

ELECTRONIC INFORMATION EXCHANGE SYSTEMS IN RAIL FREIGHT TRANSPORT



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ABBREVIATIONS AND ACRONYMS

CER	Community of European Railway and Infrastructure Companies
CIM	Uniform Rules Concerning the Contract of International Carriage of Goods by Rail (Appendix B to the Convention concerning International Carriage by Rail)
CIS	Commonwealth of Independent States
CIT	The International Rail Transport Committee
COTIF	Convention concerning International Carriage by Rail
CRT	Council for Railway Transport
CUV	Uniform Rules concerning Contracts of Use of Vehicles in International Rail Traffic (Appendix D to the Convention concerning International Carriage by Rail)
ERA	European Union Agency for Railways
EU	European Union
EUROSTAT	Statistical Office of the European Union
OSJD	Organization for Cooperation of Railways
RNE	Rail Net Europe
SMGS	The Agreement on International Goods Transport by Rail
TAF	Telematic applications for freight subsystem of the rail system in the European Union
TEU	The twenty-foot equivalent unit
TSI	Technical specifications for Interoperability
TTP	Trusted Third Party
UIC	International Union of Railways
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WG	Working Group

Executive Summary

Given that the flow of information has a crucial impact on the efficiency of the railway border crossing processes, electronic exchange of information among railways could enormously increase the efficiency at the railway border crossings.

When the information required is exchanged electronically the organization of the processes at railway border crossings could be significantly streamlined. In this background this study details the existing electronic railway information systems for facilitation of international railway transport.

The main objective of the study is to enhance the understanding of the railway officials of the region on options for sharing electronic information for efficient international railway transport.

The chapter on existing electronic information systems explains various systems in use globally for international railway transport. It provides working of the the Telematic Applications for Freight-Technical Specification for Interoperability (TAF-TSI) a system used among members of the European Union. Under TAF-TSI information is exchanged on the consignment note, path request, train preparation, train running information, wagon movement and post trip details. In addition, various information technology tools to implement TAF-TSI are indicated.

Next, the electronic information system among CIS countries developed under Council for Rail Transport (CIS CRT) is detailed. Following that, OSJD solutions for electronic interchange of communication are explicated. The status of electronic CIM/SMGS consignment note has also been elaborated.

The following chapter explains the challenges to seamless flow of information along the international railway corridors. Different legal regimes for international railway transport due to which the consignment note data gets disrupted is identified as the main challenge. The common consignment note could be way forward to serve as a bridge between the two systems.

Similarly, for information exchange between railways and customs due to different legal requirements of the customs authorities along the corridors the flow of information gets disrupted.

Based on the review of existing electronic railway information systems, the next chapter identifies the key message exchanges required for smooth international railway transport. These include messages related to (a) consignment note data; (b) train handover sheet or train information; (c) rolling stock movement. It also provides information on existing international standards on those message exchanges.

The study concludes by reiterating that electronic data exchange within the railway community faces technical, organizational and legal issues and these are closely linked to the historical divergence between 1435 mm and 1520 mm gauges. It is apparent that the process of developing solutions for possible integration of different systems is on-going such as the CIM/SMGS initiative, integration of TAF system into COTIF legislation.

It also observed that the integration of railway information exchange on the regional level is far more advanced comparing to the interregional one. The study identifies technically and legally mature systems of electronic data exchange, namely (i) TAF TSI in European Union and (ii) the system implemented in the 1520 mm railway network (including all the solutions developed by OSJD and CIS CRT).

The study concludes that the most issues on the way to globalization of the electronic data exchange for railway transport arise at the level of interface between different systems (also taking into consideration the systems developed by the customs authorities), which are already at their advanced stage of maturity.

Keeping in mind that the currently functioning electronic data exchange systems are based on intergovernmental agreements (EU legislation on TAF TSI, COTIF CIM, OSJD SMGS, decisions of the CIS CRT), one of the efficient ways for information exchange could be a intraregional intergovernmental arrangement on electronic data exchange (presumably, in the context of ESCAP) with the potential scope incorporating data exchange between railways, between railways and public authorities, and possibly the data exchange between different transport modes (multimodal dimension).

Adoption of such intergovernmental decision would demonstrate the strong commitment of the parties and would provide an impetus for the future international cooperation on this subject.

The study also emphasizes that the future activities on development of an electronic data exchange systems should involve tight cooperation between railways and customs authorities, as any diversity in implementation of various practical aspects of the system might lead to unwanted complexity.

I. Background

The adoption of the United Nations 2030 Agenda for Sustainable Development has provided renewed emphasis on sustainable transport solutions to achieve the Sustainable Development Goals. One of ways to materialize sustainable transport is to enable integrated intermodal transport systems that use modes of transport according to their strength. Such systems encourage mode complementary instead of competition. To move toward such a system at regional level there is a need for proactive policy initiatives to encourage energy efficient and environmental friendly modes of transport such as railways. This would gain even more importance in coming years as the overland transport is expected to increase rapidly.

To support rising land transport, countries in the ESCAP region are implementing numerous national as well regional initiatives to ramp up the transport infrastructure that would further strengthen transport linkages among the countries. Some of the important initiatives in this direction include: The Belt and Road Initiative, launched by China in 2013, aims to promote the connectivity and support development of transport connectivity networks. The Silk Road Economic Belt, a land component of the initiative, focuses on several regional road and railway corridors that will: connect China, Central Asia, Russia and Europe; link China with the Persian Gulf and the Mediterranean Sea through Central Asia and West Asia; and connect China with Southeast Asia, South Asia and the Indian Ocean. The projects under Belt and Road initiatives include transport infrastructure investments and cooperation in transport facilitation.

The Kazakhstan's economic policy Nurdy Zhol - the Path to the Future announced in 2014 address development and modernization of transport and logistics infrastructure, as well as other areas such as industry, energy, housing and support of small and medium businesses.

Railway Transport Development strategy of Russian Federation for 2030, first elaborated in 2008 and revised in 2013, defines strategic goals such as integrated transport space in the Russian Federation and integration into the international transport system.

As a result of these initiatives huge funds are expected to flow to improve transport connectivity among the ESCAP countries and most of it would flow to further improve international railway transport.

Moreover, last few years have also seen rapid growth in information and communication technologies due to exponential spread of internet that can now be harnessed for commercial

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