotives. This capability is extremely beneficial for train dispatchers, planners, operation managers, maintenance personnel, and a variety of external users.

Other key SmarTrain® features include:



The intuitive TDS screen is part of the SmarTrain® RMS, offering point-and-click functionality and a user-friendly interface.



Using the SmarTrain® RMS, Central Operations can view and optimize train circulation, performance, and railway usage.



The new Hi-Resolution CGC is part of the SmarTrain® RMS Onboard Computer System (OBC).

Features	Description
<ul style="list-style-type: none"> ● Integrated Railway Management 	Full operational control and integration of major systems (train dispatching, maintenance, planning, corporate systems and others).
<ul style="list-style-type: none"> ● Locomotive on-board computers (OBC) 	Color-coded, information rich, touch sensitive display shows the railroad layout and operations within the vicinity of the current train. In continuous communication with the central system and onboard devices, such as the event recorder.
<ul style="list-style-type: none"> ● Signaling systems interface 	Access current and legacy signaling systems, indications, and commands. Rules-based configuration of dispatcher and signaling commands and alarms is easily accomplished.
<ul style="list-style-type: none"> ● Railway operation planning tools: Train Graph (TG), Algorithm Graphical Interface (AGI), and Deviation Monitoring (DM) 	Planners can view and optimize train circulation, performance, and railway usage. The Train Graph sets circulation plans and reveals conflicts; the AGI optimizes plans according to configurable rules and present alternatives; the DM alerts planners and dispatchers when trains deviate from a plan by a configurable factor.
<ul style="list-style-type: none"> ● Maintenance application integration 	Graphic application for trackside alarms enables quick response to maintenance events.
<ul style="list-style-type: none"> ● Wayside Systems Interface 	Centralized control of wayside systems for dispatchers and supervisors (hot wheel/hot box detectors, derailment detectors, tag readers, grade crossing indicators).
<ul style="list-style-type: none"> ● Corporate Systems Interface 	Exchange detailed information with corporate systems concerning trains, plans, train composition, and services.
<ul style="list-style-type: none"> ● Position monitoring: trains, rail-cars, personnel 	Continuous monitoring of track-side components, personnel, and mobile equipment positions.
<ul style="list-style-type: none"> ● Modularity and Scalability 	Platform independent technology allows the system to grow with the railway.
<ul style="list-style-type: none"> ● High-availability for SmarTrain® software and hardware 	Continuous software and hardware availability provided by High Availability Module and dual hardware components with redundancy and failover procedures.
<ul style="list-style-type: none"> ● Friendly Graphic User Interfaces 	Intuitive, graphical representations of present, past, and future states of the railway operation. Point and click functionality.

Key Benefits

Strategic Results

- » Increase capacity, efficiency and productivity
- » Reduce infrastructure and operational costs
- » Decrease dependency on legacy systems and third party equipment suppliers
- » Improve quality of service

Operational Results

- » Dynamic optimization and flexibility for train planning and dispatch processes
- » Reduced response time to actions, routine procedures, and emergency events enabling faster and more reliable decisions
- » Integration of on-board, signaling, maintenance, planning, dispatching, and corporate systems
- » Accurate and uniform communication—operators see the same critical operational information as control center dispatchers
- » Lower internal communication costs among different operational functions
- » Scalability, usability, and high availability