Interoperability in Practice,
Workshop for the Railway Industry

October 9th Brussels

Workshop Report

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Executive summary

Interoperability in Practice event sets out solutions and practical experience of interoperability projects in passenger & freight services and infrastructure

A greater understanding of the wide range of issues and outcomes facing the railway industry was fostered at Hit Rail’s “Interoperability in Practice” workshop. A number of practical examples of early implementation projects in passenger and freight services and infrastructure management were presented against a backdrop of information about the new European Commission directives on interoperability.

Hosted by Hit Rail, one of Europe’s leading players in the drive towards interoperability, and held at Belgian Railway Company SNCB’s headquarters, the event attracted over 50 attendees from railway organisations across Europe. Representatives from the European Commission’s transport directorate DG Move and from railway bodies such as CER (Community of European Railway and Infrastructure Companies), ERA (European Railway Agency) and Raildata also participated.

The aim of the conference was to discuss strategies and share experiences from several European countries that are leading the way with early adoption of interoperability projects in passenger, freight and infrastructure.
Opening keynotes

Welcome by Helmut Grohmann

Helmut Grohmann
Chairman, HIT Rail

Helmut welcomed the attendees and said: "The railway industry has changed dramatically as more competition has been introduced. We wanted to provide a forum where the solutions to these developments and experiences in implementing them could be shared and discussed by many of the main actors in the industry."
Welcome by Ann Schoubs

Ann Schoubs
CIO, SNCB

Ann Schoubs stressed the importance of rail for Belgium, because of its location at the heart of Europe, and highlighted the main facts and figures relating to SNCB.

She also recalled that SNCB was one of the early promoters of the Hermes network back in the 1970s. Since then SNCB has always been a user of Hermes, as well as a shareholder of Hit Rail since its foundation.

Why is interoperability so important and urgent

Ugo Dell’Arciprete
Commercial Manager, HIT Rail

As an introduction to the morning session, Hit Rail’s Commercial Manager, Ugo Dell’Arciprete, gave an overview of why interoperability is so important and urgent, looking at the background to Hit Rail and the new European legislative landscape that will require the industry to work more closely together.
Ugo defined interoperability as the ability of a rail system to allow the safe and uninterrupted movement of trains with the required levels of performance. This ability depends on all the regulatory, technical and operational conditions that must be met. The European Union is pushing forward with directives, and institutions like the European Railway Agency (ERA) are also involved. The advantages are that if railways work together and create a strong European infrastructure then this will bring benefit to citizens, economic operators and public authorities. It will also bring environmental benefits, by reducing CO₂ gas emissions and it will make European railways more competitive in the world market and increase the competitiveness of rail in relation to the other modes of transport.

It is therefore important to consider interoperability now and plan for it. This needs to encompass all sectors of the industry, from large incumbent railway undertakings to small and new entrants, infrastructure managers, ticket vendors, public authorities and many others.

One of the key requirements for success will be by improving awareness in smaller RUs. Member states need to inform and also monitor those RUs that are less aware of the legislation that is coming. Standards need to take account of technology changes and they need to be extended to the whole business. Interoperability should set the standards for the exchange of data between RUs if and when they wish this exchange to take place, but RUs will really only seek interoperability if they see a good business case – if not, they will put it off for as long as possible.

Ugo also pointed out the role that Hit Rail has to play in this - **interoperability is in the DNA of Hit Rail** - the organisation was created as a joint venture between railway companies across Europe with the aim of helping them to work together more effectively. It is fully owned by the railways with no outside vendor interests and it encompasses both incumbent railway undertakings and newcomers in this increasingly competitive marketplace.

**Railway Interoperability Projects and Plans**

**Libor Lochman**

General Secretary of CER (Community of European Railway and Infrastructure Companies)

Libor recalled the nature and mission of CER, pointing out the extremely wide coverage of the sector: the CER members account for 84% of the overall freight traffic in Europe, and an astonishing 99% in passenger traffic.

Apart from assisting its members in complying with the legal obligations of TAF and TAP, the CER is involved in two major projects aimed at fostering rail interoperability beyond the TSI: The Full Service Model (FSM) and Shift²Rail.

The aim of the Full Service Model is to achieve an Open IT Framework that would cover the whole passenger distribution process and extend to all modes of transport, beginning with rail and then moving to the complete value chain.

Shift²Rail is a very large European rail Joint Technology Initiative, launched by the Commission together with the sector operators and manufacturers, to set better standards not only in IT but all rail domains (signalling, rolling stock, brakes, etc.).

**ERA’s Role in monitoring implementation of TSIs**

Stefan Jugelt
Project Officer for Telematic Applications, ERA (European Railway Agency)

Stefan described the main contents of the TAF and TAP Regulations, in terms of functionalities and messages, the governance put in place to ensure participation of all involved actors and the process already almost completed for the gathering of the necessary reference files.

He showed a summary of the Masterplans produced by most European companies with deadlines for TSI compliance, and described the role of the National Contact Points (NCP), designated in each Member State to make sure that all national companies are aware of their obligations.

The Central Reference File Database (CRD) is already progressing well with 97 registered users and over 46,000 primary location codes provided by 21 IMs.

The ERA will continue to monitor the progress of the TAF/TAP TSI implementation with working parties due to begin imminently. The implementation will be based on a GIS
(Geographical Information System) which will present maps with nine freight corridors and with data stored in SharePoint lists, using an IT co-operation tool which will be available online 24/7.
Practical experience of interoperability

Practical examples of interoperability projects took centre stage during the morning, as participants were reminded of the pressing need to find interoperability solutions in the face of EU TSI (Technical Specifications for Interoperability) Regulations, namely the Telematics Applications for Passengers (TAP) and for Freight (TAF).

A successful business case for interoperability in passenger reservations

Michael Kistler
Head of Marketing Communication & E-Business, Rhaetian Railway (RhB)

Enrique Ruiz
Technical Manager, Hit Rail

Download presentation

Michael Kistler, Head of Marketing Communication & E-Business at Swiss railway undertaking Rhaetian Railways (RhB) explained that RhB has implemented a fully interoperable, XML-based passenger reservation system. In fact RhB was the first rail organisation in Europe to become interconnected to all other European railways using Hit Rail's new HEROS web services. HEROS provides translation services for fast and seamless communication between "old style" reservation systems and new Web Services/XML platforms.

Michael Kistler explained that the implementation of Hit Rail’s HEROS platform enabled RhB to have its whole inventory on one system (through Hermes) and this has allowed it, along with its partners, to achieve a number of goals, including the ability to make just-in-time bookings, optimisation of train occupancy, taking pressure off the staff and avoiding booking errors. It has also brought greater synergy with partners and reduced dependence on the Swiss Railway, SBB. The use of state-of-the-art technology makes...
the company a pioneer and the new booking portal has reduced costs and allowed the company to connect with third party organisations such as booking.com.

So in the eyes of Rhaetian Railways and the words of Michael Kistler: **HEROS is the key to Europe.**

**Hit Rail’s technical manager, Enrique Ruiz**, added more detail: RhB’s new reservation system took two years to implement including the testing phase, and working with partners and with Hit Rail. Now it has up to 800 transactions per day and a total of over 270,000 transactions in one year, with partners such as the DB (Germany), SBB (Switzerland), SJ (Sweden) and SNCF (France).

He commented: **“RhB is conducting business with partners that use different technologies and standards in a seamless way. This is interoperability in practice!”**

**Wagon Tracking & Tracing based on train run in ISR system**

Luca Mariorenzi
Trenitalia, Raildata ISR Assembly Chairman

Francis Bedel
SNCF Fret, Raildata Chairman

A Raildata presentation, by Francis Bedel of SNCF Fret (Raildata Chairman) and Luca Mariorenzi of Trenitalia (Raildata ISR Assembly Chairman), demonstrated how an interoperability solution can help with wagon tracking and tracing across Europe using ISR. ISR answers the question “where’s my wagon?” and provides comprehensive exchange of movement information for wagons in international traffic through a central web-based platform.

ISR operates by taking a subset of the consignment note data from ORFEUS to match the events to a transport description, and data is stored in the ISR database for the duration of the movement. There are strict filtering rules so that RUs can only access the
ISR database depending on their role within the actual transportation but the relationship with the customer remains with the individual RU. Web-based ISR information and additional features include calculation of kilometres the wagon has run, manual input to web portal, train pre-advice messages, etc.

The system is already operating effectively as current monthly figures demonstrate:

- 26 Railway Undertakings providing/receiving information
- 12M Wagon Status Messages received
- Additionally, 450,000 Hermes advices (H30) received
- 90,000 Create Transport Dossiers received
- 250,000 mileage records forwarded

The presentation included details of how the various rail organisations and databases interoperate the current level of integration and examples of wagon monitoring information. The next challenges for ISR are to improve the quality of the data exchange, support the business needs of Raildata members, in terms of operations and commercial actions, achieve the provision of ETA information, and to provide the RUs with a reliable TAF-TSI compliant platform.

**TAP/TAF Network Rail and GB Implementation Programme**

Mick Haynes, on behalf of Network Rail UK, then described the programme for TAF and TAP implementation within the British railway system. The UK has adopted a common approach for freight and passenger traffic that is fully supported by the State bodies. Detailed implementation proposals have been developed and the TAF/TAP project will create a number of benefits, including a single way of working, compatibility with European partners, promotion of international services and improved operational and passenger information.

As an IM, Network Rail provides the programme team working with a team of stakeholder representatives from Freight RUs, Passenger RUs and Engineering representatives. The team has developed detailed implementation proposals and is seeking investment approval. He described the details of the development, including impact assessments,
coding and impact analysis for various parts of the railway system, plus the TAF TAP phases and timescales and an inter system dependency map.

Mick Haynes concluded: “It makes good engineering and financial sense for everyone to work on one programme.”

**TAF Implementation between CDC and SZDC**

![Image of two men wearing hats]

**Miloš Futera**  
SZDC, Application specialist

**Petr Červinka**  
ČD Cargo, Data interchange responsible

Download presentation  

Rail freight interoperability was illustrated with an example from the Czech Republic, by Petr Červinka of ČD Cargo, the freight company, and Miloš Futera of SZDC, the infrastructure company. The exchange of data between the two companies is now fully TSI compliant, and the benefits are already apparent, with integrated systems enabling reductions in staff time and standardised communications with all Railway Undertakings.

A lively presentation (with hats!) was given of how the system works and the processes between the RU and the IM. CD Cargo and SZDC are already using TSI messages for short term Path ordering, for Train preparation and Train running information processes, including required reference data. Also the TAF Path and Train IDs are already implemented and used for both planning and operation. The conclusion was that migrating to TSI was a good opportunity to redesign processes within the company and with partners, but that state support has been fundamental in driving the change - and goodwill between the IM and RUs is also necessary to its success.

The Czech Republic and Czech railway system is now a “TAF island” and challenges others / neighbours to join!
Sessions on strategic issues

Hit Rail’s Approach to Interoperability

Antonio E. López
Managing Director, Hit Rail

Download presentation

Antonio López, Managing Director of Hit Rail, also gave a presentation on the Hit Rail approach to interoperability, discussing the forces that are shaping the European railway market and the opportunities offered by new technologies, such as Internet or cloud computing, to support structural change and improvements in working together. He also described the HEROS platform, the family of solutions that enables interoperability between railway applications.

In summary, the HEROS platform simplifies the implementation of TAP and TAF TSIs because it allows organisations to exchange data in any format through any channel, connected via the Hermes VPN. It has open standards with no customer lock-in. It is a true interoperability platform that is high performance, reliable and easy to implement.

Hit Rail’s vision for the future sees the harnessing of ICT to the advantage of the rail industry, providing transparency, sustainability, effectiveness and continuous development.
The Infrastructure Issues panel was chaired by Henk Bothof, ICT director at ProRail, and participants include Dirk Kes, Information Architect at ProRail, Miloš Futera, SŽDC, Application Specialist and Mick Haynes representing Network Rail.

The first question concerned whether it was a realistic proposition for an RU to make one request for a Trans-European path.

Dirk Kes explained about the PCS Pathfinder software offered by RNE and the potential role of the Register of Infrastructure RINF when it becomes a reality between 2017 and 2020. One-stop-shops were already set up by IMs but the real electronic coordination was being done through PCS. The issue of arranging Pre-Arranged Paths (PAPs) is currently being resolved.

The second question tried to answer the issue as to whether just using TSI messages was sufficient to run trains. There was agreement that it covered about 85-90% of needs, but border-crossing documents were not fully included as yet. For internal Czech traffic, where TSI is in use with some additional data, it was believed to be 100% adequate. According to Mr. Futera, the experience from the Czech Republic is that “it works” – since they have implemented the TSI approach - the key is to have standardisation and then, for any other needs, special sector messages can be used.

There was then a discussion as to whether ‘train ready’ should be mandatory. This is now the case in SZDC but it still has to be worked through in other IMs. It was agreed that it is desirable.
Passenger issues panel

The passenger issues panel was chaired by Ugo Dell’Arciprete and composed of Thomas Drexler, Director of Rail and Ground Travel at Amadeus, Ruetger Fenkes, Head of Project & Programme Management Passenger Transport Division at DB and Chairman of UIC’s Passenger Forum and Linos Voskarides, Policy Officer at European Commission DG Move.

Their discussions, followed by numerous questions from the attendees, focused on the role of the Ticket Vendors in rail distribution, the obligations imposed by the TAP TSI on the railway undertakings and the strategies needed to involve the smaller companies and new market entrants in the process. The aim of bringing rail more into the ecosystem of travel has been hampered in the past by the lack of common standards, causing rail to be isolated. This is now changing but progress has been slow.

Freight issues panel

The panel, led by Petr Červinka, International data exchanges manager of ČD Cargo, included Andreas Abegg, Hermes Application Manager at SBB Infrastructure IT, Francis Bedel, responsible for IT International Affairs at SNCF Fret and Raildata Chairman, and
Luca Mariorenzi, International Systems and GDS at Trenitalia and President of the ISR Assembly of Raildata.

The main subject of the debate was the different interoperability issues, linked with the new situation after liberalisation of the freight market, with the emerging collaboration of traditional and new railway operators. Both are obliged to implement TAF TSI, but very different approaches and speed of implementation are appearing, as a result of the conditions set by local infrastructure managers. Some managers enable web form capture about trains and paths, instead of TAF messaging – this creates some doubts about the legal situation and equality.

New railway companies are setting examples that may provide a theme for consideration by national railway undertakings on how to simplify their operations, at least for block trains. Existing possibilities for getting reliable forecasts of consignment delivery to destination were discussed by the panel members. There are already several tools, such as ISR and X-Rail for ETA calculation for single wagon load traffic and for block trains operating with TAF train run monitoring. On the other hand not even full TAF implementation will resolve all interoperability issues, mainly due to the amount of freedom given in the regulation for infrastructure managers in the way they can extend and implement the TAF functions.
Summary and closing

Overall Summary by Mick Haynes

Mick Haynes gave an overall summary of the day, highlighting the main points made in each of the presentations and emphasising the excellent progress that is being made towards the goal of interoperability.

Watch video of overall summary session
https://www.youtube.com/watch?v=TjwxzX-wLxe
In a concluding keynote speech Linos Voskarides, Policy Officer at the European Commission’s DG Move, talked about the Directorate’s objectives for the next parliamentary session of the EU Commission.

These include the removal of the remaining technical barriers by simplifying administrative procedures, avoiding discrimination of new entrants in the rail market and increasing economies of scale.

The planned legislative framework involves a Revision of the Interoperability Directive within the 4th Railway Package to include the implementation of technical specifications for interoperability (TSIs) and registers. The EU also aims to make the European Rail Agency into a European Rail System Authority with the task of making the procedures for vehicle authorisation and safety certificates quicker and cheaper, enhancing cooperation with the sector and the national authorities, promoting EU Rail standards outside the EU and promoting research activities and investments in rail.

Other activities undertaken by DG Move include the promotion of the European Platform of Rail Infrastructure Managers (PRIME) to be a European Network for IMs. The department also aims to promote open and integrated ticketing for passengers (TAP TSI implementation), to promote the industry through the implementation of Shift²Rail and also to develop links with third countries.
Helmut Grohmann

Chairman, HIT Rail

Hit Rail Chairman Helmut Grohmann concluded the day with an appraisal of the many professional presentations and discussions that had taken place. He emphasised that – in an increasingly competitive marketplace, the rail industry had still managed to remain a “family” that can cooperate as well as compete.

“I think the day was a great success,” he concluded. “We hope to make this a regular event within the railway industry and to continue our discussions with all participants in the coming weeks and months.”
Conclusions and Way Forward

As showcased during the workshop, there are already good examples of interoperability, especially in countries that have adopted a fast track to a truly liberalised railway market.

In most countries, the Infrastructure Managers have taken the role of a pseudo-regulator, and they are setting the pace of RU to IM TSI implementation. The UK is a good example. Network Rail is leading a sector-wide concerted push to TSI implementation that is expected to bring substantial advances. In the Czech Republic SZDC is leading the way.

But in most countries implementation of TSIs is going slowly, due to lack of urgency, and also a certain lack of knowledge among the affected companies. The desired positive impact on service levels for end users is still years away, and even though it is increasing, it is not yet gaining momentum.

More work and collaboration among companies and organizations is needed.

In this situation, Hit Rail wants to bring a positive contribution by increasing its role as a facilitator of interoperability and the adoption of TSIs.

This will be done in a variety of ways:

• By fostering a collaborative environment via the established working groups and ad-hoc workshops and conferences to promote debate and discussion among all the actors involved in the railway domain.

• By continuing its commitment to Heros, a cloud-based set of solutions for an easy path to TSI compliant exchanges among railway partners.
The role of Hit Rail

Hit Rail will assist the railway industry drive to interoperability and TSI implementation by:

- Providing connectivity solutions for the railways’ international applications
- Developing infrastructure and applications designed to lower the barriers to the implementation of the TSIs
- Providing a collaborative environment among Hit Rail member companies
- Organizing railway industry events and workshops like this one
- Seeking agreements and constructive collaboration among the railways’ international organizations
Media and video

The workshop presentations are available for download at:

http://interoperability.hitrail.com/programme.html

There is also a video of Mick Haynes giving his overall summary at the end of the workshop. It is available at Hit Rail’s YouTube channel:

https://www.youtube.com/user/HITRailBV/
Workshop evaluation results

A questionnaire was distributed among the attendees for them to evaluate the workshop. 17 responses were collected. Here is a summary of the responses (average values):

Rating from 1 to 5
1  most negative / disagree
5  most positive/ agree

What's your overall satisfaction with the workshop? 4,3

The workshop objectives were clear to me 4,1
The workshop activities gave me useful ideas 4,0
The difficulty level of this workshop was appropriate 3,8
The pace of this workshop was appropriate 3,9
The coverage of issues addressed my concerns 3,8
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