
Economic and Social Commission for Asia and the Pacific
Working Group on the Trans-Asian Railway Network

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Item 8 of the provisional agenda*

**Perspectives and challenges in operationalizing the
Trans-Asian Railway network**

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Note by the secretariat

Summary

In its resolution 71/7 on adoption of the Regional Cooperation Framework for the Facilitation of International Railway Transport, the Economic and Social Commission for Asia and the Pacific expressed its support for the operationalization of the Trans-Asian Railway network by addressing fundamental issues in the facilitation of international railway transport and promoting cooperation among member States. To strengthen international railway transport in the region, the Regional Cooperation Framework provides, inter alia, for commonly agreed technical standards, harmonized operating procedures and streamlined formalities for railway border crossings.

In the present document, suggestions are made for possible ways to develop commonly agreed technical standards, harmonized operating processes and approaches to streamline border-crossing formalities by rail for the facilitation of international railway transport in Asia and between Asia and Europe. Member States may share current initiatives and proposed measures to address operational issues along the Trans-Asian Railway network, including, but not limited to, those identified in the Regional Cooperation Framework.

I. Introduction

1. The entry into force of the Intergovernmental Agreement on the Trans-Asian Railway Network in 2009 demonstrated the willingness of the countries in the region to work towards coordinated development of railway transport. Member States of the Economic and Social Commission for Asia and the Pacific and their development partners have been making sustained efforts to bridge the missing links in the network. Simultaneously, there is also need to strengthen interoperability in all its dimensions (legal, technical and operational) for the seamless movement of the freight trains across the Trans-Asian Railway network and beyond.

* E/ESCAP/TARN/WG(5)/L.1.

2. To carry forward the momentum generated by the entry into force of the Intergovernmental Agreement, the Commission adopted resolution 71/7 on adoption of the Regional Cooperation Framework for the Facilitation of International Railway Transport during its seventy-first session, held in Bangkok in 2015. The Regional Cooperation Framework identified four fundamental issues and 11 areas for cooperation among members for the facilitation of international railway transport.

3. The fundamental issues identified are (a) standards for railway infrastructure, facilities and equipment; (b) break-of-gauge; (c) different legal regimes for railway transport contracts; and (d) coordination of regulatory controls and inspections at border-interchange stations.

4. The 11 areas for cooperation indicated in the Regional Cooperation Framework are the following:

- (a) Participation in international railway organizations;
- (b) Formulation of subregional and bilateral agreements on the facilitation of railway transport;
- (c) Cooperation to standardize cross-border railway operations;
- (d) Use of advance passenger/cargo information system(s);
- (e) Arrangements for the exchange of wagons;
- (f) Use of new technologies in train operations as well as in container tracking;
- (g) Development of human resources for cross-border railway operations;
- (h) Establishment of logistics centres/dry ports and maintenance hubs at or near border interchange stations, particularly along railway freight corridors;
- (i) Simplification of the intermodal interface of railways with maritime, air and road transport;
- (j) Promotion of the corridor approach in the facilitation of international railway transport;
- (k) Work towards paperless railway freight transport.

5. In order to support members and associate members in implementing the Regional Cooperation Framework, the secretariat is undertaking a project on the harmonization of rules and regulations for the facilitation of international railway transport. The project aims to develop (a) common agreed technical standards and harmonized operational procedures for efficient international railway transport and (b) a model/manual of good practices for railway border crossings to reduce the time required for regulatory controls for international railway transport operations.

II. Enhancing interoperability for international railway transport

6. Three components of interoperability are important in the context of international railway transport. The first is legal interoperability, which implies unified contractual obligations between railways and customers from origin to destination; the second is technical interoperability, which encompasses the need for common technical parameters for railway infrastructure and rolling stock; and the third is operational interoperability,

which covers harmonized practices relating to railway operations and formalities of other government agencies along the international railway transport corridor.

7. Historically, international railway transport is based on two legal arrangements, one framed by the Organisation for Co-operation between Railways and the other by Intergovernmental Organisation for International Carriage by Rail. The Organisation for Co-operation between Railways developed the SMGS consignment note (under the Agreement on International Railway Freight Communications) and the Intergovernmental Organisation for International Carriage by Rail developed the CIM consignment note (under the International Convention concerning the Carriage of Goods by Rail) for formalizing contractual requirements between railways and customers. The existence of two different legal arrangements resulted in long delays for freight trains along the Eurasian railway corridors at border crossings where there was a change in the legal regime. To overcome this challenge, a common consignment note has been developed that provides the way for practical implementation of legal interoperability along the Eurasian railway transport corridors.

8. However, the situation regarding technical and operational interoperability is not clear and there appears to be divergence in various technical standards and operational procedures among countries, presenting a challenge for international railway transport in the region and beyond. In the following paragraphs, ways to improve technical and operational interoperability along the railway transport corridor(s) are provided.

9. Depending on the existing local conditions, three different levels of technical and operational interoperability could be implemented between neighbouring railways, as follows:

(a) **Level A.** Neither the wagons nor the locomotive can cross the border. The train is recomposed with new wagons after the trans-shipment of freight and will continue the trip on the entry railway in a new composition;

(b) **Level B.** Only the wagons of the train can cross the border. This requires compatibility between the two neighbouring countries with respect to a number of elements of the railway infrastructure and the wagons, including bogie change in case of different gauges;

(c) **Level C.** Both the wagons and the locomotive of the train can cross the border and continue the journey. This is the highest level of technical interoperability, is much more complex than the previous two and requires additional compatibility between the two railways in terms of infrastructure and locomotives.

10. For the completion of railway border-crossing formalities, the railway border crossing may be categorized into one of three modes, depending on the level of cooperation between the neighbouring countries:

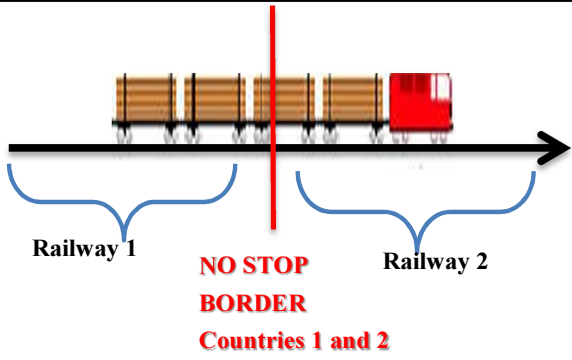
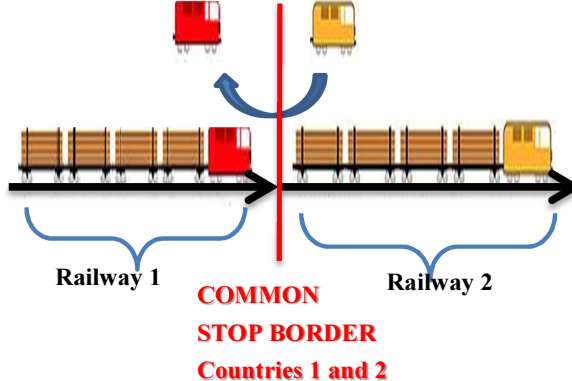
(a) **Mode 1.** No stoppage of trains at the border crossing. The two neighbouring countries decide to implement common formalities for border crossing without the train being required to stop. The border-crossing activities are organized at specific major stations agreed upon by the two neighbouring States, in parallel with operational procedures for railway traffic management;

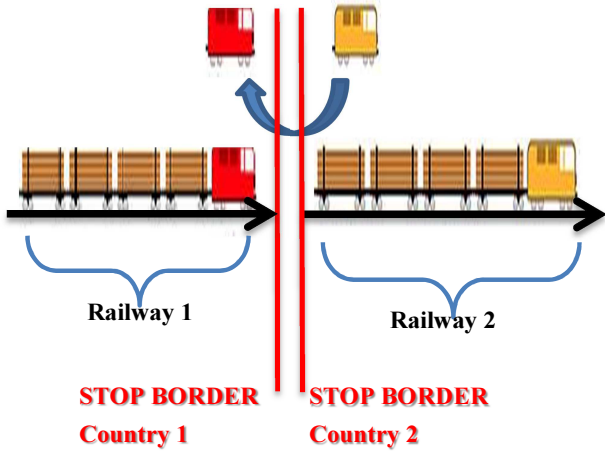
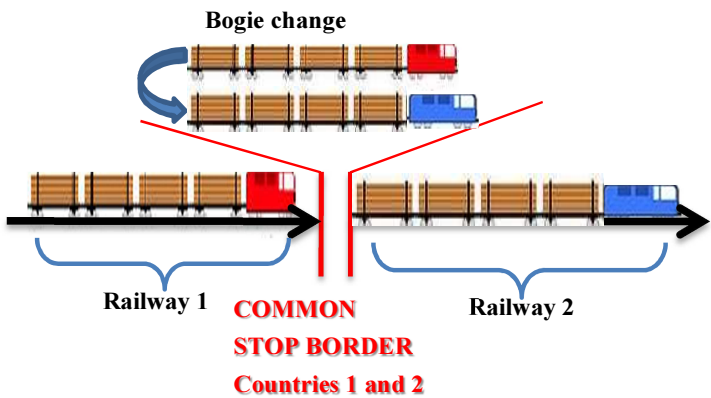
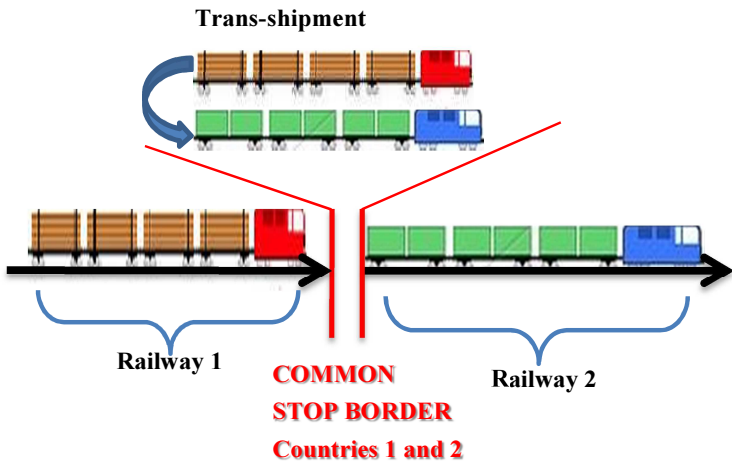
(b) **Mode 2.** A single common border station is designated, where the formalities of both countries' authorities take place sequentially or in parallel;

(c) **Mode 3.** Two border stations in neighbouring countries, one on the exit railway and one on the entry railway, complete formalities separately and sequentially, first at the exit border station and then at the entry border station.

11. Based on the level of technical and operational interoperability and the mode of border crossing, five arrangements are possible for international railway transport between two neighbouring countries, as shown in the figure.

Possible arrangements for international railway transport

<i>Number</i>	<i>Possible arrangements for international railway transport</i>	<i>Border crossing mode</i>	<i>Technical interoperability level</i>
1		Mode 1	Level C
2		Mode 2	Level B

Number	Possible arrangements for international railway transport	Border crossing mode	Technical interoperability level
3	 <p>Railway 1</p> <p>Railway 2</p> <p>STOP BORDER Country 1</p> <p>STOP BORDER Country 2</p>	Mode 3	Level B
4	 <p>Bogie change</p> <p>Railway 1</p> <p>Railway 2</p> <p>COMMON STOP BORDER Countries 1 and 2</p>	Mode 2	Level B
5	 <p>Trans-shipment</p> <p>Railway 1</p> <p>Railway 2</p> <p>COMMON STOP BORDER Countries 1 and 2</p>	Mode 2	Level A

12. In order to map the current levels of technical and operational interoperability, a number of railway corridors between Asia and Europe have been identified: (a) China-Mongolia-Russian Federation-Belarus-Poland-Germany; (b) China-Kazakhstan-Uzbekistan-Turkmenistan-Azerbaijan-Georgia-Turkey-Bulgaria; and (c) Bangladesh-India-Pakistan-Islamic Republic of Iran-Turkey-Bulgaria. A questionnaire detailing technical and operational parameters has been prepared by the secretariat to collect information on the railways en route in order to develop an accurate assessment of the current situation. The information collected will be analysed and solutions proposed to enhance technical and operational interoperability along the corridors with a view to increasing the competitiveness of railways.

13. The technical parameters on which information is being collected include – for railway infrastructure – axle load, structure gauge, passing loops and siding length, signalling and telecommunication, traffic management and traction systems; and – for rolling stock – loading gauge, maximum train length, coupling system, braking system, rail-wheel parameters, type of locomotive, power of locomotive and maximum speed.

14. Similarly, operational parameters and practices on which information is being requested include the following: (a) harmonized timetables, systems for a single tariff from origin to destination, and systems for information exchange for the purposes of traffic management along the corridor; (b) train composition, maintenance of wagons, treatment of wagons that have broken down, and handling and inspection of hazardous material; and (c) management of traffic along the route, including rules on communication, language and driver training.

III. Enhancing the efficiency of railway border crossings

15. To help modal shift and to make railways attractive to shippers on a regular basis, it is critically important to increase the reliability and predictability of freight train services. To this end, railway border-crossing procedures need to be streamlined to reduce administrative burdens and delays. The secretariat is therefore also developing a study to enhance understanding of the processes involved in railway border crossings with a view to suggesting how to streamline procedures. This could help railway authorities to reduce border-crossing delays and increase the reliability of train services.

16. The study has grouped railway border-crossing processes as follows: (a) border-crossing procedures related to railway freight traffic, including break-of-gauge, change of locomotive and crew, transfer of wagons, railway technical inspections and transfer of goods; (b) documentary requirements for railway border crossings, such as wagon lists and consignment notes; (c) use of electronic information systems for the exchange of information between railways, and between railways and customs; (d) processes related to the completion of customs and other government agency formalities, including pre-arrival intimation, mutual recognition of control measures, risk-based inspections, use of new technologies and sharing of information among agencies.

17. The Working Group is invited to share current practices and views with respect to facilitating international railway transport, particularly on the ways proposed above to further strengthen international railway transport in Asia and between Asia and Europe.