



FERRMED DECLARATION

THE SOCIO-ECONOMIC APPROACH TO EU/EURASIAN RAILWAY CORE NETWORK DEVELOPMENT SECOND EURASIAN CONNECTIVITY AND INDUSTRIAL COOPERATION FORUM

Brussels, NOVEMBER 21ST and 22ND 2018

CONTENTS

- 1.- Preamble
- 2.- Key objectives
- 3.- Enhancement of the Trans-European and Trans-Eurasian rail freight system
- 4.- Strategic Trans-Eurasian Terminals, intermediate terminals and transborder terminals
- 5.- Strategic Trans-Eurasian Logistics Hubs
- 6.- Priority Trans-Eurasian Railway Network
- 7.- Freight trains characteristics in the Priority Trans-Eurasian Rail Network
- 8.- FERRMED Multisectoral Working Groups (FMWGs)
- 9.- Strategic Trans-Eurasian Logistics Hubs Platform (STRANSS Platform)
- 10.- FERRMED Glossary

1.- PREAMBLE

FERRMED's Second Eurasian Connectivity and Industrial Cooperation Forum of 21-22 November 2018 in Brussels builds on two July 2018 events in China of major import for world logistics:

- The 20th EU-China Summit in Beijing. FERRMED welcomed the Summit's Joint Statement and is in full accord with the EU-China Connectivity Platform initiative.
- The First Eurasian Connectivity and Industrial Cooperation Forum, jointly organised by FERRMED and the People's Government of Zhengzhou.

It is full in line, as well, with the European Parliament resolution of 12 September 2018 on the state EU-China relations.

From now on, the Eurasian Connectivity and Industrial Cooperation Forum will be held twice a year – once in Europe and once in China – to develop guidelines and promote corresponding actions in a business-focussed approach to achieving the goals of both China's Belt and Road Initiative and the



European Union's own policy on sustainable connectivity between Europe and Asia.

The organization of the Forum is also open to any other countries related to the "Silk Road" land bridge.

In July 2018, FERRMED signed a cooperation agreement with Zhengzhou and in October 2018 a memorandum of cooperation with the Coordinating Council on Trans-Siberian Transportation (CCTT). Similar agreements with other key international organisations are in the making. These activities and the launch of the FERRMED Multisectoral Working Groups (FMWGs), with their Eurasian outlook, are intended to better pursue the goals of FERRMED and its partners and enhance the socio-economic approach to EU/EURASIAN Railway Core Network development.

More than 70% of the world's population lives in Eurasia. Trade among different countries in this huge continent has been growing steadily, particularly between China, the European Union and Russia. Trade with India and South-East Asian countries is also growing.

The fast development of the Chinese economy and the interdependence of manufacturing processes with the EU requires reconsidering the Trans-Eurasian transport system to restrain product costs.

To attend properly such significant challenges, multimodal transportation system reliability is a key and railway has to play an important role as one of the most sustainable transportation mode.

Unfortunately, the real facts are:

EU level

- No increase in railway freight share in land transportation in the last 15 years
- Huge Railway Core Network with nearly 80,000 km
- Continuous delays in the required investments in main lines of the Core Network
- Impossibility to achieve "White Paper" targets by 2030
- No significant reduction in railway freight transportation cost, transit times or operational unreliability

Eurasian level

- Small participation of the railway in the Trans-Eurasian Multimodal Transportation System (approx. 1% of the transported goods in value)
- No significant reduction in transportation costs.
- Transborder difficulties / bureaucracy
- Excessive transit times
- Unbalanced flows Westbound - Eastbound

2.- KEY OBJECTIVES

Pushing for faster development of the most important parts of the trans-European and trans-Eurasian railway network, particularly for freight, and for resolution of this network's most important issues. Key aspects are the mitigation of bottlenecks and implementation of the FERRMED Requirements/Standards of Reference.

The focus is on making today's freight system, and particularly the core trans-European and trans-Eurasia network, work for business.

The main targets are:

- Optimisation of multimodal transport flows
- Drastic improvement of lead/transit time (50%) and punctuality



- Cost reduction of 25%
- Freight trains able to carry 224 TEUs
- 50% increase in line capacity
- Reduction of in-transit and destination inventories of 20 to 50%
- Full, online information for shippers
- Optimised train path allocation
- Wagon tare reduction of 2 tonnes, with corresponding payload increase
- Significant reduction of noise and vibration
- Decrease of derailment hazards and maintenance costs
- Strong cutback in green-house-gas emissions
- Creation and consolidation of efficient freight train routes between strategic trans-Eurasian multimodal terminals
- Achievement of a socio-economic internal rate of return of 11%

3.- ENHANCEMENT OF THE TRANS-EUROPEAN AND TRANS-EURASIAN RAIL FREIGHT SYSTEM

3.1.- Suitable transport modes

Trans-Eurasian freight moves over long distances. The most suitable transport modes are therefore sea, rail and air, complemented when necessary by inland waterways and road for the first and final segments of a shipment's journey. For goods of a given density and value, shippers mainly base their decisions on cost, lead/transit time, reliability and information quality.

3.2.- New opportunities on the main Trans-Eurasian railway routes

Given that about 40% of total cargo between China and Europe is high-added-value products, the Trans-Eurasian Land Bridge offers new opportunities for rail to win traffic from air and sea transport. The work of CCTT and the Belt and Road Initiative are enhancing these opportunities (see Figure 2).

The Trans-Eurasian Land Bridge offers opportunities to improve Trans-Eurasian trade and manufacturing processes based on a high-performance railway pipeline that links the strategic logistic hubs of the main socio-economic mega-regions of Europe and Asia.

One objective in developing the Trans-Eurasian Land Bridge is to provide the basis for a fully synchronised manufacturing system between China and Europe with just-in-time deliveries that minimise inventories in transit and intermodal terminals.

3.3.- Actions to foster Trans-Eurasian railway traffic

Successful development of railway traffic on the Silk Road requires the prioritisation of the most suitable Trans-Eurasian corridors. In these corridors, the objectives must be to:

- Remove bottlenecks, increase capacity, improve operational processes, reduce cost, reduce transit time and increase reliability and information quality by means of actions along the corridors and the Strategic Trans-Eurasian Logistics Hubs they link.
- Modernise rolling stock to improve train capacity, reduce noise and vibration, and improve safety. Automatic couplers that provide electric power and a data link will speed shunting, ease surveillance of trains, wagons and shipments, and allow electronically controlled braking and efficient temperature control.
- Take actions related to the Strategic Trans-Eurasian Terminals to improve connectivity, expedite transfers, and enhance quality and safety.



4.- STRATEGIC TRANS-EURASIAN TERMINALS, INTERMEDIATE TERMINALS, LOCAL TERMINALS AND TRANSBORDER TERMINALS

4.1.- Main characteristics of the Strategic Trans-Eurasian Terminals

A Strategic Trans-Eurasian Logistic Hub will typically have several Strategic Trans-Eurasian Terminals having the following characteristics:

Location:

- In a Socio-economic Mega-Region and on a main Trans-European or Trans-Eurasian railway route
- In an important logistic and industrial region with comprehensive and diversified economic activity sectors such as: aeronautical, agri-food, automotive, ceramics, construction auxiliary industry, electronics, iron and steel, logistics services, metallurgical, mining, petrochemical, pharmaceutical, railway rolling stock manufacturing, textile and clothing. This diversity reduces logistics costs and offers more opportunities for backhauls.
- Location with good connections to railways, motorways, the sea or inland ports and an airport with good international links.
- Location accessible to complementary facilities such as universities and research centres, business schools and shopping districts.
- Location offering reasonable prices for warehouses and industrial land.

Within a Strategic Trans-Eurasian Logistic Hub, a Strategic Trans-Eurasian Terminal can have various specialities. Such specialities can include among others, handling containers, automobiles, whole trucks or truck trailers. They can possibly be located in different places within the Hub's area.

Terminal facilities:

- Allowing entry of 740-metre trains without shunting, with capability of gradual enlargement to 1000 to 1500 metres.
- Enough tracks to receive trains, handle shipments, park trains and shipments, and prepare outbound trains.
- Ability to handle shipment of whole trucks or truck trailers on wagons.
- Efficient performance and programme for increased automation, including automatic systems for unloading, sorting, transfer and loading.
- Customs and phytosanitary services.
- Less-than-container-load (LCL) services.
- Single-window services.
- Warehouses fitted with facilities such as refrigerator and vegetable stores, temporary storage and indoor shelving.
- Free zone declaration possibility and freight village resources.
- Workshops for rolling-stock maintenance
- Nearby land areas for new manufacturing plants that prepare assemblies and subassemblies for just-in-time deliveries.

Potential railway traffic:

The potential rail traffic of a Strategic Trans-Eurasian Terminal corresponds to the multimodal trade volumes for the terminal (and its catchment area, related to the corresponding Strategic Trans-Eurasian Logistics Hub) that could profitably move by rail.



It can be expressed in both tonnes and TEUs.

The potential market depends on the trade volumes of the Strategic Trans-Eurasian Logistics Hub and its catchment area, including both:

- Intra-zone volumes within zones such as EU, Russia and China and
- Inter-zone volumes between these zones at the Trans-Eurasian level

The potential railway traffic of the Hub and its catchment area allows classification of the terminal as a Strategic Trans-Eurasian Terminal.

To get such kind of Terminals, the Hub has to convey at least 25-30% traffic (intra-zone and interzone flows included) in the Socio-Economic Mega-Region.

4.2.- Main characteristics of the Strategic Trans-Eurasian Terminals

Intermediate Terminals may be considered as subsidiary to the Strategic Trans-Eurasian Terminals and should have the following characteristics:

Location:

- Located in a Socio-economic Mega-Region and on a domestic core network corridor (in the EU, Russia or China) with good railway connections with the corresponding Strategic Trans-Eurasian Hubs
- Established in complementary logistics and industrial zones.
- Good connections to railways, motorways, sea or inland port and air cargo facilities.
- Reasonable warehouse and land prices.

Terminal facilities:

- Availability for trains 740 metres long.
- Enough tracks to receive, handle, park and send trains and shipments.
- Efficient performance, and programme to increase automation.
- Ability to handle trains that transport truck trailers.
- Single-window services.
- Customs services
- Possibility of free-zone declaration

Potential railway traffic:

The potential rail traffic corresponds to the multimodal trade volumes for the terminal and its catchment area that could profitably move by rail.

It can be expressed in both tonnes and TEUs.

Another key criterion is the potential volumes to be exchanged with nearby Strategic Trans-Eurasian Terminals for placement on intercontinental trains.

For a terminal to be classified as an Intermediate Terminal, the potential railway traffic of the complementary logistics and industrial zone in its catchment area, including intra-zone and inter-zone traffic, has to be at least 10% traffic of the Socio-economic Mega-Region.

4.3.- Local Terminals



The location of Local Terminals allows them to improve the final distribution of transported goods and “last mile” delivery at local level. They need to be well connected with Intermediate Terminals and, if appropriate, with Strategic Trans-Eurasian Logistic Terminals.

Location:

- Anywhere on the Comprehensive Rail Network of EU, Russia, China (or other zones) close to specific consumption/production centres.
- Good local transport links to easily reach the involved consumption/production centres

Facilities:

- Reception of trains up to 500 metres long without shunting
- Adequate facilities considering the kind of goods to be collected/distributed at local level
- Efficient performance and programme for increasing automation
- Single-window services

4.4.- Transborder Railway Terminals

Transborder Railway Terminals are needed where tracks of different gauges meet (gauge-break pints). The main gauges of the Trans-Eurasian rail freight system are the 1668 mm of the Iberian Peninsula, the 1435 mm of most of the EU and China and the 1520 mm of the CIS countries.

Location:

- Locations served by two of the major Eurasian gauges – i.e. gauges, of 1435, 1520 and 1668 mm respectively – with efficient facilities for allowing shipments to continue their journey on another gauge.

Facilities:

- Ability to receive long trains without shunting. Minimum length: 740 metres, with capability of extension to 1000-1500 metres.
- Enough tracks to efficiently receive and process trains.
- As appropriate, facilities for overcoming a gauge difference by the following methods:
 - transloading
 - bogie change
 - axle change (for fixed-gauge axles)
 - for specific wagons equipped with variable-gauge axles, automatic change from one gauge to another.
- Facilities that change bogies or axles must manage an adequate fleet of these components.
- Efficient performance, and programme to increase automation.

5.- STRATEGIC TRANS-EURASIAN LOGISTICS HUBS

The optimisation of Trans-Eurasian railway performance requires a compatible network of Strategic Trans-Eurasian Terminals located in large industrial and logistic hubs that we call Strategic Trans-Eurasian Logistic Hubs.

These hubs should have the following features:

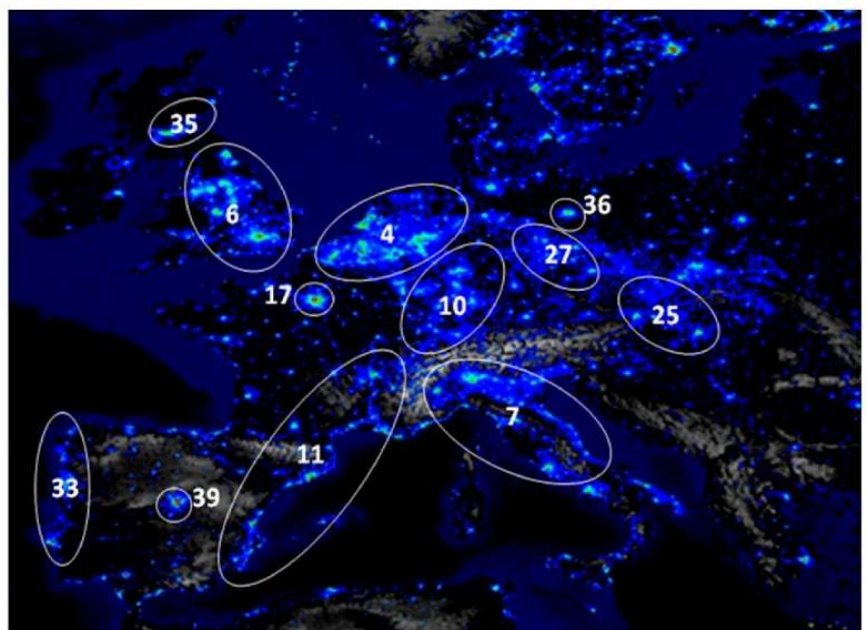
- High GDP contribution.
- Strong multimodal freight transport network, including road, rail, air, sea and inland waterways (preferably, at least, four of these modes have to be available).
- Robust industrial production and consumption zone.
- Major education centres, including universities and business schools.
- Good standard of living and also quality of life.
- Complementary facilities for passengers, including motorways, an intercontinental airport, high-speed railway connections, ferry/ro-ro services in the ports, ...
- Capacity to concentrate intercontinental import/export flows.

Strategic Trans-Eurasian Logistics Hubs will generally be large urban areas with several million inhabitants belonging to a well defined socio-economic Mega Region. See in figure 1 the main socio-economic Mega-Regions, in EU. These Hubs include many kinds of terminals. At least one of them must be a Strategic Trans-Eurasian Terminal focusing on multimodal transport.

Figure 1 – EU Mega-Regions

ECONOMIC ACTIVITY GENERATION IN THE GREAT EUROPEAN MEGA-REGIONS
 based in spatial techniques and statistics as well as in light emission (LRP) (according to **Richard Florida**)

The figure in each Mega-Region is the ordinal score world wide



6.- PRIORITY TRANS-EURASIAN RAILWAY NETWORK

6.1.- Understanding the network

FERRMED sees the Priority Trans-Eurasian Railway Network as a backbone rail transport system linking the most important Eurasian socio-economic regions by means of these regions' Strategic Trans-Eurasian Logistic Hubs. (See Figure 2)

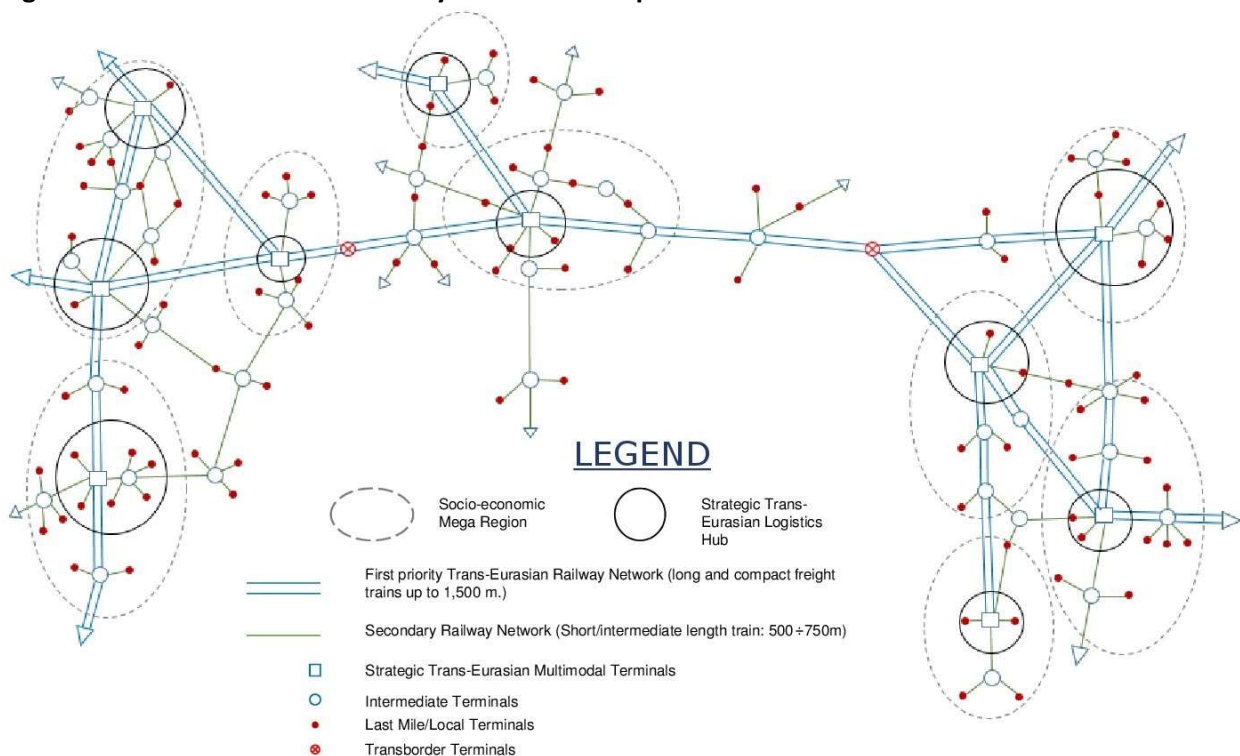
The main objectives are to reduce cost and lead/transit time while assuring quality and safety on the main Trans-Eurasian routes, including the EU's Trans-Eurasian Backbone Rail Network. (See

Figure 3)

The central means for achieving is the implementation of a common body of criteria known as the “FERRMED Requirements/Standards of Reference”. These mainly concern train length, loading gauge, wagon characteristics, efficiency of intermodal terminals and simplification of border crossing procedures, including integrated information technology and electronic documents flow.

Therefore, this selective network must be suitable for long and heavy trains of 1,500 metre length and 3,600 to 5,000 tonnes gross weight.

Figure 2 - The Trans-Eurasian railway network concept



6.2.- EU Priority Trans-Eurasian Railway Network

In the EU, it is essential to select the corridors within the EU Core Network that bear the heaviest traffic.

Two groups of corridors correspond to two successive enhancement efforts:

Backbone rail network:

EU Trans-Eurasian Backbone Rail Network (consisting of approximately 6000 km and about 30% of the Core Network’s traffic):

- North Sea – Baltic Corridor (West-East direction to the Belarus border)
- North Sea – Mediterranean (continental portion)
- Rhine – Alpine
- Mediterranean (section: ... - Milano – Lyon – Marseille – Barcelona - ...)

Extension of the backbone rail network:

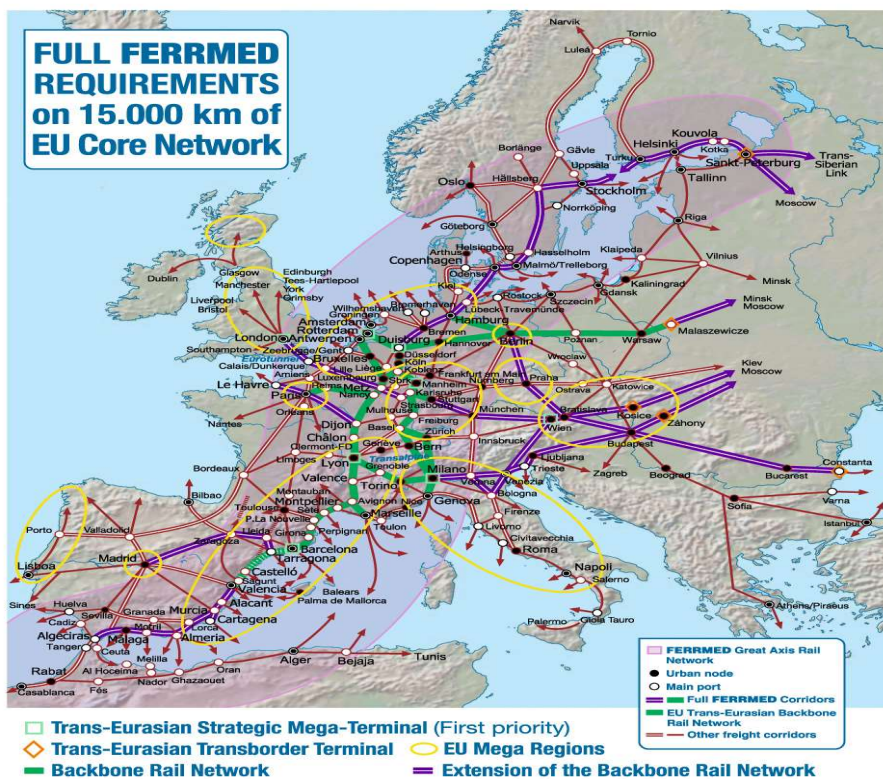
An additional 9000÷10000 km of corridor that represent the busier sections of the remaining corridors.

Together, these 15,000 km of corridors carry about 60% of the Core Network’s traffic (EU Main Trans-Eurasian Corridors, which we also call “Full FERRMED Corridors”).

The core network approved by the European Commission is too extensive (close to 80,000 km). With the 15,000 km proposed by FERRMED we cover almost 60% of the EC core network traffic. This is where we must proceed in building a very efficient railway freight transport system achieving the aims of the EC White Paper on transport, including the environmental objectives.

Figure 3 – Map of the selected corridors of first and second priority

FULL FERRMED CORRIDORS IN THE EU CORE NETWORK



First step:
Trans-Eurasian Backbone Rail Network
(about 6,000 Km)
(approx. 30% of Core Network traffic)

Second step:
EU Main Trans-Eurasian Corridors (to reach about 15,000 Km)
(approx. 60% of Core Network)

EU Core Network about 80.000 km

This network links the most important socio-economic regions and the proposed Strategic Trans-Eurasian Hubs in the EU.

6.3.- Priority Trans-Eurasian Railway Networks in Eurasia

As in the case of the EU, FERRMED proposes to select the most important corridors linking Chinese, Russian and European Union socio-economic mega-regions, as Figure 4 shows.

Figure 4 – Trans-Eurasian routes

Key issues: LEAD TIME, TRANSPORTATION COST & CAPACITY AND EFFICIENT SERVICE



6.4.- Priority topics

Improving the Trans-Eurasian rail network requires attention to a number of topics. The FERRMED Multi-Sectoral Working Groups (FMWGs) have identified the following main topics. In addressing each of them, FERRMED's focus will be Europe and its outlook Eurasian:

- Removing existing and potential bottlenecks
- Longer freight trains
- Harmonized criteria for international freight trains, path allocation and open access to tracks in a non-discriminatory way
- Loading gauge enlargement for transport of whole truck or truck trailers (first stage: 4 metre corner height).
- Harmonisation and simplification of rolling stock homologation procedures
- Efficient, available and accessible intermodal terminals, which are to be classified as Strategic Trans-Eurasian Terminals, Intermediate Terminals, Local Terminals and Transborder Railway Terminals.
- Harmonisation of processes for operations.
- ERTMS implementation on the network and in locomotives.
- Electrification: extension of electrification and multi-system locomotives.
- FERRMED freight wagon concept implementation, including automatic couplers carrying electricity and data; central beam for transmission of traction and braking effort; new brake technology; and optimisation wagon length in line with market needs.
- Balancing of freight flows in main railway routes to allow backhauls.
- Availability of interoperable rolling stock for rent, particularly concerning locomotives adapted to European standards and market requirements.
- Integrated management, monitoring and tracking of freight trains, including data sharing and avoidance of manual re-entry of data when shipments cross borders.
- Fair and internationally homogenous track use fees.
- As appropriate, re-gauging of lines with related compatibility of rolling stock.



- Redefine main railway lines so as to avoid grades over 12 ‰ (exceptionally 15 ‰ on short sections of less than a kilometre) and allowing 22.5 tonnes/axle (25 on new lines).
- Efficient and appropriate sharing of transport information, including prices, schedules, tracking and ETA information, in the multimodal network.
- Reduction of the environmental impact of the rail freight transport system, particularly noise, vibration and greenhouse gas emissions.
- Common training procedures for drivers and controllers at EU level including English training and automatic translation systems.
- To promote PPP solutions in infrastructure, operation and rolling stock enhancement.
- To promote exchange of experience and especially success stories
- To foster the creation of new freight train routes.

Key organisations, including CCTT, CER, ERFA, OSJD, UIC, UIRR and UNECE are working on these topics. The FMWGs intend to focus on the following issues, in which several of their members have deep knowledge and experience:

1. Train length (longer trains)

- Target 740 metres (first stage).
- Analysis and recommendations to permit of 1000 to 1500 metre trains on lines and in terminals in the future.

2. Terminals (multimodal terminal efficiency)

Targets (non-exhaustive list):

- Train length
- Capacity
- Efficiency
- Multimodality
- Opening hours (times of day; days of week; holidays)
- Ability to handle transport of whole trucks and truck trailers on trains

3. Bottlenecks

- Removal of infrastructure bottlenecks on lines and in terminals to accommodate expected traffic and longer trains.
- ERTMS implementation (level 2; Baseline 3 for the interoperability)
- Track gauge compatibility
- Removal of operational bottlenecks, particular at borders or related to path allocation.
- Target: Progressively enhance the railway system so it can absorb current and potential traffic and to improve lead/transit times.

4. Larger loading gauge

- Target: P400 (first stage) to allow carriage of whole trucks and truck trailers 4 metres high at the corners.

Automatic couplers that supply power and allow data communication on the train

5. Rolling stock improvements

- Locomotives
 - ERTMS implementation
 - Required locomotives for longer trains.
- Freight wagons
First step:
 - Longer wagons
 - Automatic couplers that transmit electric power and data
 - Composite brake shoes
- E-trains
 - Automatic couplers that supply power and allow data communication on the train.

6. Potential traffic analysis and trains new routes proposals

The FMWGs will outline an action plan concerning each of these topics with the key organisations mentioned above, particularly the UIC.

7.- FREIGHT TRAIN CHARACTERISTICS IN THE PRIORITY TRANS-EURASIAN RAIL NETWORK

Freight trains in the Priority Trans-Eurasian Rail Network must take into account FERRMED requirements for length and gross weight, as Figure 5 shows.

Figure 5 – FERRMED requirements for length and gross weight

FERRMED objective for train characteristic	
Length	1,500 m
Loading gauge	UIC C
Gross tonnes	3,600 to 5,000 tonnes, depending on goods density
Number of motorised axles	12
Number of locomotives	More than one: 2 Co-Co or 3 Bo-Bo
Starting tractive effort	600-800 kN, depending on line profile and train weight
Locomotive power	7,000-10,000 kW, depending on line profile and train weight

In most cases, the goods in Trans-Eurasian trains are high-added-value, low-density products. FERRMED recommends the implementation of long freight wagons able to carry four 20-foot containers. This allows a train of a given length to carry a larger payload (“compact freight trains”).

The FERRMED freight wagon concept foresees freight wagons with optimised loading areas, automatic couplers transmitting electric power and data, and compact brakes to lighten the bogie, and a central beam. Main goals are reduce weight, noise and vibration.

8.- FERRMED MULTISECTORAL WORKING GROUPS (FMWGS)



8.1.- General scope and objectives

In order to foster the development of the Trans-European and Trans-Eurasian Railway Network, particularly for freight (removal of bottlenecks and implementation of FERRMED Requirements/Standards of Reference) and to reduce drastically door-to-door lead/transit times and logistics costs, FERRMED, jointly with other interested companies and associations, is launching three FERRMED Multisectoral Working Groups (FMWGs) related to **Infrastructure**, **Operations** and **Rolling Stock**.

The main objective of the FMWGs is to perform studies, analyses, reports and proposals in these three areas and to foster their implementation so that the most important parts of the European rail network to handle current and potential demand for European and Trans-Eurasian freight flows. The basis for these improvements is a body of criteria we call the "FERRMED Requirements/Standards of Reference".

Another key objective is to promote rail freight transport, looking for specific cases and train routes of interest to shippers.

The FMWGs will consider the following issues:

FMWG on Infrastructure

Focus: main lines, including train length, loading gauges, bottlenecks, missing links and gauge-break points.

Special emphasis should be placed in the corridors defined by FERRMED as EU Main Trans-Eurasian Corridors, corresponding to the 15,000 km with the most rail freight traffic potential in the EU Core Network (see figure 3), giving priority to the corridors within the EU Trans-Eurasian Backbone Rail Network.

FMWG on Operations

Focus: terminals, train services and the full logistic chain.

This FMWG must consider all issues relating to the operation of freight trains at an appropriate quality level, at competitive cost levels and as part of optimised intermodal processes. These issues include harmonisation and simplification of processes, rates, path allocation, free competition with non-discriminatory access to lines, traceability, and unification of management.

The FMWG on Operations will also create a New Routes Commission to promote new rail freight transport routes, particularly on the Main Trans-Eurasian Network.

The EU Trans-Eurasian Backbone Rail Network will be the priority focus of these efforts.

FMWG on Rolling Stock

Focus: support actions for initiatives on locomotives, wagons and transport units.

The objectives of the FMWG on Rolling Stock include:

- Unifying approval procedures
- Reducing noise and vibrations



- Implementing automatic couplers with data and electric power links for the surveillance of trains, wagons and shipments and for electronically controlled brakes and efficient temperature control
- Stimulating the implementation of the design criteria adopted in previous FERRMED studies.

The FMWGs on Infrastructure and Operations may be subdivided into geographical zones. For the FMWG on Rolling Stock one this subdivision is considered not necessary.

Each FMWG will have a Global Coordinator and a Full Working Group Secretary, and each zone subgroup will have a Sector Coordinator and a Sector Secretary.

See general organization chart of the FMWGs in figure 6.

The FMWGs are open to all FERRMED and Advisory Council members and to all other allied companies and associations interested in the project, according to their preferences and needs.

The general action plan of each FMWG must be compatible with the calendar and the overall program of activities of the Association, and an FMWG must submit proposals for the approval of the General Steering Committee and/or the Presidency (for special or urgent circumstances) before being published.

8.2.- Basic Action Plan configuration

As a first step, the FMWGs will consider the Core EU/trans-Eurasian network corridors:

- First priority: the backbone rail network
- Second priority: main additional routes to the backbone rail network (extended backbone rail network)
- Third priority: other leading sections of the global core rail network (not included in the extended backbone rail network)

The FMWGs are defining development priorities on the following horizons:

- Short term (for rail breakthroughs): 2020/2021
- Medium term: 2025
- Long term: 2030

The main topics included in the Action Plan are:

- Longer trains
- Enhance of terminals
- Loading gauge enlargement
- Appropriate re-gauging of lines having gauges other than 1435 and 1520 mm.
- Rolling stock improvement
- Analysis of potential traffic, resolution of bottlenecks, priority missing tracks and lines, and implementation of new freight train routes

8.3.- Main expected results

The main expected results are in line with the key objectives stated in point 2:

- Significant increase in railway land transport share
- Multimodal flows optimisation
- Drastic lead/transit time reduction (over 50%)

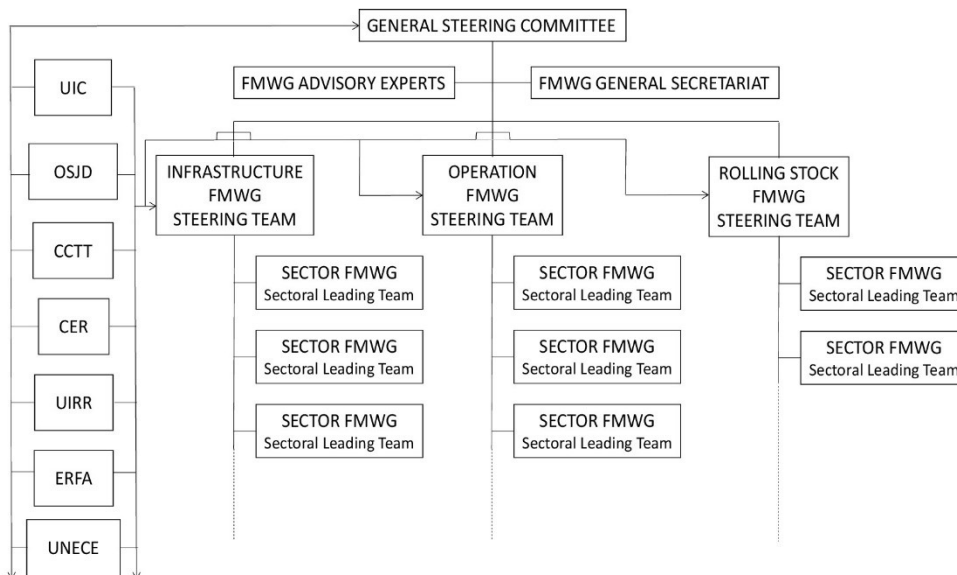


- Transport cost reduction: over 25%
- Freight train punctuality over 95%
- Freight trains able to carry more than 200 TEUs
- Lines capacity increase: over 50%
- Continuous full online information for operations planning, operations monitoring and estimated time of arrival (ETA)
- Reduction of wagon tare by 2 tonnes with corresponding payload increase
- Substantial reduction of noise and vibration
- Strong decrease in greenhouse-gas emissions
- Socio-economic internal rate of return of 11%
- Creation and consolidation of freight trains routes

As a consequence of the FMWGs activities, additional advantages for the involved members are expected, including:

- Mutual exchange of experience
- Identification of critical issues
- Access to innovative solutions
- Good news acknowledgement

Figure 6 – FMWGs organization chart



9.- STRATEGIC TRANS-EURASIAN LOGISTICS HUBS PLATFORM (STRANSS PLATFORM)

The members of the STRANSS Platform will be the main cities of the urban agglomerations classified as Strategic Trans-Eurasian Logistic Hubs due to their respective GDP contribution, volume of production and trade and corresponding major logistic facilities.

The STRANSS Platform is created following the basic criteria of the Belt and Road Initiative. A Strategic



Trans-Eurasian Logistic Hub can be in any Eurasian country.

The main objectives of the STRANSS Platform are:

- To increase social welfare by enhancing the industrial and commercial capacity of each Strategic Trans-Eurasian Logistic Hub.
- To collaborate with UIC, CCTT, OSJD and FERRMED in the enhancement of the multimodal Trans-Eurasian transport system on the basis of an efficient railway.
- To promote smart and environmentally friendly intercity logistics.
- To promote trade and transport routes between all the involved Strategic Trans-Eurasian Logistic Hubs.
- To foster the organisation of forums, exhibitions, seminars and conferences regarding the Belt and Road Initiative – including FERRMED Multisectoral Working Groups meetings – in order to promote research, development, innovation and success stories in the transport system.
- To promote collaboration between the universities, business schools, research centres, professional associations, chambers of commerce and similar actors of the involved Strategic Trans-Eurasian Logistic Hubs.
- To encourage cultural exchange between institutions of the concerned Strategic Trans-Eurasian Logistic Hubs.

The STRANSS Platform will have two activity branches:

- A multifunctional branch constituted by municipal authorities of the STRANSS Platform
- A technical branch constituted by the Strategic Trans-Eurasian Terminals and mainly promoted by FERRMED and other interested international business and logistics associations.

The central objective of the STRANSS Platform is to contribute to development of a highly efficient railway network connecting China, the CIS and the EU, with significant cost reduction, drastically shorter lead/transit times, timetable fulfilment, adequate information quality, traceability, innovative procedures (including e-trains and e-terminals), flows balancing to allow backhauls, environmental friendliness and, in summary, strong contribution to the welfare of the involved populations.

10.- FERRMED GLOSSARY

Belt and Road Initiative	A Chinese initiative to develop transport routes involving sea, rail and road transport between China and other countries and continents.
CCTT	Coordinating Council on Trans-Siberian Transportation
Comprehensive Rail Network	The significant parts of the rail network, including the core network and other complementary lines.
EU	For the purposes of this document, EU is shorthand for the EU, the non-EU Balkan states, Norway, Switzerland, the UK.
EU Core Network	Core network designated by the EU; the busiest 80,000 km of the EU freight network
EU Main Trans-Eurasian Corridors (extended Backbone Rail Network)	The busiest 15,000 km of the EU Core Network; carries 60% of current or potential EU Core Network traffic.
EU Trans-Eurasian Backbone Rail Network	The busiest 6,000 km of the EU Core Network; carries 30% of current or potential EU Core Network traffic.

FERRMED Multisectoral Working Group	One of three FERRMED groups (Infrastructure, Operation and Rolling Stock) working on issues contributing to reduce cost and to improve quality of Trans-European and Trans-Eurasian rail freight services.
FMWG	Ferrmed Multisectoral Working Group
Full FERRMED Corridor	See EU Main Trans-Eurasian Corridor
Intermediate Terminal	A terminal playing a feeder role to one (or more) Strategic Trans-Eurasian Terminals.
Local terminal	A terminal playing a feeder role to one (or more) Intermediate Terminals. The Terminal facilitates the final distribution of transported goods.
One Belt, One Road	See Belt and Road Initiative.
Silk Road	General term grouping transport routes involving sea, rail and road transport between Asia and Europe. Traders have been using such routes since Antiquity.
Socio-economic Mega-Region	Main Socio-Economic Regions all over the world according to economic activity generation (considering Richard Florida criteria)
STRANSS Platform	Strategic Trans-Eurasian Logistics Hubs Platform
Strategic Trans-Eurasian Logistic Hub	Large industrial and logistics Metropolitan Area located in a Socio-Economic Mega-Region.
Strategic Trans-Eurasian Logistic Hubs Platform	The group constituted by the Strategic Trans-Eurasian Logistics Hubs; an organisation that designates Strategic Trans-Eurasian Logistic Hubs, fosters their cooperation and advances their collective interests and those of the populations they serve.
Strategic Trans-Eurasian Terminal	A Terminal located in a Large Industrial and logistics Metropolitan Area, with good connections to railways, motorways, sea or inland ports and an airport with strong international links. (Location accessible to complementary facilities such as universities, research centres, business schools and shopping districts)
Trans-Eurasian	In the context of FERRMED, denotes rail freight traffic among China, Europe, Russia and intermediary countries and zones.
Trans-Eurasian Main Routes	The most important rail routes between the Far East and Europe.
Trans-European	In the context of FERRMED denotes rail freight traffic inside the EU and neighbouring countries.
Transborder Terminal	A terminal where a major function is to allow containers and other shipments to continue their rail journey on a different track gauge. (The terminal may be either a Strategic Trans-Eurasian Terminal, Intermediate Terminal or Local Terminal.)



CONCLUSIONS

FERRMED's Second Eurasian Connectivity and Industrial Cooperation Forum of 21-22 November 2018 in Brussels builds on two July 2018 events in China of major import for world logistics:

- The 20th EU-China Summit in Beijing. FERRMED welcomed the Summit's Joint Statement and is in full accord with the EU-China Connectivity Platform initiative.
- The First Eurasian Connectivity and Industrial Cooperation Forum, jointly organised by FERRMED and the People's Government of Zhengzhou.

The Forum in Brussels also builds on and is fully in line with the European Parliament resolution of 12 September 2018 on the state of EU-China relations.

From now on, the Eurasian Connectivity and Industrial Cooperation Forum will be held twice a year – once in Europe and once in China – to develop guidelines and promote corresponding actions in a business-focussed approach to achieving the goals of both China's Belt and Road Initiative and the European Union's own policy on sustainable connectivity between Europe and Asia.

To accomplish the objectives of the Forum, FERRMED is working with related associations and partners on the following issues:

- Enhancement of the trans-European and trans-Eurasian rail freight system, considering socio-economic ABC criteria to focus on the busiest EU core network corridors and main trans-Eurasian main routes.
Within the European Union, identification in a first stage of some 6000 km of routes comprising a backbone rail network that carries 30% of the EU core network traffic and in a second stage a further 9000-10,000 km of routes for a total 15,000 km comprising an extended backbone network rail carrying about 60% of the EU core network traffic.
- Launch of the FERRMED Multisectoral Working Groups (FMWGs) in collaboration with other key associations such as CCTT, OSJD and UIC.
The FMWGs will conclude agreements with these associations to exchange information. The FMWGs will concentrate their efforts on the following goals:
 - Progressive increase of train length from 740 m to 1,500 m
 - Efficiency and versatility and intermodal terminals
 - Loading-gauge enlargement
 - Rolling-stock improvements, including a new wagon concept
 - Track-gauge compatibility and resolution of main bottlenecks
 - Creation and consolidation of efficient train routes between strategic trans-Eurasian terminals
- Identification of the strategic trans-Eurasian logistics hubs and corresponding strategic trans-Eurasian terminals, intermediate terminals, local terminals and gauge-break terminals.
- Creation of conditions allowing connection of strategic Trans-Eurasian terminals with trains that are both long and compact, i.e. allow high longitudinal utilisation so as to carry the greatest possible number of TEUs or other loading units.
- To promote the Strategic Trans-Eurasian Logistics Hubs Platform in order to pursue smart and green city logistics throughout Eurasia.

The main targets are:

- Optimisation of multimodal transport flows
- Drastic improvement of lead/transit time (50%) and punctuality
- Cost reduction of 25%



- Freight trains able to carry more than 200 TEUs
- 50% increase in line capacity
- Reduction of in-transit and destination inventories of 20 to 50%
- Wagon tare reduction of 2 tonnes, with corresponding payload increase
- Strong cutback in greenhouse-gas emissions
- Creation and consolidation of efficient freight-train routes between strategic trans-Eurasian multimodal terminals
- Achievement of a socio-economic internal rate of return of 11%