HIGH-LEVEL MEETING ON DEEPENING DIGITALIZATION OF INTERNATIONAL RAIL TRANSPORT IN ASIA-PACIFIC

XI'AN, 13-15 MAY 2025

ELECTRONIC DATA INTERCHANGE FOR CHINA-MONGOLIA-RUSSIA ECONOMIC CORRIDOR: PROJECT FINDINGS

Ekaterina KOZYREVA
ESCAP resource person
IEC International – InfraEconomy Group
e.kozyreva@infraeconomy.group

Background and key findings of previous meetings

BACKGROUND AND KEY FINDINGS OF PREVIOUS MEETINGS

CONCLUSIONS OF PREVIOUS MEETINGS

Apart from available documents, the study was based on a dedicated survey:

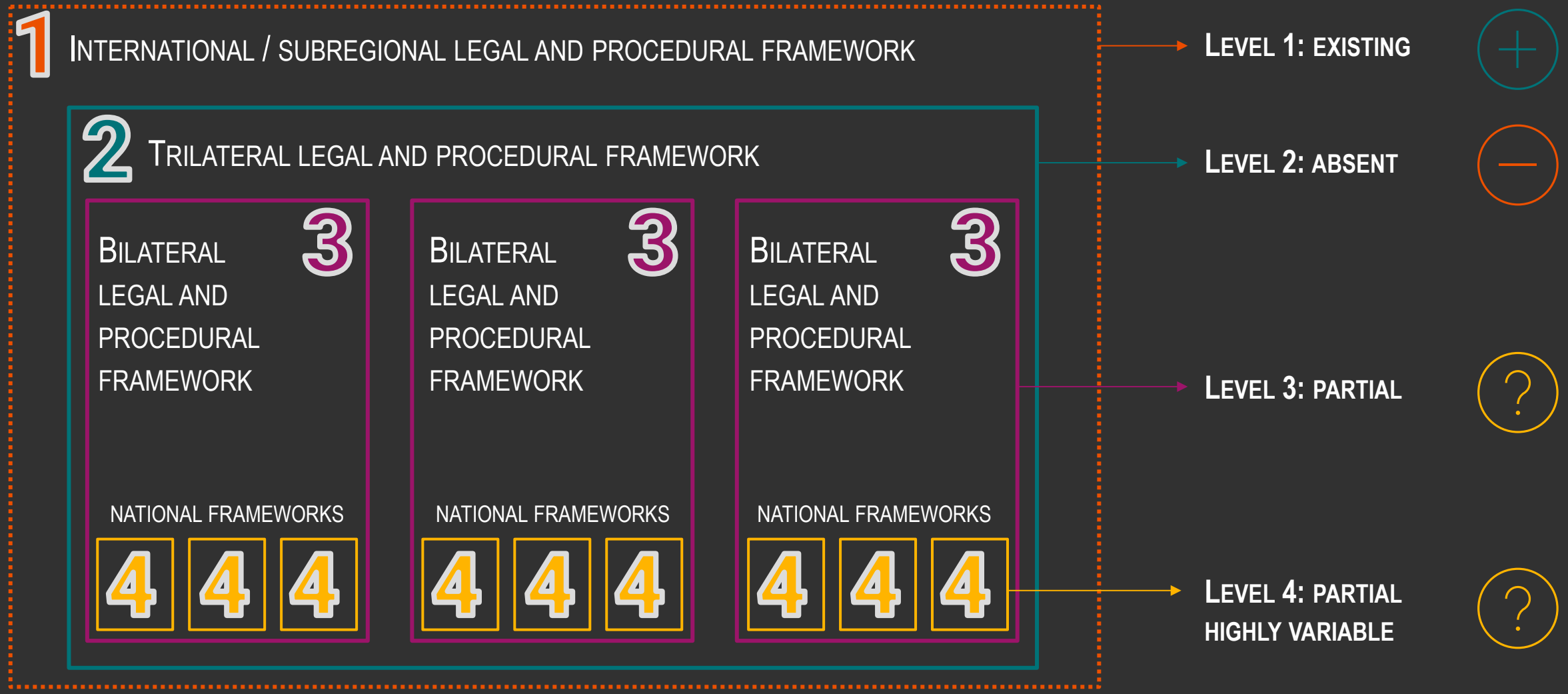
- distributed to transport and customs authorities
- containing questions on (a) freight flows, (b) EDI, (c) constraints and problems
- answers received from Mongolia and Russian Federation

KEY FINDINGS FROM THE SURVEY

- all respondents mentioned different documents as a legal basis for EDI along the route
- common issues mentioned: customs to railways, customs to customs, unstructured processes
- lack of recognition of e-signatures as one of the major constraints

BACKGROUND AND KEY FINDINGS OF PREVIOUS MEETINGS

CONCLUSIONS OF PREVIOUS MEETINGS



BACKGROUND AND KEY FINDINGS OF PREVIOUS MEETINGS

CONCLUSIONS OF PREVIOUS MEETINGS

Intra-rail level: insufficiency of data, digitalization and especially process description in Mongolia.

Rail-to-third parties level: lack of information exchange between railways and authorities in Mongolia, lack of sufficient legal base for transit operations.

Generally: insufficient legal basis, especially referring to the acceptance of electronic documents and electronic signatures and especially for transit operations, insufficient harmonization of procedures and technical issues between the customs and other control authorities

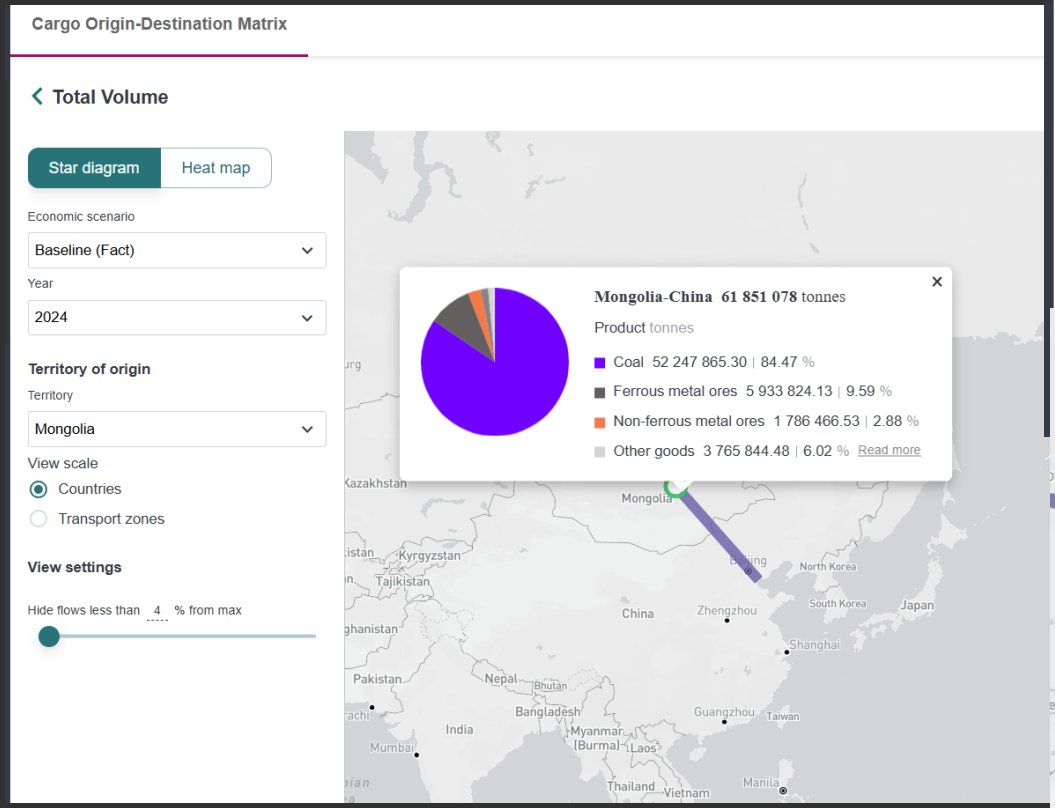
TILL NOW PAPERLESS BORDER CROSSING ISSUE **HAS NOT RECEIVED NECESSARY LEGAL AND INSTITUTIONAL SUPPORT**: WHILE RAIL-TO-RAIL EDI EXISTS, THERE ARE **IMPORTANT GAPS IN RAIL-TO-THIRD PARTIES AND CUSTOMS-TO-CUSTOMS COMMUNICATIONS, ESPECIALLY FOR THE CARGO IN TRANSIT**.

CURRENT STATE OF THE CORRIDOR

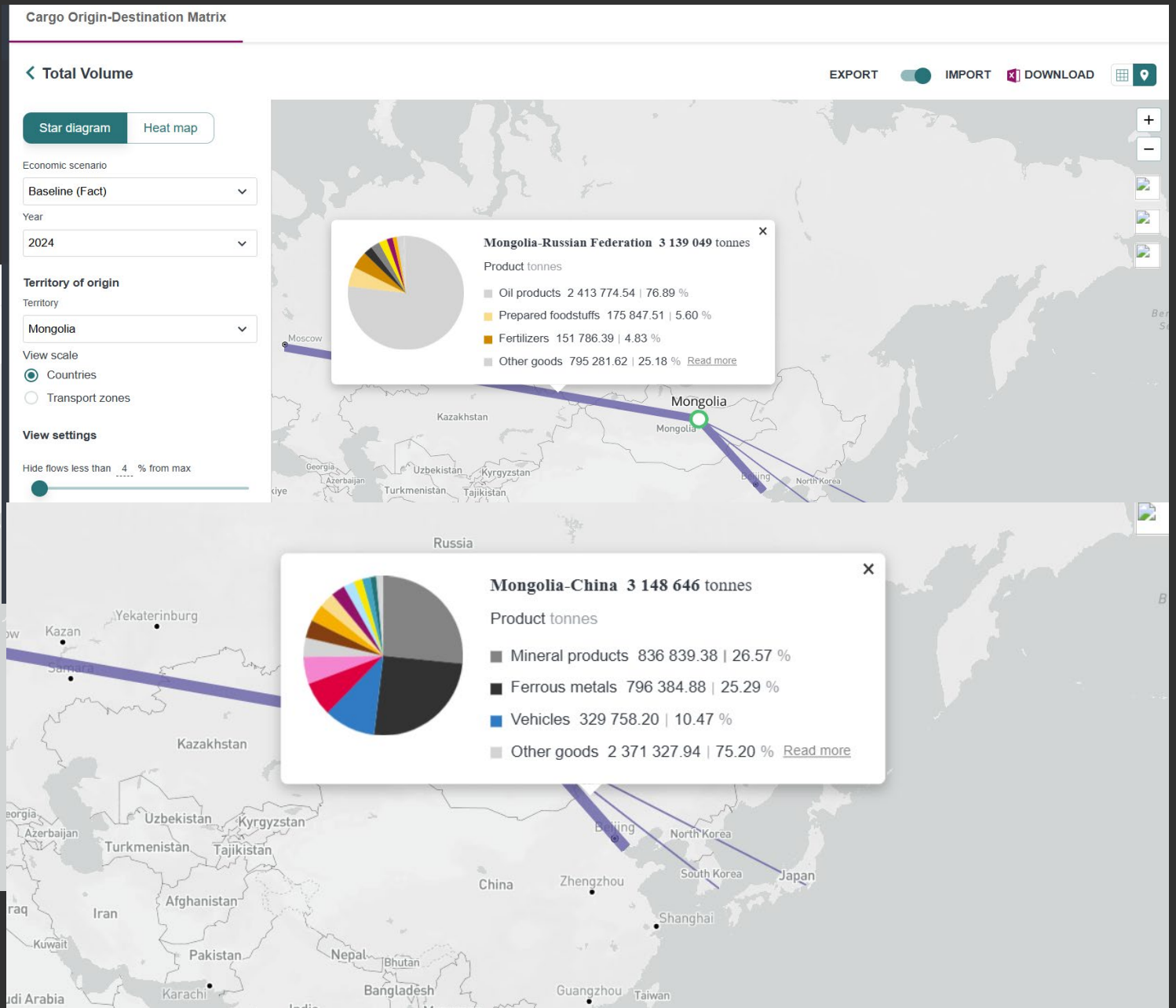
CURRENT STATE OF THE CORRIDOR

TRADE OF MONGOLIA, 2024

EXPORTS



IMPORTS

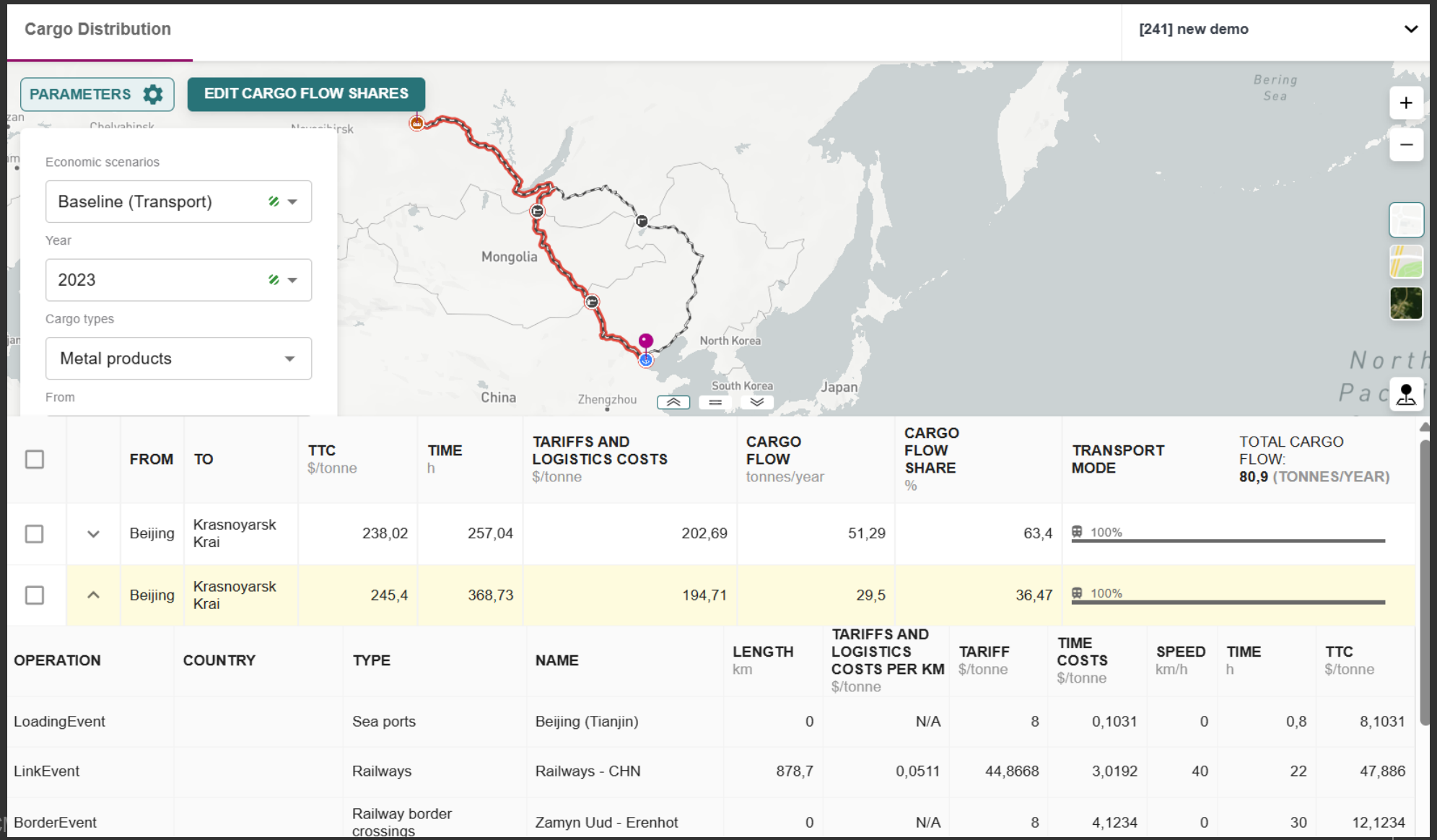


Modelled in InfraForecast Software

CURRENT STATE OF THE CORRIDOR

TRANSIT

CMR is still less competitive to other connections due to longer time (+43% to China-Russia connection).



		FROM	TO	TTC $/tonne	TIME h	TARIFFS AND LOGISTICS COSTS $/tonne	CARGO FLOW tonnes/year	CARGO FLOW SHARE %	TRANSPORT MODE	TOTAL CARGO FLOW: 80,9 (TONNES/YEAR)
☐	⌄	Beijing	Krasnoyarsk Krai	238,02	257,04	202,69	51,29	63,4	100%	
☐	⌃	Beijing	Krasnoyarsk Krai	245,4	368,73	194,71	29,5	36,47	100%	

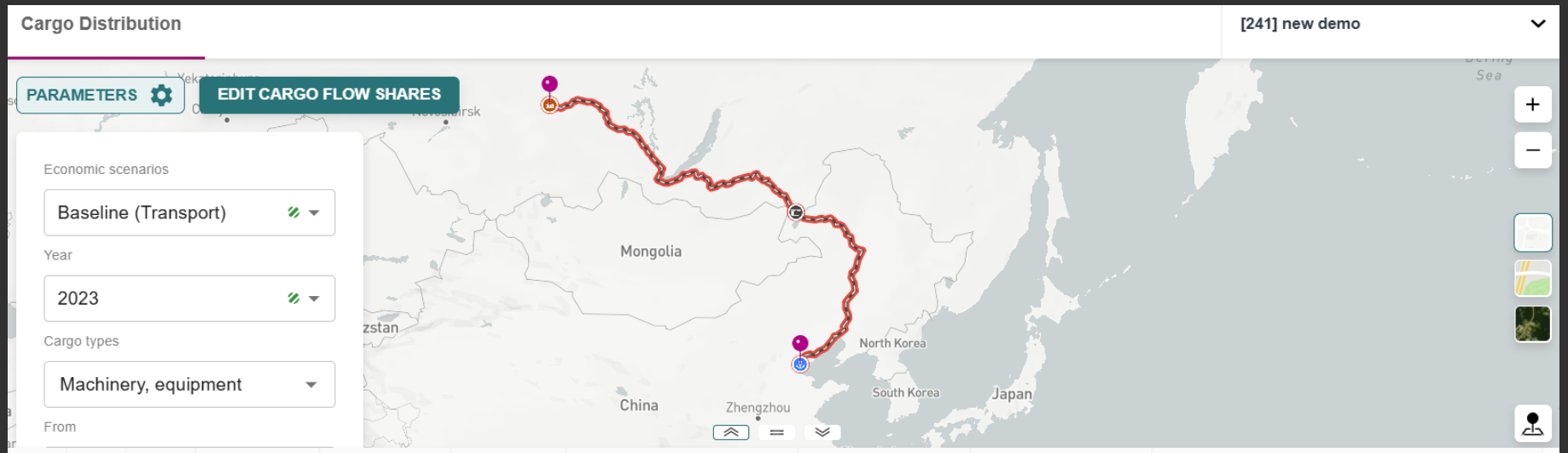
OPERATION	COUNTRY	TYPE	NAME	LENGTH km	TARIFFS AND LOGISTICS COSTS PER KM $/tonne	TARIFF $/tonne	TIME COSTS $/tonne	SPEED km/h	TIME h	TTC $/tonne
LoadingEvent		Sea ports	Beijing (Tianjin)	0	N/A	8	0,1031	0	0,8	8,1031
LinkEvent		Railways	Railways - CHN	878,7	0,0511	44,8668	3,0192	40	22	47,886
BorderEvent		Railway border crossings	Zamyn Uud - Erenhot	0	N/A	8	4,1234	0	30	12,1234

Modelled in InfraForecast Software

CURRENT STATE OF THE CORRIDOR

TRANSIT

For high value-added goods CMR corridor is not among chosen routes.



FROM	TO	TTC $/tonne	TIME h	TARIFFS AND LOGISTICS COSTS $/tonne	CARGO FLOW tonnes/year	CARGO FLOW SHARE %	TRANSPORT MODE	TOTAL CARGO FLOW: 3 711 (TONNES/YEAR)
Beijing	Krasnoyarsk Krai	241,73	255,87	181,01	3 711,05	100	100%	

OPERATION	COUNTRY	TYPE	NAME	LENGTH km	TARIFFS AND LOGISTICS COSTS PER KM $/tonne	TARIFF $/tonne	TIME COSTS $/tonne	SPEED km/h	TIME h	TTC $/tonne
LoadingEvent		Sea ports	Beijing (Tianjin)	0	N/A	18,75	0,0396	0	0,2	18,7896
LinkEvent		Railways	Railways - CHN	1 936,2	0,0357	69,0291	13,5576	33,9	57,1	82,5867
BorderEvent		Railway border crossings	Zabaykalsk - Manzhouli	0	N/A	18,75	7,1191	0	30	25,8691
LinkEvent		Railways	Railways - RUS	2 526,1	0,0221	55,7318	39,9631	15	168,4	95,6949
UnloadingEvent		Logistics centers	Krasnoyarsk	0	N/A	18,75	0,0396	0	0,2	18,7896

Modelled in InfraForecast Software

DETAILED ANALYSIS OF RAIL-CUSTOMS INTERACTION

DETAILED ANALYSIS OF RAIL-CUSTOMS INTERACTION

SOURCES



final analysis combines elements of the BPA approach with simplified schematic description of the most complemented or multi-optional processes

DETAILED ANALYSIS OF RAIL-CUSTOMS INTERACTION

KEY PARTICIPANTS OF PREPARATIONS FOR RAIL TRANSPORTATION

EXPORTER / SHIPPER

Option 1. Exporter or cargo shipper gets the export permission for the transported commodities.
Option 2. Export permission may be received later upon presentation to customs authorities of a preliminary consignment note issued by a freight forwarder or directly by carrier acting as a freight forwarder.
Under these two alternatives processes will be structured and continued in different ways.

FREIGHT FORWARDER

An exporter or his representative may conclude a contract with a freight forwarder that will, in its turn, conclude subcontracts with carriers and other entities. Freight forwarder prepares necessary documents in cooperation with the carrier, the latter being responsible for transportation documents related to the rolling stock.

RAIL CARRIER

An exporter or his representative may have direct contract with a carrier (e.g. in case of Russian Railways this will be a unified forwarding and carriage contract).
A contract is concluded with the first carrier along the route.

In the practice of the Russian Federation the carrier is responsible for dealing with customs all along the transportation process. This practice is not uniform for the while route. For example, in China this is a responsibility of a freight forwarder. **Consequently, in addition to the variety of options in terms of stakeholders and process organization alternatives, there are different responsibilities attributed to the same types of actors along the CMR corridor**.

DETAILED ANALYSIS OF RAIL-CUSTOMS INTERACTION

CUSTOMS DOCUMENTS FOR RAIL TRANSPORTATION

Customs documents necessary for exporting from Russian Federation to Mongolia or China include the following:

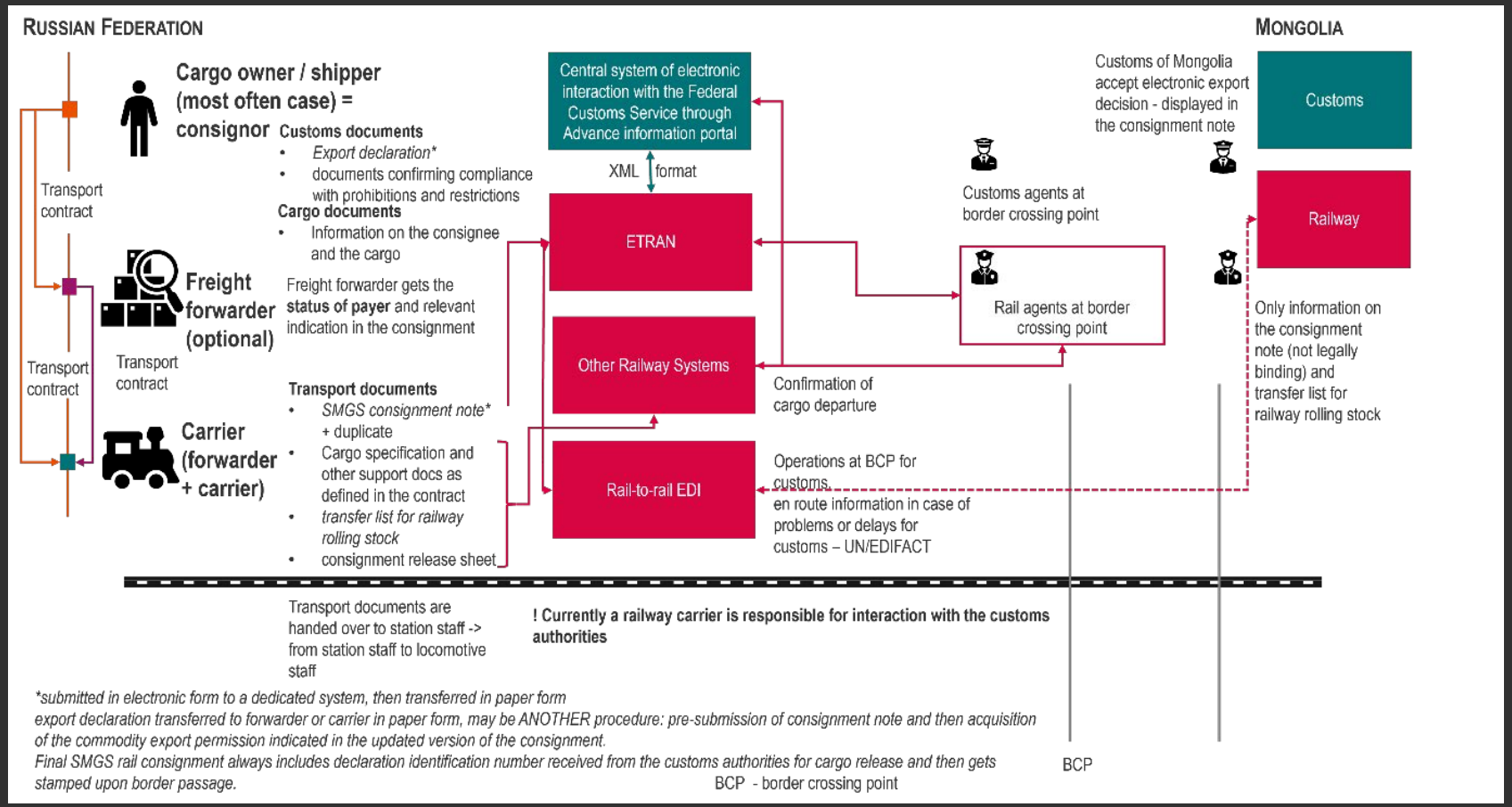
- export declaration necessary to obtain export permit,
- documents confirming compliance with prohibitions and restrictions,
- other supporting documents.

Supporting documents are not legally specified. They may include specifications, invoices, contract of the exporter with a buyer, etc. These documents are then transported with cargo in original or copy forms. Freight forwarder may propose their preferrable forms of documents (e.g. combined document as invoice-specification has been proposed by one of the leading forwarders).

As mentioned by the expert of the Russian Export Centre, this ambiguity leads to non-uniformity in practice at the level of customs agents at the border crossing points.

DETAILED ANALYSIS OF RAIL-CUSTOMS INTERACTION

- SIMPLIFIED SCHEME OF CUSTOMS-RAIL INTERACTION FOR RUSSIAN FEDERATION-MONGOLIA-CHINA RAIL FREIGHT



DETAILED ANALYSIS OF RAIL-CUSTOMS INTERACTION

SIMPLIFIED SCHEME OF CUSTOMS-RAIL INTERACTION FOR RUSSIAN FEDERATION-MONGOLIA-CHINA RAIL FREIGHT

- As it there is no legally binding electronic exchange between customs, so the documents have to be transmitted in paper form. No electronic signatures are accepted by the customs.
- As for rail-to-rail EDI, the exchange between Russian Federation and Mongolia is not legally binding, electronic documents cannot be accepted as legal documents, the have a function of advance notification only (that is called exchange of *information on the consignment*).
- SMGS consignment contains both electronic export decision mark and customs stamps for cargo departure from the Russian Federation. This information from the consignment note is accepted by the Customs of Mongolia.
- Rail-to-rail EDI is limited to transfer of the information on the consignment note and rolling stock transfer list (not legally binding). In principle it is possible to exchange any documents for export. But scanned copies of documents are practically not transmitted to neighbouring railways, as the data volume is too large.
- Railways use UN/EDIFACT standards in order not to clog the traffic. While Customs' system work with the XML format. It is the Federal Customs Service of the Russian Federation who sets the format for customs-rail interchange - there is an album of FCS formats for exporters and other users.

ELECTRONIC ROLLING STOCK DATABASE

ELECTRONIC ROLLING STOCK DATABASE

NECESSITY FOR PLANNING AND DECISION-MAKING

SITUATION AS IS

- Rolling stock, mainly freight wagons of all types, cannot be used for international transportation without special arrangements.
- This is an impact for ALL non-container freight.
- The reasons: rolling stock needs to be verified prior to border crossing for certification for the exact country, technical maintenance, owner and leaser, etc.
- Countries participating in OSJD or OTIF agreements use them for rolling stock cross-border control – and pass all documents in paper form – the longest part of the border crossing procedures.
- Asian countries in the most dynamic regions are not members of OSJD or OTIF and have no legal basis at all for cross-border rolling stock move.
- This is especially important for leased rolling stock.

ELECTRONIC DATABASE AND PROCESSING FOR ROLLING STOCK OPERATIONS

OPPORTUNITIES

- Rolling stock compliance certification and check.
- Data for forecasts and accurate rolling stock sell / lease deals (incl. for MDBs).
- Multilateral compliance for national regulations, automated restrictions.
- Sharing of technical and exploitation data though uniform protocols or APIs to local resources.
- Built-in processing for all rolling stock related payments and insurance, incl. for lease payments.
- Data for preventive maintenance, planning and forecasts.
- Important decrease in border-crossing time.

ELECTRONIC ROLLING STOCK DATABASE

PECULIARITIES OF THE TRANS-ASIAN RAILWAY NETWORK

The **purpose** of the electronic rail wagon database is to propose to the countries of the Trans-Asian Railway Network agreement **a practical digital tool for facilitation of cross-border rail services and wagon lease that could simultaneously serve as a basis for further rolling-stock related ecosystem of tools and services.** This tool aims all countries of the Trans-Asian Railway Network but will be particularly beneficial for countries with new rail developments and newly introduced cross-border services, including countries that are not parties to any international rail agreements such as SMGS or COTIF.

The **objectives of the database** are proposed as follows

- Identification of rolling stock and update of legal and technical information on each unit.
- Creation of a repository of digitized bilateral agreements for cross-border services and automated rolling stock certification for cross-border services for specific routes.
- Collection of data on freight movements and data for insurance and leasing companies,
- Creation of a basis for related data-based knowledge-sharing and additional services (such as wagon marketplaces, data for transport models, etc.)

ELECTRONIC ROLLING STOCK DATABASE

EXPECTED BENEFITS

The expected benefits of the database go beyond international rail freight traffic facilitation.
This could become the first integrative digital rail project for the Trans-Asian Railway Network and ESCAP members resulting in:

1. enhancing electronic rail information
2. operationalization of international rail corridors particularly for new rail markets such as ASEAN member states
3. alleviation of non-physical barriers for international and national rail transportation
4. way forward to developing inter-connected rail IT systems

RECOMMENDATIONS ON THE WAY FORWARD FOR CMR CORRIDOR

RECOMMENDATIONS ON THE WAY FORWARD

ACTION PLAN

GOAL: TO ENSURE A SEAMLESS EDI BETWEEN RAILWAYS AND AUTHORITIES ALONG THE CMR CORRIDOR RESULTING IN DECREASING TRADE COSTS AND FULL UTILIZATION OF THE ECONOMIC POTENTIAL OF THE CORRIDOR.

1. PROVIDE SUFFICIENT AND OVERARCHING LEGAL GROUNDS FOR EDI
2. ENSURE THE FUNCTIONING OF ELECTRONIC DATA EXCHANGE FOR BOTH EXPORT-IMPORT AND TRANSIT TRANSPORTATION, *BOTH RAIL AND CUSTOMS*
3. PRIORITIZE THE TECHNOLOGICAL AND PROCEDURAL SOLUTIONS TO MEET THE DEVELOPMENT OBJECTIVES OF THE ECONOMIC CORRIDOR

ACTIVITIES (FOLLOWING AN MOU)	TARGETS
1. To establish a special working program within the existing mechanism of the WCO-ESCAP Joint Task Force on Cross-border Electronic Data Exchange	Working program established with participation of railway authorities (done V)
2. To define existing gaps in EDI along the corridor and solutions to close them	Gaps defined (done V) and solutions proposed
3. To define optimal processes, responsibles and time, export-import and transit	Optimal processes described in detail, and approved
4. To define necessary changes or amendments to trilateral, bilateral, national and corporate legal framework	Necessary changes proposed
5. To ensure a test run and determine the successfulness and sufficiency of actions	Test run performed, results documented, and actions adjusted
6. To update the proposed solutions upon the test run and to consider gradual transition to EDI for commercial operations	Necessary changes to the process descriptions and the legal framework amended (if necessary) and adopted

THANK YOU FOR ATTENTION!