Recent rail Digitalization initiatives in Asia-Pacific

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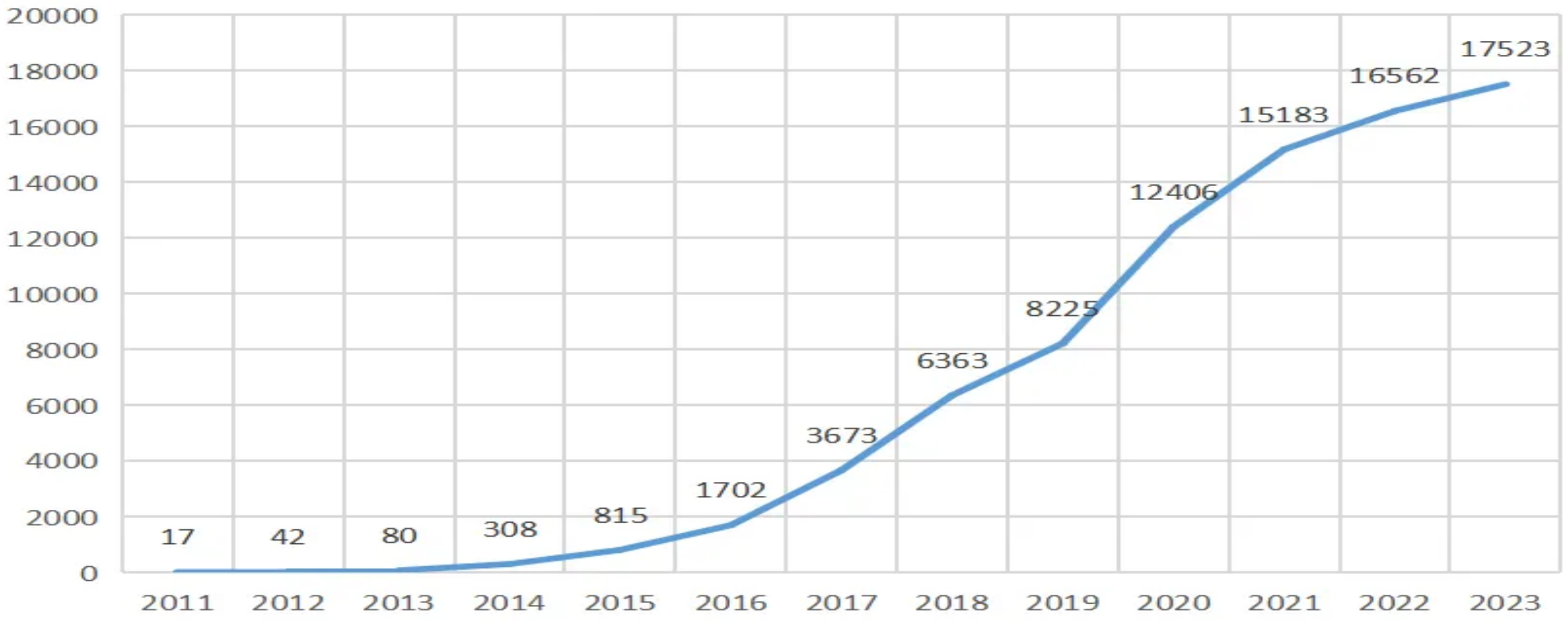
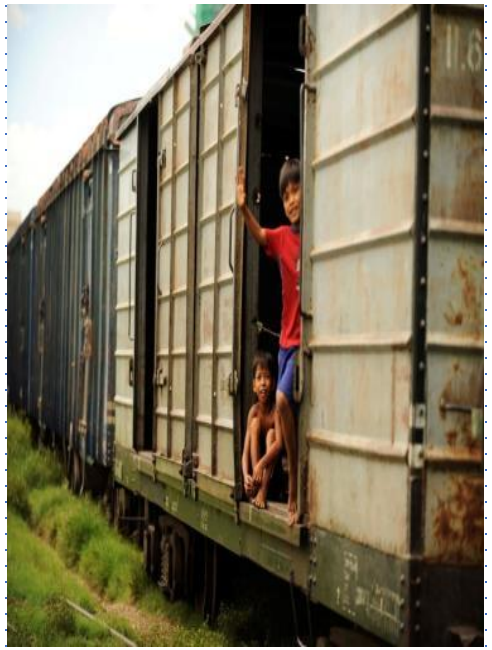
ANNUAL FREIGHT TRAIN TRIPS BETWEEN CHINA/EUROPE FROM 2011 TO 2023



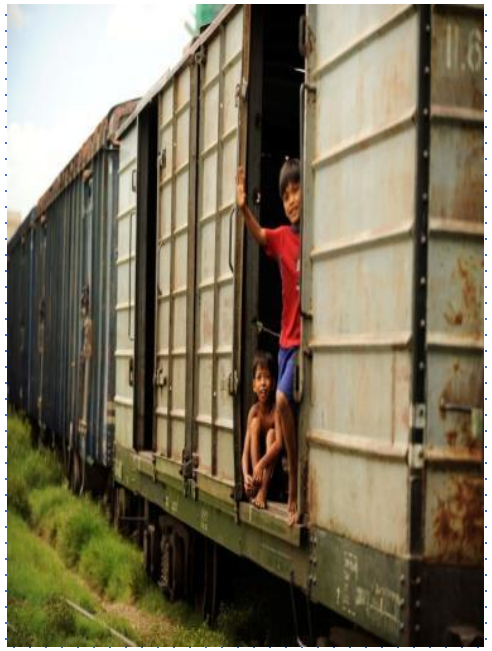
Source: CRCT, New Silkroad Discovery

Growing importance of rail digitalization



- ✓ Exponential increase in Eurasian rail traffic in last decade
- ✓ Rail proved to be reliable transport means during pandemic-as the rail freight avoided major restrictions and kept international supply chain functioning
- ✓ Geopolitical challenges (Suez crisis) has further fortified role of rail in international transport as countries look to de-risk their transport connectivity
- ✓ Rail, therefore, is now established as sustainable, reliable and a competitive mode of transport between Asia and Europe and vice versa

Growing importance of rail digitalization

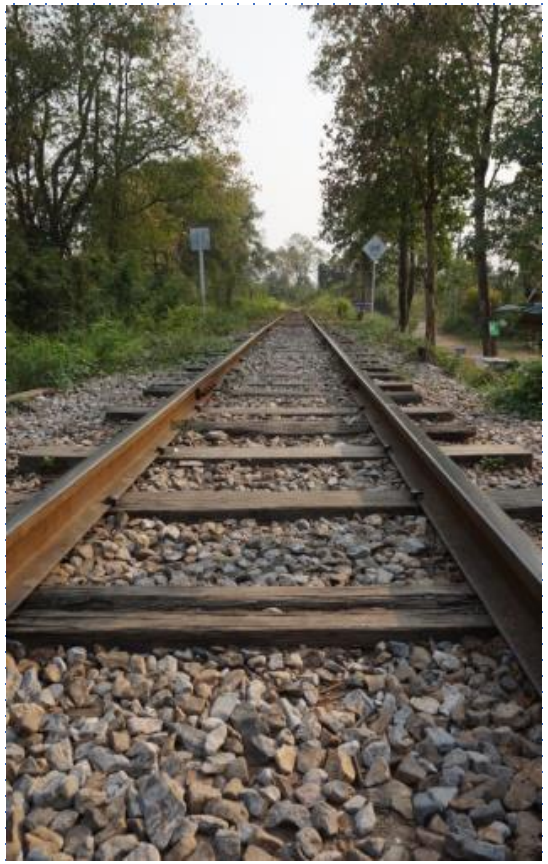


- ✓ As rail is energy efficient and environment friendly promoting rail transport is imperative to address negative externalities of transport such as emissions, congestion and pollution
- ✓ Pandemic gave further momentum to digitalization of transport even in countries with relatively low level of digital services
- ✓ Digitalizing rail is crucial to enhance rail competitiveness

TRANS-ASIAN RAILWAY NETWORK



Intergovernmental Agreement on Trans-Asian Railway Network

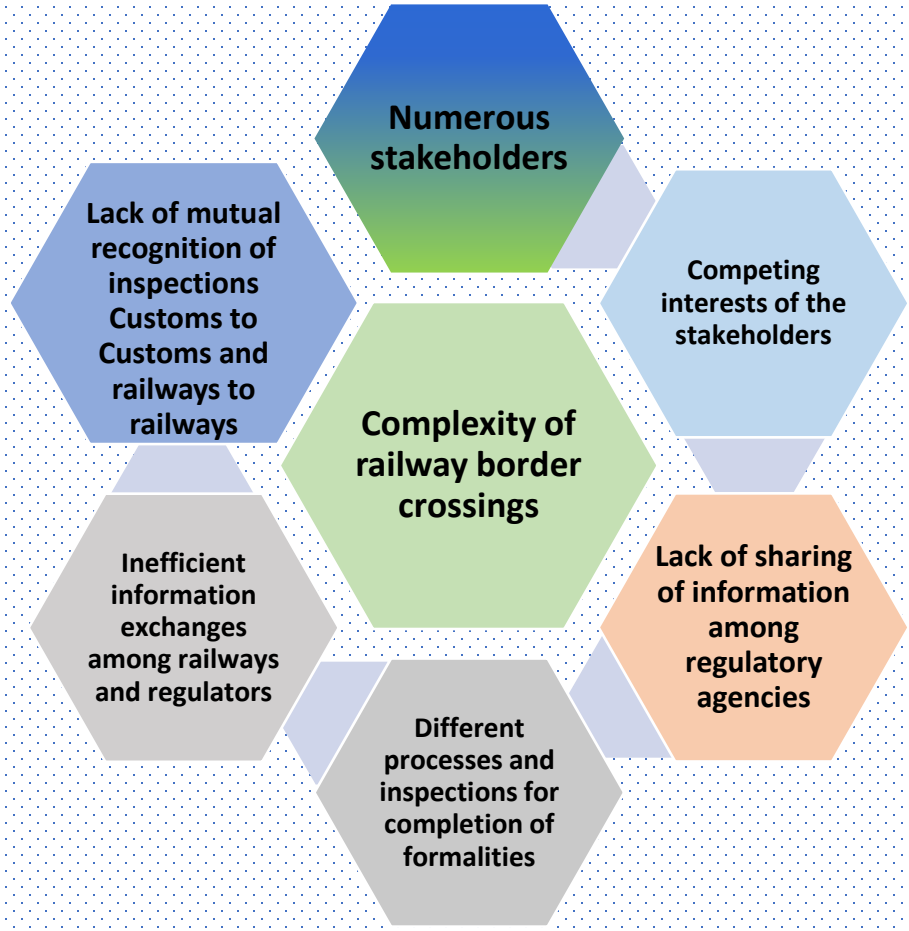


Trans-Asian Railway Network was developed by ESCAP members as a coordinated plan to develop a regional railway network to meet the growing needs of intra and interregional trade and transport.

Formalized through intergovernmental agreement entered into force in 2009. Has now 21 contracting parties

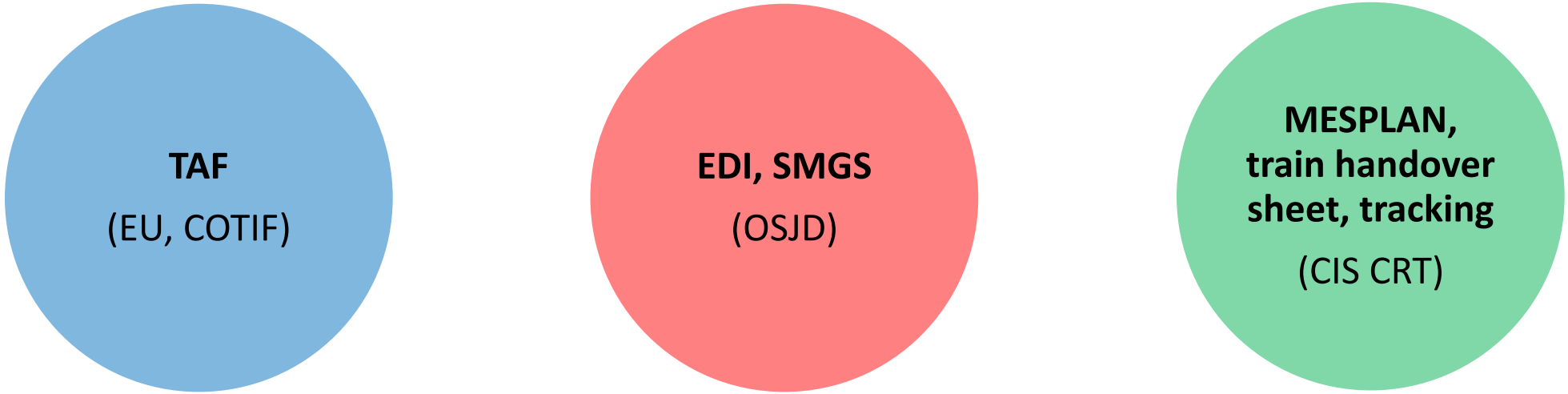
The Working Group under the agreement provides a regional platform for the member countries to discuss persistent and emerging issues in international railway transport along the network. Eight meetings- focus on operational issues

Complex environment of railway border crossing

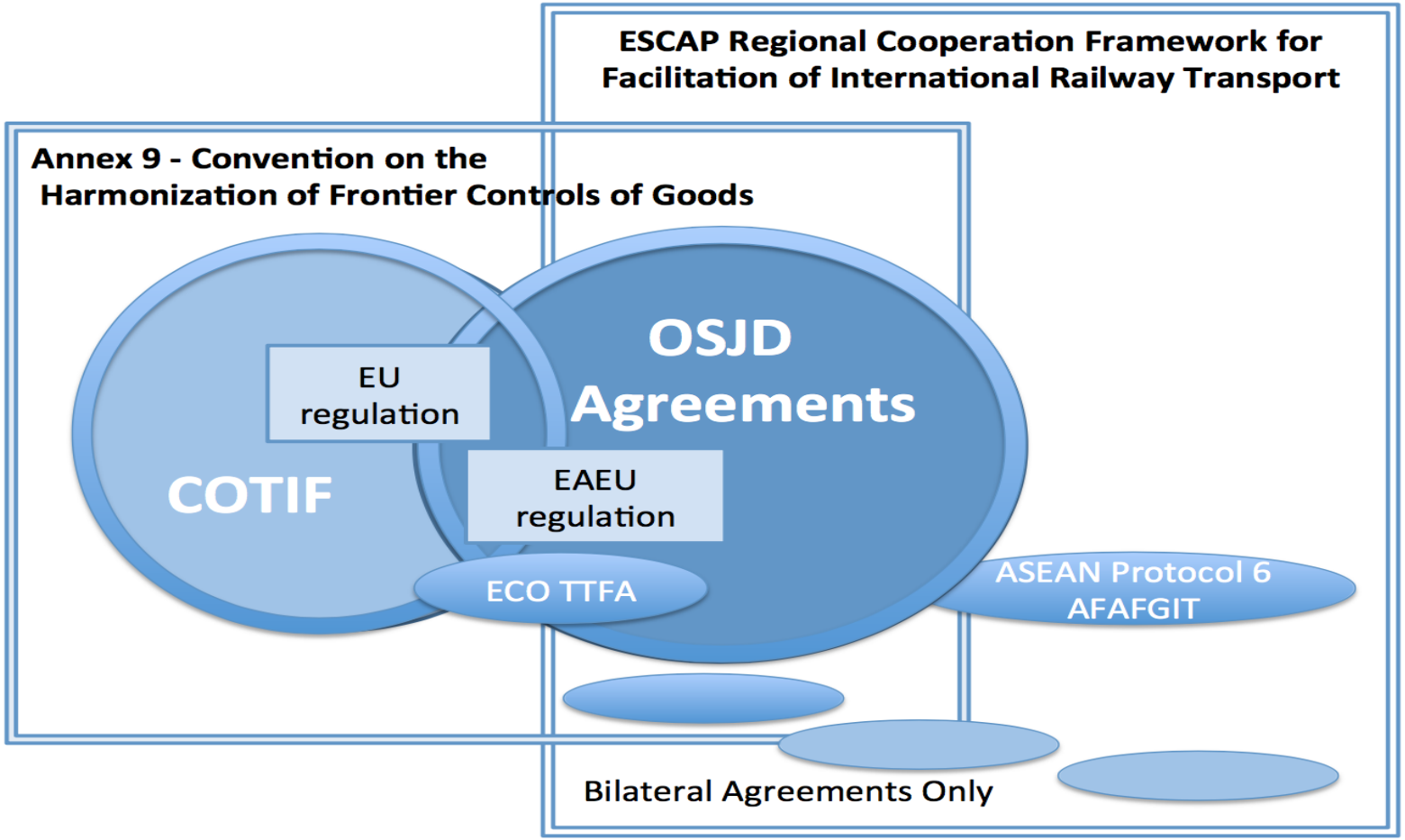


Existing situation on electronic information exchange between railways

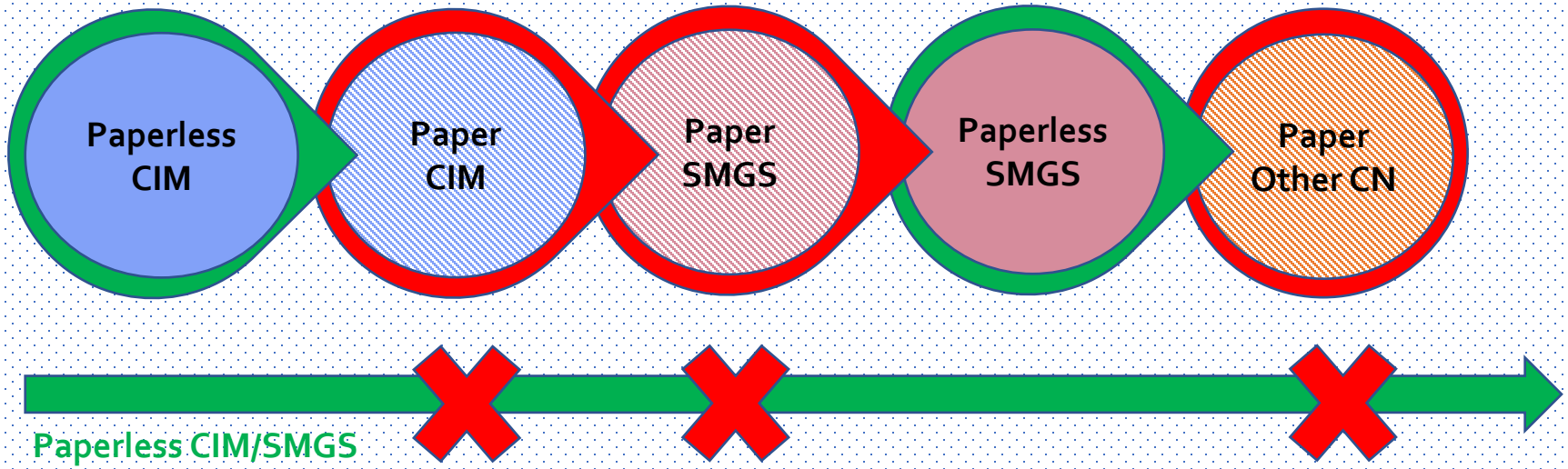
Three electronic exchange systems have been developed by **EU, OSJD and CIS** railway organizations that are being used to support Eurasian rail traffic



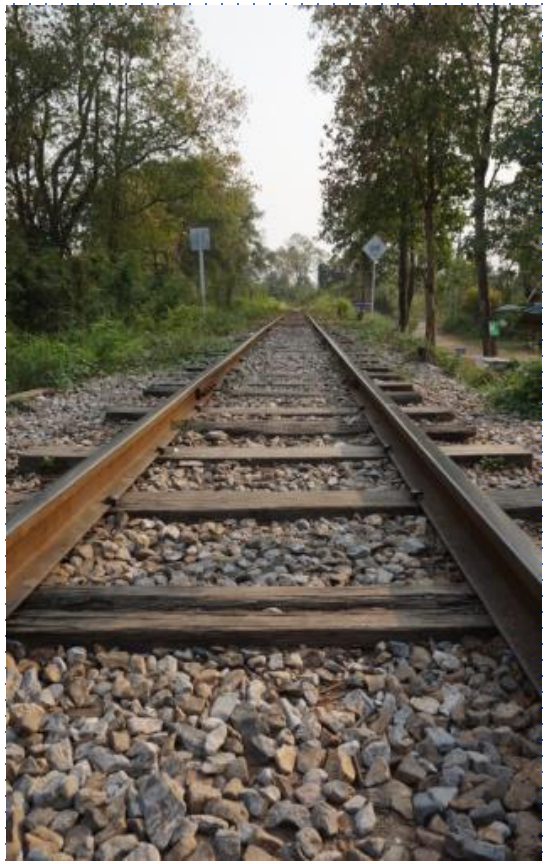
Fragmented legal environment along Eurasian rail corridors



Lack of seamless information flow along the international railway corridors



New Annex to intergovernmental agreement on Trans-Asia Railway network



Proposed by Iran at the seventh meeting in 2021 and adopted at the eighth meeting held in 2023

Annex on Guiding principles on electronic information exchange among railways and between railways and control agencies

Encourages contracting parties to exchange data required for completion of rail border crossing electronically

Harmonize them *as far as possible* so that the information flows seamlessly among the stakeholder in for efficient completion of regulatory formalities and operational requirements in international railway transport

New Annex to intergovernmental agreement on Trans-Asia Railway network

- ✓Aim to provide grounds for the further harmonization of electronic information exchange/data interchange among railways and between railways and control agencies
- ✓Main objective of the principles is to provide general guidance to the Parties
- ✓Encourage use existing standards and practices on electronic information exchange/data interchange
- ✓Could also serve as a basis for developing plurilateral, multilateral and regional agreements

Electronic information exchange/data interchange among railways

a) For operational requirements in international railway transport, electronic data related: (i) consignment notes; (ii) train information; and (iii) movement and tracking of wagons;

b) Structure and format of messages and/or electronic data may be harmonized taking into account existing standards and practices

c) Seamless flow of electronic information/data (i) the use of common interfaces for linking different railway systems; (ii)compatible methods for electronic communication; and (iii) common data protection and security standards

d) Exact content to be exchanged to be determined on basis on bilateral agreement

e) Pre-arrival information

Electronic information exchange/data interchange between railways and control agencies

a) Establish a special task force consisting of representatives of railways, customs and other border agencies

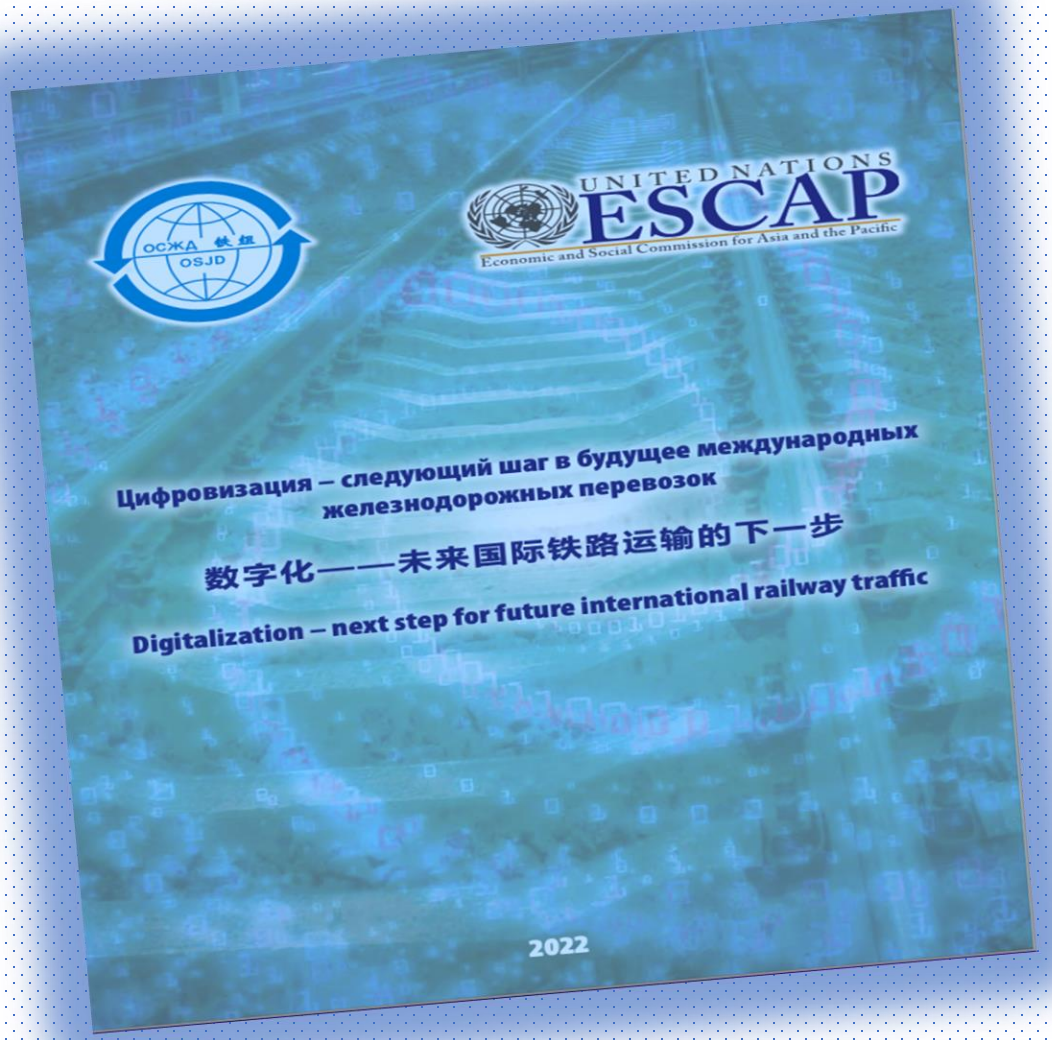
b) Information and data received by railways for the completion of regulatory formalities could be shared electronically with customs and other border agencies, as appropriate;

c) Railways, customs and other border agencies, as appropriate, may enter into institutional arrangements for data to be exchanged electronically including on the acceptance of consignment notes as customs document

d) Use harmonized interface between railway and customs

e) Use new technologies and nonintrusive inspections

ESCAP-OSJD Joint document on potential of e-cost in information exchange to streamline customs formalities in international railway transport

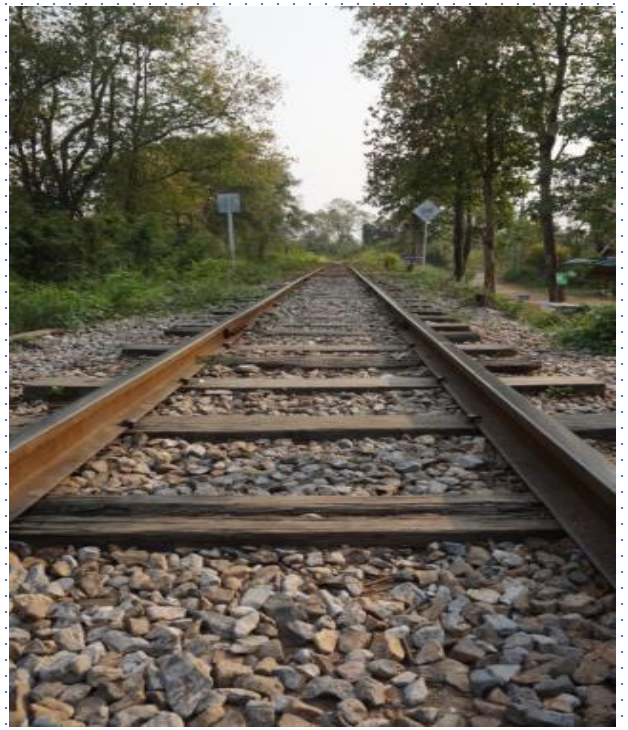


https://en.osjd.org/en/8909/page/106077?id=2928

Potential of electronic exchange of information for streamlining customs formalities for rail

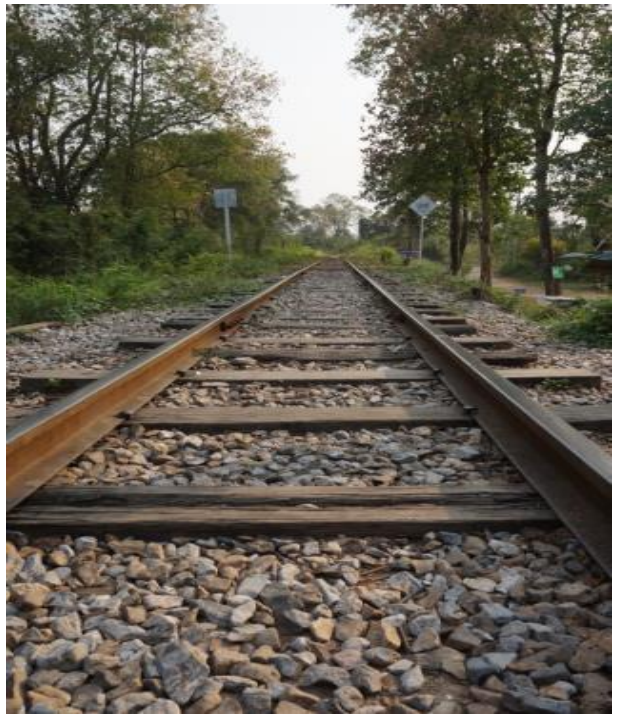
1. Recognition of railway consignment note as customs transit declaration
2. Use of new technologies in collecting information required for regulatory controls and increased cooperation among border agencies behind the border and across the border
3. Implementation of joint control measures customs and other regulatory controls
4. Electronic pre- arrival intimation can facilitate integrated risk assessment
5. Electronic interface between railway and border agencies for streamlining customs formalities
6. Facilitated customs formalities for rail transit including simplified procedures for authorized rail operators (AROs)

Harmonizing rail transit datasets



- ✓ Different documents, processes and electronic data sets are currently exchanged at rail borders
- ✓ **ESCAP and WCO** are now documenting them and then defining minimum datasets required for completion of customs formalities
- ✓ **Minimum dataset** would then be mapped to railway consignment note to analyze if the CN has all data elements required for customs formalities so that it can be recommended to customs for acceptance as customs transit declaration

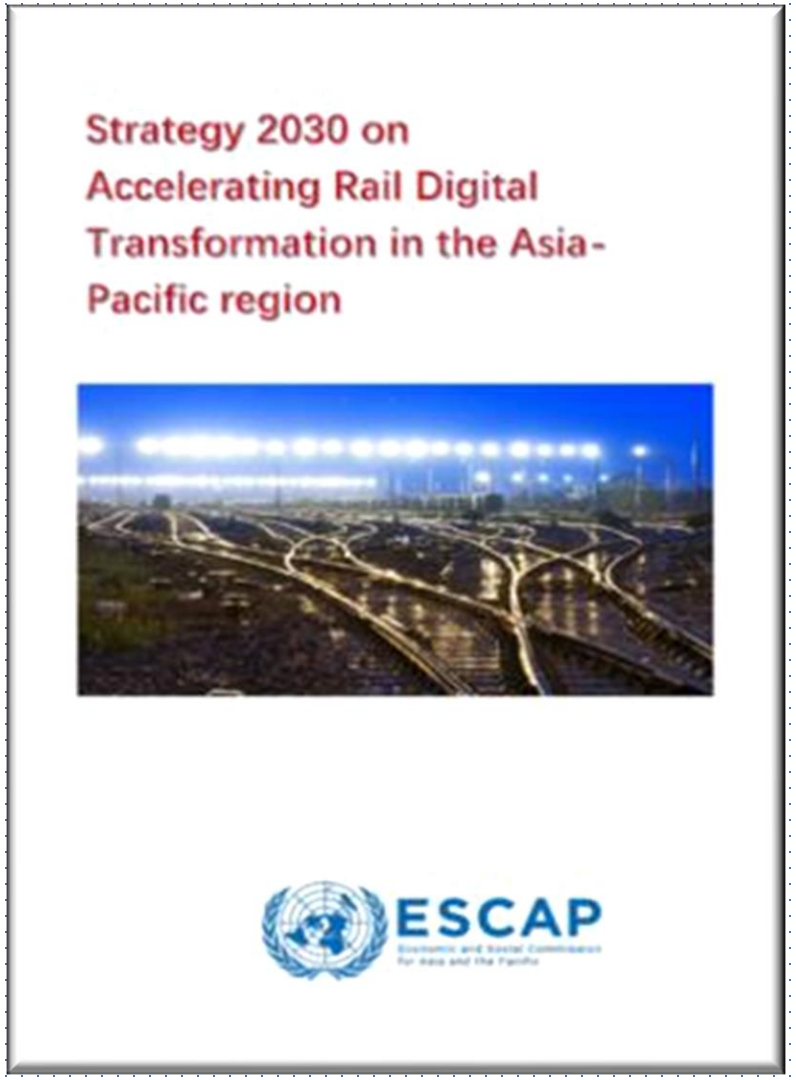
New Annex to intergovernmental agreement on Trans-Asia Railway network



Next steps for entry into force on new annex

- ✓ Annex Adopted at the eighth meeting of the Working Group
- ✓ As per article 7, paragraph 5 of the Intergovernmental Agreement on the Trans-Asian Railway Network, the annex shall enter into force twelve (12) months after they have been *accepted* by two-thirds of the Parties.
- ✓ An instrument of acceptance has been sent as enclosure to NV issued by secretariat on 27 December 2023

Strategy 2030 on Accelerating Rail Digital Transformation in Asia-Pacific



Vision

Enhance sustainability of transport to support realization of Agenda 2030 on Sustainable Development

Outcome

Increase in freight and passenger transport by rail

Reduce green house gas emission from transport

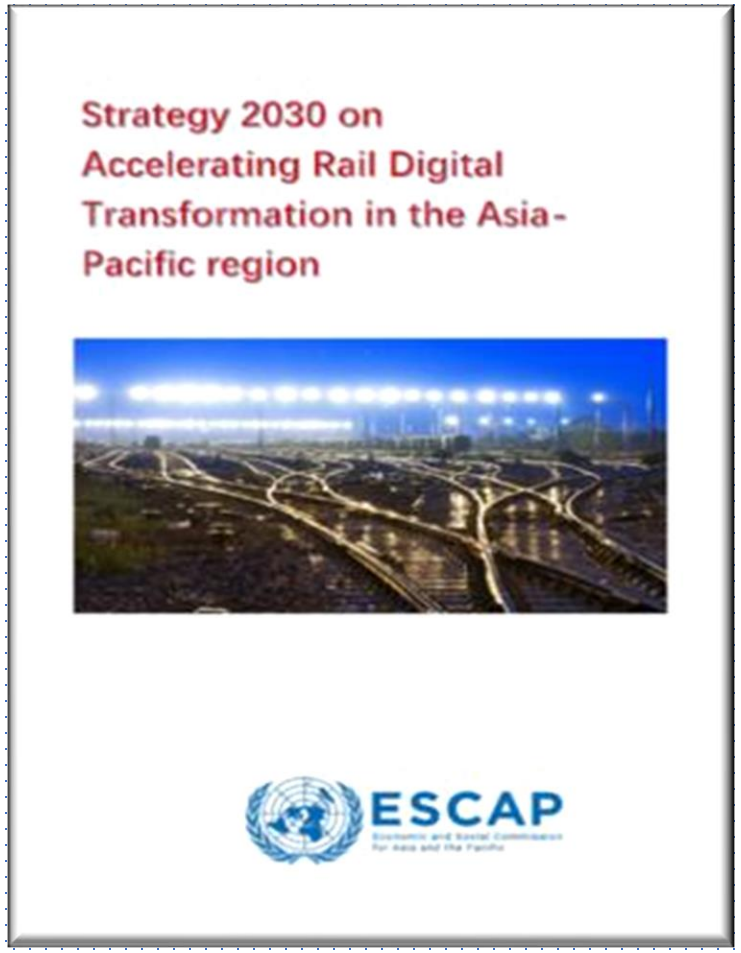
SDG supported directly

Target 9.1; 9a quality, reliable, sustainable, and resilient infrastructure

Target 3.6 Road traffic accident

Target 7.3 Energy efficiency

Objectives (Six)



1. Provide coherence and momentum to rail digitalization initiatives
2. Foster an ecosystem to harnesses full potential of rail digitalization
3. Augment the operational performance, capacity, reliability, safety, and security of rail assets
4. Enhance customer experience including ease of doing business
5. Create synergies through partnerships to digitalize rail
6. Ensure high level political support on rail digitalization

Priority Areas (eight)



1. Digital communication technologies for rail
2. Digital customer services
3. Digital platforms for rail operations
4. Digital rail asset management including maintenance
5. Digital traffic management including signaling
6. Digitally integrated rail services
7. Digital rail business process
8. **Digital rail border crossing**

Cross cutting issues (five)



1. Enhance digital skills of rail officials

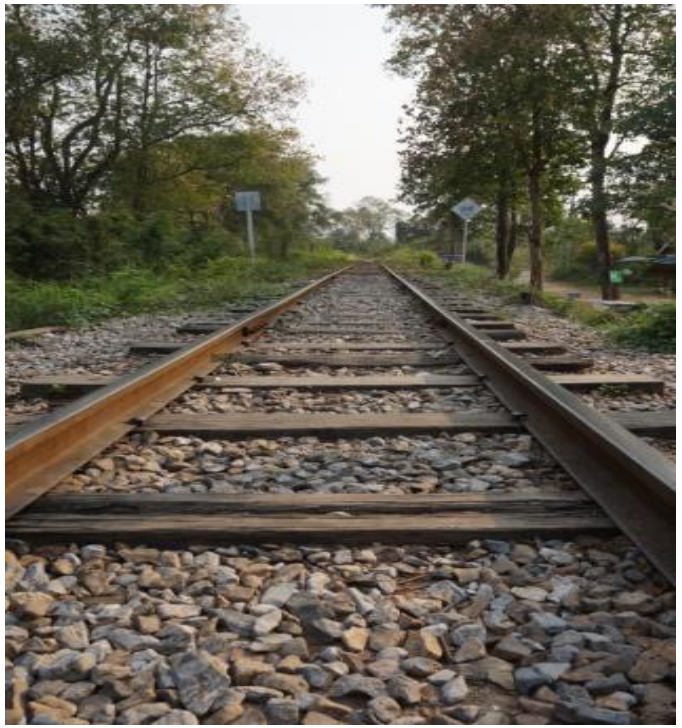
2. Increase investment in rail digitalization **Establish a rail digital and innovation fund**

3. Strengthen rail cyber security including data protection **develop a regional framework for rail cybersecurity**

4. Use data analytics to support optimal decision making for planning and operating the rail network

5. Heighten engagement with private sector develop supportive legal and regulatory framework

Implementing and monitoring



Creating implementation mechanism/arrangements-formulate national and sub-regional strategies on rail digitalization

Measuring progress in rail digitalization- develop a **rail digital index** and a three- level maturity profile for rail

Thank you
for
your attention

http://www.unescap.org/our-work/transport

