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SAFETY AND SECURITY IN RAILWAY TRANSPORT

UIC Safety and Interoperability Activity

Transmitted by the International Union of Railways (UIC)[1]

Introduction

The transverse, multi-functional subject of safety within the rail sector continues to be high on our agenda. As a result, there is a sector-wide safety record of which the railway community can be justifiably proud. Nevertheless, with market liberalization, and the emergence of a whole new set of intra-system interfaces, along with rising societal expectations, the sector must work continuously to maintain and, where reasonably practicable, improve upon this already high level.

This paper sets out the main themes within which work at the UIC is focused in order that the sector can build on what exists and continue to grow.

The main issues centre on people, process and performance. The activities within these issues involve: human factors, occupational safety, safety strategy, interface management and system performance.

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Europe

Within Europe a number of pieces of legislation (directives) and, in particular, those covering safety (2004/49/EC – the Safety Directive) and interoperability (in particular 96/48/EC, 2001/16/EC and 2004/50/EC) have been produced and published by the European Commission.

The development of management systems in order that the rail sector can comply with the requirements of these statutory instruments revealed the need for common tools – a set of concrete and easily measurable safety indicators, targets and methods – with which rail companies can identify.

The Safety Platform of the UIC, in conjunction with the EU-sponsored project known as SAMNET, has been heavily involved in developing input to these tools. Whilst these are specifically for application within the 25 Member States of the European Union, both Norway and Switzerland have formally agreed to apply the measures that are produced in respect to these tools. In addition to playing an important role in the work of the Safety Platform and SAMNET, the UIC has also been central to the activities of the AEIF in respect to interoperability.

Safety - Development of a model Safety Management System that complies with the requirements of the Safety Directive (2004/49/EC) and which takes into account not only internal but also external risk to the overall systemic levels of safety has featured as an important issue. This will continue to develop as international efforts in the safety environment, in combination with the UIC, bring about a greater understanding of risk identification and control.

The role of the safety Platform in this area is explained further on.

Interoperability – the AEIF which, in conjunction with UNIFE, was set up by the UIC to develop the Technical Specifications for Interoperability (TSIs) on the high speed and conventional rail networks of the EU.

A number of TSIs were accepted and published by the EU in 2002 – these were specifically for the high-speed rail network. A further set of TSIs for conventional rail – including "freight rolling stock"; "control, command and signalling"; "traffic management and operations", "telematic applications for freight operation" and "noise" have now been accepted by the EU and are in the course of being translated into the 20 languages of the EU before being published in the Official Journal. A second series involving "persons with reduced mobility" and "the safety of railway tunnels" are in the final stages of acceptance.

The original high speed TSIs are now in the process of being reviewed and reissued.

The European Rail Agency (ERA) – this has been established by the European Union and is now building up its team of experts at its headquarters in Valenciennes, Northern France.

It will take responsibility for all the interoperability issues that the AEIF had until now been dealing with and will be the final "customer" of the findings of the SAMNET project when it concludes at the end of 2005. It will also take responsibility for the emerging European rail signalling and communications system – ERTMS.

The UIC is geographically and technically very well placed to work closely, on behalf of the railway community, with the ERA. To do this, it has created a special interoperability and safety unit which will be the central axis around which this interface will operate.

European Rail Traffic Management System (ERTMS) - The ETCS train control-command system, whose international specifications were drawn up by UIC in cooperation with the railway signalling industry and user railways, with the GSM-R radio communications system, constitute the integral parts of the European Rail Traffic Management System (ERTMS), developed with European Union support.

ETCS, by offering a uniform signalling system, is opening the way for seamless cross-border operations for high speed trains as well as for more conventional operations of both passenger and freight traffic.

By optimizing safety and the use of available capacity on the railway network, the system is starting to make a vital contribution to rail network efficiency as a whole both in terms of productivity and cost.

Spin-offs of the project are specifying cost saving and intelligent track side equipment implementation options for the ETCS in order that the rail administrations may have a future flexible use of the rolling stock equipped with an ERTMS/ETCS/GSM-R on-board system on their network.

With implementation of GSM-R now under way on much of the European network, interest is developing beyond its frontiers. The ERTMS/GSM-R project of the UIC has the task of maintaining the GSM-R specifications, developed under the earlier EIRENE project, managing the rail community's roll-out plan for the system and handling issues and problems that arise as the work progresses. It will play a very close liaison role with the newly-appointed EU ERTMS implementation coordinator and his team.

Through its constituent working groups, the ERTMS/GSM-R project brings together existing and future implementers of GSM-R, assisting the former in realising their objectives and keeping the latter – and the railway industry in general – informed of developments.

Globally

This increased focus on all three dimensions of safety management (people, process and performance) as well as a greater understanding of what society expects from the rail sector, will ensure that the safety issue remains a high level strategic focus right around the world. There is, nevertheless, a very narrow boundary between cost, system performance and safety benefit. Therefore, the sector must remain realistic in the proposals it makes, never forgetting that other transport modes are driving just as hard towards sustainable safety development. It is these successes that will make tomorrow's headlines because these sectors are making such headway.

The rail sector needs to keep firmly and collectively in mind that UIC striving to develop our safety management programme against a tough legislative, political, market and societal background, whilst maintaining our position at the top of the safety league and as a world leader in public transportation.

The Work of the Safety Platform

Introduction

The control of risk is something of vital importance to the rail sector. Third party risk (brought about by issues not within the control of the rail sector) is one of the biggest contributors to the overall level of safety on the rail network. Only a minority of rail accident fatalities are actually passengers travelling in trains. Data analysis suggests that injury to a third party is 4 times more likely than to a passenger travelling in a train. Overall, the major area of risk to the industry comes from this quarter and is largely as a result of incidents on level crossings and trespass.

The Safety Platform, acting as an advisory body for UIC activities in the field of safety has as its core objective to put in place recommendations and actions to help control, mitigate or eradicate these risks and eliminate their underlying causes and effects.

Constituents

The Safety Platform brings together safety directors from member companies of the UIC coming from the following countries: Austria, Belgium, France, Germany, Great Britain, India, Italy, Japan, Poland, Spain, Sweden, Switzerland and United States of America. Amongst these is a mixture of Infrastructure Managers and Railway Undertakings as well as representative organizations such as the CER and EIM in Europe and the FRA/AAR in the USA. Considerable additional independence is provided by having representatives from organizations such as RSSB from Great Britain.

Purpose

The purpose of the Safety Platform is to:

- identify measures or activity (related to system safety within the rail sector) likely to enable safety standards to be maintained or enhanced and, in parallel, boost the volume of international rail traffic;

- promote overall coherence of system safety of the railway sector;

- facilitate the management of safety at the key interfaces between IMs and RUs, RUs and RUs, IMs and IMs and between the rail sector and the National Safety Authorities.

Decision Making

As a result of its transverse advisory status, the Safety Platform is not a body with binding decision-making authority.

However, the Safety Platform is, from its influential position, able to take positions on issues and publish recommendations that can be taken into account by the bodies with the day-to-day responsibility for the railway network.

The Safety Platform is especially able to:

- promote the exchange and mutual understanding of issues between participants;

-   seek convergence on key issues to boost safety and international traffic;

-   help secure high-level approval for the approaches by which convergence is achieved;

-   press for and facilitate implementation thereof;

-   identify issues relating to system safety of the rail sector and projects in cross-functional fields (Safety Management, Human Factors, Occupational Safety, Signalling, Rolling Stock, etc.) where there are specific issues pertinent to system safety and where there are key interfaces;

-   promote the exchange of good practice and the development of competence in system safety management;

-   monitor and analyse system performance to promote debate of the underlying issues and then to make recommendations for dealing with the issues and trends identified;

-   prepare and recommend the annual UIC safety programme.

Current and proposed projects

The Safety Platform is currently engaged on, or planning projects in the following areas:

-   Common Safety Targets, Indicators and Methods
-   System performance analysis and identification of trends
-   Level Crossings
-   The management of signals passed at danger (SPADs)
-   Linguistic Competence
-   Data (Event) Recording
-   Standardization of issues associated with drugs and alcohol
-   Glossary of terms and definitions, with suitable interpretation, used in modern safety management.

Annual Safety Seminar

This seminar is arranged by the UIC in September of each year in order that all its members may gather together and participate in a workshop-style exchange of experience from both within the rail community and externally. Round table sessions as a platform for discussion on subjects of a topical nature are included in the programme with all the contributors to the seminar involved. The theme for 2005 was "Managing Safety at the Key Interfaces" during which UIC heard of experiences on this issue from a wide-ranging number of colleagues not only in the rail sector but also from the automotive industry.

The safety work programme

The UIC publishes an annual safety programme which is currently categorized under the 5 principal headings mentioned above.

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