TRAFFIC AND TRANSPORT

RAILWAY TRAFFIC MANAGEMENT SYSTEMS

More than 1 million man-hours invested in R&D. 4 million lines of java code

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RAILWAY TRAFFIC MANAGEMENT SYSTEMS



DaVinci operation desk

DaVinci, a fully integrated railway management system proven successfully in High Speed, Conventional Speed, Narrow Track Traffic and Metropolitan Environments

Introduction

Fully developed on the basis of new technologies to boosts the performance of railway management.

In the backbone of the system is the railway service bus that acts as a middleware for all the subsystems. The core of the system is a Unified Information model built around the operational plan. In the heart of the system is the iTracker, an intelligent train tracking service that integrates information from different subsystems to make a real train tracking. The brain of the systems is the iRouter, the advanced forecasting and the intelligent conflict detection modules. With DaVinci real operation management, from the planning time to the real time execution of the plan, is possible.

Spanish high speed management platform

Easy integration of third party systems

Enabled for ETCS integration

Enabled for GSM-R integration

Includes safety detectors management platform

Real scalable, from single lines to complex networks

Enabled for EU division between infrastructure managers and commercial operators

Key components

Integration platform

Railway Service Bus Architecture, enabling the real time information interchange Connector Architecture for rapid system integration.

Real Time Database, in memory object oriented database.

Single Sign On Platform, including biometric user authentication.

System Management Platform, monitoring the system health.

Plan making features

Travel time simulation, using advanced algorithms for calculating travel time.

Rolling Stock Management, including all vehicles and EMU features (power, length, mass, traction, braking, ETCS equipment).

Time table management, for planning departures, arrivals, stopping times, speeds, allowed delays, paths, shunting, routing, resource allocation, vehicles, crews... allowing the planning of all kinds of movements and vehicle assignment.

Driver Mission Management, generation of the driver mission, space time diagrams and reporting.

Real time system features

iTracking, enabling the real time train movement tracking. Allows the tracking of any kind of train movements independently of the subjacent signaling system (interlocking, ETCS...).

iRouter, enabling automatic train routing, including alternative evaluation and conflict solving.

iForecast, real time forecasting of traffic evolution, including in advance conflict forecasting.

Train Working Diagram, real time space-time diagrams, geowindow, resources allocation, vehicle movements, alarm management, synoptic representations...

Safety Detector System, integration of safety detectors (hot boxes, catenary, object on track).

Traffic Control System, for interlocking control, including ETCS integration.

Simulation system features

Integrated Simulation Environment, with a full simulation of all the track elements, from the signaling system to energy.

System, including interlocking, ETCS, trains, etc.

Exercise Management Tool, for preparing exercises on the simulation environment.

Enabled for user training, capacity planning, plan testing.

Corporation information system.

Internet Services.

Billing System.

Remote Monitorization.

Proven success in all kinds of railway traffic environments

ADIF has installed this system in all of Spain's high-speed lines (Madrid-Barcelona, Madrid-Valladolid, Córdoba-Málaga...), and it will also be installed in every new Spanish high-speed line when their construction is finished. " The International Rail System DaVinci" is one of the most advanced traffic management systems in the world, able to adapt to all kinds of railway traffic: conventional lines, underground, low traffic density railways and so on. At present, this system is being implemented in narrow track traffic management centres (FEVE), in Medellin's subway (Colombia)...



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