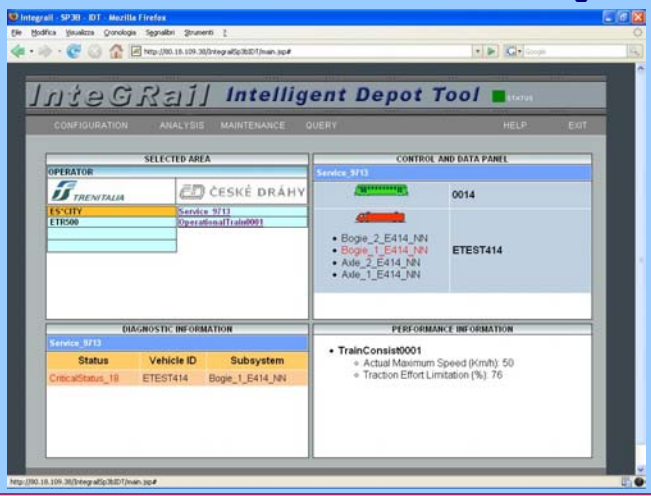
InteGRail → InteGRail Technology Platform
Demonstration Scenario 1
Demonstration Scenario 2
Demonstration Scenario 3 → Intelligent Depot Tool



Operations

Intelligent Depot Tool

Direct access to Diagnostic, Condition, Predictive, Optimization Applications for efficient Rolling Stock Maintenance and Unplanned Event Management

Integration of information is key for further growth of railway transport volume. Decision makers will be able to make better decisions once they have the right information at hand about their own processes and about the processes of their partners in business. InteGRail is the project that developed an enabling technology to allow universal access to existing information systems, be it databases, monitoring systems or existing user applications. For this purpose InteGRail defined a standard approach for architecture and communication. Using this standard approach a number of example applications were developed. One of these applications is the Intelligent Depot Tool, that allows the User with the proper rights to access the information to optimize the Maintenance Process, by discovering in advance incipient faults and being informed in very short time on unplanned events (locking faults) and the best suggestion to manage them..

What is the Intelligent Depot Tool?

The Intelligent Depot Tool (IDT) is a web based application that allows the on-line access to the Maintenance Tools for Rolling Stock. The user, after the login identification that includes the rights based on the user's profile, can access the Diagnostic applications (as the Symptom Agent) to identify symptoms that can become dangerous, and the Tools for Maintenance (Condition Analyzer, Unplanned Event Manager, Lean Maintenance Optimizer and Predictive Maintenance Server) in order to optimize the Maintenance interventions, planning them just in time and with the best organization (resources, site, stop of the train when is really necessary and for the right time).
It includes the Graphical User Interface (GUI) for the interaction to the user and make results accessible in a friendly way

Who can benefit?

The Maintenance department can plan in advance the interventions before they are absolutely necessary (predictive maintenance) or reducing the stop time of the Rolling Stock as short as possible, thanks to advanced information on the real train conditions. The Operation department can schedule the Rolling Stock availability for commercial services in the most efficient way, including fast substitutions when strictly necessary. The overall performance of the Railway system takes advantage in terms of punctuality, reduction of unplanned stop during the service, optimization of resources.

How is the benefit realised?

In the current Rolling Stock Maintenance process, the maintenance interventions are scheduled on the basis of fixed values (mileage or time) and not on the real conditions of the items to be maintained. Besides, the high number of actors involved in RS Maintenance (not only the related department, but also the Operation to plan the trains for commercial services and the Traffic Manager to allow the transfer of RS from the site where it is and the workshop for

the maintenance intervention) makes the process quite inefficient without an integrated view of the available information. These two subjects can take great advantage by the information sharing, that allows on one side to reduce costs of useless maintenance and on the other to share in real time the needed inputs among the involved departments.

Present status, availability and future possibilities

To be able to demonstrate the cross-border capabilities of the Intelligent Depot Tool, many applications have been linked for building the Demonstration Scenario (DS3) that groups Servers in Italy (IDT and Coach Diagnostic Database for Maintenance Legacy System and historical data), in UK (CA, UEM, LMO), locomotive in Italy (E414, with on board Symptom Agent and Condition Analyzer). A standardization of the applications and process through a common Graphical User Interface can be foreseen as an incoming result of the project.
The Intelligent Depot Tool is subject of the Demonstration Scenario 3 in Italy of the InteGRail project in Autumn 2008.

Other results of InteGRail

Architecture definition of integrated information systems: IGRIS

Semantic data structure of the railway domain, the InteGRail ontology

Example user applications: ODSS for on-line operational decision support, IAC for on-line infrastructure availability, IDT for on-line vehicle maintenance information

Description of interdependence of performance of railway processes: the railway KPI tree, and a tool to assess and visualise performance

InteGRail - Facts and Figures

InteGRail started on 1/1/2005 and ends on 31/12/2008

Total project budget:
20 million Euros

EC funding : 11 million Euros

Total effort over 125 person-years

39 partners from 11 countries

Partners of InteGRail:

UNIFE • Alstom Transport • AnsaldoBreda • Bombardier Transportation • Siemens Mobility • UIC • Trenitalia • D'Appolonia • TSB-FAV • DeltaRail • ATSF • CAF • Nortel Networks • Laboratori Guglielmo Marconi • FAR Systems • MER MEC • Italcertifer • ATOC • České dráhy • MAV • UNICONTROLS • Strukton Railinfra • Deuta-Werke • Heriot-Watt University • IMEC • OFFIS • Televic • Seebyte • Kontron • University of Chile • INRETS • Wireless Future • University of Birmingham • ADiF • RFF • ARGE Corridor X • Network Rail • ProRail • SNCF

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