



Monitoring

Wheel Trend Analyser

Accumulative wheel status analysis

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 Wheel Trend Analyser. This application facilitates the linking of sets of wheel force measurements to individual wheels. This enables the operator or maintainer to assess if the health of their wheelsets is deteriorating. It also enables the user to set their own threshold for wheel maintenance requirement.



What is Wheel Trend Analyser?

It is a software application that receives wheel status data from multiple monitoring systems. It executes an algorithm to establish if the rate of deterioration or the level of deterioration of a wheel, or wheel set, has reached a level that suggests closer inspection or maintenance is required. The objective of the application is to transform the data into a semantic format for interpretation by a decision support tool such as the Event Analyser[†]. The Event Analyser can then integrate it with other information to prioritise maintenance and operational tasks.

Who can benefit?

This application is specifically aimed at vehicle maintenance personnel charged with the task of optimising wheel maintenance.

How is the benefit realised?

The benefit is realised by the implementation of an online integrating tool. On processing the received data, the Wheel Trend analyser reports any events to a semantic tool, such as the Event Analyser, which will integrate the information with other sources to support decision making activities. The event result is displayed to the user through the GUI allowing them to perform further analysis of the status of the asset.

Quantification is possible by reviewing costs associated with current maintenance activities and by measuring the reduction in costs through implementation of a Wheel Trend Analyser in the maintenance process.

[†] See the Event Analyser fact sheet

Present status, availability and future possibilities

This application is currently in the development phase within the project. A sample data set is available which will be used to demonstrate the key functionality of the Wheel Trend Analyser application. At the end of the project, this application will be available for trial by Vehicle Operators and Maintainers who wish to use asset monitoring data to support decision making.

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

More information:

For more information on the InteGRail project contact: helene.koepf@unife.org, or surf to www.integrail.info

For more information on the Wheel Trend Analyser: R-Lewis.1@bham.ac.uk

