



Economic and Social Council

Distr.: General
12 September 2018

Original: English

Economic and Social Commission for Asia and the Pacific Committee on Transport

Fifth session

Bangkok, 19–21 November 2018

Item 3 (b) of the provisional agenda*

Major issues in transport: framework for enhancing the efficiency of railway border crossings along the Trans-Asian Railway network and beyond

Draft framework for enhancing efficiency of railway border crossings along the Trans-Asian Railway network and beyond

Note by the secretariat

Summary

In accordance with the recommendations of the Regional Meeting on Harmonization of Rules and Regulations for Facilitation of International Railway Transport, held in Astana on 20 and 21 December 2017, the secretariat is submitting the draft framework for enhancing the efficiency of railway border crossings along the Trans-Asian Railway network and beyond, as contained in the present document, to the Committee on Transport for its endorsement.

Based on the recommendations of the fifth meeting of the Working Group on the Trans-Asian Railway Network, held in Busan, Republic of Korea, on 13 and 14 June 2017, the draft framework was developed by the secretariat jointly with the Organisation for Co-operation Between Railways.

The draft framework includes a discussion on four specific issues as well as targets and processes for achieving them with a view to making railway border crossings along the Trans-Asian Railway network more efficient. The issues are: information exchange between railways; customs and other government agency formalities; break of gauge; and measurement of the performance of railway border crossings.

The targets for the four issues are: to develop guiding principles on electronic information exchange between railways and among railways and control agencies; to harmonize customs formalities for international railway transport through appropriate arrangements between the member countries; to frame standard operating procedures to efficiently deal with the break of gauge for different possible situations; and to develop comprehensive indicators to measure the performance of railway border crossings and use a standardized methodology to identify challenges and recommend solutions.

The implementation of the measures proposed in the draft framework will help countries to reduce border crossing times in international railway transport and thereby make freight trains more reliable. This, in turn, will boost the modal share of railways, leading to more sustainable transport in support of the realization of the Sustainable Development Goals.

* ESCAP/CTR/2018/L.1.

I. Background

1. Transport is a key driver of economic and social development. However, recently, the negative externalities associated with transport have become more apparent. Transport contributes approximately 25 per cent to global carbon dioxide emissions. Road transport alone contributes to approximately 75 per cent of transport-related emissions. This situation, together with rising road congestion and accidents as well as other types of pollution, points to unsustainable trends in transport development.

2. The adoption of the 2030 Agenda for Sustainable Development has provided renewed emphasis on developing sustainable transport solutions, which are needed to achieve the accompanying Sustainable Development Goals. One way to develop sustainable transport is to integrate intermodal transport systems that use modes of transport according to their strength and encourage complementariness instead of competition among the transport modes. To advance towards such a system at the regional level, proactive policy initiatives are needed to encourage the use of energy-efficient and environmentally friendly modes of transport, such as railways.

3. This is also important given that overland transport is projected to rise substantially. Using estimates provided by the Organization for Economic Cooperation and Development (OECD), total freight transport is expected to triple by 2050 compared with 2015. In Asia and the Pacific, land transport freight is expected to increase by a factor of 3.2, accounting for more than two thirds of all surface freight globally. The rail transport freight is projected to increase 1.7 times.¹

4. Notably, statistics in international railway freight transport are already showing rising trends. The number of block container trains organized along routes between China and Europe has been rising rapidly, from 17 freight trains in 2011 to 3,673 in 2017, and from 2 routes in 2011 to 61 in 2017.² The success of the container train services organized during that time frame has confirmed that the goods can be transported between Asia and Europe by railways in almost half of the time taken by maritime transport.

5. To support rising land transport, member States of the Economic and Social Commission for Asia and the Pacific (ESCAP) are implementing many national and regional initiatives to ramp up transport infrastructure. Those initiatives will further strengthen transport linkages among the countries. As a consequence of those initiatives, an extensive amount of funds is expected to flow in to improve transport connectivity among the ESCAP countries, with most of allocations directed towards improving international railway transport.

6. The comparative advantages of railway transport are still not fully harnessed, and more initiatives need to be undertaken to strengthen international railway transport. The missing links on the Trans-Asian Railway network are under various stages of development. Also, to strengthen railway

¹ ESCAP calculations based on data from OECD/International Transport Forum, *ITF Transport Outlook 2017* (Paris, 2017). Available at www.oecd-ilibrary.org/transport/itf-transport-outlook-2017_9789282108000-en.

² Agencia EFE, “Number of China-Europe freight trains highest in 2017”, 22 January 2018.

transport in Asia and between Asia and Europe, it is imperative to implement “soft” measures to facilitate international railway transport.

7. The need for such measures was recognized by the countries of the region with the adoption of ESCAP resolution 71/7. In the resolution, the Commission adopted the Regional Cooperation Framework for the Facilitation of International Railway Transport,³ which includes four fundamental issues and 11 areas for cooperation to strengthen railway transport in the region. Many of the areas identified in the Framework focus on enhancing the efficiency of railway border crossings.

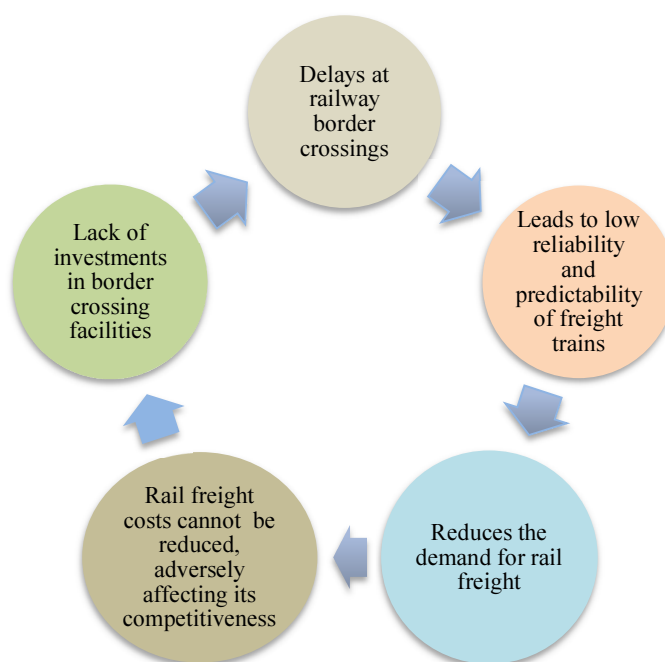
8. Railway border crossing processes play a central role in facilitating international railway transport. As the strength of a chain is equal to the strength of the weakest link, one weak railway border crossing could undermine the efficiency of the entire railway corridor. Delays stemming from the completion of border crossing formalities lead to increased transit time for railway transport, adversely affecting its competitiveness compared with other modes of transport. This not only increases logistic costs for firms, but it also reduces the reliability, predictability and punctuality of freight trains, which, in turn, leads to a vicious cycle of low reliability, low demand for freight train services and higher transport costs and ultimately impedes investments in border crossing facilities (figure I).

9. The imperatives of sustainable development and the need for sustainable transport are prompting countries to reorient their transport strategy towards railway transport. In line with the expansion of international railway transport, the efficiency of railway border crossings⁴ are set to gain importance to ensure that movement of freight by railways is predictable and reliable – the two key features that shippers consider when choosing a mode of transport.

³ See www.unescap.org/resources/regional-cooperation-framework-facilitation-international-railway-transport.

⁴ The expression “railway border crossings” used in the draft framework refers to railway stations where railway operations and customs, immigration, quarantine and other regulatory formalities, necessary for the movement of goods, rolling stock and people from one country to another, are finalized. Railway border crossings is a broad term that includes several distinctive and some related terms used in various countries and also includes railway borders and frontier stations, border interchange stations, railway bogie exchanges and transfer stations, border crossing checkpoints and border crossing control points, stations and offices.

Figure I
Vicious cycle created by delays at railway border crossings



10. Accordingly, in the draft framework, there is a discussion on the significant issues that affect the performance of railway border crossings along with some suggested practical measures to eliminate unwarranted delays. By implementing the suggested measures, the existing vicious cycle resulting from the lengthy delays at border crossings could be changed into a virtuous cycle resulting from efficient border crossings. The enhanced reliability and predictability of railway freight services would lead to more demand, which would, in turn, lower the related costs, and improve the overall productivity and competitiveness of railway freight.

11. The draft framework for enhancing efficiency of railway border crossings was developed based on the recommendations of the fifth meeting of the Working Group on the Trans-Asia Railway Network, held in Busan, Republic of Korea, on 13 and 14 in June 2017.⁵ The meeting underscored that the operational readiness of the Trans-Asian Railway network would improve with measures to facilitate railway transport that include simplification of customs formalities and efficient information exchange among the railways, and suggested that a framework should be prepared to take onboard those processes.

12. The draft framework was developed jointly with the Organisation for Co-operation between the Railways (OSJD) under the project on the Harmonization of the Rules and Regulations for Facilitation of International Railway Transport in the region, which is being funded by the Government of the Russian Federation.

13. The measures indicated therein are intended to support efforts of railways in the region to enhance the efficiency of railway border crossing processes, and thereby increase the reliability of railway freight transport.

⁵ E/ESCAP/TARN/WG(5)/6, para. 16.

II. Existing situations at railway border crossings in the region

14. There are 59 pairs or 118 railway border crossings along the Trans-Asian Railway network. Railway border crossings in Asia and the Pacific have numerous similarities in terms of border crossing operations and formalities, but also have significant differences.

15. According to OSJD statistics established in 2016, five pairs of border crossings in the Asia-Pacific region dealt with an annual volume of cargo exceeding 15 million tons; and nine pairs of border crossings dealt with an annual volume of cargo of between 5 and 15 million tons.⁶

16. Railway border crossings are choke points, which can impede international railway transport. Accordingly, a comprehensive approach is needed to tackle railway border crossing delays. Some of the factors that lead to inordinate delays are inefficient organization of railway operations, such as lack of coordination, exchange of paper-based documents, and lengthy and uncoordinated regulatory controls of customs and other government agencies; dealing with break of gauge; and inadequate railway facilities and equipment at border crossings. In addition to significant delays, those factors also result in uncertain arrival times and increased transport costs.

17. OSJD has conducted a survey to analyse the frequency of occurrence and time of delay at the selected railway border crossings. The results of the survey attributed the extended delays to the following: customs and border control formalities (26 per cent, up to 3.85 days); technical errors (23 per cent, up to 3.9 days); incorrect transport documents (11.3 per cent, up to 3 days); train organization issues resulting from infrastructure insufficiency (10 per cent, up to 1.8 days); commercial errors (6.5 per cent, up to 2.8 days); veterinary and sanitary control (2.6 per cent, up to 4 days); and other reasons (21 per cent, up to 2 days).⁷

18. Furthermore, according to another report by the Asian Development Bank, at some railroad border crossings, it takes on average 32.2 hours to complete the formalities. One of the major causes for delays can be attributed to reloading because of restriction on entry caused by railway terminals not having the capacity to admit additional incoming trains. Other causes are non-availability of wagons and transloading operations to deal with break of gauge, customs inspection, reissue of transit documents and commercial inspections.⁸

19. Moreover, the number of railway border crossings along transport corridors, related delays and uncertainties of dwell time experienced are important factors in determining the attractiveness of the rail corridors. Corridors with multiple railway border crossings offer competitive international railway transport options only if border crossings along the corridor have a similar level of efficiency, as one weak border crossing can undermine the performance of the entire corridor.

⁶ ESCAP calculations based on Organisation for Co-operation between Railways, *OSJD Bulletin of Statistical Data on Railway Transport for 2016* (Warsaw, 2017).

⁷ Organisation for Co-operation between Railways, "Best practices to improve efficiency of international carriage by rail in Eurasia" (Warsaw, 2014).

⁸ Asian Development Bank, *CAREC Corridor Performance Measurement and Monitoring Annual Report for 2016* (2016). Available at www.carecprogram.org/uploads/2016-CAREC-CPMM-Annual-Report.pdf.

20. Given the critical role of railway border crossings to support international railway transport, understanding the environment at railway border crossings is essential.

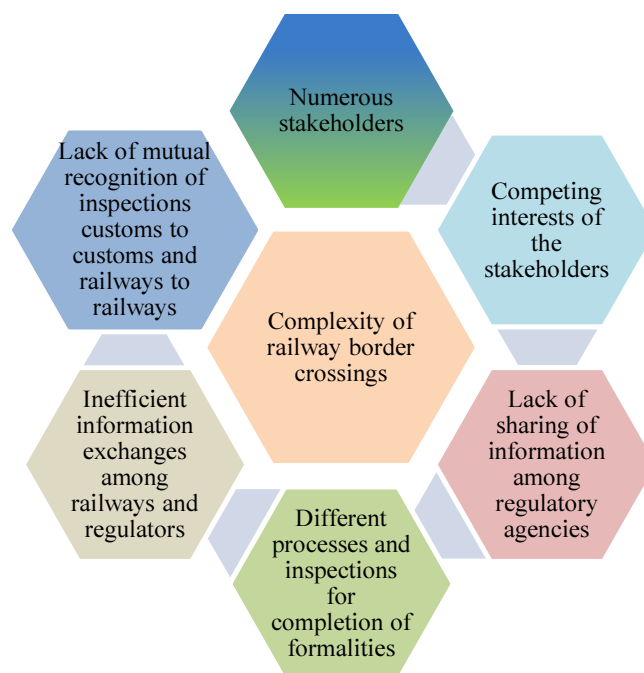
Complex environment of railway border crossings

21. The environment at railway border crossings is complex because of the involvement of numerous stakeholders, which often have different interests (figure II). The consignee, consignor, freight forwarders, customs brokers, importers and exporters all want formalities to be minimal and completed quickly. Regulators, such as customs authorities, phytosanitary and sanitary agencies, authorities responsible for licences and permits, immigration authorities and border guards need specific information to complete the formalities to ensure compliance of rules and regulations. The regulatory authorities also face particular challenges pertaining to goods, namely as to what and how much to inspect to complete the formalities.

Main stakeholders at railway border crossings and their interactions

22. A railway border crossing has numerous stakeholders performing diverse functions. Those stakeholders can be broadly divided into three categories: railways, regulatory agencies and other companies, including those in the private sector.

Figure II
Complexity of railway border crossings



23. Railways are the main stakeholders at railway border crossings. Several operations must be carried out by adjacent railways at the border crossings, involving the technical, commercial and operational handover from one railway to another. The technical part involves inspection of rolling stock, and the commercial handover includes information on goods being transported.

24. Many regulatory agencies are at railway border crossings to ensure that rules and regulations for cross-border movement of freight trains are complied with. Other companies are also there to complete those formalities. The number of agencies at the border crossing depends on the type of border crossing and the freight handled.

25. Customs is a major government agency at railway border crossings. Its primary concern is to ensure compliance of the customs regulations related to the import, export and transit of goods. Concurrently, it is also responsible for preventing smuggling and ensuring security during the transport process.

26. Some other government agencies at border crossings are border guards and police from the immigration department. Their main objective is to control the movement of people at railway border crossings. Phytosanitary, sanitary and radiology authorities are also present at some railway border crossings.

27. The interface between regulators and railways at railway border crossings can be complex, and the requirements for completion of the formalities need substantial harmonization among the countries. Customs seals or inspections are not mutually recognized unless there is an arrangement to that effect. Formation of a single customs territory, such as the Eurasian Economic Union, can potentially simplify railway border crossing formalities within the internal borders of the countries of the Union.

28. Lack of an appropriate mechanism for sharing information and mutual recognition of inspection results among the regulatory agencies leads to duplication of many processes at railway border crossings. For example, if the results of rolling stock inspections and related certification are not mutually acceptable, this leads to duplication of inspections and inordinate delays to complete the border crossing formalities.

29. The private sector stakeholders present at railway border crossings include shippers or their representatives, such as freight forwarders or customs brokers who organize the shipment and comply with the formalities related to the transportation of goods from origin to destination. The forwarders and brokers further contract with the carriers for the transport of goods. At some railway border crossings, companies under the control of railways have been mandated to support railway operations, such as shunting or train marshalling.

Fragmented legal environment for international railway transport

30. The legal arrangements on international railway transport, customs and other regulatory border crossing requirements determine the operations and formalities at railway border crossings. Numerous international railway instruments affect railway border crossing procedures. Foremost among them are the legal regimes developed by two railway organizations, OSJD and the Intergovernmental Organisation for International Carriage by Rail (OTIF). The OSJD agreements and the Convention concerning International Carriage by Rail provide comprehensive legal frameworks that cover most aspects of international railway transport, including consignment notes, use of wagons and other areas that are relevant for border crossing processes.

31. Of the 28 countries that are members of the Trans-Asian Railway network, 14 are members of OSJD and six of OTIF, including three countries that have dual memberships. The ESCAP members that are contracting parties to one or both legal regimes have reached a certain level of harmonization in international railway transport; however, many countries of the region do not participate in either of them.

32. Other international or regional instruments that provide guidance on railway border crossing formalities are the following: International Convention to Facilitate the Crossing of Frontiers for Goods Carried by Rail, 1952;⁹ annex 9 to the International Convention on the Harmonization of Frontier Controls of Goods;¹⁰ agreements under subregional arrangements such as the Association of Southeast Asian Nations, the Commonwealth of Independent States, the Central Asia Regional Economic Cooperation Programme, the Eurasian Economic Union, the Economic Cooperation Organization, the Transport Corridor Europe Caucasus Asia, the Trans-Caspian International Transport Route and other similar arrangements, the Convention on International Customs Transit Procedures for the Carriage of Goods by Rail under Cover of SMGS Consignment Notes 2006,¹¹ conventions and instruments developed by the World Customs Organization, and bilateral agreements that define details on the implementation of railway transport between the countries involved.

33. Fragmentation of international railway transport based on different legal regimes and numerous bilateral arrangements poses a challenge to achieving a seamless international railway transport because of different rules, documents, procedures and practices. The organization of the railway operations at railway border crossings where the legal regimes are different is burdened by the requirement for different railway transport documents. Divergence in formalities for railway transit among the countries compounds delays at the border crossings.

34. The general level of participation by member States in international instruments on railway border crossing facilitation has been low. One reason for this may be the low traffic volumes of railway freight limited to few countries in the past. However, of late, international railway traffic, particularly along the China-Europe route, has risen rapidly. Also, the railway infrastructure in many countries is being ramped up with support provided by national initiatives.

35. There has been rapid growth in information and communications technologies because of the exponential spread of the Internet, which can now be harnessed for transport facilitation. To support the increase in volume of goods transported by railways and to exploit the full benefits of the new technologies, including the electronic exchange of information to enhance the efficiency of regulatory controls, new arrangements for the harmonization of customs formalities in international railway transport should be considered.

36. The framework would draw from the good practices that are currently embodied in various other agreements and conventions. It includes a proposal for an electronic transit transport system for railway transport that can be formalized through an appropriate regional arrangement.

III. Main processes undertaken at railway border crossings

37. Railway border crossings are potentially major bottlenecks for seamless international railway transport. Inefficient railway border crossing processes and procedures are the main causes for significant delays and increased transport costs, which diminish the comparative advantages of railway transport. At railway border crossing points, several critical processes and

⁹ There are currently 12 contracting parties to this Convention, including one ESCAP member State.

¹⁰ Thirteen ESCAP member States are parties to the Convention.

¹¹ The Convention has not entered into force.

procedures take place, including the transfer of wagons and goods between neighbouring railways, change of locomotive and crews, technical inspections and control of compliance with railway transport standards. Neighbouring railways often operate under diverse legal regimes and different standards. At some border crossing points, it is necessary to deal with the break of gauge issue.

38. Several mandatory regulatory and security controls need to be completed at railway border crossing stations by competent agencies, such as customs, border guards, immigration and those dealing with quarantine and sanitary inspections. Lack of coordination among them is a major impediment to smooth international railway transport, which, in turn, leads to duplication of inspections and cumbersome documentation.

39. To complete railway border crossing formalities for a freight train, the following information is generally needed by the adjacent railways and customs authorities: (a) estimated arrival and departure times of the freight train; (b) details of goods being transported; and (c) rolling stock details in case they would cross over. The railway border crossing process involves three main stages: first, activities performed before the arrival of the train; second, actions initiated on arrival; and finally, activities performed on departure.

40. A freight train normally goes through five processes after arriving at a railway border crossing:

- (a) Commercial handover from one railway to another;
- (b) Technical handover, including dealing with break of gauge;
- (c) Customs formalities;
- (d) Border guard and immigration formalities;
- (e) Other government agencies formalities.

41. The commercial handover is completed between the railways. The primary document for this is the railway consignment note, which contains the details of the consignee and the description of the goods, including their value. The consignment note along international railway corridors could be an Agreement on International Railway Freight Communications (SMGS) consignment note, a Carriage of Goods by Rail Convention (CIM) consignment note, a combined CIM-SMGS consignment note or a consignment note mutually agreed among the railways. At many railway border crossings, the consignment note is paper-based, but increasingly the railways in the region are exploring exchange of electronic consignment notes. The use of electronic consignment notes has great potential to expedite border crossing formalities.

42. The technical handover of the wagons is required when they need to cross over to the neighbouring railways. The details of required processes and documentation are specified in the bilateral and multilateral railway agreements. The OSJD Agreement on the Rules for Use of Wagons in International Traffic includes the terms and conditions for use of freight wagons as a transport means for carriage of goods in international traffic.

43. The Agreement introduces a standardized procedure for completing the handover formalities at the border crossings. The form of the wagon list is prescribed along with the rules for checking the numbers of the wagons, signing and stamping the list of wagons during the handover process. The rules

relating to technical admission of vehicles to circulate in international traffic, technical requirements and standards are also provided.

44. In addition, the appendix on Uniform Rules Concerning Contracts of Use of Vehicles in International Rail Traffic to the Convention concerning International Carriage by Rail (COTIF) contains rules concerning the contract of use of wagons between the keepers of the wagon, which serves as a means of transport, and the railway undertakings using the wagon, and is focused on rules concerning mutual liability and periods of limitation for international rail transport.

45. With the exception of OSJD and COTIF, which provide a comprehensive legal framework on the handling of wagons, there appears to be lack of mutual recognition of wagon and rolling stock inspections between railways. If a wagon is fit according to one railway and marked off by the other because of different inspection protocols, then the marked-off wagon is shunted off and the train must be remarshalled. This leads to further delays.

46. Dealing with break of gauge is a major process undertaken at railway border crossings along the Trans-Asian Railway network. Mostly, the change is from 1,435 mm to 1,520 mm gauge and vice versa, and bogie changing is the usual approach used to deal with it.

47. Customs formalities at railway border crossings include pre-arrival intimation followed by a risk analysis of the information submitted to arrive at the decision on the level of customs control that needs to be applied to the goods. After the arrival of goods, the party or the party's agent files the customs declaration for import or export or transit as required and goods are cleared from the customs control after completion of necessary formalities.

48. The immigration controls are conducted by border police or by the designated immigration officials. Their duties include checking the illegal flow of migrants and providing protection against terrorism and crime. Border controls also depend on the arrangement among the countries. For example, no passport controls are undertaken within the Schengen area in Europe. Immigration controls for the railway staff from neighbouring countries can be minimized through common approaches, such as special identity cards that are mutually recognized by the railways.

49. Controls by other government agencies depend on the nature of goods transported from the border crossing. Depending on the need, some border crossings have extensive controls, including phytosanitary, sanitary and radiology controls, which are managed by other government agencies. International railway carriage is a common product of two or more railway companies and its efficiency directly depends on the cooperation among those companies and the control agencies responsible for clearance.

IV. Key issues affecting efficiency at railway border crossings and possible ways to deal with them

50. Efficient completion of railway border crossing processes hinges on the availability of information on the various aspects of the freight train required by neighbouring railways and by regulatory authorities to complete the necessary formalities. The following key issues are cited in the draft framework as affecting the ability of railway border crossings to operate efficiently:

A. Information exchange between railways

Description of the issue

51. To initiate and complete the railway operations and regulatory formalities at railway border crossings, the following details are usually required: estimated time of arrival and deviations, if any, for scheduled trains; the consignment note, as the information contained in the note is standardized and includes data on the consignor, consignee, goods information (harmonized nomenclature and description), destination or delivery point, commercial specifications, freight rates and additional services fees levied by the railway undertaking, invoicing and payment instructions, and weight; and the wagon list containing information on the wagons to be handed over to the next railways, with the document used as specified or agreed.

52. Most border crossings in the region rely on paper-based workflow and processes. Information is exchanged by telephone, faxes, emails and manual copying of documentation, which results in delays and inefficiency at the border crossings. The lack of pre-arrival information does not allow for any preparation before the arrival of a train regarding the main processes undertaken at railway border crossings. The procedures are initiated on actual arrival of the freight train when the locomotive driver hands over the paper documents. The departing train needs to have those documents when leaving the crossing.

53. The paper documents include the wagon list, consignment notes, and information on customs seals that need to be verified upon the arrival of the train. When all the procedures are finalized, the documents are signed or stamped before being handed over to the representative of the next railways. After the railway documents are handed over at the interchange station, the information may be keyed in the national railways electronic systems, when such systems are available.

54. Regulators and railways require information to initiate and complete the formalities at the border crossings. Accordingly, the way information flows and is shared with relevant stakeholders has a significant effect on the efficiency of railway border crossings.

55. Electronic exchange of information among railways can enhance the efficiency of processes at the border crossings enormously. If the information required were to be exchanged electronically, the organization of the processes at railway border crossings could be significantly streamlined. To date, many countries in Europe are harnessing the advantages of electronic interchange of data among railway undertakings.

56. The European Commission has issued regulations on Telematics Application for Freight – Technical Specifications for Interoperability, which require electronic data interchange among the railway undertakings, infrastructure managers, customs and, in certain cases, with other government agencies. The regulation deals with various aspects of information exchange, including technical specifications of interoperable data exchange between infrastructure managers and railway undertakings within the European Union and with non-European Union States if they agree to comply with the regulations.

57. Many ESCAP member countries are also taking steps to introduce electronic interchange of data and enhance the efficiency of their international railway operations. The railways of the Russian Federation have come up with

advanced solutions for electronic information interchange among many railways. Electronic sharing of information regarding railway operations has been agreed to at the bilateral level between the railways of the Russian Federation and many countries, including Belarus, China, Mongolia, Baltic countries, some Nordic countries and members of the Commonwealth of Independent States. The electronic information exchange has already been implemented in most of the countries. Other countries in the region are also developing electronic exchange of railways data with partner railways.

58. The electronic information exchange among railways can significantly enhance the efficiency of information exchange. However, many challenges remain to harness their potential along the international railway corridors. The electronic exchange solutions have been historically determined by the legal requirements and principles relating to the functioning of 1,435 and 1,520 mm railway gauges and the corresponding business demands.

59. Electronic information exchange among railways driven by initiatives among some countries of the region can potentially lead to the development of different electronic messages or systems for the same processes and events. Such multiplicity can undermine the seamless flow of information, particularly along the international railway corridors. If electronic information exchange messages required for international railway transport at the regional level are not harmonized, the flow of information would likely be disrupted, undermining the efficiency of transport operations along the corridors.

Target

60. To develop guiding principles on electronic information exchange between railways and among railways and control agencies.

Process

61. Harmonization of railway electronic information exchange is already being supported by the OSJD solutions as described in relevant OSJD leaflets; the COTIF Uniform Technical Prescription on Telematics Application for Freight equivalent to the Telematics Application for Freight – Technical Specifications for Interoperability; and initiatives on the introduction of a common electronic CIM/SMGS consignment note by the International Rail Transport Committee.

62. To date, many countries of the Asia-Pacific region are neither members of OSJD nor COTIF and most of them are expanding their international railway transport. Aligning their systems and message exchanges for operation of freight trains in the wider railway networks would ensure that information among railways and control authorities flows efficiently for the adequate completion of the border crossing formalities. To support the railways of those countries, guiding principles for electronic information exchange between railways and among railways and controls agencies, particularly, for countries that are neither members of OSJD nor OTIF, should be developed.

63. An informal group of experts consisting of representatives of interested member countries and specialized railway organization could be tasked to work on such principles. It would draw on the existing electronic information exchange solutions, related international standards and recommendations and recognized good practices to ensure a high degree of interoperability required for railway operations.

64. Examples of the principles for electronic exchange of information are: (a) key messages to be exchanged in international railway transport; (b) structure and format of standardized electronic messages to be exchanged; (c) use of common interfaces to link different national systems; (d) compatible methods of electronic communication and applicable standards; (e) data protection and security standard; and (f) common rules for coding and data harmonization.

65. Depending on the priorities and level of development of electronic information exchanges systems in the railways of member countries, a gradual approach should be used to implement such systems. Those principles could be implemented on a voluntary basis. However, an agreement on electronic exchange of information between railways of interested ESCAP member countries could also be considered.

B. Customs and other government agencies formalities

Description of the issue

66. Completion of regulatory formalities is a major activity carried out at railway border crossings, as much information and many documents are exchanged among the railways, customs and other government agencies pertaining to, for example, the border security guards, immigration, sanitary issues, food safety, veterinary information and phytosanitary issues. Regarding paper documentation, the formalities begin when the authorities receive the documents physically, which slows the process of completing the controls as no advance decision on goods can be taken.

67. Moreover, differences among countries remain on the requirements for completion of the customs formalities for international transit by railway on such issues as submission of customs transit declaration, carrying out physical inspections, guarantee requirements for railway transit and related procedures, mutual recognition of control measures and documentary and information requirements. In addition, lack of linkages between electronic information systems of railways and control authorities in many countries inhibits sharing of information and use of new technologies when completing control measures.

68. To support the increase in volume of goods transported by railways, the benefits of new technologies need to be fully exploited, including, in particular, the electronic exchange of information, to make the regulatory controls more efficient. An appropriate legal arrangement for harmonization of customs formalities for international railway transport using modern technologies could be considered in that regard. That instrument would draw from the good practices that are currently scattered in various other agreements or conventions. Moreover, considering the different stages of development of electronic systems of railways and control agencies in the countries, the implementation of such systems should be staggered and in conjunction with the existing paper-based systems.

Target

69. To harmonize customs formalities for international railway transport through appropriate arrangements between the member countries.

Process

70. Harmonization of customs formalities supported by electronic exchange of information between railways, customs and other government

agencies would result in the efficient organization of border crossing formalities.

71. The following issues need to be considered in developing a regional arrangement for harmonizing customs formalities for international railway transport supported by a railway electronic transit transport system.

Submission of electronic pre-arrival intimation

72. Traditionally importers declare goods on their arrival and thereon customs formalities are initiated. Pre-arrival intimation is now considered a good practice,¹² as it allows customs to make a decision on the level of controls required to be undertaken and thereby expedites the release of the goods. Many customs authorities in the region have introduced pre-arrival intimation requirements in their customs legislation.

73. Similarly, prior information on rolling stock¹³ helps adjacent railways to prepare in advance technical and commercial handovers. Otherwise, those formalities have to be initiated on arrival of the train. In addition, other government agencies also need advance information to better prepare for required inspections and formalities.

74. The pre-arrival information can be submitted through electronic message from railways simultaneously to the railways, customs and other government agencies of adjacent countries, directly to railways of the adjacent country or by the representative of the railways in the neighbouring country. Among them, the electronic submission of pre-arrival information is the most efficient. The format of a message for pre-arrival intimation, however, needs to be agreed and harmonized among the railways and between railways and control agencies.

Harmonization of messages required for rail transit

75. For electronic railway transit transport, the initiation of transit or the pre-arrival information, guarantee management and completion of transit¹⁴ need to be based on electronic exchange of messages among the stakeholders involved. This implies identification of messages required and harmonization of them among the railways of countries so that each message is understood in the same way by the participating railways. The new customs transit system, the solutions developed by OSJD as described in relevant OSJD leaflets and initiatives on the introduction of a common electronic CIM/SMGS consignment note being developed by the International Rail Transport Committee can provide significant guidance on this.

¹² Standard 3.25 of the Revised Kyoto Convention urges customs authorities to lodge goods declarations prior to the arrival of goods. Many border crossing facilitation instruments such as the Harmonization Convention and World Trade Organization Agreement on Trade Facilitation encourage prior filing of a declaration.

¹³ This provision has been incorporated into article 4.7 of annex 9 to the Harmonization Convention.

¹⁴ The status of goods or wagons under customs control at the border interchange station can also be communicated electronically to other stakeholders, as is the practice in Georgia.

Reduced guarantees for transit by rail

76. Many customs authorities require guarantees equal to duties involved for the goods in transit. This results in a cumbersome process of assessment of duties and associated delays at the border crossing. Moreover, lack of mutual recognition of authorized economic operator programmes means that railways are not given guarantee waivers in international railway transit operations. Customs of a transiting country can waive the guarantee requirements for transit undertaken by designated railway operators that are mutually recognized as authorized operators through a regional transit transport arrangement by rail.

77. Moreover, the guarantee required by customs is normally related to the perceived risk. Because of the special characteristics related to railway transport, the risks of diversion of transit goods are lower as compared with the transit of goods by road. A significant characteristic of railway transport is the existence of single railways (or only a few railway undertakings) that carry the goods. Generally, the railways are fully in charge of railway transport operations and the process of handover of goods and rolling stock at the border crossings is organized, supervised and recorded into accounts of railways. Consequently, the possibility of diversion of goods is minimal, justifying low or no guarantee requirements.

Recognition of a railway consignment note as a customs declaration

78. The national legislation of customs generally requires transit declaration for goods in transit in its territory. Filing a transit declaration involves preparing the information as contained in the consignment note of the goods being transported. To avoid duplication in keying the data, the railway consignment note is being increasingly recognized¹⁵ as a customs document because it contains the information required by customs. This streamlines procedures at railway border crossings, which, in turn, reduces the time and costs for completion of customs formalities.

79. Recognition of a railway consignment note as a customs declaration may take different forms. For example, the note could be used to replace a paper-based customs declaration or; electronic data could be submitted in a railway consignment note as an electronic form of a customs declaration, in addition to the submission of a paper-based railway consignment note or a customs declaration; or an electronic consignment note could serve as a paperless customs declaration.

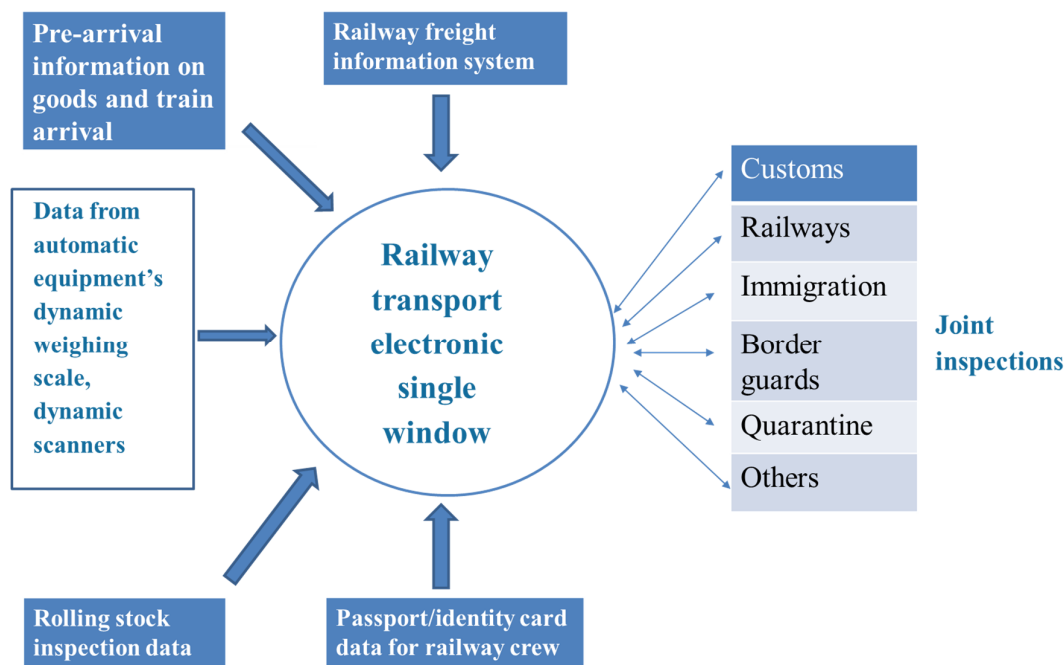
Electronic single window for railway transport

80. An electronic single window for railway transport could be contemplated at railway border crossings using modern technologies (figure III). The railways and the government agencies require a lot of the same information, documents and certificates to complete their designated formalities. For example, information on description of goods and loading and unloading places are usually required by railways, customs and quarantine and health inspections. The data collected from multiple sources, such as electronic

¹⁵ The use of a railway consignment note as a customs transit declaration is provided for in article 9 of annex 9 to the Harmonization Convention; in the Agreement on the Particularities of Customs Transit of Goods Transported by Rail within the Customs Territory of the Customs Union within the Eurasian Economic Community; in the Union Customs Code of the European Union; and in the national customs legislation of some States.

systems of railways, customs and immigration, automatic control equipment and dynamic scanners, could be stored in a neutral platform or the single window for railway transport. It can then be accessed by control authorities at railway border crossings for completion of regulatory formalities.

Figure III
Railway transport single window



Source: Adapted from Model on Integrated Controls at Border Crossings (www.unescap.org/resources/model-integrated-controls-border-crossings).

81. Linking railway information systems with the systems of other government agencies, national single window facilities and the information systems of the carriers would lead to more efficient information exchange. In particular, it would alleviate the need for resubmission of similar information. The introduction of cross-border electronic information exchange among related government agencies could contribute to smooth cross-border operations and a reduction in delays at railway border crossings. It would also aid risk management and, accordingly, enhance the efficiency of the controls conducted by customs and other government agencies. All in all, electronic information exchange among government agencies at railway border crossings would contribute towards making completion of controls more efficient.

Using new technologies for efficient completion of control measures

82. Completing railway border crossing formalities would become more efficient through the introduction of new technologies and non-intrusive inspections. The application of new technologies, such as dynamic scanners and dynamic scales, makes it possible to collect data required for completion of required controls while the train is in motion. Non-intrusive inspections for cargo and transport, such as using X-ray scanners and mobile scanners, would contribute towards making the completion of control formalities more efficient.

83. Examples of other new technologies that could be used at railway border crossings are: individual or multifunctional systems that provide electronic surveillance with video monitoring; automated train and wagon

commercial inspection with electronic gate sensors; thermal image technology and video monitoring for checking oversized cargo, correct loading of the goods, cargo fastening elements, security and safety of cargo; automated recognition and registration of wagons, which detects the number of wagon cars or container numbers; and automated monitoring of radiation and leakage of chemical substances.

84. The railways and control authorities can use the inspection facilities and share results. If the inspection systems are installed at different location from where the clearance takes place, the data collected needs to be transmitted to the control centres at the border crossing and, if necessary, to inland customs offices, so that when the train arrives at the station, the railways, customs and other control authorities have the information available in their systems.

85. Implementation of automated systems could significantly reduce the processing time for the inspection of trains and improve the efficiency of technical and commercial inspections as well as of regulatory controls. Customs authorities should encourage the adaption of new technologies and align their systems with railways to expeditiously get the information they need to complete the required formalities.

Joint controls at railway border crossings

86. The customs formalities between neighbouring countries should be organized at one joint railway border crossing station designated for that purpose. Under that arrangement, the train does not have to stop at both the exit and entry border crossing stations, but only at one railway border crossing station. There are various possible options to complete regulatory requirements. The border agencies from two countries can conduct joint physical inspections of identified goods and rolling stock. Given limited resources with control agencies, another option is joint inspection by designated lead agencies and thereafter sharing results with other agencies. It is also possible for control agencies of one country to carry out inspections at the entry and share the results with their counterparts in the adjacent country. This, however, is only feasible if there is a mutual recognition of control measures. Planning and implementing joint controls¹⁶ should be approached systematically to address the concerns of the agencies involved.

87. The second-best option is to have sequential controls under which countries complete controls independently. In that case, all agencies behind the border undertake joint inspections or one agency inspects and shares results with other agencies. This option makes it possible to avoid duplication of inspections and enables the quick release of goods, but there must be good cooperation among the various agencies at the border. Shifting of clearance formalities to inland locations can reduce congestion and speed up the completion of transit formalities at railway border crossings.

88. Owing to the increasing volume of goods and vehicles crossing international borders, it is impossible to physically verify all goods in transit. Using advance information, customs normally undertake risk analysis based on pre-defined criteria to identify the required level of inspections for the goods. Where relevant, customs and other government agencies could conduct an integrated risk assessment to identify goods for joint inspections. Integrated risk analysis is particularly important for railway border crossings with high

¹⁶ Article 5 of annex 9 to the Harmonization Convention also calls on contracting parties to arrange all forms of joint controls on the basis of bilateral agreements.

traffic flows. In general, inspections of goods in transit at railway border crossings should be minimal and justifiable.

Standardization and harmonization of information requirements

89. The introduction of electronic information exchange for railway transport should be preceded as long as possible by the standardization of the data requirements of the railways and the government agencies responsible for controls at railway border crossings. The number of requirements for submission of supporting documents should be reduced to only the ones necessary for the efficient completion of regulatory formalities. Customs and other government agencies often require excessive documents, such as sales contracts, bills of lading, letters of credit, other commercial documents and various certificates, and carry out administrative formalities, such as stamping documents to complete border formalities.

90. Excessive documentary requirements hamper effort to streamline clearances at the border crossings and, as experience suggests, such methods are ineffective because the collected documents are usually stored without any substantial control. Development of efficient risk analysis, intelligence gathering and effective post clearance audits can reduce excessive document requirements and related formalities while increasing the quality of controls.

91. Standardized and harmonized data and documents could make it possible to streamline border crossing processes; enhance the efficiency of the electronic exchange of information among stakeholders; introduce an electronic single window for railway transport; jointly use inspection facilities; and integrate risk analysis and introduce joint controls.

92. To address the issues of different and excessive data and documentary requirements of customs and other regulatory agencies, international standards should be harmonized at the regional level and formalized through a regional arrangement.

C. Break of gauge

Description of the issue

93. The need to deal with a gauge difference is one of the main factors behind operational delays at railway border crossings. Along the Trans-Asian Railway network, break-of-gauge operations must be organized at railway border crossings, mostly between 1,435 mm and 1,520 mm gauges. However, there are also border crossings with other gauges.

94. Effective technical solutions are required to deal with the different track gauges. If break of gauge is not handled adequately, there may be significant delays at railway border crossings. Limited reloading capacities, lack of availability of wagons, lengthy trans-shipment operations and inefficient information exchange among the railways are some of the factors preventing adequate handling of break of gauge.

95. The Regional Cooperation Framework for the Facilitation of International Railway Transport contains several options for dealing with break of gauge, including trans-shipment, bogie changing, use of wagons with “variable-gauge” bogies, and provision of dual gauge and conversion of different track gauges to a single-gauge standard.

96. There is no one-size-fits-all solution for dealing with break of gauge. The selection of the option should be based on the characteristics of each railway border crossing and, the types and volumes of freight that are moving across the border. Multiple options can be employed at the same railway border crossing.

Target

97. To frame standard operating procedures to efficiently deal with the break of gauge for different possible situations.

Process

98. The bogie changing for the wagons and trans-shipment for the containers is the most common way of dealing with break of gauge in the region. Exchange of information between the railways would help support efforts aimed at dealing with break of gauge and prevent related delays.

99. For bogie changing, organization of the break-of-gauge activities on either side of the border crossing could be managed efficiently by the rail tracks of both the gauges running across the two border crossing stations for movement of rolling stock of both railways. In addition, bogie changing across railway border crossings could be used more effectively with an understanding among neighbouring railways that would allow for adjustments.

100. Furthermore, sufficient and balanced capacity to deal with break of gauge, with a focus on reloading containers and changing bogies for wagons, is required. This includes sufficient capacity to deal with side tracks, railway yards, container terminals, cranes and lifting equipment, trans-shipment stations, bogie changing systems and sets of jacks.

101. Well-designed facilities and operational procedures organized in parallel can make it possible to deal with the break-of-gauge issue within the time allocated for other railway operations, such as change of locomotives, change of crew, technical inspection for acceptance of wagons, safety inspection for dangerous goods and regulatory controls of customs and other government agencies.

102. It is also recommended to have in place clear handover rules and organization of break-of-gauge activities based on bilateral arrangements with inputs for specialized railway organizations. Those issues, including specifics pertaining to a particular border crossing should be detailed in the standard operational procedures for dealing with break of gauge, which are mutually agreed by neighbouring railways.

D. Measurement of the performance of railway border crossings

Description of issue

103. The recommendations in this draft framework are broad in scope. Implementing them would generally improve the efficiency of railway border crossings. However, each railway border crossing is unique in terms of challenges and specific issues that need to be addressed. To implement the recommendation that provide the most optimal solutions, an in-depth analysis of railway border crossing stations between adjacent countries should be conducted using a systematic and methodical approach to deal with complexities and demands of each station.

104. In addition, a comprehensive performance measurement indicator is required to better understand the need for and impact of measures to enhance the efficiency of railway border crossings. To date, several performance measurement and monitoring mechanisms are being used for international freight railway transport and railway border crossings. Among them are Time-Cost-Distance Methodology; Corridor Performance Measurement and Monitoring Mechanism; and Time Release Studies by the World Customs Organization.

105. OSJD members have developed standards of time as a target for completion of specific types of railway operations, border operations, customs operations in accordance with comprehensive plans for improvement of transport and development for each of the 13 OSJD transport corridors.

106. Though those indicators are relevant, none of them measures the railway border crossing processes comprehensively. Accordingly, there is a need for comprehensive indicators or an index for measuring the efficiency of processes at railway border crossings.

Target

107. To develop comprehensive indicators to measure the performance of railway border crossings and use a standardized methodology to identify challenges and recommend solutions.

Process

108. To develop a standardized methodology for in-depth analysis of railway border crossings, the following is required:

- (a) Current data on and forecast of railway freight traffic along railway border crossings along with the type of goods transported;
- (b) Review of legal arrangements for railway transport;
- (c) Information on the major stakeholders present at railway border crossings and their responsibilities;
- (d) Report on the condition of railway border crossing equipment, facilities and infrastructure;
- (e) Critical analysis of the railway operations and of the formalities of customs and other government agencies, including: (a) activities undertaken before the arrival of trains, such as submission of pre-arrival information, preparatory activities for the arrival of trains, risk analysis, stopping trains at the border lines and having them escorted by border guards; (b) processes after the arrival of trains and during the stops at railway border crossings, including technical and commercial handover, technical inspections, checking seals, bogie changes, trans-shipment of containers, customs and other government agencies formalities; and (c) activities undertaken during the departure of trains from railway border crossings (reconfiguration of trains, dispatching operations);
- (f) An oversight of the existing arrangements for sharing of information between railways and railways and between railways and other control agencies, including documents and information exchanged in paper format, documents and information exchanged in electronic format, of the differences in data requirements among railways and between railways, and of the interoperability of existing information and communications technologies

solutions for railways to railways and railways to customs electronic information exchange;

(g) Present state of cooperation among control agencies for completion of formalities at railway border crossing;

(h) Recommendations.

109. By using the above standardized methodology, the operations and formalities at railway border crossings can be evaluated comprehensively. This analysis can be used to identify crucial issues affecting the efficiency of the operations and formalities and to recommend measures to be implemented in accordance with specific characteristics of railway border crossings.

110. Furthermore, an in-depth review of the extant approaches of performance measurement is suggested in order to recommend comprehensive measures of performance for railway border crossings. Establishing a comprehensive performance indicator for measuring efficiency at railway border crossings and related comparisons would encourage countries to institute measures and provide impetus for improving the efficiency of railway border crossings across the Trans-Asian Railway network and beyond.
