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Identification of cargo flows on the Euro-Asian transport links

Draft report of the phase III of the Euro-Asian Transport Links project

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Introduction

1. This document contains the draft final report of the phase III of the Euro-Asian Transport Links (EATL) project. It presents the results of the project's phase III whose aim was to identify measures to make the overland EATL operational.

2. In particular, the report offers an overview and analysis of the existing situation in transport and trade along EATL routes, it reviews existing studies, programmes and initiatives on the development of EATL in the period 2013-2016, it identifies main transportation and trade obstacles in transport, trade, border-crossing, customs and transit along the EATL routes, and it formulates recommendations to overcome the identified obstacles as well as to further develop the trade across the EATL area.

3. This document is submitted to the fifteenth session of the Group of Experts on EATL for discussion and review.

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ABBREVIATIONS

ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
ASEAN	Association of Southeast Asian Nations
BSEC	Organization of the Black Sea Economic Cooperation
BSEC-URTA	BSEC Union of Road Transport Associations
CAREC	Central Asian Regional Economic Development Program
CCTP	Coordinating Council on Trans-Siberian Transportation International Association
CEFIR	Centre for Economic and Financial Research at the New Economic School
CIM	Uniform Rules concerning the Contract of International Carriage of Goods by Rail
CIS	Commonwealth of Independent States
COSCO	China Ocean Shipping Company
COTIF	Convention concerning International Carriage by Rail
EAEU	Eurasian Economic Union
EATL	Euro-Asian Transport Links
EBRD	European Bank for Reconstruction and Development
ECO	Economic Cooperation Organization
EDB	Euro-Asian Development Bank
EECCA	Eastern Europe, Caucasus and Central Asia
EU	European Union
FAS	FESCO Amur Shuttle
FASw	FESCO Amur Shuttle westbound
FBS	FESCO Baltic Shuttle service
FELB	Far East Land Bridge
FESCO	Far East Shipping Company
FMS	FESCO Moscow Shuttle
FMSe	FESCO Moscow Shuttle eastbound
FOB	free on board
FOS	FESCO Ob Shuttle
FSS	FESCO Siberian Shuttle
FSSe	FESCO Siberian Shuttle eastbound
FUS	FESCO Ural Shuttle
GDP	gross domestic product
GIS	Geographical Information System
GPST	Global Partnership for Sustainable Transport
GUAM	Organization for Democracy and Economic Development
GVC	Global value chain
IBRD	International Bank for Reconstruction and Development
ICT	information and communication technology
IDA	International Development Association
IDB	Islamic Development Bank
IGC	Intergovernmental Commission
IM	Infrastructure Manager
IMF	International Monetary Fund
IRF	International Road Federation
ISIC	International Road Transport Union
ISIC	International Standard Industrial Classification
KTZ	Kazakhstan Railways
LDC	Least developed countries
LHV	long and heavy vehicles
LLDC	Landlocked developing countries
MLA	Multilateral Agreement

OBOR	One Belt – One Road Initiative
OECD	Organisation for Economic Co-operation and Development
OSCE	Organization for Security and Co-operation in Europe
OSJD	Organization for Cooperation of international Railways
OTIF	Intergovernmental Organisation for International Carriage by Rail
PETC	Pan-European Transport Corridors
RZD	Russian Railways
RZDL	Russian Railways (RZD) Logistics
SDGs	Sustainable Development Goals
SITC	Standard International Trade Classification
SMGS	Agreement on Direct International Goods Transport by Rail
SPECA	United Nations Special Programme for the Economies of Central Asia
SREB	Silk Road Economic Belt
TAR	Trans-Asian Railway Network
TEL	Trans Eurasia Logistics
TEM	Trans-European Motorways Project
TEN-T	Trans-European Network - Transport
TER	Trans-European Railways Project
TEU	Twenty-foot equivalent unit
TRACECA	Transport Corridor Europe – Caucasus – Asia
TSR	Trans-Siberian Railway
TWG	Thematic Working Group
UIC	International Union of Railways
UNCTAD	United Nations Conference on Trade and Development
UN DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe
UN OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States
UNESCAP	United Nations Economic and Social Commission for Asia and Pacific
UNWTO	United Nations World Tourism Organization
UTLC	United Transport and Logistics Company
WCM	World Container Model
WCO	World Customs Organization
WTO	World Trade Organization
XUAR	Xinjiang Uyghur Autonomous Region, China

INTRODUCTION

History and background

The Euro-Asian Transport Links (EATL) project is a part of long-term collaborative work carried out during recent decades by international institutions and particular countries of the Eurasia to improve the conditions for trade and socio-economic development on the continent.

At the moment EATL is supported by 38 countries: Afghanistan, Armenia, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Finland, France, Georgia, Germany, Greece, Iran, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Mongolia, Pakistan, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Spain, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, Uzbekistan.

EATL started in 2002 as a joint undertaking between the United Nations Economic Commission for Europe (UNECE) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).

Phase I of the project (2002-07) had selected the main Euro-Asian road, rail and inland water transport routes, transshipment points and ports. Projects were prioritized in order to improve the selected routes. The first analysis of physical and non-physical obstacles hampering the trade via the surface Euro-Asian routes was undertaken. An Expert Group established under the Phase I proved to be the effective cooperation platform for the coordinated development of coherent Euro-Asian inland transport links.

Phase II of the EATL project (2008 to 2013) was coordinated by UNECE. Within this phase the Expert Group identified nine rail and nine road corridors (EATL corridors) which should be considered as principle transport links between Europe and Asia. At the same time 311 projects linked with the EATL corridors were proposed by the participating countries. The projects have been evaluated from the standpoint of their relevance and importance for international traffic and their value to connect Asia and Europe. The assessment of transport investment needs along EATL routes at the multi-county level was undertaken which formed the basis of the updated EATL Investment Plan. Administrative impediments to transport and trade were also identified.

Among the most valuable Phase II results the following should be noted:

- analysis of the Euro–Asian railway links in comparison to maritime transport that could be used as anchors for further railway reforms to improve railway services for trade within the continent;

- comparison of nine door-to-door transport scenarios: time-wise and cost-wise. In five out of the nine scenarios, rail transport performs better than maritime for both the cost and time. In all nine scenarios, rail transport performs better than the maritime in terms of time;

- the transport and border-crossing facilitation review and analysis that offers concrete examples and highlights certain specific issues to be addressed;

- SWOT analysis of the EATL corridors.

Finally, the Phase II report lists a number of recommendations in the areas of infrastructure development, facilitation and sectorial policies. The Study argues that well-functioning EATL corridors, efficient customs transit regimes, the implementation of international trade and transport conventions, elimination of rent-seeking as well as the overall improvement of transport and logistics services can shorten the economic distances between EATL countries.

Within Phase II UNECE also created and made freely available the Geographical Information System (GIS) interactive application that gives access to the database related to the EATL corridors. UNECE is ready to maintain this database in collaboration with the participating governments with the intention to help the governments and the international institutions to coordinate and accelerate their collaborative investment activities.

The Second EATL Ministerial Meeting (26 February 2013) endorsed the Phase II final report and supported the next phase of the project in its Joint Declaration.

Main goals of the project

The Euro-Asian Transport Links project is aimed at three main interconnected goals, or three project domains:

1) Developing the Euro-Asian transit. This aspect of work is focused on providing conditions for increasing volumes of Euro-Asian trade via overland routes, primarily railway. The basic idea is to benefit from potentially shorter travel time - in comparison with the maritime routes - that would attract the time-sensitive segment of Euro-Asian trade. Since this idea was formulated during the St. Petersburg International Euro-Asian Conference on Transport in 1998, much had changed in Eurasian trade and transport. The trade volumes had significantly increased as well as the capacity of container ships operating on Eurasian routes. That, in turn, led to lower freight rates and the prospects of overland delivery seemed to be very bad. At the same time, the idea of intercontinental container trains that once looked as a very distant prospect had become the everyday reality for many shippers who now see these services as an attractive alternative to sea transport. The reasons for that are not only the growth of high-value commodities share and the "slow steaming" concept adopted by shipping lines. It should be stated that the efforts of the EATL countries - and other states interested in Eurasian links development - had really improved the conditions for overland trade.

Experts agree that the potential of Eurasian transit is not fully utilized and that the work on its development should be continued.

2) Addressing the challenge of the landlockness. Thirteen of the EATL area states - Afghanistan, Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, The former Yugoslav Republic of Macedonia, Moldova, Mongolia, Serbia, Tajikistan, Turkmenistan and Uzbekistan – belong to the "family" of the landlocked countries that face special challenges associated with lack of direct territorial access to the sea, remoteness and isolation from world markets. For these countries, fragmentation of the supply chain in a poorly regulated transit process can add up to 50 per cent to transport costs between a landlocked country and a nearest foreign port. According to the World Bank, landlocked countries'trade and incomes lag far behind those of transit countries and the global average.

The international community constantly pays special attention to needs of landlocked countries. The Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries, adopted in 2003, reflected the strong commitment of all actors to address the special development needs and challenges faced by landlocked developing countries and to promote their effective integration into the global economy through the implementation, inter alia, of specific actions in the areas of fundamental transit policy issues, infrastructure development and maintenance, trade facilitation.

Currently the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024 is under implementation. This innovative, holistic and results-oriented 10-year programme is based on renewed and strengthened partnerships to accompany landlocked developing countries. This Programme envisages individual and concerted efforts by the organizations and bodies of the United Nation system, relevant international organizations, etc., who are invited to give priority to requests for technical assistance and capacity-building support from landlocked developing countries in a well-coordinated and coherent manner, within their respective mandates.

Some of the specific goals and objectives of the Vienna Programme, such as promotion of efficient and cost-effective access to and from the sea by all means of transport, reducing trade transaction costs and transport costs and improvement of international trade services, development of adequate transit transport infrastructure networks and completion of missing links connecting landlocked developing countries, etc. – are fully consistent with the EATL project priorities.

3) Improving the environment for regional trade between the EATL countries, primarily – in the Central Asian area. The region had recovered from the transitional recession in the late 1990s, and during the 2000s emerged as one of the most dynamic economic regions in the world. Kyrgyz Republic, Tajikistan and Kazakhstan became WTO members in 1998, 2013 and 2015 respectively.

The region started the previous decade with strong links with Europe and important ties with the CIS. During the last decade, China has emerged as an important trading partner for Central Asia, particularly in natural resources while ties with Turkey have also intensified.

However, trade in the region is still below potential, with limitations in connectivity, market access, limited bilateral engagement and difficult trade and transport facilitation. Further development is limited by transport-geographical factors as well as by the institutional issues. Despite a long history as a center of global trade, the economic structure of Central Asia is currently characterized by low economic density and long distances.

It should be noted that the average level of economic development of the Central Asian countries makes the large-scale infrastructure investments very burdensome for their national budgets. In the context of the current economic situation, this fact becomes even more important.

At the same time, trade policy regimes throughout Central Asia are very uneven and often far from best international practice. They vary from liberal in the Kyrgyz Republic, to fairly liberal in Kazakhstan and Tajikistan and to quite restrictive in Uzbekistan. While tariffs are not particularly restrictive by global standards, tariff structures are complex and changes are not transparent or predictable and non-tariff measures are extensive and pervasive [18].

That is why adjusted “point-focused” investment projects undertaken together with institutional improvements seems to be the principal vector of connectivity development in the region.

Scope of work

This report presents the results of Phase III of the EATL project coordinated by the UNECE. The principle aim of Phase III is to identify the measures that will make the EATL overland links operational.

The Report focuses on the following issues:

- “snapshot” overview and the analysis of the current situation in transport and trade along EATL routes;

- review of current studies, programmes and initiatives on development of Euro-Asian transport links recently undertaken at both national and international levels;

- identification of main transport, trade, border-crossing, customs and transit obstacles hampering transportation and trade along EATL routes;

- formulation of recommendations to overcome the identified barriers and further develop the trade across the EATL area.

The outcomes of Phase III of the EATL project should help establishing a platform for policymakers and operators to improve the situation and enhance opportunities for the overland transport in the future. The goal is to analyze the situation, identify obstacles and opportunities, propose solutions and encourage stakeholders to harmonize actions and act jointly along the EATL routes. It is also expected to boost political support for often painful reforms in the transport sector, border crossing facilitation, as well as in the management of large-scale transport investment programs.

EXECUTIVE SUMMARY

General description of the project

The Euro-Asian Transport Links (EATL) project is a part of long-term collaborative work carried out during recent decades by international institutions and particular countries of the Eurasia to improve the conditions for trade and socio-economic development on the continent. The EATL initiative is aimed at three main interconnected goals, or three project domains:

- developing the Euro-Asian transit

- addressing the challenge of the landlockness

- improving the environment for regional trade between the EATL countries.

The project was undertaken in three phases.

Phase I (2002-07) had selected and prioritized the main Euro-Asian road, rail and inland water transport routes, transshipment points and ports. The first analysis of physical and non-physical obstacles hampering the trade via the surface Euro-Asian routes was undertaken.

Phase II (2008 to 2013) identified nine rail and nine road corridors (EATL corridors) which should be considered as principle transport links between Europe and Asia. Main projects linked with the EATL corridors were proposed by the participating countries.

The principle aim of Phase III is to identify the measures that will make the EATL overland links operational. The report contains:

- the overview of the current situation along EATL routes,

- the analysis of the main transport, trade, border-crossing, customs and transit obstacles hampering transportation and trade along EATL routes;

- the recommendations to overcome the identified barriers and further develop the trade across the EATL area.

General economic and trade situation

The 2008 financial crisis continued to influence the global economy and trade in the period 2013-2016. This negative trend was expected to persist. Therefore, growth of international trade in the coming years should not be considered as the main driver for Euro–Asian transport flows and transport links.

As regards the continental Euro-Asian links, the crisis situation has its negative impact in several aspects:

a) the general slow-down of transport demand

b) decrease of the “critical mass” of traffic in landbridge corridors to keep the transport services across them sustainable

c) limitations of the investment potential for infrastructure projects implementation

d) growing gap between the shipping rates and the railway rates (which is one of the main disadvantages of the Euro-Asian landbridge).

At the same time, the current situation has some potential opportunities for the EATL transport routes development. A portion of time-sensitive transit can be redirected through inland EATL routes due to "slow steaming" introduction on the maritime routes. Besides that, such events as the start of "One Belt – One Road" Initiative, Creation of the Customs Union between the Russian Federation, Belarus and Kazakhstan, accession of the Russian Federation, Tajikistan and Kazakhstan to WTO improve the general political-economic climate across the EATL area.

Continental Euro-Asian links competitiveness conditions

Maritime transport is the dominating mode in the Euro-Asian trade. There are certain factors that make its market position stronger: introduction of slow steaming, development of shipping alliances and flexible tariff policy.

For objective reasons the Euro-Asian land bridge will likely never compete in volume with maritime routes. It may, however, well establish itself as a complement to shipping services increasing the reliability of high-value and time-sensitive supply chains.

The continental Euro-Asian transport network system is already formed. The main routes are demonstrating the practical capability of expensive and time-sensitive cargoes delivery serving as a complement to maritime routes.

EATL transport routes combine the functions and features of different types of transport corridors: transport and trade transit corridors, access corridors and developing corridors. This gives wide development opportunities to EATL routes as the instrument of regional trade and development.

Competition of transport corridors on the Euro-Asian continent is not about the simple choice between transport routes and/or transport modes. It is the competition of logistic decisions based on intermodal services and value-added services and focused at the needs of particular supply chains. Main supply chains requirements are regular services, high punctuality, flexible costs, value added services availability, delivery speed appropriate for certain types of cargo. These requirements do not apply to particular sections of Euro-Asian routes, but to entire transport-logistic chains.

Decision making in supply chains, in particular – choosing the routes and modes – is made usually not by shippers themselves but by logistic operators: freight forwarders, 3 PL – providers, etc., who combine the understanding of the needs of a particular supply chain with deep knowledge of transportation market and ability to put together the interests of numerous market players: carriers, terminal operators, infrastructure owners, etc.

In view of the above, any transport route within the Eurasian continent will attract traffic and trade only when it will be competitive in the context of supply chains. No political decisions or investment projects developed beyond this context will be successful in this sense. For the same reasons the attempts to bind the freight flows within the corridors to particular fixed routes, points or to selected transport modes seem counterproductive.

Further development of EATL continental links needs improvement or modernizations of the infrastructure and elimination of the non-physical barriers influencing the trade and transport flows.

Comparison of maritime and overland transit routes

Comparative analysis of maritime and overland routes connecting Europe and Asia is undertaken constantly in numerous studies, among others, in order to:

- demonstrate the principle advantages of particular overland transit corridors;

- choose the most competitive overland route among several options;

- evaluate the volumes of cargo that can be attracted to the overland routes.

Within this report, several examples of the sea and overland routes comparative analysis are given, in particular:

- the updated fragment of the analysis undertaken during Phase II of the EATL research;

- the study undertaken by the Russian Centre for Economic and Financial Research at the New Economic School (CEFIR);

- the research provided by PLASKE – freight forwarding company involved into the Euro-Asian intermodal container transportation;

- the study by the Eurasian Development Bank.

The analyses show that there are segments of undisputed "maritime domination", but under certain conditions regular railway transit can be an attractive alternative to shippers. In the existing situation competitive railway services in EATL transit corridors can develop under the following conditions:

a) location of Asian terminal points in North-Western China;

b) location of European terminal points in Eastern Europe; and

c) existence of guaranteed flow of high-value and time-sensitive cargo (automotive parts, electronics, etc.) from one shipper or a limited group of "anchor" shippers as a basis for sustainable regular service. Besides, the service should be better operated not by pure railway carrier but by market-oriented logistic operator experienced in a design of transport-logistic chains.

Railway transport.

Railway transport should play the leading role within the EATL transport links, primarily, in the sector of intermodal services. To achieve that, the railways should:

- cooperate widely with freight forwarders, terminal operators, trucking companies and logistic providers;

- offer cost-based competitive tariffs and have the opportunity to adjust them according to the market situation;

- be flexible in the choice of routes and schedules; and

- cooperate internationally to provide long-haul services.

All this needs a liberalized market-oriented environment across the entire international railway routes. Such an environment can be created as a result of railway structural reforms.

The EATL area is the sphere of the railway reforms that seem necessary to make overland routes effective and competitive. In different groups of EATL countries the reforms are undertaken according to different models and proceed at a different pace.

The first group of countries - Belgium, Bulgaria, Croatia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, and Spain - is formed by the EU member states which follow the EC railway reform directives also known as EC railway packages.

The second group is formed by the EATL countries that have expressed their intention to join the EU: Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey. Being under the Stabilization and Association Process which precedes the country's accession to the European Union, they are also developing their railway structural policy according to the principles of the EC railway packages.

The third group of countries includes the former republics of the Soviet Union: Armenia, Azerbaijan, Belorussia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. They, in turn, can be separated according to the achieved reform progress:

- countries that have made certain progress in reforms developing the "Russian-specific" reform model: Russian Federation and Kazakhstan;

- countries, where reforms are widely discussed and some legal acts are adopted, although practical steps seem to be moderate: Ukraine and Uzbekistan;

- countries, where reforms had not been yet planned: Armenia, Azerbaijan, Belarus, Kyrgizstan, Moldova, Tajikistan, Georgia, Turkmenistan.

Group four includes Asian countries that do not belong to neither of the previous three groups. They are characterized by completely different situation in the railway industry and railway reforms: Afghanistan, China, Iran, Mongolia, and Pakistan.

Whichever model is chosen, the market transformations of the railway industry should be among the main priorities for EATL countries.

Road transport

It can be assumed that the role of road transport will grow in the most of the EATL countries following the demand for high quality and flexible logistic services.

The road transport within the EATL corridors should be developed to complement railway services rather than to directly compete with them. In particular, road transport should be developed for:

- short-run cross border trade;

- long haul transportation on the routes where railway links do not exist or cannot provide effective services for certain commodities (perishable, expensive, etc.);

- "road section" of intermodal rail-road transport service. This section connecting the consignor (consignee) and intermodal terminal or logistic center can be hundreds or even thousands kilometers long.

The last option is the most important one from the point of view of logistic supply chains transport provision and improving the competitiveness of EATL links.

For effective long-haul trucking it is important to provide an equal weight/length limitations for road transport along the main EATL routes. Besides that, the option of the long/heavy road vehicles was analyzed. It seems useful to use the experience of numerous countries of opening certain routes with low traffic density and appropriate profile for road trains which could substantially increase the efficiency of road transportation in the EATL region.

Sea ports

According to the contemporary logistic approach, sea ports should not be analyzed or developed as isolated units. Development plans should consider also the port hinterland connections and the infrastructural objects located in the hinterland and directly linked to sea ports (logistic centers, dry ports, inland intermodal terminals). Such an approach should be used while developing national transport policies and infrastructure development plans, as well as in the regional documents adopted by EATL countries.

The analysis showed that the most important sea ports rom the point of view of the EATL system development are ports of Baltic, Black and Caspian seas.

These ports have a relatively high throughput, demonstrate good progress in throughput during five recent years and/or provide direct ocean access on the foreland side.

Logistic centers and dry ports

Logistic centers are considered to be the mandatory components of logistic infrastructure carrying on numerous functions in the supply chains.

Logistic centers developed within the EATL network should become the modern market-oriented nodes of supply chains improving the competitiveness of the entire EATL system carrying on the following functions:

- act as the points of local integration/distribution of goods in particular areas;

- serve as effective warehouse zones directly connected to transport services;

- be points of seamless transshipment between rail and road (as well as between different railway links) within intermodal transport services;

- act as platforms for industrial zones linked transport-logistic network;

- offer the possibility for provision of value-added services within the supply chains;

- be located nearby the borders – provide infrastructure for effective border check procedures;

- be located on the connection points of different rail gauges – give opportunity to combine boogies exchange or freight transshipment with intermediate warehousing and/or value-added services.

Main obstacles hampering the Euro-Asian transport links development

The existence of high-level transport infrastructure – railways, roads, inland waterways - is a necessary, but not a sufficient condition for efficient and competitive transport routes serving the trade routes. Numerous obstacles and bottlenecks along transport routes occur disrupting the traffic and flow of goods. These obstacles can be divided into physical and non-physical barriers.

Non-physical barriers seem to be the main problem for Euro-Asian links especially in the Central Asian region, where numerous legal and administrative procedures have been established. This leads to very high level fragmentation of transport and trade routes..

The obstacles hampering the Euro-Asian trade and transport manifest themselves primarily at the border crossing points. The main non-physical barriers concern border crossing technologies and procedures (inadequate infrastructure, process inefficiencies), transported goods (customs procedures, export and import documents) and specific transport modes. "Political" issues caused by international or domestic political conflicts and related to unclear or inconsistent transport and trade policy are also among the barriers across the Eurasian trade.

Main recommendations

The SWOT-analysis of the EATL transport communications was developed which, in turn, gave the opportunity to create the "EATL Roadmap to 2030". The roadmap is designed in the form of "Challenges – Opportunities – Solutions" matrix.

The principle solutions indicated in the matrix are put down in form of the recommendations in the following spheres:

- policy development;

- facilitation, procedures, and institutions;

- infrastructure development.

EATL seems to be the most comprehensive of all initiatives aimed at facilitation of trade and transportation across the Eurasian region. Thus it seems reasonable to continue the activities under the EATL "umbrella" in the format that will be found appropriate by the EATL countries.

The main recommendations in the area of policy development areas follows:

- Continue the activities within the EATL project in co-ordination with other initiatives;

- Analyse and disseminate best practices and models in the area of international trade and transport;

- Improve the monitoring and high-level coordination of regional initiatives, programs and projects;

- Develop co-operation at the business level together with intergovernmental cooperation
- Encourage development of the freight-forwarding and high level logistic providers segment; and
- Put railway reforms among highest policy priorities

During the crisis times high-scale infrastructure investments seem to be a serious burden for many EATL countries. That is why institutional reforms and trade facilitation should be the leading priority in comparison with infrastructure projects.

The main recommendations in the area of facilitation, procedures and institutions are as follows:

- Move towards the universal legal regimes and administrative procedures across the Eur0-Asian area based on best international practices;
- Introduce best international practices in newly-adopted trade and transport legislation;
- Inter-harmonise provisions of regional and bilateral agreements;
- Establish institutions and procedures facilitating the long-haul container rail operation and related activities
- Give special attention to procedures accelerating trade and transport operations; and
- Introduce best international experience when developing new railway legislation.

To date, the EATL transport network has been practically eastblished and has proven its efficiency for certain trade routes and specific commodities. Numerous initiatives, programmes and projects are undertaken to improve the infrastructure in the EATL region. It seems reasonable to focus the efforts on coordination, standardization of infrastructure parameters and implementation of the most effective “point-focused” projects.

The main recommendations in the area of infrastructure development are as follows:

- Eliminate bottlenecks and missing links on the potentially most effective overland transit and trade routes in the EATL area;
- Encourage introduction of public-private partnerships and other forms of innovative financing for infrastructure projects;
- Coordinate infrastructure programs and projects by developing the “system approach” to infrastructure programs, ie. developing the transport and logistic infrastructure in the interests of the entire economy;
- Advance development of railway and logistic infrastructure for an effective container transportation;
- Give special attention to infrastructure projects providing time-effective transportation; and

- Introduce effective mechanisms of railway infrastructure development in reform programs

I. EURO-ASIAN TRADE ROUTES AND FREIGHT FLOWS

I.1 Economics and trade current situation in EATL Region

I.1.1. General overview: world trade and economics

The 2008–2009 financial crisis had significantly influenced the global economy and trade. According to the WTO, the crisis brought about a 12 per cent drop in the volume of world trade in 2009, which was the sharpest decline recorded in more than 70 years.

Like global economic activity, international trade remains subdued. Between 2012 and 2014, the rate of growth of world merchandise trade (by volume) oscillated between 2 and 2.6 per cent. These growth rates are significantly below the average annual rate of 7.2 per cent recorded during the 2003–2007 pre-crisis period.

Falling short of expectations and below the prefinancial crisis levels, growth in world GDP expanded by 2.5 per cent in 2015, the same rate as in 2014 (table 1.1). Diverging individual country performances unfolded against the background of lower oil and commodity price levels, weak global demand and a slowdown in China. China's transition from an investment and export led-growth model has had animpact on global manufacturing activity, aggregate demand, investment and commodity prices. An additional factor dampening global growth was the reduced positive effect of lower oil prices, partly offset by the negative impact on investment in the oil sector and the import demand of oil-exporting countries.

Developing country growth decelerated from 4.4 per cent in 2014 to 3.9 per cent in 2015, although still accounting for 70 per cent of global expansion (International Monetary Fund, 2016). China's economy has slowed over the past few years, although it is still growing at a relatively high rate; GDP growth decelerated from 7.2 per cent in 2014 to 6.9 per cent in 2015. China may be said to be growing at two speeds, with its manufacturing sector facing overcapacity and limited growth, while its consumer-driven services sector is growing at a rapid pace (The Economist Intelligence Unit, 2016a). India is now growing faster than China, as its GDP growth, supported by factors such as infrastructure investment, accelerated to 7.2 per cent in 2015. Apart from developments in China and continuing weak demand conditions, other trends have also affected many developing countries, namely, the recession in Brazil, the low commodity and energy price environment, and geopolitical tensions and domestic conflicts in a number of countries.

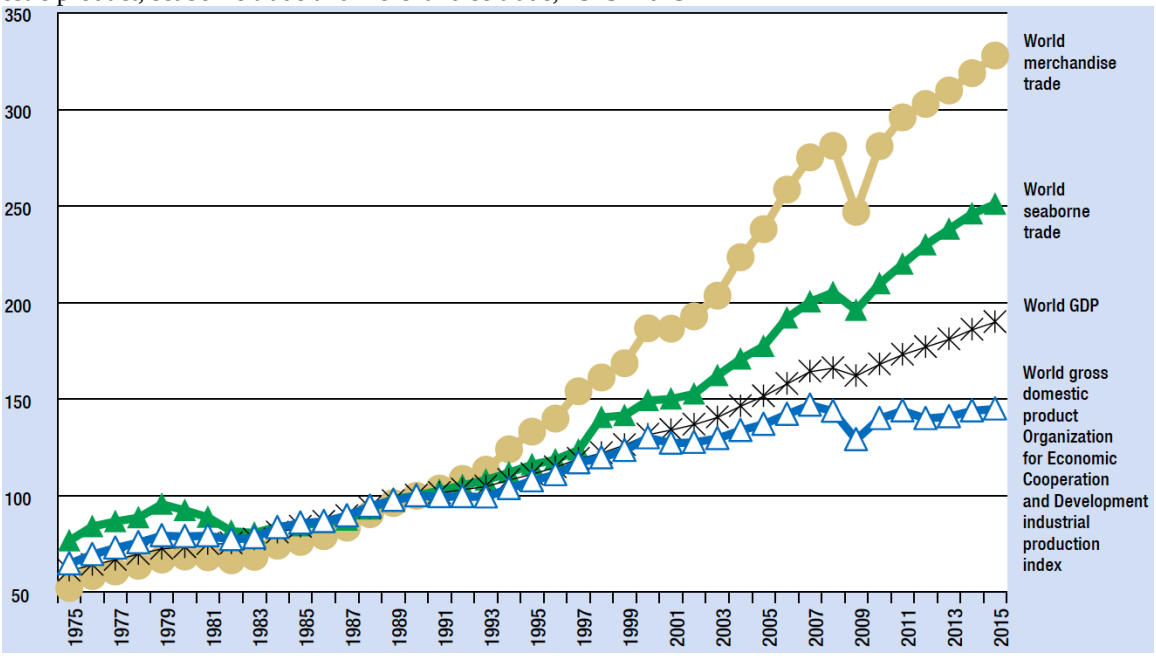
Some estimates suggest that a sustained 1 percentage point decline in China, India and the Russian Federation could reduce growth in other emerging and developing economies by around 0.8 percentage points and global growth by 0.4 percentage points (World Bank, 2016).

GDP in countries with economies in transition declined by 2.8 per cent, owing to the recessions in the Russian Federation and Ukraine, as well as low commodity prices, net capital outflows, falling real wages, conflicts and unilateral coercive measures. While still fragile, the recovery in developed economies continued in 2015, with GDP expanding by 2.0 per cent, up from 1.7 per cent in 2014.

Growth in the European Union improved to 2.0 per cent, supported in particular by higher domestic consumption and investment levels and by falling energy prices.

GDP growth in Japan remained subdued, at 0.5 per cent, reflecting the country's continued struggle against economic stagnation.

Figure 1.1.
Organization for Economic Cooperation and Development industrial production index and indices for world gross domestic product, seaborne trade and merchandise trade, 1975–2015



Source:
UNCTAD (2016) Review of Maritime Transport,
UNCTAD secretariat calculations, based on Organization for Economic Cooperation and Development, 2016;
UNCTAD,
World Trade Organization, 2016.
Note:
1990=100. Indices calculated based on GDP and merchandise trade in dollars and seaborne trade in metric tons.

World merchandise trade

Global merchandise trade by volume (that is, trade in value terms, adjusted to account for inflation and exchange rate movements) increased by 1.4 per cent in 2015, down from 2.3 per cent in 2014 (table 1.2).

Trade in volumes held up relatively well, compared with trade in value, which recorded a decline of 13 per cent, due to fluctuations in commodity prices and exchange rates (World Trade Organization, 2016).

Table 1.1
World economic growth by selected country grouping, 2013–2016 (Percentage change)

	2013	2014	2015	2016 (est.)
World	2.2	2.5	2.5	2.3
Developed economies	1.1	1.7	2.0	1.5
EU-28	0.3	1.4	2.0	1.8
Germany	0.3	1.6	1.7	1.7
France	0.7	0.2	1.2	1.5
Italy	-1.8	-0.3	0.8	0.8
United Kingdom	2.2	2.9	2.2	1.8
Japan	1.4	0.0	0.5	0.7

	2013	2014	2015	2016 (est.)
Developing economies	4.6	4.4	3.9	3.8
Asia	5.5	5.5	5.1	5.1
China	7.7	7.3	6.9	6.7
India	6.3	7.0	7.2	7.6
Transition economies	2.0	0.9	-2.8	0.0
Russian Federation	1.3	0.7	-3.7	-0.3

Source:
UNCTAD (2016) Review of Maritime Transport 2016
Note: Calculations for country aggregates based on GDP in constant 2005 dollars.

Together, the slow recovery in Europe, weaker global investment and the slowdown in large developing economies have depressed global trade. Overall, the impact of Asia, which had contributed more than any other region to the recovery of world merchandise trade after the financial crisis, appears to be easing.

The contribution to global import growth from Eastern Asia dropped significantly, from an average of 27 per cent in the previous decade to 8.4 per cent in 2015 (United Nations Department of Economic and Social Affairs, 2016). In comparison, Europe contributed 59 per cent to global import growth, in contrast to the negative contribution in 2012 and 2013. With regard to global export growth, Europe contributed 44 per cent and Asia, 35 per cent (World Trade Organization, 2016). Other regions had limited contributions.

Developing country trade was particularly weak in 2015, with export and import volumes, respectively, expanding at the marginal rate of 0.4 per cent, a significant drop from growth in previous years. The contraction of both exports and imports in Eastern Asia had negative impacts on the trade of other developing economies, in particular manufacturing export-dependent economies in developing Asia. China accounted for about 20 per cent of the slowdown in import growth of developing economies and countries with economies in transition in 2014–2015 (United Nations Department of Economic and Social Affairs, 2016).

In contrast, India experienced a surge in its import demand (10.1 per cent).

For the second consecutive year, developed economies were more active in driving global trade, with exports rising slightly (2.2 per cent) while imports grew at a faster pace, by 3.3 per cent. United States exports declined marginally (-0.2 per cent) while in Japan, modest growth, a weaker currency and a slowdown in key trading partners in Eastern Asia dampened both exports and imports. Import demand in the United States and Europe held up relatively well (4.8 per cent and 3.6 per cent, respectively), owing to a stronger dollar and relatively solid economic growth in the Unites States and, arguably, due to recovery in intra-European Union trade.

In recent years, world merchandise trade has been expanding at a relatively slower pace, either matching or below world GDP growth levels, while in earlier years, on average, international trade grew significantly faster than world GDP. The trade–GDP growth ratio was estimated at 0.62 in 2015, down from 0.94 in 2014 and 1.4 in 2013. While international trade is still influenced by the Great Recession (2009), the question is whether the continued slowdown in merchandise trade results mainly from cyclical factors (weaker GDP growth and macroeconomic cycles) or a break in the long-term trade–GDP relationship, indicating that structural factors are at play, such as the potential start of a deglobalization pattern.

Figure 1.2.
Growth in volume of world merchandise trade and real GDP, 2005-2015 (percentage change)

Source:
WTO (2016) World Trade Statistics Review 2016,
WTO Secretariat for trade figures, IMF and WTO Secretariat calculations for GDP

Table 1.2
Growth in merchandise trade volume by selected country grouping, 2013–2015
(Percentage change)

	Export			Import		
	2013	2014	2015	2013	2014	2015
World	3.3	2.3	1.4	2.7	2.4	1.6
Developed economies	2.2	1.9	2.2	0.0	2.8	3.3
EU-28	1.8	1.7	3.2	-0.9	3.3	3.6
Japan	-1.5	0.6	-1.0	0.3	0.6	-2.8
Developing economies	4.6	3.1	0.4	5.3	2.5	0.4
Asia	5.6	3.3	-0.1	5.8	2.6	0.7
China	7.7	6.8	-0.9	9.9	3.9	-2.2
Eastern Asia	6.7	4.9	-0.5	8.9	2.8	-1.6
India	8.5	3.5	-2.1	-0.3	3.2	10.1
Transition economies	2.3	0.5	0.9	-0.5	-7.6	-19.4

Source:
UNCTAD (2016) Review of Maritime Transport 2016
UNCTAD secretariat calculations, based on UNCTADstat and national sources.
Note: Trade volumes derived from international merchandise trade values deflated by UNCTAD unit value indices.

In sum, global recovery continues but at a slower pace, with momentum created by China and other developing economies in Asia increasingly easing (UNCTAD (2016) Review of Maritime Transport 2016). Developments in the economy of China and related spillover effects on other large developing countries impact all countries, both developed and developing. Other factors – namely, lower commodity and oil price levels, eroding terms of trade in many commodity and oil-exporting countries, weaker global demand and investment, geopolitical tensions and political unrest – contribute to heightening uncertainty, increasing downside risks and challenging the outlook for merchandise trade and transport between Europe and Asia. A trend that was reinforced in 2015 and that has a bearing on the long-term outlook for seaborne trade and shipping is the evolving trade–GDP relationship.

The analysis shows that current financial crisis is influencing the global economy and trade sharply and probably will for a long enough period stay as the dominating external factor.

Because of that expected growth of international trade can't be considered as the main driver for Euro–Asian transport flows and transport links, as it was during Phase I and Phase II of the EATL Project.

I.1.2. Asia and Pacific region

For five consecutive years the Asia-Pacific region's trade growth has performed below the pre-financial crisis levels. Such a long and uninterrupted trade slowdown is unprecedented, and is a cause for concern that a "new normal" of weaker trade growth is being reached.

Trade by the Asia-Pacific region contracted noticeably in 2015. The contraction occurred despite an increase in GDP growth among countries in the European Union, and continued but lower than expected growth in the United States, suggesting that this growth in Asian traditional export markets did not transfer to increased demand for the regional good. Furthermore, weak demand by developing countries within and outside the Asia-Pacific region set the path for regional exports to fall by 9.7% in 2015. In turn, regional imports contracted by 15%. The European Union strengthened its economic growth to 2% in 2015 from 1.4% in 2014, while the United States remained stable at 2.4% (Source: UNESCAP (2016) Asia-Pacific Trade and Investment Report 2016. Recent Trends and Developments).

According to the International Monetary Fund (IMF) data, Japan classified as "developed economy" in the Asia-Pacific region grew at 0.6 (IMF, 2016). Developed markets in general were traditionally the main sources of demand for exports from Asia and the Pacific, although in more recent years (the turning point being the global financial crisis in 2008-2009, demand has increasingly depended on South-South (especially intraregional) links.

It comes as no surprise that declining growth among regional and world developing countries in 2015 adversely affected the Asia-Pacific region's trade. In particular, China's continued transition to a "new economic growth normal" was associated with GDP growth slowdown to 6.9% in 2015, from 7.3% in 2014 and 7.7% in 2013.

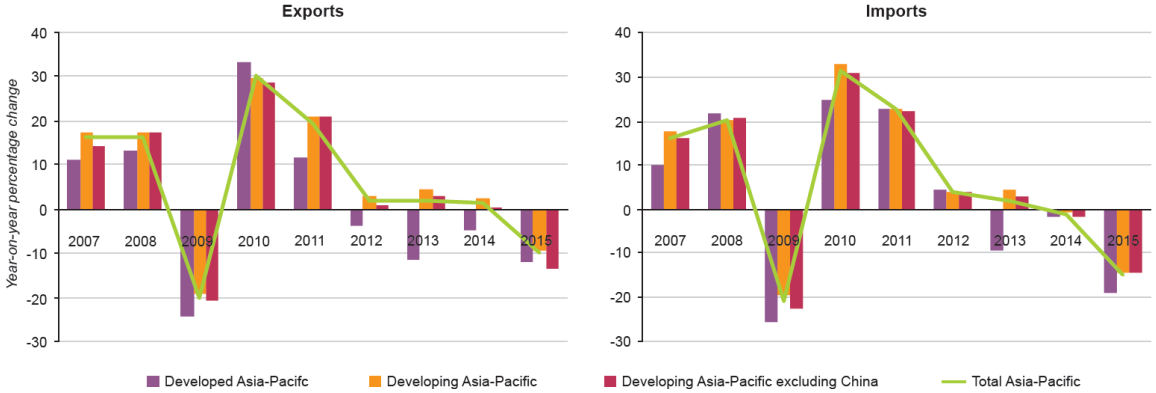
Some economies in the region that rely largely on commodity exports have been particularly hit, both by China's continued slowdown and the persistent decreases in commodity prices through 2015.

The continuing weak demand from outside and within the region has left developing Asia-Pacific economies with no choice but to rebalance their sources of demand from export to domestic consumption. However, the degree to which domestic demand can offset trade contraction differs across countries as it depends on factors including economic size and the level of trade dependency of each country. In addition, the fact that trade has been a channel for knowledge

transfer and for improving resource allocation makes it challenging for small developing economies to maintain the development pace.

The relative success in the Asia-Pacific region in "outperforming" the global economy in 2015, with an export reduction of only 9.7% compared with the global decline of 13.1%, is largely explained by the relatively good performance of China, whose exports declined by only 2.9%. Excluding China, which accounted for 34% of the region's merchandise exports, the Asia-Pacific region registered a 13% decline in exports, which was similar to the world average (figure 1.3).

Figure 1.3
Flattening of merchandise trade growth across Asian and Pacific economies, 2007-2015



Sources:
UNESCAP (2016) Asia-Pacific Trade and Investment Report 2016. Recent Trends and Developments
ESCAP calculation based on country data from WTO International Trade Statistics Database (accessed June 2016).
Country data are available from the ESCAP website (ESCAP Statistical Database).

While the 2015 export value growth is highly disappointing, it must be noted that the quantity (volume) of exports still grew at 3% in 2015 (a similar annual rate to that recorded since 2012). The fall in export value has thus been driven primarily by a sharp fall in prices in 2015, due in turn to slower demand growth by regional powers (in particular China) and elsewhere.

As stated, Asia-Pacific imports contracted by much more than the region's exports in 2015. This amounted to a 15% fall overall, including a 14.2% decline for China (the largest drop since 1976), a 14.4% fall among other regional developing economies and a 19.1% decrease among regional developed economies.

Consequently, the Asia-Pacific region experienced a substantial improvement in the regional surplus, which more than doubled from $291 billion in 2014 to $635 billion in 2015.

The deceleration of trade growth is worrying for the whole region given that the rapid growth of China and developing Asia-Pacific economies during the past 25 years is often considered to be the result of an export-led strategy. In addition, a structural rebalance towards domestic demand-led growth in China will have knock-on effects for other developing countries in the region, for which exports and production have been highly integrated with China's economy through both forward and backward linkages in global value chains (GVCs). China has been the largest individual trading partner in the region; in 2015, the rest of the Asia-Pacific region exported 19.8% of their goods to China (compared with 11.3% to the United States).

These linkages also mean that Asia-Pacific economies participating in GVCs will be adversely affected if China's internal rebalancing includes a shift to higher domestic content in its production and exports. This is particularly worrying given the fact that imports by China have fallen more than exports since early 2014.

At the same time, it was still uncertain if and by how much merchandise trade in the Asia-Pacific region could improve by the end of 2016. Export and import values declined further in the first seven months of 2016 in eight major developing economies in the region.

Year-on-year monthly changes continue to be negative or, if positive, they are very small with little indication of an upward movement in trade values. There has been no indication of any pick-up of intraregional and global demand.

China is of particular interest due to its economic size, as that country's import and export values have again contracted so far in every month of 2016 except March. Adding to this somewhat gloomy picture are the IMF (IMF, 2016) and ESCAP (UNESCAP (2016) Asia-Pacific Trade and Investment Report 2016. Recent Trends and Developments) projections for GDP growth in 2016.

China's economic slowdown is expected to continue in 2016, with the projected annual growth rate declining further to 6.6%.[12] In addition, the IMF (IMF, 2016) has forecast that the United States economy will grow only 1.6% in 2016, a significant decrease compared with 2015. The expected resulting reduction in demand for regional exports to China and the United States may

be countered somewhat by a better picture emerging in the European Union. Despite uncertainties stemming from the United Kingdom's decision to leave the European Union, the growth in Euro-zone countries is expected to be resilient at 1.6% in 2016, which is only slightly less than in 2015. Of all regional economies, only India is expected to experience dynamic growth performance in 2016, at 7.6%, and might have an increase of import demand.

This may provide a boost to exports from countries in South and South-West Asia, which are linked to India through a network of preferential trade agreements.

The Asia-Pacific region retained its position as the world's largest trading region in 2015, despite the large trade contraction noted above. Overall, due to an even greater global reduction in trade,

the region increased its share of world exports to 40% in 2015 from 38.6% in 2014 while its share of global imports fell slightly to 35.6% from 36.9% in the previous year. This dominance was again driven primarily by the trade performance of the economies of the East and North-East Asia subregion, which accounted for more than 64% of total Asia-Pacific trade with the world (table 1.3). In other words, exports by this subregion are considerably higher than those by other subregions – from more than tripple that of South-East Asia, to 18 times of the Pacific subregion.

Table 1.3
Shares in Asia-Pacific total trade, by subregion, 2013-2015

Subregion	Exports			Imports		
	2013	2014	2015	2013	2014	2015
East and North-East Asia	60.2	60.8	64.1	59.4	59.8	60.1
South-East Asia	17.7	17.7	17.6	17.6	17.6	18.3
South and South-West Asia	8.6	8.7	8.2	12.5	12.6	12.7
North and Central Asia	9.4	8.8	6.6	6.3	5.8	4.6
Pacific	4.2	4.0	3.5	4.2	4.2	4.3

Sources:
UNESCAP (2016) Asia-Pacific Trade and Investment Report 2016. Recent Trends and Developments
ESCAP calculation based on country data from WTO International Trade Statistics Database (accessed July 2016).
Note:
Calculations in United States dollar values. Import data are not available for Guam and Nauru. Although Taiwan Province of China is not a member of ESCAP, it is included in calculations for East and North-East Asia due to its share in the region's trade.

In 2015, China was the main force behind the dominant position of East and North-East Asia in regional trade, with its world export and import share of 13.8% and 10%, respectively. East and North-East Asia increased its regional export share by 3.3 percentage points in 2015, a substantial change reflecting this subregion's disproportionately small export contraction of 4.8% (in turn, driven largely by the small export decline by China of only 2.9%, as stated above). This increased share came mainly at the expense of North and Central Asian economies, whose export share fell sharply from 8.8% to 6.6%. This was largely due to the massive fall in values of exports and imports by the Russian Federation in 2015 (31% and 37%, respectively), as the

result of declining oil prices and political sanctions.As the Russian Federation is the dominant economy in the subregion (accounting for 78% of North and Central Asia's exports and 71%

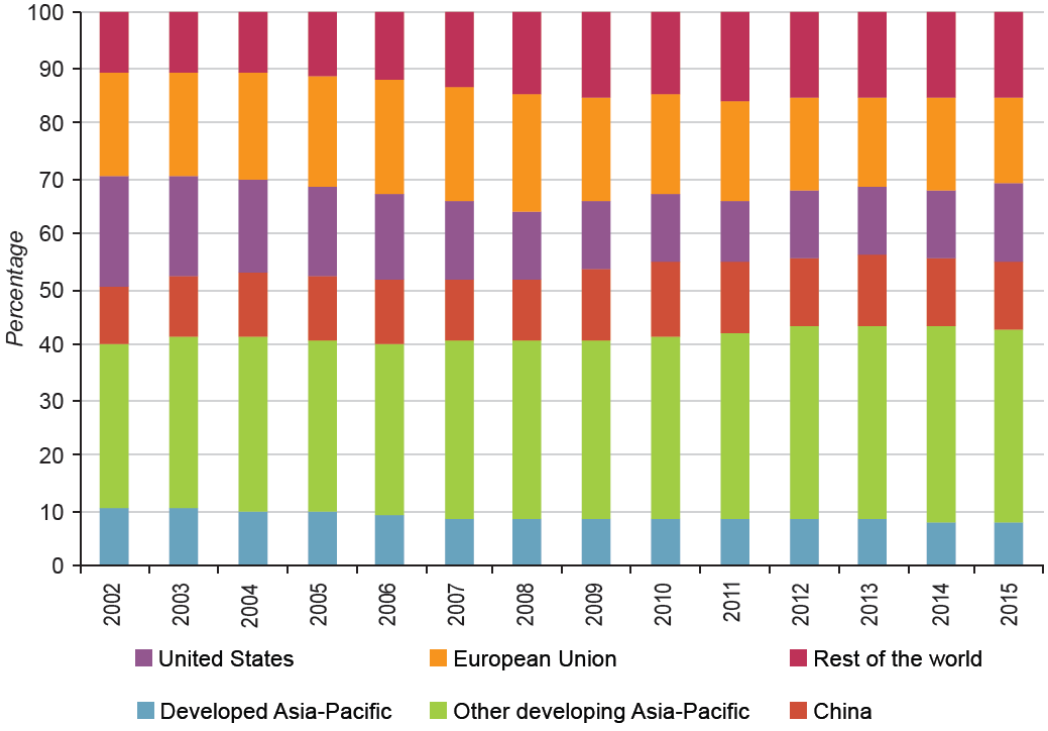
of its imports), this translates into a large fall in the world trade share for this subregion.

South-East Asia's share of the region's total exports remained large and fairly stable. Compared with other subregions, trade is relatively well-distributed among subregion's economies, although still driven primarily by the performances of five members of the Association of Southeast Asian Nations (ASEAN), i.e. Indonesia, Malaysia, Singapore, Thailand and Viet Nam. The shares held by the South and South-West Asia as well as Pacific subregions declined by 0.5 percentage

points from an already low base; trade performance is highly dependent on a few economies of those two subregions. Trade by South and South-West Asia remained dominated by India, which captured 50% of the areas exports and imports, while Turkey captured a further 27%. Hit by the commodity price plunge, those two countries experienced a 17% and 10% decline, respectively, in merchandise export value in 2015. Similarly, exports by the Pacific subregion, dominated by Australia and New Zealand, have also shown a stagnant, and even slightly declining, share of world exports and imports.

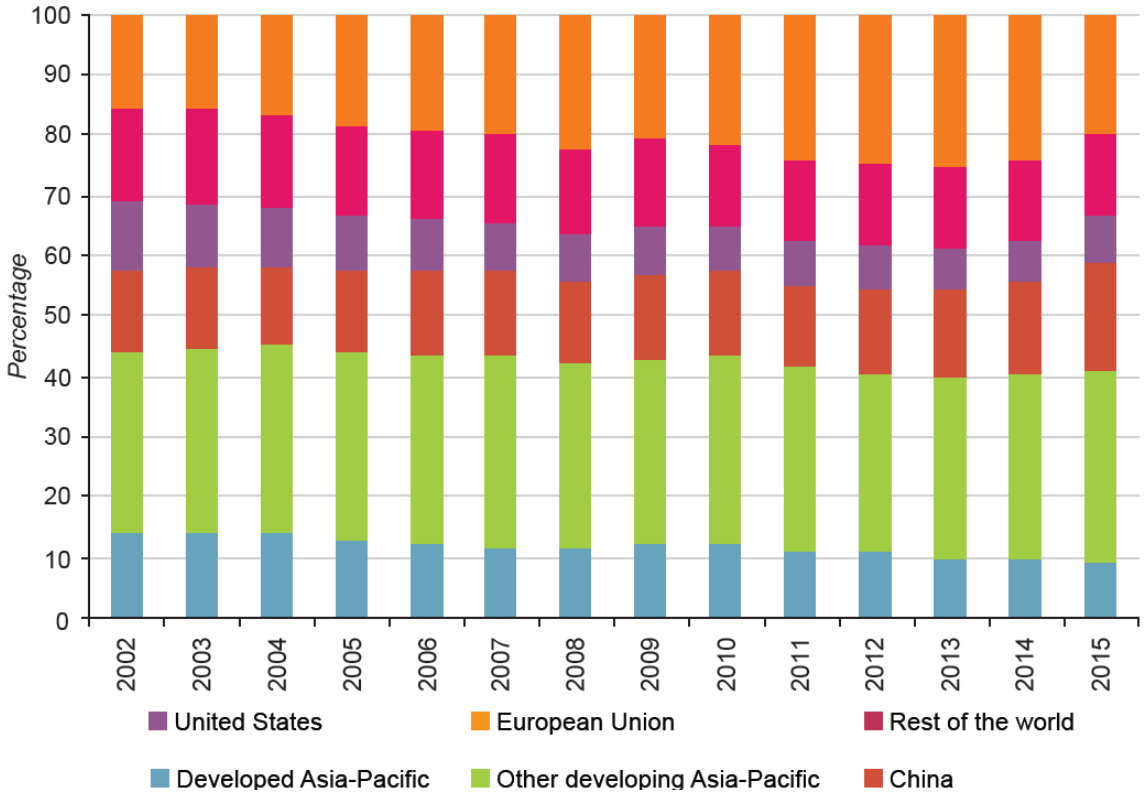
While intraregional trade continues to dominate region's trade, trade with countries in the European Union and the United States remains important, as they accounted for 29% of regional exports and 21% of regional imports in 2015 (figures 1.4 and 1.5). Driven primarily by the slowdown of exports to advanced markets since the 2008-2009 global financial crisis, the share of exports to developing Asia-Pacific economies, especially to China, increased steadily from 43% in 2008 to a peak of 48.2% in 2013, before falling slightly to 47.6% in 2015.

Figure 1.4
Destinations of merchandise exports from Asia and the Pacific, 2002-2015



Source:
UNESCAP (2016) Asia-Pacific Trade and Investment Report 2016. Recent Trends and Developments, ESCAP calculation based on IMF Direction of Trade Statistics (accessed August 2016). Country data are available from the ESCAP online statistics database.

Figure 1.5
Sources of Asia-Pacific merchandise imports, 2002-2015



Source:
UNESCAP (2016) Asia-Pacific Trade and Investment Report 2016. Recent Trends and Developments, ESCAP calculation based on IMF Direction of Trade Statistics (accessed August 2016). Country data are available from the ESCAP online statistics database.

Absolute values of exports in 2015 fell for each destination in figure 1.3, except the United States, although not symmetrically. Exports to the European Union saw the largest decline in absolute value; hence its share of region's exports declined by 1 percentage point in 2015, continuing a decline that started after 2008. Similarly, the share of exports to developed Asia-Pacific countries fell by 0.4 percentage points, continuing a trend that had been evident since 2002. Exports to China also fell substantially in value terms, although given the decline of exports to all main markets that fall translates into a small decline in the share of exports, from 12.8% in 2014 to 12.6% in 2015, thus reflecting the impact of China's economic new normal on the rest of the region in 2015. Since reaching its peak in 2010, the share of regional exports to China has consistently fallen, demonstrating China's slowdown in regional integration. The share of exports

going to other developing Asia-Pacific economies did not change much in 2015 following a long growth period, with the difference being made up by an increase in the share of exports to the United States (12.3% in 2014 to 13.8% in 2015) and to the rest of the world (15.2% in 2014 to 15.4% in 2015).

The intraregional import share increased in 2015 to 59% of total imports in the Asia-Pacific region, a slightly higher level than that seen during 2002-2015. While the share of imports from developed Asia-Pacific countries declined slightly (continuing a long downward trend), China and other developing Asia-Pacific countries increased their share by 2.4 and 1.3 percentage

points, respectively. This was mainly at the expense of the import share of the rest of the world, which shrank from 24.1% in 2014 to 20.1% in 2015 (figure 1.4).

As global economic growth remains more anaemic, intraregional South-South cooperation is in a better position and carries greater potential than cooperation with countries outside the region. The increase in the intraregional import share reflects the fact the while the absolute value of intraregional imports fell in 2015, it did so by less than the overall contraction in imports into the region. This is particularly the case for imports from China, which fell only slightly in 2015.

Hence the severe contraction in world trade in 2015 and the reduced output among several extraregional developing countries has produced the opportunity for relatively more intraregional trade. However, the risk that China's demand for imports from the region will fall further (as stated above, Asia-Pacific exports to China have declined in relative terms since 2010) is looming with its move to a lower growth model that has an increased focus on services and domestic production, rather than manufacturing and product assembly for export.

I.1.4. CIS countries

Since the collapse of the Soviet Union, the successor states that formed the Commonwealth of Independent States (CIS) have suffered from various cyclical crises. Although the latest recession that began in 2015 has not yet finished, the situation is improving (IMF, 2016).

The economic recession in 2015–2016 was caused by a combination of external and domestic factors. The rapid depreciation of the Russian ruble and of the currencies of other CIS countries in 2015 and 2016 revived worries of macroeconomic instability in the region—a fear that has arisen several times since the Soviet Union's collapse in 1991. As with previous currency crises, particularly those of 1998–1999 and 2008–2009, the most recent episode was caused by a combination of global, regional and country-specific factors. Most countries' policy response took the form of foreign exchange interventions—which drained international reserves—and some anti-crisis policies.

In 2016, the economy of the Commonwealth of Independent States continued to adjust to a painful new reality of low commodity prices, geopolitical risks and subdued global growth. Economists estimate that the region's economy contracted 0.3% last year, which was its second year in recession. The economic downturn was less severe than in 2015 as the latest data show that economic activity began to revive in the second half of the year. However, against a backdrop of recovering commodities prices, weak economic growth is expected to continue in the coming quarters and this year will be challenging for most economies in the region. The Consensus view among economists is that the CIS economy will expand 1.4% in 2017, which was revised down 0.1 percentage points from last month's forecast. Going forward, economists forecast regional economic growth to pick up to 1.9% in 2018, supported by higher commodities prices and the correction of the macroeconomic imbalances observed since 2015.

The region's projected improvement in 2017 is mainly the result of better prospects for the Russian economy, which is expected to rebound this year as oil prices gradually recover. Meanwhile, in Central Asia—a region closely linked to Russia — economic growth is projected to gain momentum in 2017, after a slowdown in 2016. In the Caucasus economic activity is expected to rebound strongly, mainly due to Azerbaijan's return to growth.

Republic of Belarus

Belarus' economy suffered a broad-based decline in the third quarter of 2016, with private consumption, investment and government spending all falling compared to the same period last year. The country was negatively impacted by the continuing recession in Russia, its largest trading partner, as well as by weak domestic bank balance sheets, which impeded private lending. Belarus' economic advancement depends in large part on the implementation of the government's 2016-2020 action plan, which aims to break up monopolies, improve governance and prepare the country for accession to the World Trade Organization.

Belarus' economy should return to growth in 2017, aided by expansion in Russia and funding from the World Bank and the European Bank for Reconstruction and Development, although the economy will continue to be hampered by low prices for commodity exports. Consensus Forecast panelists forecast that GDP will increase by 0.5% in 2017, which is down 0.1 percentage points from last month's forecast. For 2018, experts see growth picking up to 1.4% (IMF, 2016).

Republic of Kazakhstan

A stabilization in the Kazakhstan's financial conditions and higher oil prices led to an improvement in economic activity in the second half of 2016. Industrial production increased for a third consecutive month in November, which suggests that economic growth shifted into a higher gear in the final quarter of 2016.

The outlook for Kazakhstan is bright as higher oil production, on the back of the Kashagan project, is expected to fuel growth in the oil and non-oil sectors in 2017. Analysts agree that the government's commitment to cut oil output will not impact the GDP growth forecast. They left the country's 2017 GDP growth forecast unchanged from last month's 2.1% and see the economy accelerating further to a 2.8% expansion in 2018 (IMF, 2016).

Russian Federation

After two years in recession, a return to growth is in sight. GDP contracted at the slowest pace in Q3 2016 since the slump began nearly two years ago, following which data from industrial production and business surveys results signaled a further strengthening of economic activity in the final quarter of 2016. That said, the return to growth is expected to be gradual and uneven, given the absence of fiscal or monetary policy support. Moreover, the shock to Russia's external sector from low oil prices and international sanctions was substantial in 2016.

GDP should continue to strengthen gradually and the economy is expected to enter a shallow recovery this year, but plans to reduce the fiscal deficit will prevent a faster pickup in activity. The analysts we surveyed expect the economy to expand 1.2% in 2017, which is unchanged from last month's projection, before accelerating to a 1.6% expansion in 2018.

Ukraine

Ukraine's recovery picked up steam in Q3 2016, as GDP grew at the fastest pace in almost three years. Surging fixed investment due to an improving business climate and higher household consumption fueled the economy's acceleration. Data for the fourth quarter suggest that the economy continued on a modest recovery path with industrial production expanded at the fastest pace in eight months in November. The government also adopted a 2017 budget which meets the IMF's requirement of a 3.0% fiscal deficit. These moves should allow the country to receive

a crucial USD 1.3 billion in aid in the coming weeks to replenish the Central Bank's reserves and government coffers.

The government's cooperation with the IMF bodes well for Ukraine's outlook and the economy is expected to continue on an upward trajectory. Experts sees GDP rising by 2.4% this year, which is unchanged from the previous month's estimate. In 2018, experts sees growth picking up to 3.0% (IMF, 2016).

EATL countries general overview

The geographical space covered by the EATL routes stretches from the North and Baltic Sea in the North to the Mediterranean and the Indian Ocean in the South, Western Europe in the west and the coast of the Pacific Ocean in the east. Of the countries that currently participate in the EATL project, 11 belong to Commonwealth of Independent States (CIS). These countries are the three Eastern European states - Belarus, Moldova, and Ukraine, the five Central Asian states - Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan and Kazakhstan, two Caucasus republics - Armenia and Azerbaijan, and Russia. The EATL routes also cross four countries that do not belong to the CIS, China, Georgia, Iran, and Turkey, and connect those CIS and non-CIS countries to EU-28 countries, Afghanistan, Pakistan and Mongolia.

This section does not cover all EATL project member countries. Only those countries, which an EATL route crosses, have been described including all CIS countries, China, Georgia, Iran and Turkey.

The economies of these 15 countries differ in size and industry composition Most of the CIS countries have gone through transition from centrally planned to market economies, but the transformation processes are uneven, and Turkmenistan and Uzbekistan are only slowly opening up their markets.

With Tajikistan's accession to the WTO in March 2013 eight CIS countries are now WTO members and five are observer members (see table *). Belarus, Kazakhstan and Russia form a Customs Union that is the central pillar of the single economic space of the Eurasian Economic Union (EEU or EAEU), and Kyrgyzstan and Armenia have signed accession agreements to this Customs Union. CIS countries have also signed multiple bilateral and multilateral trade agreements, such as the CIS Free Trade Agreement (CISFTA), with each other granting preferential treatment to their goods (see table 1.5).

Several of the 12 EATL CIS countries are "oil exporters", meaning that energy commodities, such as oil or natural gas, account for a large share of their total exports. China, Russia and Turkey are the biggest economies in the EATL network. In 2013, their combined GDP of 12'157'254 million US$ represents 92% of the total economic activity of EATL countries.

CIS countries have seen a continued growth of their economic output in the past years. The Kyrgyz economy has grown by 10.5 per cent from 2010 to 2014, Turkmenistan by 10.2 percent and Uzbekistan by 8 per cent during the same period. The Caucasus and Central Asian (CCA) countries that are not "oil-exporters" are expected to have the strongest growth.

As can be seen from table 1.4, Russia is not only the biggest economy of the CIS in terms of GDP but also in terms of merchandise trade. Russia's exports accounted for 523'294 million US$ in 2013, while Tajikistan only exported goods with a value of 1,163 million US$. Armenia and Tajikistan have the lowest export and import volume, and are at the bottom of the export

(117 and 123 rank respectively) and import ranking (106 and 108 rank respectively) established by the WTO.

Table 1.4
EATL countries economic parameters

	Population	GDP	Trade to GDP ratio	Growth rate 2010-2014	Export (FOB) value	Import (CIF) value)	Exports Ranking (excl. Intra EU Trade)	Imports Ranking (excl. Intra EU Trade)
Unit	Thousand	US$ (million)	US$ (million)		US$ (million)	US$ (million)		
China	1357380	9240270	51.9	7.7%	2209007	1949992	2	3
Russian Federation	143500	2096777	51.5	1.3%	523294	342980	7	11
Iran	77447	368904	44.5	-5.8%	82000	49000	31	36
Turkey	74933	820207	57.3	4.1%	151787	251650	22	13
Ukraine	45490	177431	108.9	1.9%	63312	76962	37	26
Uzbekistan	30241	56796	49.5	8.0%	12643	12998	60	64
Kazakhstan	17038	224415	72	6.0%	82512	48873	30	37
Belarus	9466	7170	147.7	0.9%	37232	42999	44	41
Azerbaijan	9417	73560	78	5.8%	31776	11156	45	76
Tajikistan	8208	8508	85.5	7.4%	1163	4139	123	108
Kyrgyzstan	5720	7226	140.6	10.5%	1791	6070	113	95
Turkmenistan	5240	41851	n.a.	10.2%	18000	10000	52	78
Georgia	4477	16127	95.9	3.3%	2909	7874	96	84
Moldova	3559	7935	126.8	8.9%	2399	5493	103	100
Armenia	2977	10432	74.9	3.5%	1480	4477	117	106

Source: UNECE, WP.5 GE2 Informal Doc #1

Table 1.5
EATL countries bilateral and multilateral trade agreements

Countries	WTO	EEU[15]	CISFTA	EAEC[16]	Bilateral trade Agreements with EATL countries
Armenia (AM)	2003		Yes		KZ, MD, RU, TK, UK, GE, KZ
Azerbaijan (AZ)	Observer				RU, GE; UK
Belarus (BY)	Observer	Yes	Yes	Yes	UK, RU
China (CH)	2001				
Georgia (GE)	2000				AM, AZ, KZ, TR, TM, RU, UZ
Iran (IR)	Observer				
Kazakhstan (KZ)	Observer	Yes	Yes	Yes	AM, GE, UK, RU, KZ,
Kyrgyzstan (KY)	1998		Yes	Yes	AM, KZ, MD, RU, UZ, UK
Moldova (MD)	2001		Yes		KY, AM, UK, RU
Russia (RU)	2012	Yes	Yes	Yes	AM, GE, BY, AZ, KZ, MD, TJ, TK, UK, UZ,
Tajikistan (TJ)	2013		Yes	Yes	RU, UK
Turkey (TR)	1995				GE
Turkmenistan (TK)	No				AM, GE, UK, RU
Ukraine (UK)	2008				AM, GE, KY, AZ, BY, KZ, MD, RU, TJ, KZ, TK, TR, UZ
Uzbekistan (UZ)	Observer		Yes		KY, RU, UK

Source: UNECE, WP.5 GE2 Informal Doc #1

I.2. Euro-Asian trade routes

I.2.1. Trade routes general development

Modern supply chains and transport corridors characteristics

"Supply chains compete, not companies" - this principle developed by Martin Christopher, one of the classics of logistics and supply chain management, is the key to understanding the current situation and the prospects of global trade lanes, in particular – the Euro-Asian.

In the course of supply chains competition requirements to transport corridors and transport operatorsare established. Supply chain managing entities choose the trade routes and service providers.

Globalization together with introduction of logistics principles into production, trade and distribution had dramatically changed the nature of supply chains during the recent decades. To be adequate to their desirable role, EATL corridors should meet the requirements of modern supply chains for which the corridors provide proper connectivity, capacity and economic efficiency.

The following principal features of modern supply chains should be mentioned in this context.

1) Integrated management. The first principle feature of modern supply chains that, in many ways, predetermines the rest is the presence of the integrated management.

Traditional supply chains (the "old" Silk Way is probably the best historic example) had represented the long enough series of sales in the trading cities along the route connected by trade caravans on land or by commercial shipping. Fragmentation was the key characteristics of the players' relationship. Each of them was interested and responsible only for one particular chain link.

Modern supply chains are under the constant control which is usually carried out by high level logistic providers acting on behalf of the focus companies of the supply chains.The entire logistic network within the supply chain is constantly customized according to the market situation. Functions, costs, responsibilities and risks are distributed among the players and planning is done across the supply chain according to the strategic interests of the whole system.

The management criteria within the supply chain are way more complicated than just "time and costs". The economic idea of supply chain management is sometimes expressed as "to reduce the total cost of owning materials and services across the entire chain", which leads to integrated control of stock – either moving or at rest - as well as of all kinds of services, costs, risks, etc.

Accordingly, modern supply chains managers are not using just one particular "best" route or mode of transportation or transport operator while making transport decisions. They need to have several options to combine them within the currently optimal decision. Their choice is not only the transport route itself, however "short" or "fast" or "cheap" it can be. The logistics business environment along the trade lane, availability of logistic services, friendly and predictable administrative procedures, ability to flexibly switch the flow between different intermediate points – all this is important in decision making as well as political stability along the entire trade lane and safety and security factors.

2) Flexible routing. While the traditional supply chain is something like the fixed sequence of nodes and links between the origin and destination points, the modern supply chain looks more

than a network connecting the regions where commodity flows are nucleated and absorbed. The actual routes can vary within this network depending on the changing situation on the commodity markets served by the supply chain and on the transport services market.

In many cases the actual route is not the shortest one, even for one particular mode, because of the hub&spoke technologies often used by long-haul transport operators (for the sake of transport flows efficiency) and logistic providers (for the sake of commodity flows efficiency).

3) Special role of nodes. Nodes of traditional supply chains – sea and inland waterway ports, railway stations, etc., had always performed the obviously necessary connecting and transshipment functions within the supply chains. At the same time traditionally they also created inevitable obstacles for traffic and cargo flows, sometimes being the bottlenecks within the supply chains.

"Traditional" node is the spot where the flow of vehicles and commodities is interrupted and players that have to co-operate in resumption of this flow often have contradictory interests. Some local players – both state agencies and commercial intermediaries - pursue pure revenue goals. The procedures are often aimed not at speeding the process but at collecting more fees (formal and sometimes informal). Scarcity of resources is a typical system problem and long enough waiting time for cargo - either onboard the vehicles or in the warehouses - is a rule. Different types of cargo are handled which aggravates the problems. Additional services adding to the total value of goods are rare. The market position of the "traditional" node is often a monopoly since it gains an advantage, primarily, due to its geographical position.

Nodes of modern supply chains are quite different. Supply chain connectivity and fastening of flows is the main goal for the players in charge, including the governmental agencies. Fast and cheap transshipment is the main efficiency factor. The technologies used are focused on intermodal units, primarily – containers. Handling operations arecomplemented by value added logistic services. Nodes compete with each other because their main advantages – services quality and price as well as the set of transport services catering for particular node – do not so much depend on the location factors.

4) Intermodality. Modern intercontinental supply chains are intermodal by their nature. Most of origins and destinations in the Euro-Asian trade in principle can not be connected by services of one single transport mode. It means that in spite of intermodal competition (which is one of the drivers of transport system efficiency) different modes are compelled to co-operate within the transportation process. If the transport operator is in the position to succeed in the supply chain it must either be capable to design intermodal transport product engaging other modes' operators on attractive terms (as many shipping companies do) or it should be ready to be engaged to participate in such a product designed by someone else. The latter means offering reliable transport service with guaranteed parameters as well as meeting the technological standards for intermodal transportation.

5) Regular transport services. One of the most important qualities highly valued in modern supply chains is the availability of regular transport services. Regular service with pre-announced call points, schedules and tariffs is ideal from the point of view of supply chain design and planning and it can be utilized on the "plug and play" basis without additional trimming. It is commonly accepted that the minimum frequency of the regular long-haul transport service suitable for most international supply chains is a weekly service although the well-developed trade lanes show the example of several serviced a day offered by a number of competing transport operators. Combining the regular services of different modes (e.g., ship and rail) allows creating efficient intermodal transport services within the supply chains.

Types of corridors

Summarizing the classifications proposed by numerous researchers (Arnold (2005), Kunaka&Carruters (2014), Rastogi and Arvis (2014) and others), the following types of transport corridors can be specified:

- *transport transit corridor* that provides smooth, fast and cheap movement of vehicles along the specified route. The main performance indicators for transport transit corridor are the speed, cost and safety of transportation. Corridors of this type are often created at the national level or they pass through the group of countries within a free trade zone. Accordingly, the efforts while creating the transit corridor are focused on infrastructure and transportation technologies. The main beneficiaries of this type of corridors are transport operators who achieve the decrease of operational costs and vehicle turnover time and can share these positive results with their customers. Transport transit corridors can also generate environmental benefits;

- *trade transit corridor* that provides smooth, fast and cheap movement of goods along the logistic supply chains. Trade transit corridors usually cross at least one frontier where the trade flow is interrupted by a set of customs, sanitary and other border procedures. The main performance indicators for transit corridor are the speed, cost and safety of merchandise movement and distribution. Besides that, the spectrum and quality of value added logistic services is important. In addition to the mentioned above transport component creating the effective trade transit corridor envisages also the improvement of the administrative procedures along the corridor.

The main beneficiaries of this type of corridor are located in the origin and destination regions which can lead to a "transit country paradox" - the cheaper and faster is the trade lane within the corridor the less is the revenue of the transit countries. More, substantial traffic on transit routes can lead to limitations of their national transport system capacity;

- *access corridor* which is created to approach some point or region. Typical access corridors give the landlocked countries the opportunity to trade via foreign seaports. The performance of this type of corridor can be measured by the trade-related costs level "with and without the project". National economies of the countries originally isolated from the destination point benefit from the access corridor. To be effective, it needs not only the well developed transport infrastructure but also a logistics "interface" represented by terminals and distribution centers. A market segment of transport operators, freight forwarders and high level logistic providers is also necessary to help the national business to benefit from the access corridor;

- *developing corridor* provides the conditions for socio-economic development of particular economic region. Developing corridor project is usually interconnected with numerous regional projects of mining, town-planning, plant construction and so on. The corridor plays the role of backbone of the regional development serving the needs of the growing industry, social sphere, creating jobs, increasing the territory value. The list of beneficiaries can be long enough including regional and national authorities, site-developers, local population, etc.

Cooperation

EATL corridors, to a great extent, combine the features of all the types of corridors mentioned above.

This, on one hand, makes the list of possible benefits impressive enough. On another hand, the countries participating in the EATL should have a clear understanding of possibilities, costs, benefits and risks that particular projects mean to them and their partners.

EATL corridors successful development does not mean just improving the quality of the infrastructure on specific routes. Equally important are institutional factors such as general business environment level, quality and scope of services available, customs and border control procedures, and all the related trade or transportation policies that affect logistics performance.

Cross-border cooperation is critically essential either because the supply chains are only as strong as their weakest link is. Balanced and coordinated logistics strategy is the keystone for EATL countries, especially Central Asian, since they depend on each other in attracting transit flows and in development of their own global trade links.

Thereby, a corridor is not just an infrastructural concept. Strategically, the corridor idea is about organizing the economic activities on particular territories. Different transport modes are used just to effectively link these activities together. The success of a corridor is thus in part a function of the coalitions that parties are able to form to attract investments and improve performance. How the parties collaborate to manage a corridor is a key dimension of the definition of a corridor. Institutional and economic relationships are part and parcel of a corridor, especially in the presence of competing trade routes [Kunaka, Karruters].

Unfortunately, at the moment cooperation is not among the strong features of the EATL routes network. "The paradox of the modern Silk Route is that despite changes in transport technology its governance and organization are reminiscent of the old Silk Road. The latter depended on fragmented caravan trade. No direct business connection was in place between buyers and sellers, and trade happened through along and costly series of sales in the famous trading cities along the route" [Rastogi, Cardoula].

Supply chain fragmentation is the principle problem of the EATL routes to be tackled strategically. The situation is exacerbated by a lack of skills and a limited culture of market-focused supply-chain management among both private and public sector. The private sector that has a key role in provision of modern supply chains connectivity is not enough developed in certain EATL countries, particularly in Central Asia. A limited presence of international logistics brands leads to a limited exposure to international best practices of supply-chain management.

Trade lanes general development

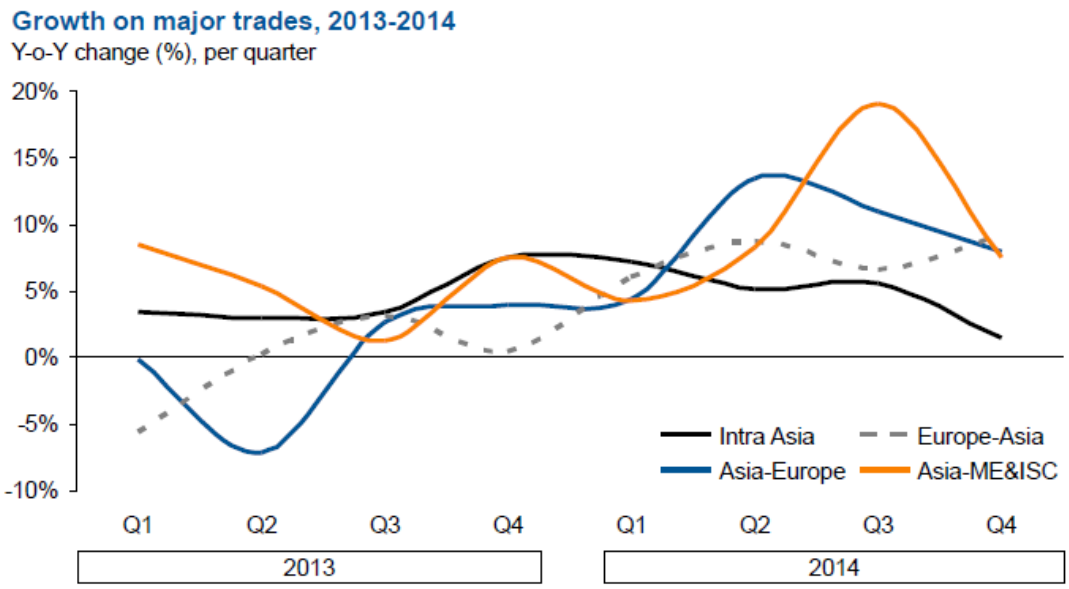
Despite of the general economic situation, the Euro-Asian trade is the main generator of the global trade. World export growth is mainly driven by Asia and Europe.

According to Seabury Cargo Advisory, Chinese export growth alone is responsible for almost 50% of all TEU growth in 2014, followed at a distance by growth from South East Asia and Europe. Export growth in North East Asia is negative if China is excluded.

Asia to Middle East and Indian Subcontinent trade is growing faster than Asia-Europe. This trade lane is also dominated by China. At the same time, Asia to Europe trade is slowing down. With the exception of Spain and Poland, all major destinations on the Asia-Europe trade are expected to see a slowing of growth the coming 5 years.

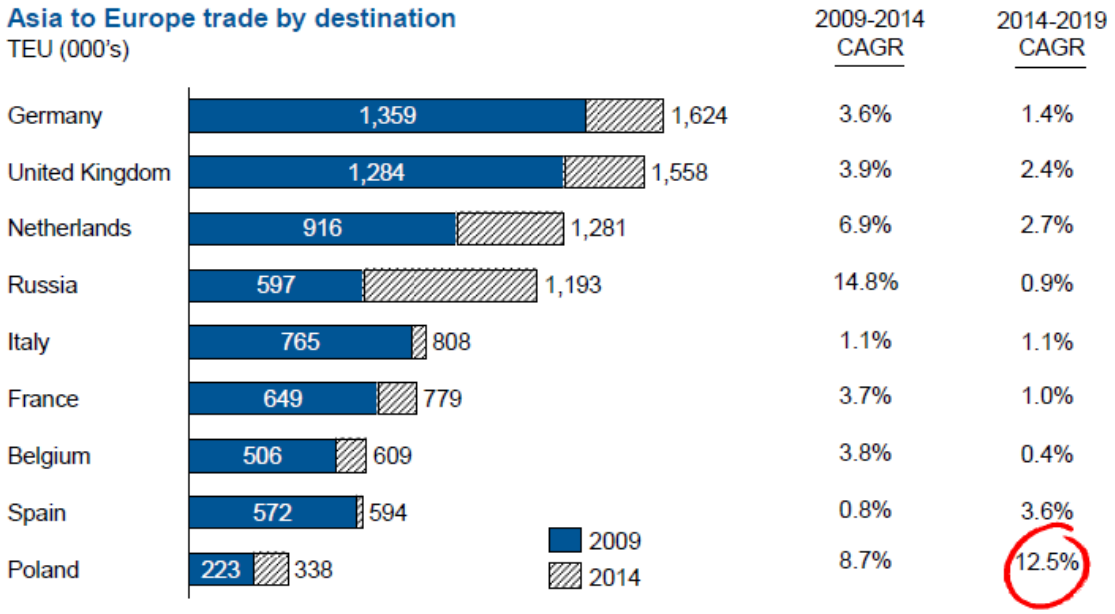
Although the Asia/Europe trade is expected to slow down, some commodities will still show increasing growth rates

Figure 1.6
Dynamics of trade between Europe and Asia



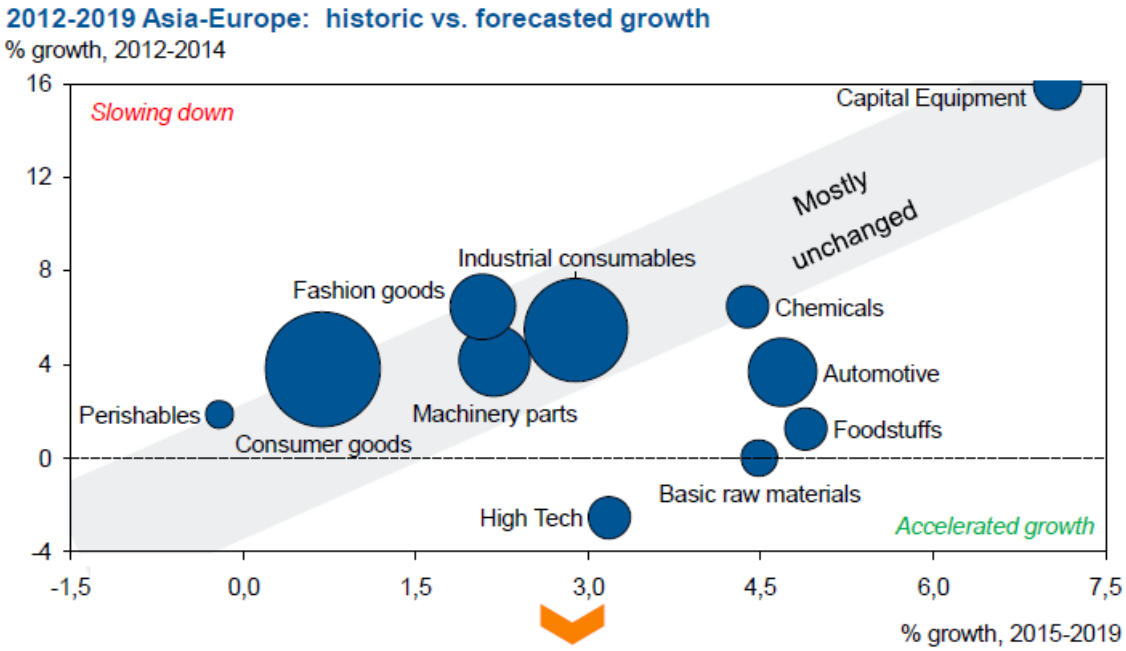
Sourse: Seabury

Figure 1.7



Sourse: Seabury

Figure 1.8



Sourse: Seabury

I.2.2. Main trade partners

For the purposes of this report, the matrix of corresponding European and Asian countries was compiled.

All countries participating in the EATL Project, were separated into 2 groups:

1) Countries participating in the Euro-Asian trade from the side of Asian continent (Islamic Republic of Afghanistan, Republic of Armenia, Republic of Azerbaijan, China, Islamic Republic of Iran, Republic of Kazakhstan, Kyrgyz Republic, Mongolia, Pakistan, Russian Federation, Republic of Tajikistan, Turkey, Turkmenistan, Republic of Uzbekistan, India, Japan, Republic of Korea);

2) Countries participating in the Euro-Asian trade from the side of European continent (Republic of Belarus, Bosnia and Herzegovina, Georgia, EU, the Former Yugoslav Republic of Macedonia, Republic of Moldova, Russian Federation, Serbia, Switzerland, Turkey Ukraine).

Thus, the Euro-Asian trade flows, gravitating towards land transport routes can be calculated in the form of correspondence of two matrices - matrices Asian exports to Europe and the matrix of Asian countries import from Europe.

The specifics of the these matrix are as follows:

1) Trade flows all European EU-member states participating in the EATL project, aggregated with the total European Union trade flows, which is represented in the matrix,

2) Three countries that do not participate in the EATL Project, also included in the matrix due to their gravity (potential gravity) to the Euro-Asian land transit: India, Japan, Republic of Korea,

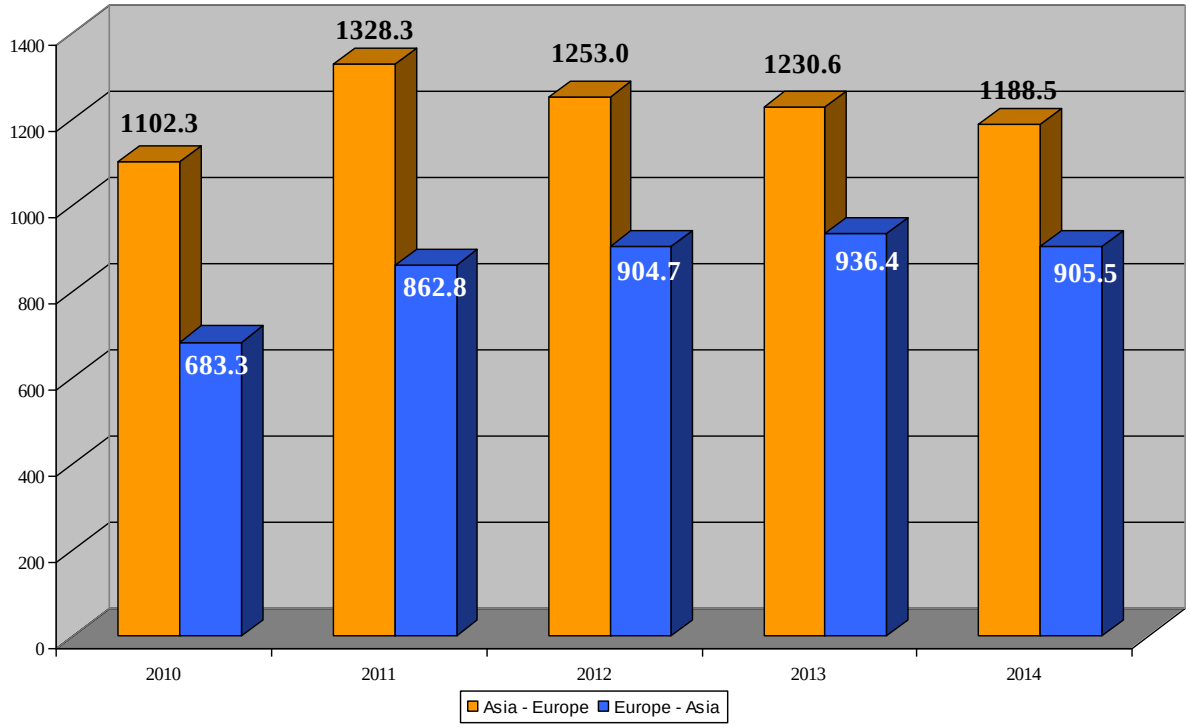
3) Two countries – the Russian Federation and Turkey - included twice, both in the European part of the matrix, and in its Asian part. This is due to the fact that these countries, being at the crossroads of continents, conduct trade from Europe as well from Asia and both trade flows oriented to Euro-Asian land transit.

In accordance with the Comtrade database, the total volume of trade between Europe and Asia, which can be served by inland transport routes, estimated 2094 billion US Dollars in 2014. Asian exports to Europe amounted to 1188.5 billion US Dollars, imports of goods from Europe to Asia - 905.5 billion US Dollars (Figure 1.9)

The share of trade between Europe and Asia, which can be served by inland transport routes, declined from 2011 to 2014. In particular, in 2014 they amounted to 11.0% in comparison with 11.9% in 2011 (Figure 1.10).

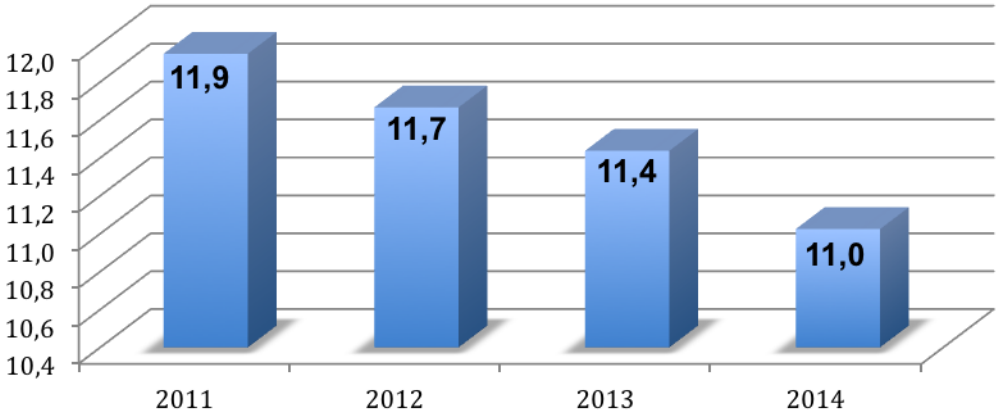
The matrix of trade flows between the selected European and Asian countries are presented in Tables 1.5-1.14 and matrix flows for certain types of commodity nomenclature – in the Annex.

Figure 1.9
Dynamics of trade in goods between selected European and Asian countries in 2010-2014, billion US Dollars



Source: UN Comtrade database

Figure 1.10
Share of volume of trade in goods between selected European and Asian countries in world merchandise trade in 2011-2014, %



Sources:
UN Comtrade database,
WTO (2016) World Trade Statistics Review 2016

Table 1.5

Import of goods to Asia from selected European countries in 2010, million US dollars

Countries of Asia (Importers)	**Countries of Europe (exporters)**											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	14.7	1.2	0.0	1024.8	0.1	0.6	539.0	28.4	5.3	259.9	14.0	**1888.0**
Armenia	42.1	0.0	160.2	732.9	0.1	1.4	396.1	0.6	33.9	0.0	201.3	**1568.6**
Azerbaijan	140.2	0.4	244.0	3106.6	1.7	7.5	1476.9	5.8	136.6	1551.2	610.8	**7281.7**
China	475.8	5.0	24.3	149968.7	89.2	2.3	19783.0	7.3	7178.1	2259.8	1316.6	**181110.1**
Iran	97.2	30.3	12.1	14975.8	1.8	3.1	3359.0	32.3	674.9	3043.4	1030.7	**23260.6**
Kazakhstan	464.8	0.0	47.9	6918.8	0.3	30.5	10690.4	4.6	168.3	819.9	1300.5	**20446.0**
Kyrgyzstan	85.5	0.0	3.1	278.9		2.5	975.4		7.3	129.2	75.0	**1556.9**
Mongolia	13.2	0.1	0.1	319.6		0.2	936.6	0.3	2.7	11.2	33.3	**1317.3**
Pakistan	33.7	0.1	0.0	4938.5	0.1	0.1	104.3	1.2	283.9	248.2	113.0	**5723.1**
Russian Federation	9953.6	25.7	33.9	114019.1	26.7	404.0	-	534.7	2585.7	4631.5	13431.9	**145646.8**
Tajikistan	42.1	0.0	2.5	191.0		0.7	672.6	1.5	3.4	144.1	74.7	**1132.6**
Turkey	104.8	55.0	216.0	81219.9	50.9	67.5	13958.6	88.0	2030.2	-	3026.6	**100817.5**
Turkmenistan	87.2	0.0	12.2	956.7	0.1	1.0	717.5	2.8	16.0	1139.2	208.9	**3141.6**
Uzbekistan	95.1	0.0	6.7	1646.6		4.5	1663.5	1.5	96.1	283.0	228.5	**4025.5**
India *)	330.8	26.3	12.0	46159.0	2.4	3.4	5406.3	9.7	2464.6	606.8	1426.0	**56447.3**
Japan *)	3.6	0.4	8.1	58173.1	0.9	0.4	12496.6	1.6	6474.0	272.3	104.8	**77535.8**
Republic of Korea *)	25.1	0.1	7.0	36987.1	1.8	0.0	10407.9	0.9	2183.7	304.6	498.0	**50416.2**
TOTAL	**12009.5**	**144.6**	**790.1**	**521617.1**	**176.1**	**529.7**	**83583.7**	**721.2**	**24344.7**	**15704.3**	**23694.6**	**683315.6**

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.6

Export of goods from Asia to selected European countries in 2010, million US dollars

Countries of Asia (Exporters)	**Countries of Europe (importers)**											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	2.0	0.0	0.0	54.6	0.0		19.5	0.0	0.6	5.1	0.5	82.3
Armenia	5.1	0.1	45.5	343.0	0.0	0.9	158.5	0.8	3.2	2.6	17.9	577.6
Azerbaijan	6.0	0.0	464.2	12866.2	0.2	0.2	385.9	0.5	924.6	865.1	951.2	16464.1
China	1684.1	444.0	333.7	374248.6	288.8	320.2	38960.9	1202.5	5848.2	17180.8	4700.4	445212.2
Iran	7.6	2.4	55.1	19242.4	5.5	1.0	271.6	15.8	42.5	7644.8	49.9	27338.6
Kazakhstan	405.8	6.1	91.6	21070.4	1.5	15.8	4449.4	30.4	1075.6	2471.0	766.2	30383.8
Kyrgyzstan	8.3	0.2	1.4	263.1	1.1	0.5	393.3	3.8	0.1	30.9	6.2	708.9
Mongolia	0.0	0.0		133.9	0.2	0.0	79.1	0.0	1.2	0.9	11.1	226.4
Pakistan	15.7	5.5	2.0	5070.4	4.9	2.9	240.2	9.2	60.5	749.9	55.2	6216.4
Russian Federation	18080.6	805.2	279.7	212788.6	552.5	586.5		2157.2	1000.2	21599.6	22198.0	280048.1
Tajikistan	5.5	0.0	0.1	75.1	0.0	0.0	213.7	0.4	0.2	283.7	3.5	582.2
Turkey	259.4	256.4	883.6	56159.6	261.7	205.8	4866.0	324.9	736.0		1298.3	65251.7
Turkmenistan	3.6	0.1	59.2	485.6	1.3	1.7	148.0	1.5	0.1	386.3	31.4	1118.8
Uzbekistan	58.5	0.3	9.7	459.3	0.4	3.6	1513.5	9.5	32.8	861.4	81.7	3030.7
India *)	152.0	36.5	32.5	44119.1	34.5	26.0	2143.3	113.4	969.5	3409.9	680.7	51717.4
Japan *)	184.8	55.8	80.9	89101.9	45.4	34.4	10259.7	136.9	3537.3	3297.8	801.8	107536.7
Republic of Korea *)	139.2	45.6	29.3	52186.8	43.4	23.3	7281.5	126.0	422.4	4764.0	768.0	65829.5
TOTAL	21018.2	1658.2	2368.5	888668.6	1241.4	1222.8	71384.1	4132.8	14655.0	63553.8	32422.0	1102325.4

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.7

Import of goods to Asia from selected European countries in 2011, million US dollars

Countries of Asia (Importers)	Countries of Europe (exporters)											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	140.3	1.6	2.1	1247.5	0.6	5.4	801.3	10	10.8	276	14.1	2509.7
Armenia	24.2	0.1	218.4	896.7	0.2	2.9	437.1	0.7	29.2	0.2	227.6	1837.3
Azerbaijan	138.6	0.5	425.8	4010.6	0.2	5.7	2196.4	3.9	236.5	2064.2	708.3	9790.7
China	631.6	5.8	28.9	189785.8	127.5	3.9	34692.4	15.3	9971.2	2466.6	2180	239909.0
Iran	124.5	32.3	16.2	14604.4	0.9	1.0	3277.1	48.4	761.5	3589.7	1127.4	23583.4
Kazakhstan	668.7	0.1	156.9	8326.1	0.2	45.5	14173.7	9.9	318.1	947.9	1857.5	26504.6
Kyrgyzstan	218.2	0.1	7.6	568.0		2.9	1156.4	0.0	9.0	180.4	111.3	2253.9
Mongolia	77.4	0.0	0.8	573.8		0.1	1485.6	0.4	9.9	43.4	45.3	2236.7
Pakistan	48.8	0.4	0.4	5226.4		0.1	126.3	0.4	315.4	213.7	183.7	6115.6
Russian Federation	14397.7	37.8	21.2	151061.7	39.6	625.5		792.3	3396.5	5992.7	19819.7	196184.7
Tajikistan	50.1	0.0	4.5	195.0	0.0	1.2	721.4	0.8	4.3	172.6	60.2	1210.1
Turkey	128.6	106.7	214.1	101945.9	73.4	73.4	15086.8	183.2	2421.7		3748.6	123982.4
Turkmenistan	213.8	0.0	5.5	1326.0	0.1	1.2	1116.9	1.4	23.6	1493.4	241.9	4423.8
Uzbekistan	63.8	0.0	12.8	1810.3		5.8	1983.1	2.7	100.5	354.5	353.8	4687.3
India *)	331.2	15.2	19.3	56460.9	18.1	5.6	4665.7	8.4	3364.8	756.1	2265.3	67910.6
Japan *)	12.2	0.3	2.9	68275.1	1.1	0.9	14234.7	2.3	7509.2	296.4	152.5	90487.6
Republic of Korea *)	8.6	0.2	8.5	42235.3	19.4	0.2	13329.7	1.4	2620.4	527.8	467.6	59219.1
TOTAL	17278.3	201.1	1145.9	648549.5	281.3	781.3	109484.6	1081.5	31102.6	19375.6	33564.8	862846.5

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.8

Export of goods from Asia to selected European countries in 2011, million US dollars

Countries of Asia (Exporters)	**Countries of Europe (importers)**											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	2.8	0.0	0.0	66.3	0.0		28.1	0.1	0.1	4.8	1.1	103.3
Armenia	5.5	0.1	51.4	448.3	0.0	0.2	183.8	5.5	6.8	0.1	18.5	720.2
Azerbaijan	825.8	0.0	446.6	21517.8		2.7	571.1	0.1	503.7	262.3	643.3	24773.4
China	2166.5	551.5	525.1	410570.8	354.9	399.8	48038.4	1488.5	7119.3	21693.0	6268.3	499176.1
Iran	8.9	2.2	64.9	24116.6	5.3	1.3	351.4	9.7	34.6	12461.5	46.5	37102.9
Kazakhstan	136.8	2.7	69.6	31897.7	1.6	31.9	6912.7	110.8	2179.4	1995.1	1675.9	45014.2
Kyrgyzstan	9.1	0.5	1.4	76.3	1.6	0.1	290.8	4.8	0.1	52.1	7.5	444.3
Mongolia	0.0	0.0	0.8	100.6	0.6	0.0	89.1	0.0	2.2	3.0	4.9	201.2
Pakistan	13.4	6.8	4.9	6502.6	4.9	3.0	349.3	8.6	82.1	873.1	68.2	7916.9
Russian Federation	24709.8	1163.6	312.6	280185.2	684.3	823.0		2654.2	1005.8	23952.9	29132.2	364623.6
Tajikistan	21.9	0.0	0.6	105.6	0.0	0.0	88.6	7.0	0.0	324.3	13.0	561.0
Turkey	315.3	320.3	1276.5	67635.4	345.4	366.9	6352.5	405.1	872.9		1481.2	79371.5
Turkmenistan	8.0	0.0	55.5	622.4	4.0	9.1	142.6	0.4	45.6	392.7	736.0	2016.3
Uzbekistan	44.3	1.4	11.7	551.9	0.1	10.6	1756.2	16.3	9.4	939.9	643.9	3985.7
India *)	172.6	52.9	55.4	55566.4	47.4	37.6	2760.6	149.6	1471.5	6498.7	812.3	67625.0
Japan *)	245.5	62.5	174.1	98227.5	52.0	43.7	15012.6	165.6	4675.8	4263.7	1014.0	123937.0
Republic of Korea *)	188.9	50.1	46.9	50534.5	45.8	34.6	11575.7	158.1	556.3	6298.5	1236.0	70725.4
TOTAL	28875.1	2214.6	3098	1048726	1547.9	1764.5	94503.5	5184.4	18565.6	80015.7	43802.8	1328298.0

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.9

Import of goods to Asia from selected European countries in 2012, million US dollars

Countries of Asia (Importers)	**Countries of Europe (exporters)**											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	156.3	2.0	13.4	1212.7	0.6	8.2	938.4	3.5	12.2	290	21	2658.3
Armenia	31.1	0.0	255.6	876.4	0.2	1.4	447.9	1.1	83.6	0.2	179.2	1876.7
Azerbaijan	139.2	0.4	626.4	3839.7	0.8	5.4	2845.7	31.6	198.2	2587.5	766.6	11041.5
China	432.0	5.6	25.6	185040.4	158.8	8.3	35766.8	19.8	9928.1	2833.4	1777.2	235996.0
Iran	108.4	18.6	18.5	9481.1	0.1	1.2	1900.4	32.9	495.4	9922.6	1164.7	23143.9
Kazakhstan	804.1	0.3	62.2	8893.8	0.8	50.3	14892.5	11.4	239.9	1069.4	2459.3	28484.0
Kyrgyzstan	141.8	0.1	8.9	541.3		2.8	1634.1	0	11.8	257.5	127.1	2725.4
Mongolia	111.4	0.2	3.2	560.6		0.1	1851.4	0.3	11.3	35.9	45.5	2619.9
Pakistan	53.9	0.1	0.2	5289.0	0.0		210.0	0.4	278.6	276.5	114.1	6222.8
Russian Federation	16161.4	36.8	36.5	158535.7	33.1	655.1		866.2	3157.9	6683.0	17631.7	203797.4
Tajikistan	48.2	0.0	4.8	209.6		0.9	678.8	1.4	2.8	235.0	100.8	1282.3
Turkey	145.2	115.7	134.8	96833.1	66.8	56.1	16103.2	187.0	4401.8		3685.1	121728.8
Turkmenistan	230.2	0.0	8.0	1703.3	0.1	0.8	1210.6	0.5	33.6	1480.5	528.2	5195.8
Uzbekistan	95.5	0.0	16.2	1570.2		8.2	2324.7	1.2	69.7	450.4	435.9	4972.0
India *)	263.9	11.1	14.9	49502.4	24.0	3.7	7566.7	4.9	30629.2	791.7	2290.9	91103.4
Japan *)	15.1	0.7	5.7	71414.7	1.5	1.1	15588.0	4.2	7648.4	332.0	320.5	95331.9
Republic of Korea *)	37.9	1.0	2.9	48561.3	57.9	0.0	13865.5	2.2	2954.8	528.0	481.9	66493.4
TOTAL	18975.6	192.6	1237.8	644065.3	344.7	803.6	117824.7	1168.6	60157.3	27773.6	32129.7	904673.5

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.10

Export of goods from Asia to selected European countries in 2012, million US dollars

Countries of Asia (Exporters)	Countries of Europe (importers)											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	1.5	0.1	0.0	73.7	0.0		11.3	0.1	1.3	6.5	0.9	95.4
Armenia	6.7	0.1	68.3	353.9	0.0	0.4	300.7	0.3	9.0	0.2	22.9	762.5
Azerbaijan	12.2	34.1	448.4	18364.5		0.5	563.6	0.8	238.6	339.9	79.7	20082.3
China	2345.0	536.2	613.6	374828.4	374.9	415.7	51767.7	1385.5	11072.6	21295.1	7899.6	472534.3
Iran	9.1	2.4	100.4	7264.8	2.9	1.0	428.5	7.7	39.4	11964.6	67.4	19888.2
Kazakhstan	119.0	2.5	131.8	31562.4	6.0	26.5	9409.3	415.3	1459.0	2056.1	1494.9	46682.8
Kyrgyzstan	12.5	0.9	2.5	69.8	2.3	0.3	195.7	6.4	344.1	45.2	6.5	686.2
Mongolia	0.0	0.0		86.8	0.0	0.0	64.3	0.0	38.5	0.0	4.6	194.2
Pakistan	11.9	6.0	5.8	5278.2	5.8	3.8	332.2	9.7	114.9	555.0	121.5	6444.8
Russian Federation	27268.6	981.1	385.7	276499.8	362.1	816.9		2076.6	3082.6	26625.0	27418.3	365516.7
Tajikistan	9.3	3.9	0.0	154.3	0.0	0.0	67.7	48.7	53.7	345.2	7.2	690.0
Turkey	343.2	295.0	1468.8	62042.9	325.4	388.2	6840.0	439.0	2389.7		1951.9	76484.1
Turkmenistan	6.2	0.0	30.7	860.7	2.2	4.0	183.8	0.1	29.6	303.0	123.4	1543.7
Uzbekistan	29.0	2.4	12.1	334.5	0.1	8.6	1390.8	4.3	543.2	813.3	109.0	3247.3
India *)	231.8	47.3	73.9	48173.4	50.9	30.5	3041.3	153.5	1547.4	5843.6	1020.7	60214.3
Japan *)	179.7	58.2	312.6	83218.5	48.4	30.9	15676.1	186.2	5045.9	3601.4	1197.8	109555.7
Republic of Korea *)	150.9	45.2	53.0	48848.2	23.1	32.8	10976.9	146.6	883.2	5660.1	1547.2	68367.2
TOTAL	30736.6	2015.4	3707.6	958014.8	1204.1	1760.1	101249.9	4880.8	26892.7	79454.2	43073.5	1252989.7

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.11

Import of goods to Asia from selected European countries in 2013, million US dollars

Countries of Asia (Importers)	Countries of Europe (exporters)											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	4.8	0.5	8.3	767.4	0.2	1.0	631.0	4.9	9.7	228.2	16.1	1672.1
Armenia	29.9	0.0	312.5	946.4	0.1	1.1	468.4	1.8	84.3	0.1	181.0	2025.6
Azerbaijan	164.1	0.6	710.0	4965.7	0.5	6.5	2942.5	56.1	256.9	2960.4	869.0	12932.3
China	460.3	7.1	33.9	196827.9	103.9	6.5	35625.4	9.1	20986.7	3600.9	2726.7	260388.4
Iran	32.9	19.1	46.9	7233.0	0.2	0.9	1168.6	13.9	358.8	4192.5	793.9	13860.7
Kazakhstan	862.0	0.3	103.6	9945.2	0.3	39.2	17218.2	11.6	210.4	1039.4	2120.1	31550.3
Kyrgyzstan	98.2	0.0	8.9	531.5		3.3	2029.4	0.6	17.5	388.3	134.7	3212.4
Mongolia	107.7	0.1	4.6	677.7		0.1	1572.1	0.8	13.2	48.1	45.8	2470.2
Pakistan	42.5	0.1	2.9	5092.3	0.1	1.9	197.1	0.4	299.7	285.9	234.1	6157.0
Russian Federation	16733.7	38.8	179.3	158985.4	31.6	631.9		1062.7	3388.5	6994.2	15077.3	203123.4
Tajikistan	29.7	0.0	7.9	260.7	0.1	1.9	724.4	0.5	3.5	283.6	61.3	1373.6
Turkey	167.8	114.0	183.8	103165.4	71.7	127.1	15122.1	219.0	8900.9		3805.5	131877.3
Turkmenistan	315.7	0.0	14.1	1449.1	0.1	1.0	1429.9	0.3	28.3	1957.5	395.1	5591.1
Uzbekistan	92.2	0.0	22.7	1868.3	0.0	7.6	2803.9	1.9	87.6	562.5	351.7	5798.4
India *)	172.7	1.1	6.4	47620.7	28.7	0.7	6982.7	7.8	25870.6	586.9	1974.6	83252.9
Japan *)	21.5	0.6	3.6	71666.5	1.6	0.5	19667.5	6.3	6925.7	409.2	458.4	99161.4
Republic of Korea *)	30.2	0.9	0.9	53058.2	0.7	0.4	14867.1	0.5	3112.8	460.1	407.5	71939.3
TOTAL	19365.9	183.2	1650.3	665061.4	239.8	831.6	123450.3	1398.2	70555.1	23997.8	29652.8	936386.4

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.12

Export of goods from Asia to selected European countries in 2013, million US dollars

Countries of Asia (Exporters)	**Countries of Europe (importers)**											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	1.2	0.1	1.0	74.0	0.0		14.3	0.1	4.1	10.7	2.3	107.8
Armenia	8.5	0.0	180.4	347.9	0.0	0.5	352.4	0.1	8.1	0.4	19.7	918.0
Azerbaijan	12.6	0.0	400.1	18851.8	0.1	0.3	635.9	0.0	266.8	3337.7	77.8	23583.1
China	2827.2	620.3	611.6	371903.1	379.6	478.9	53173.1	1509.6	12334.8	24685.9	7903.2	476427.3
Iran	9.6	1.7	129.7	1029.1	1.8	1.5	432.9	3.6	33.3	10383.2	83.7	12110.1
Kazakhstan	77.7	3.5	55.3	31165.2	2.8	32.7	5664.9	888.2	1877.0	1760.1	683.6	42211.0
Kyrgyzstan	12.7	0.7	2.1	102.9	1.8	0.3	110.1	5.7	363.8	37.0	11.8	648.9
Mongolia	0.0	0.1		94.9		0.0	40.9		310.8	0.4	1.4	448.5
Pakistan	15.8	7.3	5.4	6015.2	6.6	2.7	350.0	9.8	105.3	436.7	93.8	7048.6
Russian Federation	22573.3	1022.0	503.2	274191.1	163.6	788.0		1903.5	4736.4	25064.2	23244.0	354189.3
Tajikistan	4.9	0.4	0.0	119.0		0.0	37.9	1.2	50.3	371.4	5.2	590.3
Turkey	397.4	234.4	1408.9	66910.3	314.5	381.0	7272.8	530.9	1471.3		1852.9	80774.4
Turkmenistan	3.4	0.0	47.9	1150.1	1.1	3.2	139.4	0.1	0.9	653.8	100.5	2100.4
Uzbekistan	33.6	3.4	15.5	328.1	0.3	9.8	1256.9	0.4	1539.0	815.4	91.6	4094.0
India *)	181.1	54.4	55.7	48869.6	68.7	35.0	3091.2	173.9	1662.3	6367.8	838.6	61398.3
Japan *)	213.0	51.7	319.9	75062.1	55.5	37.3	13560.5	124.2	4026.5	3453.2	985.0	97888.9
Republic of Korea *)	204.7	47.7	70.7	47592.5	29.1	33.9	10305.4	141.1	709.3	6088.3	830.6	66053.3
TOTAL	26576.7	2047.7	3807.4	943806.9	1025.5	1805.1	96438.6	5292.4	29500	83466.2	36825.7	1230592.2

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.13

Import of goods to Asia from selected European countries in 2014, million US dollars

Countries of Asia (Importers)	Countries of Europe (exporters)											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	4.2	0.1	1.5	640.8	0.3	0.1	407.6	5.1	8	186.2	10.2	1264.1
Armenia	27.2	0.0	280.6	937.9	0.3	2.1	534.8	1.7	125.2		173.4	2083.2
Azerbaijan	186.6	0.9	544.2	4605.1	0.6	5.9	2144.3	15.7	192	2874.6	591.6	11161.5
China	639.0	9.2	90.4	217443.3	92.6	8.2	37414.6	14.2	18407.1	2861.1	2674.1	279653.8
Iran	84.3	2.1	28.2	8487.2	0.8	2.1	1325.5	15.9	666.1	3886.2	703.4	15201.8
Kazakhstan	875.5	0.1	88.6	8922.5	0.1	45.3	13862.3	16.8	235.6	977.5	1073.2	26097.5
Kyrgyzstan	88.8	0.0	10.0	530.2		3.3	1737.7	1.4	15.9	421.4	102.5	2911.2
Mongolia	21.7	0.1	2.3	438.4	0.2	0.0	1460.4	0.6	10.5	35.3	38.0	2007.5
Pakistan	42.6	0.1	0.7	5253.6	1.2	7.9	143.1	0.7	299.0	259.3	397.8	6406.0
Russian Federation	15071.6	54.0	270.0	136267.3	42.1	423.7		1029.1	3174.6	5943.0	9799.1	172074.5
Tajikistan	30.6	0.9	10.8	286.1	0.0	2.0	890.9	0.8	121.0	277.4	46.7	1667.2
Turkey	161.3	155.5	222.4	98243.6	67.6	104.7	14755.2	230.9	4902.1		3561.4	122404.7
Turkmenistan	174.0	0.0	14.3	1451.9	0.2	1.2	1137.7	1.6	22.2	2231.2	431.3	5465.6
Uzbekistan	67.1	0.0	54.8	2061.8		8.1	3113.6	7.2	142.7	603.0	308.6	6366.9
India *)	210.4	0.5	10.8	46196.2	22.0	0.6	4395.7	8.7	21118.4	586.6	1817.4	74367.3
Japan *)	12.5	1.5	3.3	69751.7	1.2	1.4	19830.8	6.8	6981.3	375.5	209.6	97175.6
Republic of Korea *)	42.6	4.4	3.5	56802.1	0.1	0.1	18081.8	2.4	3242.3	470.5	510.3	79160.1
TOTAL	17740.0	229.4	1636.4	658319.7	229.3	616.7	121236.0	1359.6	59664.0	21988.8	22448.6	905468.5

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

Table 1.14

Export of goods from Asia to selected European countries in 2014, million US dollars

Countries of Asia (Exporters)	**Countries of Europe (importers)**											
	Belarus	**Bosnia and Herzegovina**	**Georgia**	**EC**	**FYR Macedonia**	**Moldova**	**Russian Federation**	**Serbia**	**Switzerland**	**Turkey**	**Ukraine**	**TOTAL**
Afghanistan	1.4	0.4		63.3	0.0	0.1	12.7	0.1	0.1	16.5	1.0	95.6
Armenia	9.0	0.0	205.1	304.4	0.0	0.4	314.2	0.1	4.8	1.5	13.3	852.8
Azerbaijan	18.4	0.3	349.1	17548.6	0.0	0.1	452.3	0.4	441.2	291.3	43.7	19145.4
China	948.0	922.5	733.0	400507.7	433.0	481.2	50583.0	1561.1	13284.7	24918.2	5408.9	499781.3
Iran	6.1	2.3	122.7	1532.3	1.6	1.1	355.1	3.9	32.7	9833.3	52.7	11943.8
Kazakhstan	82.5	2.7	35.2	31209.4	1.8	27.3	7172.4	198.0	1034.6	1236.3	375.8	41376.0
Kyrgyzstan	6.5	0.7	2.7	105.3	2.1	0.4	70.9	4.8	425.1	65.6	4.3	688.4
Mongolia	0.7	0.0		98.5	0.0	0.0	40.4	0.0	421.6	0.1	0.6	561.9
Pakistan	6.5	9.8	4.0	7317.3	5.4	2.9	310.9	14.8	117.8	435.5	100.7	8325.6
Russian Federation	21868.6	876.8	462.1	220906.1	140.1	717.2		2340.4	3314.9	25288.6	12678.7	288593.5
Tajikistan	4.0	0.0	0.0	81.1	0.0	0.0	37.3	0.0	121.7	160.9	3.2	408.2
Turkey	338.7	394.8	1727.3	72035.9	377.8	300.9	6654.3	589.7	3626.9		1298.2	87344.5
Turkmenistan	5.1	0.1	69.3	1083.9	1.5	0.0	90.9	0.6	29.9	623.3	24.6	1929.2
Uzbekistan	21.7	2.3	13.4	309.7	0.2	15.4	869.8	0.0	1336.2	780.7	72.8	3422.2
India *)	71.0	68.3	50.5	49144.7	48.2	36.9	3170.7	139.9	1777.0	6898.6	656.4	62062.2
Japan *)	88.5	64.3	368.2	72951.9	64.1	45.8	10917.4	107.5	3985.2	3199.9	612.6	92405.4
Republic of Korea *)	62.7	52.3	51.5	51477.0	32.6	38.6	8972.5	119.8	690.1	7548.3	478.3	69523.7
TOTAL	23539.4	2397.6	4194.1	926677.1	1108.4	1668.3	90024.8	5081.1	30644.5	81298.6	21825.8	1188459.7

Souce: UN Comtrade database

*) India, Japan and Republic of Korea are non EATL Project countries

I.2.3. Main commodity groups

The Group of Experts on Euro-Asian Transport Links (EATL) at its eleventh session (ECE/TRANS/WP.5/GE.2/2 (Paragraph 14)) requested the secretariat to send out a questionnaire to selected ports and ask for information about the type of cargo and transport passing through ports relevant to the EATL project.

The information received from ports includes three parts of cargoes:

1. Cargoes identified as suitable for overland transport between Europe and Asia.

2. Synergies between overland and maritime transport types of cargoes.

3. Cargoes most relevant for the Euro-Asian maritime transport.

Cargo that can be transported by rail or road from Europe to Asia and vice versa covers a rather limited niche market which includes high value and small volume goods, especially the ones that may be containerised. Those are goods for which air transport is too expensive, while maritime transport is too slow. These cargoes includes the following Standard International Trade Classification (SITC) positions (table 1.15).

Table 1.15
Cargoes identified as suitable for overland transport between Europe and Asia or shiftable from maritime to overland transport

Commoditiy Group	Description
SITC 08	Edible fruit, nuts, peel of citrus fruit, melons
SITC 09	Coffee, tea, mate and spices
SITC 11	Milling products, malt, starches, inulin, wheat gluten
SITC 12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes
SITC 13	Lac, gums, resins, vegetable saps and extracts nes
SITC 14	Vegetable plaiting materials, vegetable products nes
SITC 15	Animal,vegetable fats and oils, cleavage products, etc
SITC 16	Meat, fish and seafood food preparations nes
SITC 17	Sugars and sugar confectionery
SITC 18	Cocoa and cocoa preparations
SITC 19	Cereal, flour, starch, milk preparations and products
SITC 20	Vegetable, fruit, nut, etc food preparations
SITC 21	Miscellaneous edible preparations
SITC 22	Beverages, spirits and vinegar
SITC 23	Residues, wastes of food industry, animal fodder
SITC 24	Tobacco and manufactured tobacco substitutes
SITC 25	Salt, sulphur, earth, stone, plaster, lime and cement
SITC 29	Organic chemicals
SITC 30	Pharmaceutical products
SITC 31	Fertilizers
SITC 32	Tanning, dyeing extracts, tannins, derivs,pigments etc
SITC 33	Essential oils, perfumes, cosmetics, toileteries
SITC 34	Soaps, lubricants, waxes, candles, modelling pastes
SITC 35	Albuminoids, modified starches, glues, enzymes
SITC 36	Explosives, pyrotechnics, matches, pyrophorics, etc
SITC 37	Photographic or cinematographic goods
SITC 38	Miscellaneous chemical products
SITC 39	Plastics and articles thereof
SITC 40	Rubber and articles thereof

Commoditiy Group	Description
SITC 41	Raw hides and skins (other than furskins) and leather
SITC 42	Articles of leather, animal gut, harness, travel goods
SITC 43	Furskins and artificial fur, manufactures thereof
SITC 44	Wood and articles of wood, wood charcoal
SITC 45	Cork and articles of cork
SITC 46	Manufactures of plaiting material, basketwork, etc.
SITC 47	Pulp of wood, fibrous cellulosic material, waste etc
SITC 48	Paper & paperboard, articles of pulp, paper and board
SITC 49	Printed books, newspapers, pictures etc
SITC 50	Silk
SITC 51	Wool, animal hair, horsehair yarn and fabric thereof
SITC 52	Cotton
SITC 53	Vegetable textile fibres nes, paper yarn, woven fabric
SITC 54	Manmade filaments
SITC 55	Manmade staple fibres
SITC 56	Wadding, felt, nonwovens, yarns, twine, cordage, etc
SITC 57	Carpets and other textile floor coverings
SITC 58	Special woven or tufted fabric, lace, tapestry etc
SITC 59	Impregnated, coated or laminated textile fabric
SITC 60	Knitted or crocheted fabric
SITC 61	Articles of apparel, accessories, knit or crochet
SITC 62	Articles of apparel, accessories, not knit or crochet
SITC 63	Other made textile articles, sets, worn clothing etc
SITC 64	Footwear, gaiters and the like, parts thereof
SITC 65	Headgear and parts thereof
SITC 66	Umbrellas, walking-sticks, seat-sticks, whips, etc
SITC 67	Bird skin, feathers, artificial flowers, human hair
SITC 69	Ceramic products
SITC 70	Glass and glassware
SITC 72	Iron and steel
SITC 73	Articles of iron or steel
SITC 74	Copper and articles thereof
SITC 75	Nickel and articles thereof
SITC 76	Aluminium and articles thereof
SITC 78	Lead and articles thereof
SITC 79	Zinc and articles thereof
SITC 80	Tin and articles thereof
SITC 81	Other base metals, cermets, articles thereof
SITC 82	Tools, implements, cutlery, etc of base metal
SITC 83	Miscellaneous articles of base metal
SITC 85	Electrical, electronic equipment
SITC 86	Railway, tramway locomotives, rolling stock, equipment
SITC 87	Vehicles other than railway, tramway
SITC 90	Optical, photo, technical, medical, etc apparatus
SITC 91	Clocks and watches and parts thereof
SITC 92	Musical instruments, parts and accessories
SITC 93	Arms and ammunition, parts and accessories thereof
SITC 94	Furniture, lighting, signs, prefabricated buildings
SITC 95	Toys, games, sports requisites
SITC 96	Miscellaneous manufactured articles

Electronic products are mostly transported from China to Europe, whereas there is an increasing interest to move automotive components, finished products (cars), pharmaceuticals, chemicals and food (including frozen foods) from the EU to China.

Cases of specific services include the following ones:

• The Chongqing-Xinjiang-Europe train carries electronics, cars, and medical equipment;

• The international cargo train (Chang'an) from Xi'an to Rotterdam carries trucks, steel, aluminium, apple juice and electric power control units;

• The Zhengzhou-Xinjiang-Europe train carries electronic products, construction machinery, vehicles and parts, medical equipment and other high value products;

• The Suzhou-Manchuria-Europe train (through Siberia) carries liquid crystal monitors and laptops.

Regarding temperature sensitive products, DHL introduced in January 2014 the first temperature-controlled rail container service between China and Europe on a year-round basis.

Railways are good alternative to maritime transport in the case of high value and small volume goods. Therefore, in the case of products that need to be delivered rather fast and on time, railways offer a good option.

Other cargo not mentioned above, is not typically transported by rail and generally does not present good candidate for transport by rail (or road) from Europe to Asia or from Asia to Europe. In general, cheap and bulky products such as raw materials, petroleum products and liquefied gas are not transported overland between Europe and Asia.

Synergies between overland and maritime transport

Overland and maritime is a typical combination of transport modes between Europe and Asia transport and much attention is devoted to its development. The goal of such a synergy should be to achieve the most efficient combination of low cost transport (maritime transport) and low travel times (railways). An example that has gained much attention in recent years is the transport of goods by sea from China to the port of Piraeus (Greece) and by rail from Piraeus to major distribution centres in Central Europe. This type of transport may be enhanced by further improving the connection and reducing the handling time during the transfer process, between modes.

The strongest synergy between overland and maritime transport occurs in container transportation. In recent decades the containerisation of cargos is developing rapidly due to possibility for easy and fast change of transport modes. For example, the hinterland destinations for containers from the port of Riga (Latvia) are the Russian Federation, Ukraine, Belarus, Kazakhstan and Central Asian countries. To enhance synergy between overland and maritime transport, it is necessary to develop rail infrastructure to those destinations in Asia and to open new reliable and fast container train services with minimised border control, customs and other bureaucratic burdens.

The Port of Riga has a strong interoperability between maritime and overland transport for dry bulk cargo from the Russian Federation, Kazakhstan and Central Asian countries. To enhance this, it is necessary to improve the port infrastructure and access infrastructure from/to hinterland, to synchronize the port operations and to avoid bottlenecks in cargo handling. For example, at the Port of Riga the maritime infrastructure is fully developed to handle large *Panamax* type vessels, but the rail infrastructure at the port and access to rail infrastructure is not

sufficient to receive large amount of dry bulk cargo at the short period of time to allow simultaneous rail-sea handling at the port.

When transporting export cargoes from Uzbekistan, synergy is observed in the transport between such goods as cotton and mineral fertilizers. The greatest effect of the synergy is observed in the reduction in the cost of transport of these types of goods to the nearest seaport.

The inter-modal change between maritime and railway transport can be developed by unifying the railway system that differs the CIS countries from other European countries. For instance, in Turkey a project was concluded in Samsun Port for a change of gauge of the wagons coming from the CIS countries to Turkey.

The types of cargo that might have strong synergies between overland and maritime transport include petroleum products, machinery and other manufacturing products, chemicals, building minerals, solid mineral fuels, foodstuffs, agricultural products, crude oil, metal waste and metal products, chemicals and fertilisers.

Challenges in Euro-Asian maritime transport

Maritime transport is without doubt the dominant transport mode between Asia and Europe, which until recently, exhibited an average growth rate of over 6% per year. This continuous and significant increase in maritime trade, along with other developments in the sector such as increased vessel size, however, has resulted in major congestion problems at several ports and other freight hubs, and has created serious environmental concerns. Traffic concentration problems, both at ports and hinterlands are particularly evident in China, where there are several constraints in access to the hinterland.

Slow steaming practices of the shipping lines aiming to reduce fuel cost and lengthy detours often taken to avoid extremely congested ports, have significantly increased trip durations. Congestion, along with the increase in labour costs, especially on the east coast of China, partly attributed to the workers getting organised in unions and fighting for higher wages, have resulted in several industries locating their manufacturing facilities in the western parts of China and using air transport for moving goods to Europe. As air transport becomes more expensive, rail may increase in relevance.

Another important problem in the maritime transport is the increasing number of piracy incidents. Safety of goods and crew is very important and for this reason companies often prefer to take longer routes instead of risking getting involved in a piracy event. This however does not come without a consequence, as it leads to higher costs and increase in the overall travel time. Cargo security, however, can also be an issue in overland transport between Europe and Asia.

Currently the competitiveness of rail transport from Asia to Europe is limited by undeveloped rail infrastructure in some parts of Asia. Other limiting factors are border crossing (customs and other complicated) bureaucratic procedures which increase the transportation time and costs. Due to those reasons, air transport is the most appealing for high value, small in size or perishable cargo.

Road transport is, for example, important for the Port of Riga. Of all containers coming by sea, 80 % are delivered to destinations in the hinterland (Baltic countries, Russian Federation, Kazakhstan, Central Asia and even Afghanistan) by trucks. Undeveloped rail network in those

destinations makes road transport more competitive because of ‘door to door’ and ‘just in time’ deliveries.

An important problem for container cargo is a necessary repositioning of empty containers due to imbalance in containerised cargo flow in direction of Europe and Asia. For most of transport operators it is necessary to find ways how to increase containerised cargo flow in both directions, to avoid transportation of empty containers.

In order to enhance the synergy between the transport modes, facilitation of border crossings with simple border procedures are of utmost importance. Facilitation of the port procedures may have direct and substantial effect on expediting the operations at the container terminals because containerised cargoes require fast exchange of information.

The fact that there are two different transport legal regimes and documents as well as different track gauges in OSJD member countries and OTIF members leads to additional formalities and hence waste of time.

The biggest problem that exists in the Euro-Asian maritime transport refers to transport times which are extremely long. This problem could be overcome by the use of more efficient sea lines, combination with other modes of transport and improved time consuming procedures when the ships are arriving and departing from ports. Proposals are:

• To improve communication and to simplify the exchange of information between the different parts of the logistic chain.

• Customs have a key role in the facilitation and the boosting of trade. Customs rules and procedures should be efficiently implemented with a view to shortening the time thereby reducing the impact in terms of cost and time for business.

• A major challenge is to meet the environmental challenges that both market forces and society impose upon transport industry in order to boost the blue and green economy and achieve sustainable development.

I.2.3. Container freight

Rapidly expanding participation of the Asian-Pacific Region countries in the world economy and trade determined the establishment of sustainable logistics chains of cargo delivery between Europe and Asia via Euro-Asian rail routes.

Container services are a flexible instrument allowing establishing logistics chains conforming to the requirements of different companies - both goods producers and retailers.

Accelerated container train is the most operative approach to containerized cargo transportation. As compared to conventional trains, its efficiency is 20-30% higher due to shorter delivery time, simplified documents of carriage and border crossing.

Advantages of cargo transportation within container block trains:

- Quality of service

- Cargo safety
- Delivery speed
- Regular service and stable transit time
- Simple and transparent document flow
- Competitive tariff as per the 'price - delivery period' criterion

Container services to/from China

Major operators of container trains in the China - Europe - China service on various sections of the Trans-Siberian Route are as follows: CRCT, CRIMT, Kaztransservice, Kedetrans, RZD Logistics, TransContainer, UTLC, Belintertrans, Trans- Rail BCh, InterRail Holding, DB Schenker, TEL, FELB.

Table 1.16
Container services to/from China offered by DB Schenker and Trans Eurasia Logistics (TEL)

Route	Europe – China (Eastbound)	China – Europe (Westbound)
Southern	Duisburg – Chongqing First train: trial runs in 2013 Departure days: on request	Chongqing – Duisburg Since 2011 From terminal to terminal Lead time: 17 days Departure day: every Saturday, Tuesday, thursday
	Lodz – Chengdu First train: trial runs in 2014 Departure days: on request	Chengdu – Lodz Since April 2013 From terminal to terminal Lead time: 15 days Departure day: every Saturday, Wednesday
	Hamburg – Zhengzhou First train: trial runs in 2013 via Mongolia Departure days: non regular service	Hamburg – Zhengzhou Since July 2013 From terminal to terminal Lead time: 16 days Departure day: every Saturday, Wednesday
Northern	Points in Europe – China Block trains: no scheduled train services Single containers/groups of containers: regulars departures from different European points	Souzhou – Warsaw Since April 2014 From terminal to terminal Lead time: 14 days Departure day: one time every 10 days

Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

Based on the CRCT data, in 2014 the number trains increased by 285% (308 runs) and by 220% (326 runs) in January - July 2015 (Table 1.17). Starting from 1 July 2015 number of train slots in the new traffic schedule of the Chinese Railways increased up to 21.

Table 1.17
Block Container Trains Europe - China in 2014

From	To	Number of runs
China – Europe (Westbound)		
Zhengzhou	Hamburg	52
Chongqing	Duisburg	79
Chongqing	Cherkessk	6
Chengdu	Lodz	25
Wuhan	Points in Chech Republic, Poland and Germany	37
Souzhou	Warsaw	43

From	To	Number of runs
Yiwu	Madrid	4
Yiwu	Points in Poland	2
Hefei	Points in Germany	2
Shixjeczy	Chelyabinsk	1
Kunming	Rotterdam	1
Europe – China (Eastbound)		
Duisburg	Chongqing	33
Hamburg	Zhengzhou	21
Madrid *	Yiwu	2
Hamburg *	Wuhan	9
Brest *	Souzhou	6
Brest	Shenyang	3

* New routes

Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

The inventory coverage of the cargo transported by rail is comprised with IT products (mobile phones, computers, etc.), clothes, shoes, automobiles and spare parts, bakery products, wine, coffee beans, etc.

Due to the e-commerce growth postal items may constitute significant cargo base for transportation volumes growth between China and Europe. CRCT organised pilot transportation from Chungking, Urumchi and Zhengzhou to Kazakhstan, as well as from Harbin to Russia.

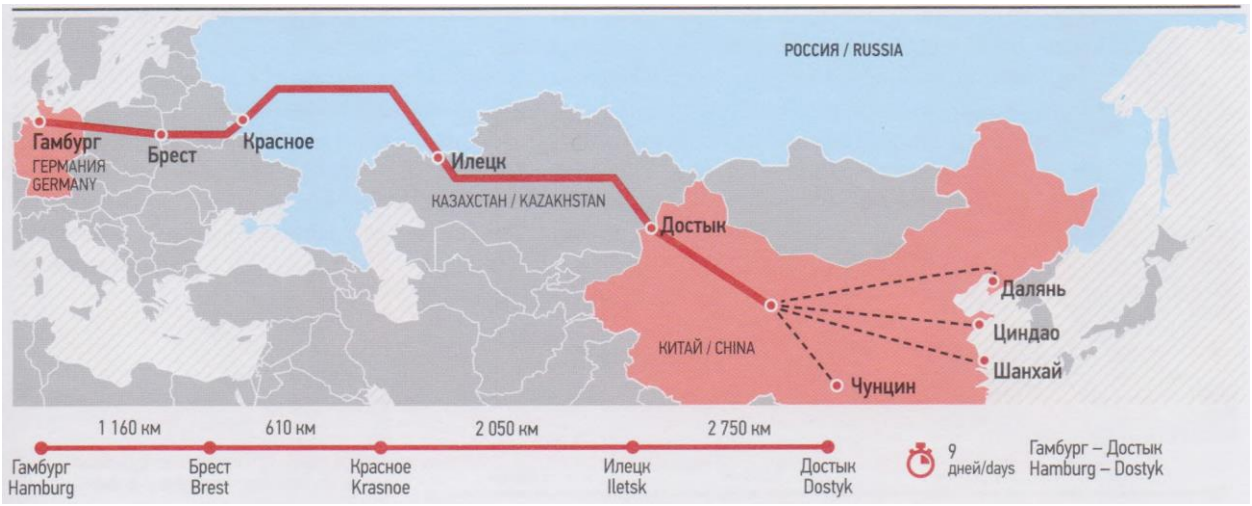
Projects of Transkontainer and Far East Land Bridge (FELB)

Project concerning BMW automobile spare parts transportation from Germany to China jointly implemented with Far East Land Bridge started in September 2010. Initially the transportation was carried out via the Chop station, in November 2010 the transportation started via the Dobra station. Cars of TransContainer and containers provided by Far East Land Bridge are used for the transportation. On the average every week three container trains are dispatched. The transportation is carried out on the Leipzig / Wackersdorf (Germany) - Dobra / Brest - Zabaikalsk - Shenyang (China). The ‘door-to-door’ transit time is 22 - 25 days.

In 2014, 164 container trains were dispatched to Europe. Within those trains there were 13,409 TEU transported which was a 47% increase compared to the same period of 2013. In 2014, 100 container trains were dispatched to Zabaikalsk. Within those trains there were 9,287 TEU transported which was a 57% increase compared to the same period of 2013. In the course of 7 months of 2015, 90 container trains were dispatched to Europe. Within those trains there were 6,266 TEU transported which was a 6% decrease compared to the same period of 2014.

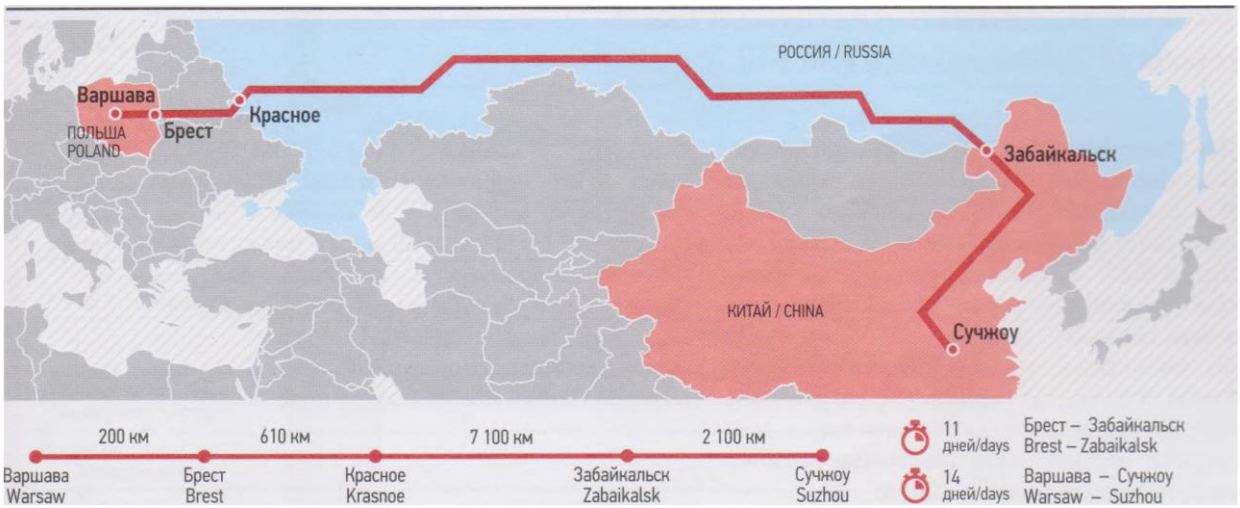
In the course of 7 months of 2015, 65 container trains were dispatched to Zabaikalsk. Within those trains there were 5,334 TEU transported which was a 2% decrease compared to the same period of 2014.

Figure 1.11
Transcontainer Sevice China – Europe - China



Source: Transcontainer, CCTP (Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016)

Figure 1.12
Container Sevice Souzhou (China) – Warsaw (Poland) by Transcontainer

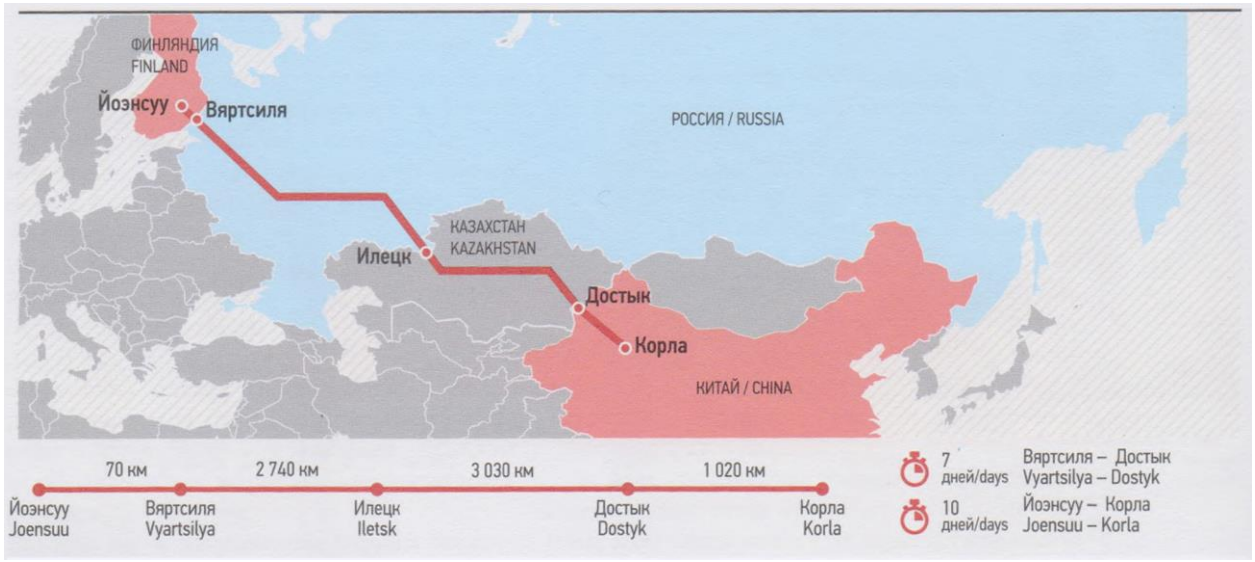


Source: Transcontainer, CCTP (Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016)

Figure 1.13
Container Sevice China – Kazakhstan by Transcontainer

Source: Transcontainer, CCTP (Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016)

Figure 1.14
Container Sevice Joensuu (Finland) – Korla (China) by Transcontainer



Source: Transcontainer, CCTP (Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016)

<u>Projects of RZD Logistics (RZDL) and Far East Land Bridge (FELB)</u>

In order to establish transport and logistics chains in the international market RZD Logistics applies competences of its affiliates - Far East Land Bridge (FELB) specialising on transit railway container transportation on the China - Europe - China route via Zabaikalsk, and

YuXinOu (Chongqing) Logistics Co. Ltd. that organizes regular railway container transportation on the Trans-Kazakhstani China - Europe - China route.

FELB uses border points for cargo heading from China to Europe, such as Brest / Malaszewicze (Belarus / Poland) for cargo transported to Poland, Germany, Holland and Belgium; Dobra / Chop (Slovakia / Ukraine) - to the Czech Republic, Slovakia, Italy, Austria and Slovenia; Zahony / Chop (Hungary / Ukraine) - to Hungary, South Germany and Austria. This routes consignors are manufacturers of electronics and representatives of the automobile industry.

A new FELB service on the Trans-Siberian Route is the container train service from Suzhou, a large industrial center in the South-Eastern part of China, heading to Warsaw, Hamburg and Duisburg (Germany). Trains are dispatched from China to Europe on a daily basis. 22 trains totalling 2,148 containers TEU have been dispatched since the beginning of 2015.

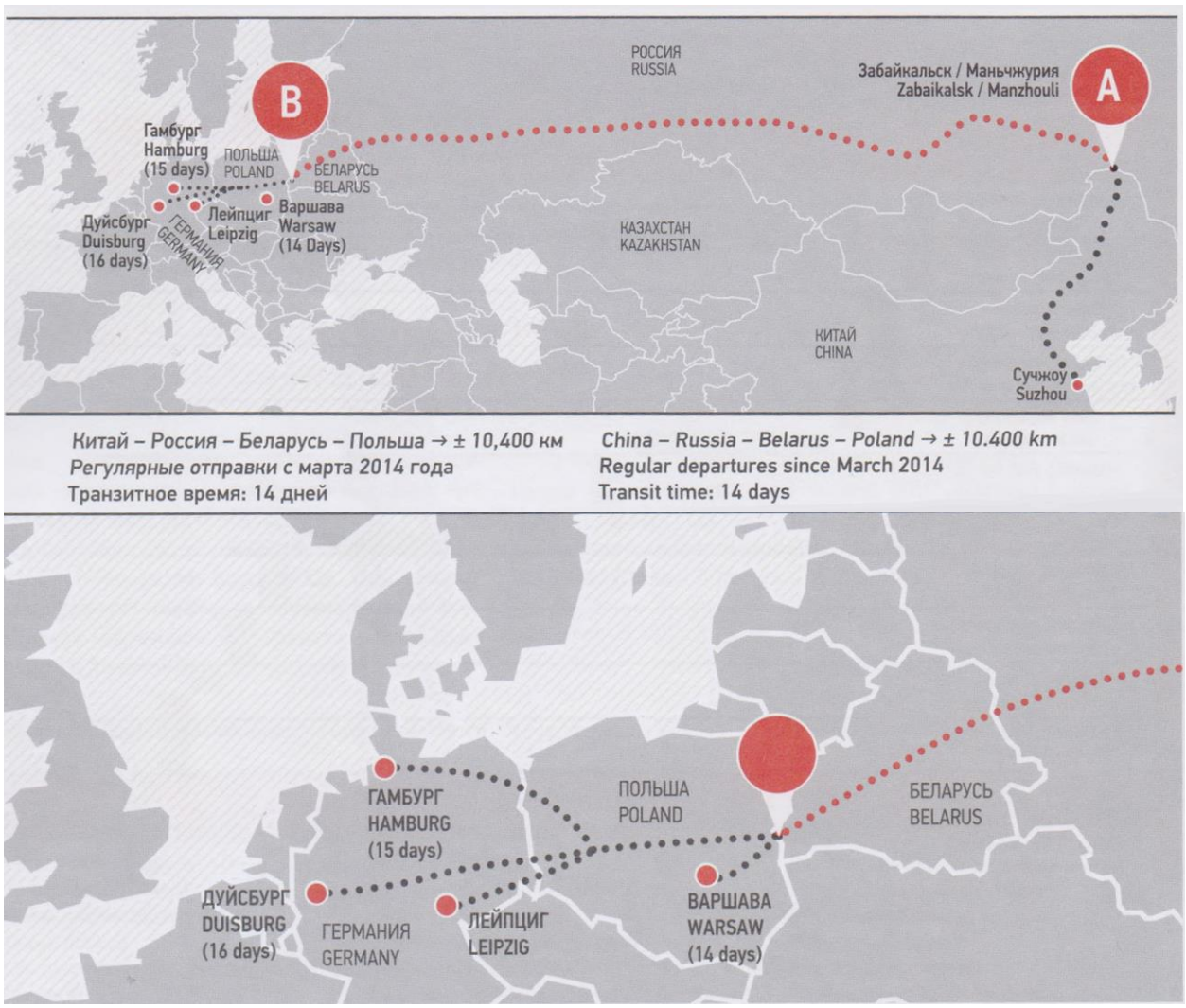
Figure 1.15
FELB Technology of Container delivery between China and Europe

Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

It took RZDL and FELB only a few years of operation on the Trans-Siberian Route to double-cut the timing of cargo delivery. Todays average transit time of transportation is 14 - 16 days. Other advantages of the service include an option of ordering ‘door- to-door’ delivery and less-than-car load freight transportation.

The total number of containers transported in2014 by RZDL in the China - Europe - China transit service via the Trans-Siberian and Trans-Kazakhstani Mainlines amounted to approximately 27 thousand TEU. For 5 months of 2015 the volume of cargo transported amounted to more than 11 thousand containers TEU. The transit potential of both of the transport corridors together with the stable growth of export cargo flows give grounds to expect an increase of total volume of cargo transported in 2015 compared to 2014.

Figure 1.16
Souzhou (China) – Europe Container Sevices by RZD Logistics



Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

The fact that RZD Logistics joined the UTLC group was a significant step in development of multimodal transit transportation service between Europe and Asia. In 2014 100% of RZDL shares were contributed into the UTLC charter capital, with UTLC uniting railway assets of Russia, Belarus and Kazakhstan. The main target of the Company is the development of transit container transportation within Common Economic Area and the Euro-Asian Union.

The RZD Logistics' joining UTLC will allow company's active participation in organisation and promotion of the number of transit routes being in demand of different clients in China, Korea and Europe.

Figure 1.17
Asia – Europe Container Sevices by RZDL and FELB

Source: RZD Logistics, Far East Land Bridge

UTLC Projects

In September 2015 United Transport and Logistics Company JSC (UTLC, affiliate of RZD) organised s container train dispatch from the port of Yingkou (PRC) to Moscow. The project is implemented in the framework of the agreements set in the memorandum on cooperation between RZD and Yingkou Port Group.

The train composed of 45 containers with consumer goods departed from the port on 17 September and in two days covered the distance to the border point in Zabaikalsk. There the train set was added with 17 more containers.

In order to simplify the customs clearance procedures while crossing the border the system of early notification was used. It allows checking the shipping documents prior the trains arrival at the destination station. That resulted in significant cut down of transit note formalisation timing. Total transit time of cargo delivery within that train will be 13 days.

Far East Land Bridge as a member of UTLC group is specialized in transporting 40ft DV. 40ft HC and 20ft containers from the Far East (China, South Korea and Japan) to Russia/Europe and vice versa using the Trans-Siberian railway connection. Our clients can gain significant financial advantages from the short transit time of 14-22 days (depending on volume and relation).

The Trans-Siberian railway is connecting Europe and China, extending the wide gauge network over 9.500 km through Russia, Belarus and Ukraine. In Europe and in China the cross-over from the wide gauge to the normal gauge is effected through special equipped terminals positioned in Brest (Belarus)/ Malaszewicze (Poland) for the northern connection, and Chop (Ukraine)/Dobra

(Slovakia) or Zahony (Hungary) for the southern connection. In the Far East the main cross-over point is Zabaikalsk (Russia) Manzhouli (China); from there 90% of our shipments areoperated.

It is followed by our southern connection via Dostyk (Kazakhstan)/Alashankou (China), which is serving Chongqing trains. The routing via Vostochny is primarily used to connect South Korean and Chinese ports by vessel, operated up from a quantity of 30 FEU per shipment.

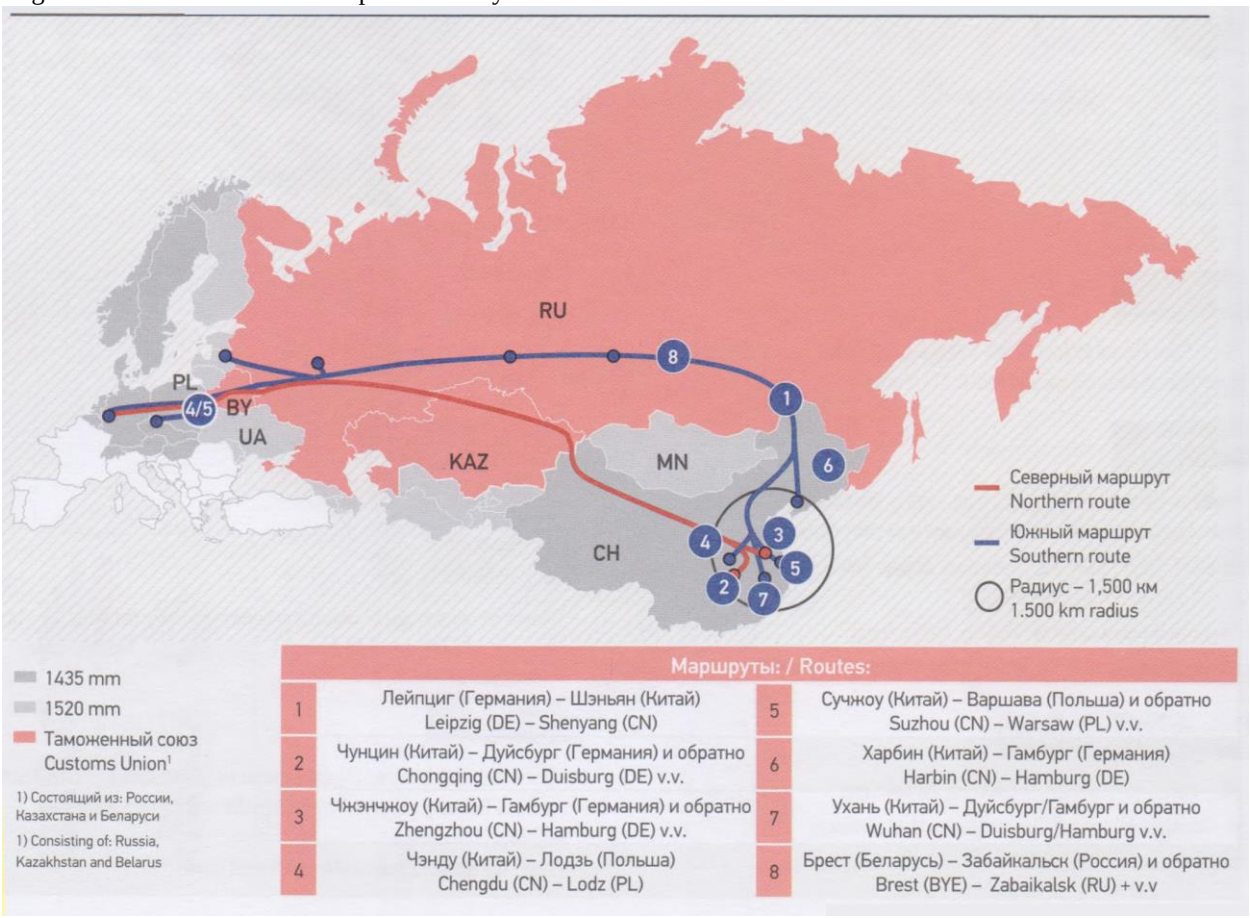
DB Scheker Rail AG and TEL Projects

Based on the railway cargo transportation volumes, DB Schenker Rail AG is a global integrated transport and logistics service supplier and the largest freight railway company in the European Union territory.

One of the key business activities of the company is the establishment and development of transport routes linking the European Union countries with Russia, other former Soviet Union states, Mongolia and China.

One of these solutions' practical examples is the regular railway service providing making up and dispatching container block trains running between China and Germany. This service's operator is Trans Eurasia Logistics GmbH (TEL), a joint venture of Deutsche Bahn AG and RZD. Due to this service consignors are able to transport freight from more than 24 geographical points of China to Germany (with final destination stations in Duisburg and Hamburg).

Figure 1.18
Regular Intermodal China – Europe Sevices by DB Scheker Rail AG and TEL



Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

The transit estimated time from the freight transfer moment at the border crossings to Dostyk (Kazakhstan) / Alashankou (China) or in Zabaikalsk (Russia) / Manzhouli (China) to Brest (Republic of Belarus) / Malaszewicze (Poland), is 10 days. The transit time along the territory of the European Union from Malaszewicze to Duisburg / Hamburg is 1.5 days.

More than 40,000 TEU were transported through both of the routes in the course of the period of 2012 - 2014.

The advantage of this service is the reduced transit transportation time compared to the sea transport, economical attractiveness compared to air transport.

It is noteworthy that the China - Germany railway route is the longest railway route in the world.

Figure 1.19
Rail Network Covered by DB Scheker operations

Примеры Examples	Шанхай – Москва Shanghai – Moscow	Шанхай – Москва Shanghai – Moscow	Шанхай – Москва Shanghai – Moscow
Тип перевозки Rail Mode	Только ж.д. Full Rail	Море + ж.д. Sea + Rail	Ж.д. + грузовик Rail + Truck
Время в пути (от двери до терминала) Lead Time (Door-Terminal)	28 дней 28 days	35 дней 35 days	20 дней 20 days
Продукт Product	Одиночный контейнер single container direct	Одиночный контейнер single container direct	Конт.поезд/грузовик через Брест/Мала block train/truck via Brest/Mala

Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

Developing Container Services

Urumchi - Zahony - Austria

Hungary's accession to the European Union enabled the creation of a new freight transportation corridor which would connect Zahony with Urumchi, an industrial and logistic centre of China, and would pass through the territories of Kazakhstan, Russia and Ukraine.

The use of transit services of Hungary will allow China, Kazakhstan, Russia and Ukraine to reduce goods transportation time and considerably optimize freight traffic.

Following growth tendencies of freight traffic in the East-West direction, the European Union specified the corridors of international goods transportation by Regulation № 913/2010/EU providing for most of them to be put into operation starting from November 2013.

Hungary is crossed by two corridors:

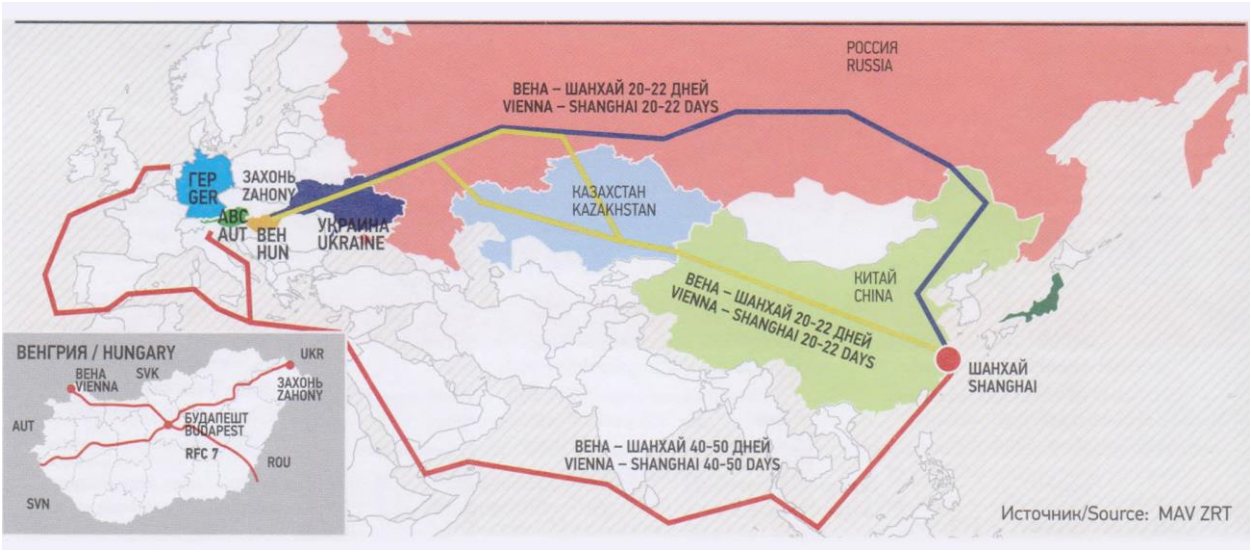
1. RFC-6 corridor, or 'Mediteran Corridor', follows Spain Southern France Northern Italy Slovenia route and reaches Budapest, whence goes east to Zahony. The value of this corridor consists in the possibility to connect it with the so-called 'Silk road' corridor.

2. RFC-7 corridor, or 'Orient Corridor', connects Prague with Athens and with Constanta through Budapest.

MAV plans to launch a demonstration container train in the last quarter of 2012 via Urumchi - Zahony - Austria route.

By means of a demonstration train important data and experience will be obtained, which will allow improving work of the given direction freight transportation.

Figure 1.20
Regular Intermodal Services between China and Hungary/Austria



Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

"Baikal Shuttle" Project by RZD

A new RZD transport product (with the name title 'Baikal Shuttle') is developed for organised standard container transportation of goods manufactured in East Asian countries (Japan, South Korea) that have no land borders with the Russian railways, heading to Siberia and European part of Russia as well as transit transportation to East and West European countries.

This transport product will provide Japanese and South Korean consignors with the ability to transport containerisable cargo on a regular basis with strictly followed frequency and schedule accuracy of the door-to-door delivery. The frequency of transportation is maintained with a specified train path with a fixed time of departure from the Nakhodka - Vostochnaya station and fixed time of arrival in Moscow. The container train en-route time is 8 days 3 hours 57 minutes. Currently there are considerations in regard of cutting down the en-route time to 7 days.

The complex of services for consignors is formed based on specific objectives set by clients. Complex transport and logistics services with the use of the 'Baikal Shuttle' transport product are provided by RZD affiliated companies - UTLC and GEFCO, and include delivery of container to a consignor's warehouse, transportation of container to the port and loading it on board the ship, customs formalisation in the ports of Japan and South Korea, maritime transportation, customs procedures in the port Vostochniy, load off of container from the ship and loading it on the train, railway transportation to Moscow, delivery of container to a consignee's warehouse.

Transcontainer services via Port Vostochny

Container train No. 1031 / 1032 NakhodkaVostochnaya - Zaschita

The route is used for Kia and GM automobile spare part transportation. TransContainer is the operator. In 2014, 74 trains were dispatched on this route with 9,285 TEU transported which is 13% fewer than in 2013. For 7 months of 2015, 15 trains were dispatched on this route with 1,639 TEU transported which is 73% fewer than in 7 months of 2014.

Container train No. 1029 / 1030 NakhodkaVostochnaya - Sergeli

The route from Korea to Uzbekistan via the territories of Kazakhstan and Russia is used for the GM - Uzbekistan joint venture automobile spare part transportation. Furthermore, the route is used for mix freight, synthetic resin and polyethylene transportation. In 2014, 54 trains were dispatched on this route with 70,073 TEU transported which is 10% fewer than in 2013. For 7 months of 2015, 34 container trains were dispatched on this route with 3,865 TEU transported which is 14% fewer than in the same period of 2014.

Container train No. 1029 /1030 NakhodkaVostochnaya - Qostanay

The route is used for SsangYong Motor Company, Iveco, and Toyota automobile spare parts transportation. TransContainer is the operator. In 2014, 36 trains were dispatched on this route with 4,658 TEU transported which is 18% more than in 2013. For 7 months of 2015, 7 container trains were dispatched on this route with 760 TEU transported which is 56% fewer than in the same period of 2014.

Container train No. 1031 /1032 NakhodkaVostochnaya - Ulugh Beg

The route is used for Isuzu mini-van spare part transportation to the SamAuto factory in Uzbekistan. In 2014, 17 trains were dispatched on this route with 1,789 TEU transported which is 2.2 times as much as in 2013. 841 TEU were transported onthe TransContainer platforms which is 1.8 times as much as in the same period of 2014. For 7 months of 2015, 13 container trains were dispatched on this route with 1,433 TEU transported which is 44% more than in the same period of 2014. 891 TEU were transported on the TransContainer platforms which is 78% more than in the same period of 2014.

Container train No.1031 / 1032 NakhodkaVostochnaya - Pitnyak

The route from Korea to Uzbekistan via the territories of Kazakhstan and Russia is used for the GM - Uzbekistan joint venture automobile spare part transportation. In 2014, 25 trains were dispatched on this route with 2,795 TEU transported. For 7 months of 2015, 17 trains were dispatched on this route with 1,711 TEU transported which is 26% more than in the same period of 2014.

FESCO Multimodal Container Services along TRANSSIB corridor

FESCO transport group (the parent entity is - Far-Eastern Shipping Company) is one of the major private logistics companies in Russia having assets in port, railway and integrated logistics business. FESCO asset diversified portfolio allows delivering cargo of a 'door-to-door' type and controlling all stages of multimodal transport chain. The majority of the Group operations is focused on the Far East of Russia which provides FESCO with an opportunity to get additional advantages from participating in dynamically growing volumes of trade operations between Russia and Asian countries.

FESCO services on the Transsib regular railway routes basis

Container transportation is the FESCO Groups core business. With all required assets FESCO delivers containers using multimodal schemes or organises separate maritime container transportation or railway dispatches. The Group also carries out dispatches of refrigerator containers by sae and by rail. Sea lines, railway assets and owned port terminals allow performing the 'door-to-door' container transportation, with no risk of freight safety loss at the same time. The Group completely bears all problems related to transportation, formalising and interaction.

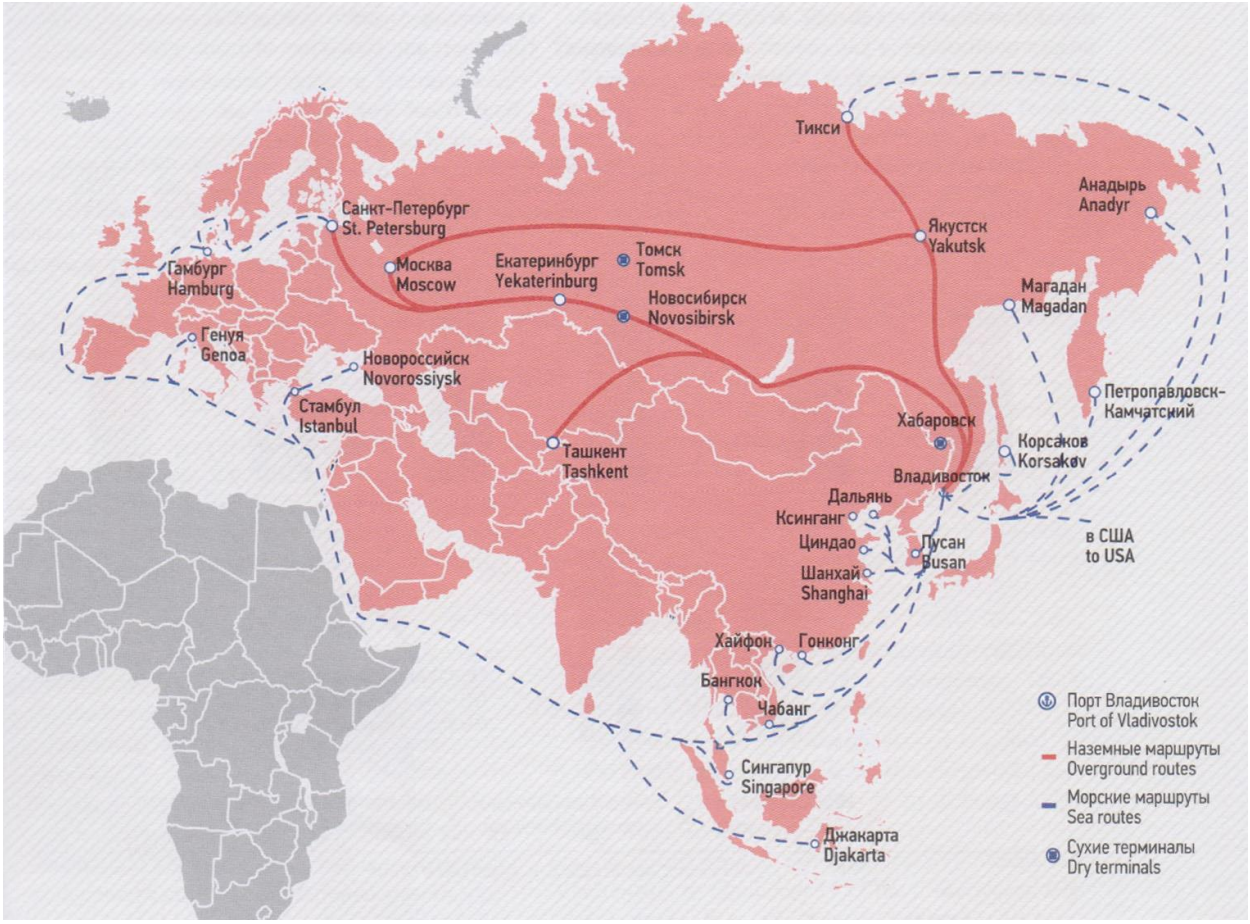
FESCO services provide, among other, for regular transportation based on the schedules of FESCO Shuttle container trains running on the Transsib - one of the innovative technologies of the railway transportation which allows FESCO organising fast container trains running in the territory of Russia.

Regular transportation by the flagman container train on the FESCO Moscow Shuttle route from the port of Vladivostok to the Silikatnaya station in Moscow is performed 9-12 times a week which provides the company with an opportunity to provide multimodal services from the major ports of China, South Korea, Japan and South-East Asian countries. The transit time from China via Vladivostok to Moscow is 28-33 days; the en-route time from Vladivostok to Moscow is 11 days.

Twice a week FESCO Siberian Shuttle container trains are dispatched from Vladivostok to Novosibirsk to the Novosibirsk-Vostochniy station. The transit time from the ports of South-East Asia via Vladivostok to Novosibirsk is 25-30 days, the en- route time from Vladivostok to Novosibirsk is 7 days. Every week containers from South-East Asia are delivered through the FESCO Ural Shuttle line to Yekaterinburg in 32-37 days, including the section from Vladivostoc to Yekaterinburg covered in 9 days. The Shuttle technology is also well-proven on the Moscow-Novosibirsk, Moscow-Khabarovsk routes. The 'Baltica-Transif Service delivers cargo from the Baltic states to Kazakhstan, Central Asian countries, Afghanistan and China.

In March 2015, FESCO opened a new line in regular services of South-East Asia - Vladivostok - Saint-Petersburg: the FESCO Baltic Shuttle service (FBS). The railway haul of FBS is the route from the Vladivostok station to the Shushary station in Saint-Petersburg. FBS is dispatched from Vladivostok once a week in accordance with the schedule.

Figure 1.21
Regular FESCO Intermodal Services



Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

FESCO Shuttle container trains

FBS (FESCO Baltic Shuttle) - Vladivostok - Saint-Petersburg

Regular transportation of cargo from the ports of South East Asia to Saint-Petersburg via Vladivostok on the basis of line maritime and railway service schedules. It includes forwarding in the port, terminal processing, provision of container fleet and delivery to a warehouse.

The railway haul of the service is the route from the Vladivostok station to the Shushary station in Saint-Petersburg. The service is oriented towards the cargo heading from the ports of South-East Asia via the Vladivostok port, freight put together in the Far East Region, as well as the cargo of the third party forwarders.

The service is organised as a loop route with a return dispatch from Saint-Petersburg to Vladivostok and via Vladivostok to SouthEast Asia and to the ports of the Far East of Russia - Petropavlovsk-Kamchatski, Magadan, Korsakov

FMS (FESCO Moscow Shuttle) - Vladivostok - Moscow

Regular transportation of cargo within container trains from the ports of South East Asia to Moscow on the basis of line maritime and railway serviceschedules, as well as forwarding in the port, terminal processing, provision of container fleet and delivery to a warehouse.

The railway haul of the service is the route from the Vladivostok station to the Silikatnaya station in Moscow. The service is oriented towards the cargo heading from the ports of South-East Asia via the Vladivostok port, freight put together in the Far East Region, as well as the cargo of the third party forwarders.

FMSe (FESCO Moscow Shuttle eastbound) - Moscow - Vladivostok

Return service from Moscow to Vladivostok and the ports of South East Asia on the basis of line maritime and railway service schedules.

FSS (FESCO Siberian Shuttle) - Vladivostok - Novosibirsk

Regular transportation of cargo within container trains from the ports of South East Asia to Novosibirsk on the basis of line maritime and railway service schedules, as well as forwarding in the port, terminal processing, provision of container fleet and delivery to a warehouse.

FSSe (FESCO Siberian Shuttle eastbound) - Novosibirsk - Vladivostok

Return service from Novosibirsk to Vladivostok and the ports of South East Asia on the basis of line maritime and railway service schedules.

FUS (FESCO Ural Shuttle) - Vladivostok - Yekaterinburg

Regular transportation of cargo within container trains from the ports of South East Asia to Yekaterinburg on the basis of line maritime and railway service schedules, as well as forwarding in the port, terminal processing, provision of container fleet and delivery to a warehouse.

FTS (FESCO Tashkent Shuttle) - Vladivostok - Tashkent

The route of public multimodal service, which part is formed with the FESCO Tashkent Shuttle train service, originates in the ports of South-East Asia via Vladivostok and heading further to the Chukursay station in Tashkent. The final destination point is the new ULS container terminal. Currently the frequency of the train service departures is twice a month.

The capacity of one train is 150 TEU. The basis of the cargo transported is constituted by consumer goods, chemicals, electronics, automotive spare parts, construction materials, equipment.

The FESCO Tashkent Shuttle service is public, so it is available for FESCO clients and clients and forwarders of containers belonging to different shipping companies and cargo owners.

The transit time of the whole railway route from Vladivostok to Chukuray is 12 days, the return trip of containers after unloading in Tashkent is 12 days. The multimodal route also implies a possibility of delivering cargo based on the ‘final mile’ principle, i.e. to the client’s door in the range of 500 km from the final destination point.

FAS (FESCO Amur Shuttle) - Moscow - Khabarovsk

Regular cargo transportation within container trains from Moscow, the Silikatnaya station, to Khabarovsk, the KrasnayaRechka station.

FASw (FESCO Amur Shuttle westbound) - Khabarovsk - Moscow

Regular cargo transportation within container trains from Khabarovsk, the KrasnayaRechka station to Moscow, the Silikatnaya station.

The en-route time from the departure station to the destination station is 10 days. Dispatches from Khabarovsk are carried out once a week according to the schedule.

Within FASw it is provided for the complete complex of logistics services, including the services of forwarding, terminal processing, provision of container fleet and delivery to a warehouse. It is available to dispatch within the train both FESCO containers and containers of a consignor.

FOS (FESCO Ob Shuttle) - Moscow - Novosibirsk

Regular cargo transportation within container trains heading from Moscow to Novosibirsk.

FLS (FESCO Lena Shuttle) - Moscow - Yakutsk/ Berkakit; Vladivostok - Yakutsk

FESCO Lena Shuttle is dispatched once in 10 days on the Moscow - Berkakit (the station of Amur-Yakutsk railway, the Neryungrinskiy sub district) and Moscow - Yakutsk routes. The transit time to Berkakit is 15-17 days, and to Yakutsk it is 21-23 days.

Within FESCO Lena Shuttle it is provided for the possibility of the service between Vladivostok and Berkakit. The dispatches from Vladivostok will be carried out once in 6-10 days. The transit time will be 6-8 days.

FESCO Lena Shuttle operates in a door-to-door format providing the opportunity of delivering cargo to the point of receipt. It is available to dispatch within the train both FESCO containers and containers of a consignor.

Container services to/from Mongolia

The ‘Mongolian Vector’ train is in service since 2002 running from Europe to Mongolia on the Brest - Ulan-Bator route.

The train is dispatched from Brest on a regular basis on the 10th, 20th and 30th day every month. The transit time en-route from Brest to Ylan-Bator (7,340 km) at the end of 2014 was 12.36 days.

Starting from 1 March 2005 the route of the ‘Mongolian Vector’ container train was extended to China on the Hohhot (China) - Erlyan - Naushki - Brest - Duisburg route (9,821 km) via Mongolia, once a month, with the transit time of 17.97 days. In 2006, approximately 600 containers TEU were transported in both directions. The ‘Mongolian Vector’ container train is in service within the framework of the joint ESCAP and OSJD project ofimproving the effectiveness of the Euro-Asian railway routes.

Starting from May 2014 a China - Europe train started its service on the Erlyan - Naushki - Brest route. The train is dispatched once a month. Thus, currently there is a loop route between Europe and China which the container train runs in both directions on.

Figure 1.22
Mongolian Vector Container Block Train Route

Source: Annual TSR Digest 2015. Coordinating Council on Trans-Siberian Transportation International Association, 2016

I.3. Euro-Asian transport flows

At the moment the Eurasian trade is provided primarily by maritime routes.

In should be noted that the term "maritime route" used here actually means the intermodal transport chain containing shipping services from Chinese to European ports, port transshipment and the surface leg executed by rail or truck (or both of them). The sea section of such a route is the longest part of the trip; besides that, the ocean shipping lines often arrange the entire delivery and value added services acting as intermodal transport operators.

The railway links between China and Europe via the Central-Asian countries are the object of the growing interest since they can offer transport products competitive under certain conditions. The main advantage of rail connection is faster delivery. Several multinational companies have started operating regular container block trains using different routes across the EATL zone. Some of the successful services of this kind are described in section **.

However, the land bridge cannot—and likely will never—compete (in full meaning of the word) with the maritime option because the potential throughput of overland routes is limited by 1–2percent of what is carried by sea. But it may well establish itself as a complement to shipping to increase the reliability of time-sensitive supply chains involving manufacturing production sharing, such as high-value components in the automotive or computer industries.

I.3.1. Maritime routes situation

As it was mentioned, maritime transport is the dominating mode in the Euro-Asian trade.

Partially it reflects the general leading position commercial shipping holds in global trade thanks to its incomparable economies of scale and punctual regular services highly valued in modern supply chains.

On another hand, maritime transport shows high market flexibility that helps the industry to survive through the crisis and keep the customers loyal. At least, three issues should be mentioned in this connection: slow steaming, shipping alliances and flexible rates.

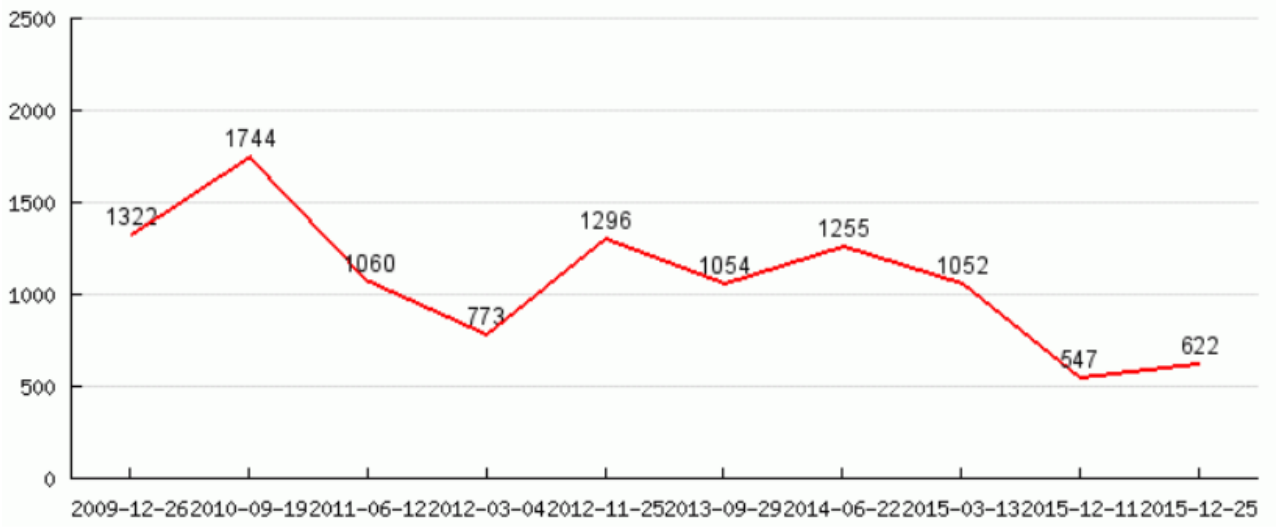
Slow steaming concept- reduced vessel speeds to save fuel and cut costs -adopted now by the majority of shipping lines is one of the important features that changed the maritime business since the 2009 crisis.

According to Clarksons Research, prior to implementing slow steaming, a typical structure for a service from the Far East to Europe included eight ships in operation to maintain weekly calls over a period of 56 days for full rotation (28 days for one leg). With the implementation of slow steaming, the number of operated vessels had increased to ten to maintain weekly calls, while transit times increased to 70 days for a full rotation (35 days for one leg). At the same time, such a speed reduction can impact almost 50% of the bunker cost of a mega-containership and a little bit more on the cost of a 5,000 TEU's ship. Besides, slow steaming obviously decreases environmental pollution which is a good news for "green-focused" customers.

Many shippers accept a shift to slow steaming since decreased tariff seems very attractive under the crisis pressure. However, others with more expensive merchandise oppose the practice due to increased pipeline inventory associated with longer transit times.

There is no generally accepted opinion about the future of slow steaming. But anyway it gives a chance for surface rail operators to offer new services to customers who believe that slow steaming parameters are not acceptable for their supply chains.

Figure 1.23
China forwarders freight index, China-Europe trade lane, 2010-2016



Source http://en.shippingchina.com/scfi/index/detail/line_id/3/date1/2010-01-01/date2/2016-01-01.html

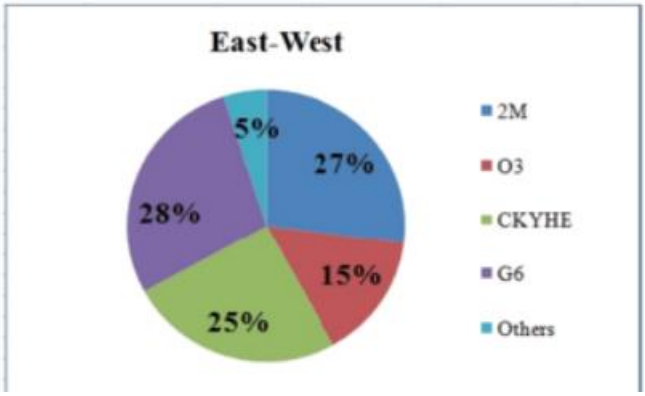
Shipping alliances creation is the market trend that reflects the market players' intention to establish the sustainable large-scale units that will be able to optimize the participants' assets utilization and services on the main trade lanes. Vessel-sharing within the alliance helps the carriers to increase service frequency without introducing extra vessels. Rate "harmonizing" within the alliances, although legally prohibited, is also said to take place.

At the moment there are four main container carrier alliances approved by the regulators in EU, US and China: 2M, Ocean 3, CKYHE and G6[1]. These structures control more than 70% of the cargo volumes moving in the major east-west trades.

The exact impact of this new alignment of the major container ship operators has yet to be fully assessed. Shippers are advocating greater scrutiny and the need to conduct reviews to determine how the alliances are impacting on the industry. But anyway the alliances seem to be the flexible instrument that maritime container carriers will use on the East-West trade lane to strengthen their market position.

[1]Thefour alliances mentioned include the following carriers: 2M - Maersk and Mediterranean Shipping Co., Ocean 3 - CMA CGM, United Arab Shipping Co. and China Shipping, CKYHE - Cosco, "K" Line, Yang Ming, Hanjin, Evergreen, G6 - APL, MOL, Hyundai Merchant Marine, OOCL, NYK Line, Hapag-Lloyd.

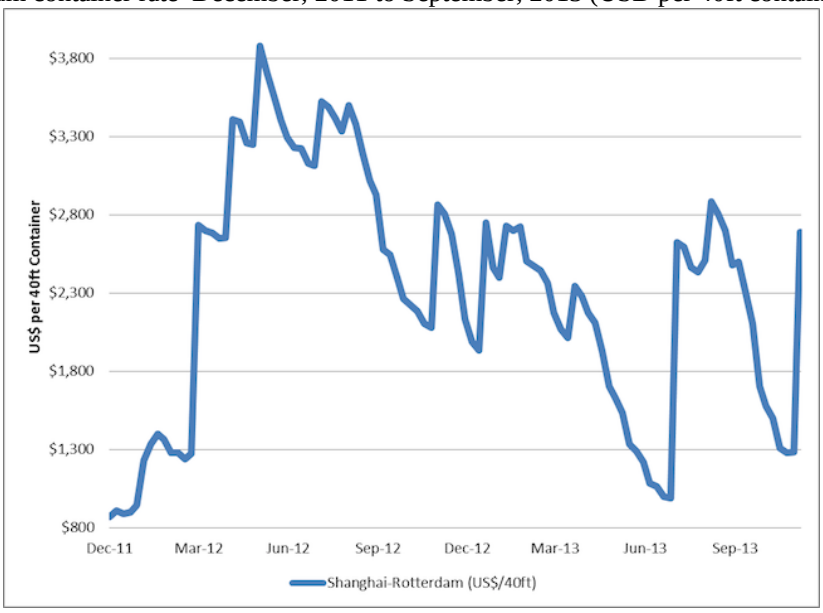
Figure 1.24
Market share of alliances on the East-West trade lanes



Source: https://www.flexport.com/blog/what-are-ocean-alliances

Flexible rates is one of the main market instruments of ocean container carriers. Their prices promptly reflect the changes of the market situation thus keeping the business competitive. The crisis period illustrates that very well. Figure 1.25 shows the dynamics of the Shanghai – Rotterdam container rate from December, 2011 to September, 2013. In the beginning of the period the rate per 40ft container increased from about $800 up to $3800 during the 4 months period and then fell down to $2300 in the next 6 months following the market conjuncture.

Fugure 1.25
Shanghai – Rotterdam container rate December, 2011 to September, 2013 (USD per 40ft container).



Source: Drewry

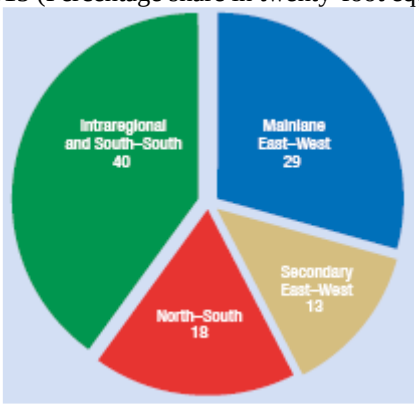
The EATL routes in their competition with maritime routes can't show such a flexibility. National railway companies operating on the Eurasian lanes have to follow the tariff agreements and sometimes get the rate change approval from the governmental agencies - which is usually a long enough procedure which is not keeping pace with market changes.

The above shown example also demonstrates that simple comparison of average rates on the EATL routes and on maritime routes that is often discussed does not show the actual picture. It

should be recognized that in any case maritime operators react to market fluctuations much faster and more accurate than the railway enterprises.

In 2015, total containerized trade across the mainlane East–West, secondary East–West, intraregional, South–South and North–South routes recorded a significant slowdown, with volumes increasing by 2.4 per cent to reach 175 million TEUs (figure 1.26).

Figure 1.26
Global containerized trade by route, 2015 (Percentage share in twenty-foot equivalent units)



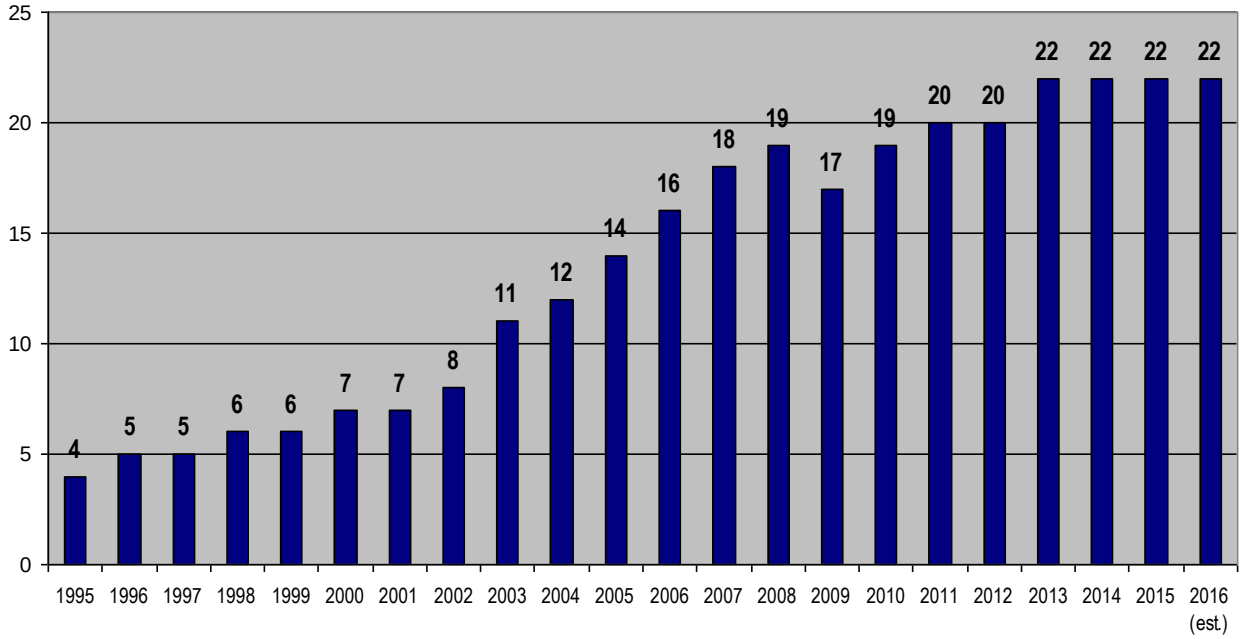
Sources:
UNCTAD (2016) Review of Maritime Transport
UNCTAD secretariat calculations, based on Clarksons Research, 2016.

Three main factors combined to limit containerized trade growth, namely, the decline in volumes on the head haul of the Eastern Asia–Europe trade route; the limited growth of North–South trade, owing to the impact of low commodity prices on the terms of trade and purchasing power of commodity exporting countries; and the pressure on intra-Asian trade resulting from the slowdown in China (figure 1.27).

Volumes on the mainlane East–West route increased by about 1.2 per cent in 2015, reaching 52.5 million TEUs (figure 1.28). Growth was constrained by negative performance (-2.2 per cent) on the headhaul of Europe–Asia trade, which reflected weaker import demand in Europe, adjustments in retail inventories, a weak euro and the negative impact of unilateral coercive measures on import volumes into the Russian Federation.

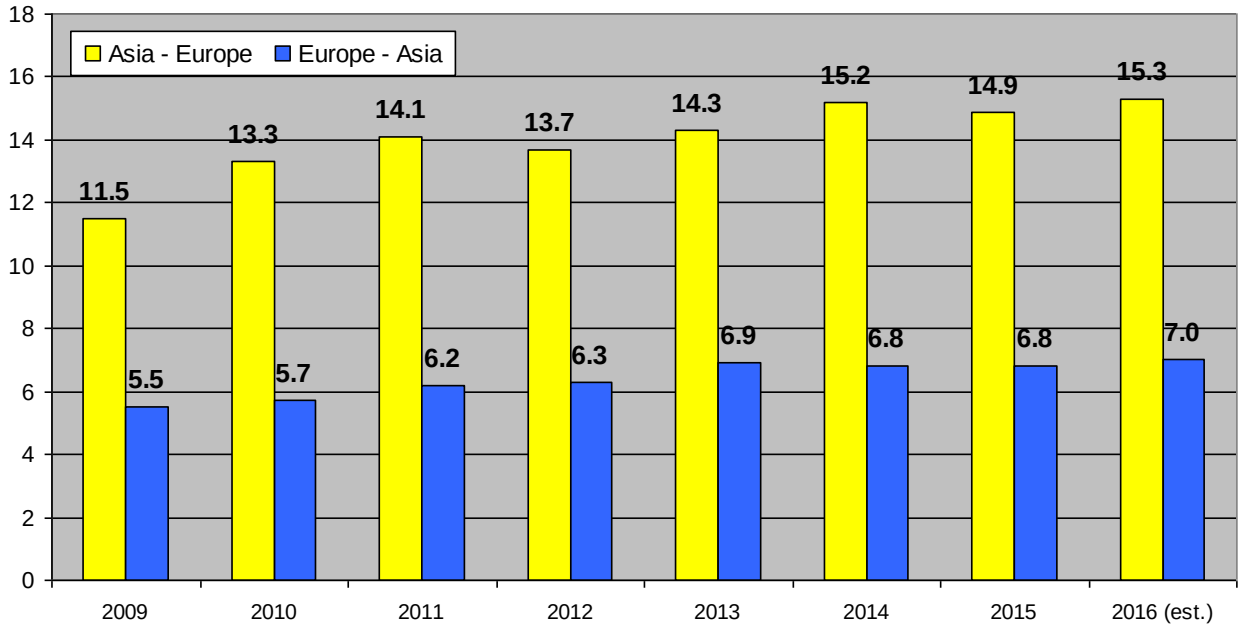
The decline in 2015 of European containerized trade seems inconsistent with data indicating that, during the year, intra-European trade growth outpaced the growth of trade between the European Union and the rest of the world. While intraregional imports grew by 1.4 per cent, imports from the rest of the world remained flat. The share of intraregional imports of total European imports increased from 60 per cent in 2007 to 65 per cent in 2015 (Danish Ship Finance, 2016). Combined with statistics showing a relatively strong demand in Europe for consumer goods during the year, it has been argued that a shift may be unfolding towards regional and closer-to-end-market sourcing of goods.

Figure 1.27.
Containerized cargo flows on major East–West container trade routes (million TEUs), 1995–2016



Source: World Maritime Review, 2016,
Container Trades Statistics Ltd (CTS), updated December 2016, available at: https://www.containerstatistics.com/

Chart 1.28
Containerized cargo flows on Asia-Europe and Europe-Asia container trade routes (million TEUs), 2009–2016



Source: World Maritime Review, 2016

Intraregional container trade expanded at an estimated 3.1 per cent in 2015. Intra-Asian trade – accounting for over two thirds of the total – expanded by 2.9 per cent, down from 6 per cent in 2014. The deceleration reflected the situation in China and the decline in imports in other economies in Asia, such as Indonesia and Japan. Intra-Asian trade continued to be supported, however, by the relocation of manufacturing centres from China to other areas in Asia and by

increased imports to the Philippines, the Republic of Korea and Viet Nam, as well as by robust growth on the Asia–South Asia route (Clarksons Research, 2016).

Overall, in 2015, containerized trade continued to face the upsizing of container ships. The average ship size in the global fleet increased at a cumulative annual growth rate of 1.9 per cent in 2001–2009 and 18.2 per cent in 2010–2015 (Davidson, 2016).

One study has noted that container ship size increases of up to 18,000 TEUs were likely to result in maximum cost savings for shipping and ports by only 5 per cent of total network costs, and that the economics of scale diminished as vessel sizes increased beyond 18,000 TEUs (Batra, 2016).

Some observers maintain that the costs of ever-larger ships may outweigh their benefits. The disadvantages include reduced service frequency, higher peaks in container traffic, greater pressure on the operations of cargo-handling services, rising terminal capital and operational costs, reductions in options available to shippers and higher supply chain risks with the concentration of trade in larger but fewer ships, as well as environmental effects arising from dredging deeper channels and expanding yard area. There will likely be a need for ports and lines to further cooperate,

including, for example, through terminal operator alliances, mergers and acquisitions, and joint ventures between the shipping industry and port terminals (Davidson, 2016). In 2015, consolidation activity heightened in the container shipping sector, leading to greater speculation about the future.

An immediate consequence of consolidation is the tendency for alliances to focus on reducing transit times and increasing reliability to attract shippers, at the expense of services and port calls (King, 2016).

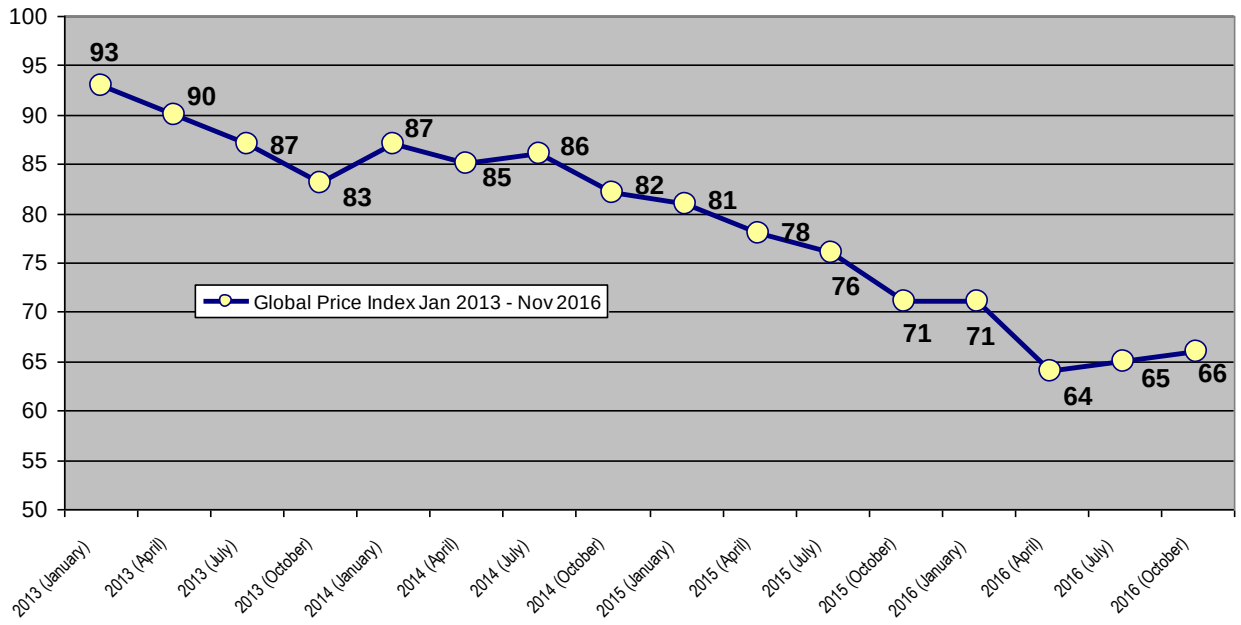
With regard to containerized trade, on 1 July 2015, a weight verification requirement was adopted under the International Convention for the Safety of Life at Sea (SOLAS), requiring shippers to verify the gross mass of shipped containers by weighing either the containers and contents combined or individual items in a container. Some observers expect the charges associated with the new requirement to increase ocean freight transport costs by over 10 per cent (Waters, 2016).

Container freight rates declined steadily, reaching record low prices as the market continued to struggle with weakening demand and the presence of ever-larger container vessels that had entered the market in 2015. As illustrated in figure 1.29 global container shipping demand slackened in 2015-2016. The segment recorded its slowest growth rate since 2010 – 2 per cent, compared with 5 per cent in 2014. At the same time, sluggish demand was challenged by an accelerated massive global expansion in container supply capacity, estimated at 8 per cent in 2015 – its highest level since 2010. This represented a slight increase over 2014, when container supply capacity stood at 7 per cent.

The limited growth in container demand in 2015 can be attributed to several factors, including weak European demand, which had an impact on peak leg trade between Asia and Europe, and low commodity prices, in particular of iron ore and crude oil. This affected the economies, and in particular the imports, of commodity-dependent developing countries, mainly in Africa and Latin America. Another contributing factor was slower economic activity in China, which also had an impact on intra-Asian trade growth (Clarksons Research, 2016).

Oversupply of fleet was mainly prompted by the use of larger vessels among major carriers striving for greater efficiency, economy of scale and market share, as well as by the new IMO Tier III requirements concerning sulphur oxides (SO_x) and nitrogen oxides (NO_x) that went into effect on 1 January 2016 in the North American and the United States Caribbean emission control areas. As noted in chapter 2, 211 new container ship deliveries entered the market in 2015. These new ships added some 1.7 million TEUs to the global fleet (with 87 per cent of this volume increase in the 8,000+ TEUs sector) (Clarksons Research, 2016).

Figure 1.29
Container Global Aggregated Price Index, January 2013 – October 2016



Source: Container Trades Statistics Ltd (CTS), updated December 2016, available at: https://www.containerstatistics.com/

This put freight rates under massive pressure. Both mainlane and non-mainlane freight rates struggled to cope with volatility and strong downward pressure, reaching a record low in 2015. Average spot freight rates on all trade lanes dropped significantly, some more than others, as shown in table 1.18. The Far East–Northern Europe trade route freight rates, for example, averaged as low as $629 per TEU in 2015, down by almost 46 per cent from the 2014 average and by 65 per cent, compared with rates in 2010. In contrast, Far East–Mediterranean spot rates fell by 41 per cent, reaching $739 per TEU, a decline of 41 per cent, compared with rates in 2014, and almost 58 per cent less than rates in 2010.

Given the challenging market conditions, the expected profits from the new large and more efficient ships that had entered the sector did not materialize and led to further financial distress for some major carriers. This resulted in a decline in revenues for the major shipping companies, from $204 billion in 2011 to $173 billion in 2015 (AlixPartners, 2016a).

Table 1.18
Container freight markets and rates on trade routes Far East – Europe (U.S. Dollars per TEU)

Freight markets	2009	2010	2011	2012	2013	2014	2015
Shanghai – Northern Europe	1395	1789	881	1353	1084	1161	629
% change		28.24	-50.75	53.58	-19.88	7.10	-45.82
Shanghai – Mediterranean	1397	1739	973	1336	1151	1253	739
% change		24.49	-44.05	37.31	-13.85	8.86	-41.02

Source: World Maritime Review, 2016

High fleet growth proved to be difficult to manage because most trade lanes had been oversupplied with tonnage. The new megaships that entered service were deployed on the Far East–Northern Europe trade route at a time when trade was slowing down. In addition, their entry into service produced a cascading effect, with larger vessels replacing smaller ships on routes that were already struggling with oversupply. Large container ships that had formerly serviced the Far East–Northern Europe trade route were, for instance, deployed into the trans-Pacific trade route, and former trans-Pacific ships were reassigned to the transatlantic route. Despite efforts to increase the idling of container ship capacity, which soared to 1.36 million TEUs at the end of 2015, compared with 0.23 million TEUs at the beginning of 2016 (BRS Group, 2016), carriers were not able to absorb the new surplus capacity (see chapter 2). Global idle container ship capacity represented 6.8 per cent of existing fleet capacity in 2015, a record high, not seen since 2009, when idle fleets had reached 1.5 million TEUs, or11.6 per cent of fleet capacity) (BRS Group, 2016).

In an attempt to overcome supply and demand imbalance and low freight rate levels, carriers imposed several rounds of general rate increases in 2015, all of which were unsuccessful. Despite low fuel prices, slow steaming remained another key practice used by carriers to absorb excess tonnage – increasing voyage times, reducing ship call frequency at a given port and optimizing the operations of larger vessels by increasing their occupancy rate. Slow steaming is estimated to have absorbed some 2.5 million TEUs of nominal capacity since the end of 2008 (Clarksons Research, 2016c).

Further, vessel scrapping helped somewhat to offset some of the influx of new tonnage by removing 201,000 TEUs of older ships from the global fleet. This figure accounted for only 11.7 per cent of the newbuilding deliveries (BRS Group, 2016).

On the other hand, low bunker prices allowed carriers to reduce operating costs and cover some of the losses incurred from falling freight rates in 2015. Bunker prices averaged $278 per ton, registering a 10-year low of $140 per ton in December 2015. This was a 49 per cent drop. compared with the average price of $547 per ton in 2014 (BRS Group, 2016). However, the benefits gained from low bunker prices, which allowed carriers to maintain unit costs below unit revenue, were not sustainable because of the persistent decline in freight rates throughout 2015.

A case in point is Maersk, the world's largest container shipping company, which experienced a decline in net profit of 82 per cent. (JOC.com, 2016).

The severe market turmoil witnessed by the container shipping industry in 2015 led to wider consolidation as a means for shipping companies to effectively manage current and future tonnage capacity, increase scale and reduce costs and thus improve profitability in the face of low revenues. The beginning of 2015 was marked by the merger in December 2014 between Compañía Sud Americana de Vapores and Hapag-Lloyd, and the acquisition of Compañía Chilena de Navegación Interoceánica by Hamburg Süd in March 2015. This was followed by the merger of China Ocean Shipping Company and China Shipping Container Lines, as well as the announcement of the acquisition of Singaporebased Neptune Orient Lines and its American President Lines brand by the French line CMA CGM, in December 2015 (the transaction was concluded in June 2016).

These two transactions paved the way for larger carriers to become even bigger. For instance, CMA CGM reinforced its position as a leader in the container shipping industry, reaching a capacity of approximately 2.35 million TEUs, with an estimated market share of 11.7 per cent and a fleet of some 540 vessels (American President Lines, 2016).

The reinforcement of alliances between carriers was a trend that continued throughout 2015. The top five carriers are expected to control more than 50 per cent of the market by the end of 2016, compared with only 23 per cent in 1996 (BRS Group, 2016). In this respect, the beginning of 2015 saw the consolidation of the five leading carriers into two new alliances (East–West): the 2M alliance (Maersk and the Mediterranean Shipping Company) and the Ocean Three alliance (CMA CGM, China Shipping Container Lines and the United Arab Shipping Company) (BRS Group, 2016). In early 2016, the Hyundai Merchant Marine, a major shipping line of the Republic of Korea, entered negotiations to join the 2M alliance (*The Wall Street Journal*, 2016).

Nevertheless, the rising level of industry concentration and consolidation failed to limit the severe market disarray and sharp drop in freight rates witnessed in 2015. The establishment of new alliances and rounds of restructuring may continue, as it is unlikely that the market will stabilize in the near future. Moreover, the global shipping infrastructure is facing deep challenges caused by the arrival of mega-container ships. Port infrastructure and hinterland connectivity need to expand and adapt to the new requirements of larger ships. This will entail investments in infrastructure – bridge height, river width/depth, quay walls, container yards – and port equipment, as well as the recruitment of more highly skilled staff to operate and handle increasing volumes efficiently and safely. It is estimated that transport costs related to mega-ships may increase by $0.4 billion per year (one third for extra equipment, one third for dredging and one third for port infrastructure and hinterland costs) (Organization for Economic Cooperation and Development and International Transport Forum, 2015). This may suggest that cooperation and consolidation between carriers could be further reinforced, taking various forms in the future, including through vertically integrated activities such as joint investments in land, port and hinterland transport operations to optimize their business and provide a comprehensive solution to remain competitive. However, growing concentration may squeeze out smaller carriers and result in an oligopolistic market structure.

Charter rates for container ships also followed the same patterns of fluctuation and downturn. Charter rates started 2015 on an upward trend until the charter market plunged again near the middle of the year, affected by weak trade growth, the availability of large quantities of chartered ships and increased container ship idling capacity. As illustrated by the Container Ship Time Charter Assessment Index (New ConTex), container ship time charter rates remained low in 2015, with an estimated average of 460 points, even when they appeared to have improved from the previous yearly average of 364 points. These rates continued to drop during the first half of 2016, reaching some of their lowest levels of the last five years and breaking below operating costs. The largest time charter segments, Panamax and Sub-Panamax, were especially affected, experiencing a decline of more than 50 per cent since May 2015. The one-year time charter for Panamax vessels was fixed at $6,000 per day at the end of 2015, compared with $10,150 per day at the end of 2014, and $15,000 per day in mid-2015. In contrast, the one-year time charter rate for a Sub-Panamax vessel dropped to $6,500 per day at the end of 2015, compared with $8,000 per day at the end of 2014, and $11,750 per day in mid-2015 (Clarksons Research, 2016c).

Problems affecting the container freight market in 2015 can be traced to diverging and persistent global supply-and-demand trends and growing imbalances. This situation is expected to continue throughout 2016 and 2017, when carriers with capacities of up to 21,100 TEUs will be in service. Despite weakening demand and low freight rates, carriers continued to invest in larger vessels in 2015. The global container ship fleet is projected to grow by 4.6 per cent in 2016 and another 5.6 per cent in 2017 (AlixPartners, 2016a). Such a pace would continue to outstrip global container demand and exacerbate market fundamentals and in turn challenge container ship market conditions and freight rates in the short term, especially on the mainlanes (Clarksons Research, 2016c). Consequently, poor performance is also expected and may result in further consolidation and restructuring of the container shipping industry.

I.3.2. EATL main routes general overview

During the stage I the EATL project had identified a strategy for the development of Euro-Asian Transport Links, taking into account the major routes along the four main Euro-Asian Corridors that had been previously agreed upon at international level and that represent an extension of the Pan-European Transport Corridors further eastwards. It was also decided, on the one hand, that major routes along these corridors should encompass intermodal aspects, including transshipment points, and, on the other hand that border crossing problems should be addressed.

The project had identified the rail, inland water and road transport linkages that are of central importance in tackling the following interrelated problems:

- to develop transport options alternative to maritime transport between Asia and Europe;

- to better connect the landlocked countries of Central Asia and the Caucasus with the global markets;

- to improve conditions for trade within EATL area itself, primarily – in the Central Asian region.

The identified EATL routes therefore not only aim at improving connectivity amongst EATL countries, but also at connecting the EATL with other existing transport networks in Europe and Asia. Among them are the Trans-European Transport network (TEN-T network) in EU-28, the Pan-European Transport Corridors (PETC), the TRACECA and the rail and road networks in Asia.

The nine rail and nine road routes constitute the core infrastructure network for the transport links between Europe and Asia across Central Asia and the Caucasus. The routes stretch over more than 10 000 kilometers in the East-West direction, and cross over 15 countries.

Specifically, the EATL rail routes extend the Trans-European Railway (TER) network eastward and connect it with the Trans-Asian Railway Network (TAR).

The EATL road routes connect the Trans-Asian Highways (TAH) with the TEN-T routes. Many of the EATL routes also coincide, either fully or partially, with other road networks and corridors, such as the TRACEA, PECT, the six Central Asia Region Economic Cooperation Program (CAREC) corridors, and the Organization for Cooperation of international Railways (OSJD) rail corridors.

As the quality of physical infrastructure of the EATL routes is uneven and gaps in the network exist, the EATL project had identified and prioritized infrastructure investment needs to close existing gaps as well as upgrade and modernize infrastructure, equipment and facilities along the routes (i.e. electrification of railways, building and upgrading container depots or intermodal terminals).

I.3.3. EATL rail routes and railway transport

Out of the nine EATL rail routes, six are in the East—West Direction, and three in the North—South direction. The rail routes 1 and 2 are already used by regular or ad-hoc freight trains connecting Asia, East Russia and Europe.

The EATL **Rail Route 1** (known also as the Trans-Siberian route) is over 10 000 km long, its branchesstretching from the eastern borders of the EU (Finland, Hungary, Poland, Lithuania) to the Russian Pacificport of Nakhodka and the Russian-Chinese border. Route 1 extends the Pan-European Transport Corridors (PETCs) II, V and IX eastwards. Its principal advantages include a small number of border crossings,the electrified traction and the uniform (1520 mm) gauge. Parts of the route situated within the Europeanpart of the Russian Federation belong to the E-rail and E-combined transport networks. Most of the routeis also part of the TAR network. At present, Route 1 provides the backbone for the long-distance surfacecontainer transport between Europe and East Asia. The capacity of Rail Route 1 in the eastern part of Russia is limited; at the moment it is planned by the Government of Russia to increase it and to modernize the Trans-Siberian railway having in mind not only the Euro-Asian traffic but the socio-economic development of the entire region.

EATL **Rail Route 2** spans over more than 8 000 km from the eastern borders of the EU with Belarusand Ukraine across the Russian Federation, Kazakhstan and Eastern China to the ports of Lianyungangand Shanghai. Route 2 extends PETCs II and IX towards Asia with most parts of this route belongingto the TAR network. It coincides with Route 1 on the sections between the EU borders and the city ofYekaterinburg in central Russia. Compared to Route 1, there are some disadvantages: firstly, the broad1520 mm gauge changes at the Kazakh-Chinese border to the 1435 mm standard prevailing in China; secondly, sections of Route 2 have not been electrified; thirdly, there are two additional border crossings and, lastly, the capacity of the section between Kazakhstan and the Chinese ports is limited.

The main branch of the EATL **Rail Route 3** leads from the south-eastern EU border (Hungary-Romania)to the Lianyungang and Shanghai ports. Route 3 extends PETCs IV, VIII and IX as well as the TRACECAto Eastern China; significant parts of the route belong to the TAR network. Route 3 includes two ferrycrossings, from Constanta on the Romanian Black Sea coast to the Georgian ports of Batumi or Potiand from the Azerbaijan port of Baku on the Caspian Sea to the Aktau port in Kazakhstan. Before reachingChina, Route 3 and its branches pass through a significant number of countries and border crossings;gauge changes are necessary at the borders of EECCA countries with China and Romania.

The EATL **Rail Route 4** provides an alternative link between South-Eastern Europe and the Lianyungangand Shanghai ports, passing through Bulgaria, Turkey, Iran, Uzbekistan and Kazakhstan. It provides anextension to PETCs IV, VIII, X and the TRACECA route to the Chinese seaboard, also with parts ofthe route belonging to the TAR network. There are two limitations to that route: there are two gaugechanges (Iran-Turkmen border and the Kazakh-Chinese border) and large sections of Route 4 have not been electrified yet.

The EATL **Rail Route 5** connects northern Europe to Iran, extending from the Finnish-Russian bordersouthward to the Caspian Sea and terminating at the port of Bandar Abbas in the Persian Gulf. Almostthe entire route is part of the TAR network. For the time being, the capacity of Route 5 is limited by the bottlenecks on the Iranian side of the Caspian Sea where major installations in the Anzali port and Rasht remain incomplete. When the construction work is completed, Route 5 could significantly reducefreight transport times between Iran and the EU.

The EATL **Rail Route 6** provides an alternative connection between the eastern borders of the EU (Hungary,Poland) with Russia's Pacific coast, while moving across Ukraine and Russian Federation (south of Route1) towards the port of Vladivostok as well as traversing briefly the Kazakh territory. Route 6 providesan extension of PETCs III, V and IX towards the Pacific Ocean. Again, parts of the route belong to theTAR network.

The EATL **Rail Route 7** provides an alternative connection between the EU and the Lianyungang andShanghai ports, passing through the territory of Ukraine, the Russian Federation, Kazakhstan, Uzbekistanand China. It extends PETCs III and V given that the whole route belongs to the TAR network. Large sections of Route 7 on the Kazakh, Uzbek and Chinese territory are not electrified.

The EATL **Rail Route 8** passes from Poland to Ukraine, southern Russia, Georgia and Azerbaijan tothe Iranian border at Astara. Thus it provides another extension to PETCs III and V with most parts ofthe route belonging to the TAR network.

The EATL **Rail Route 9** provides a connection from the northern Europe through the Russian Federationto Central Asia (Kazakhstan, Uzbekistan and Tajikistan). Significant parts of the route belong to the TAR network. Since long sections of Route 9 are not electrified, the capacity of the route is subject to limitations.

Figure 1.30
Scheme of EATL Rail Routes

Source: UNECE

Table 1.19
EATL Rail Routes

1	**"Trans-Siberian Railway, Northern Road"**
	West (N and E EU (Finland, Latvia, Lithuania, Poland, Hungary)) to East (Russia Pacific)
	Countries crossed[22]: Russia, Belarus or Ukraine
	Number of gauge changes: 0
2	**"Trans-Siberian Railway, Southern Route"**
	West (N and E EU (Finland, Lithuania, Poland, Hungary)) to East (China)
	Countries crossed: Ukraine, or Belarus, Russia, Kazakhstan, China
	Number of gauge changes: 1 (Kazakhstan/China)
3	West (SE EU (Hungary, Romania, Bulgaria) through Caucasus and Central Asia to East (China)
	Countries crossed: Moldova, Turkey, Georgia, Azerbaijan, Armenia, Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan, China
	Number of gauge changes: 1 (Kazakhstan/China) Number of ferry crossings: 2 (Caspian and Black Sea)
4	**"Southern Silk Road" or "Trans Europe-Asia Route"**
	West (SE EU (Bulgaria) through Iran and Central Asia to East (China)
	Countries crossed: Turkey, Iran, Turkmenistan, Uzbekistan, Kazakhstan, China
	Number of gauge changes: 2 (Iran/ Turkmenistan, Kazakhstan/China
5	North (N EU (Finland)) through Caucasus and Central Asia to South (Iran)
	Countries crossed: Russia, Azerbaijan, Iran, Turkmenistan, Kazakhstan, Uzbekistan
	Number of gauge changes: 1 (Kazakhstan/China Number of ferry crossings: 1 (Black Sea)
6	West (E EU (Hungary, Poland)) to through Central Asia to East (Russia Pacific Coast)[23]
	Countries crossed: Ukraine, Moldova, Russia, Kazakhstan
	Number of gauge changes: 0
7	West (E EU (Hungary and Poland)) through Central Asia to East (China)
	Countries crossed: Ukraine, Kazakhstan, Uzbekistan, China
	Number of gauge changes: 1 (Kazakhstan/China
8	North (N and E EU (Latvia, Poland and Lithuania)) through Caucasus to South (Azerbaijan, Iran)
	Countries crossed: Ukraine, Russia, Georgia, Azerbaijan, Iran
	Number of gauge changes: 1 (Azerbaijan/Iran)
9	North (N EU) Finland) and Baltic Russia) through Central Asia to South (Central Asia)
	Countries crossed: Russia, Kazakhstan, Uzbekistan, Tajikistan
	Number of gauge changes: 0

Kazakhstan and Uzbekistan, the largest economies in the Central Asian region and the countries with the most developed rail networks, carry the greatest volumes of freight transported by rail in Central Asia. The rail routes of the region going primarily via these countries serve two complementary purposes: to support the Central Asian countries' trade with Russia and Europe or with China and to provide opportunities for Euro-Asian transit trade.

Distance is one of the main factors influencing the modal choice. The land route from the North-Western Xinjiang Uygur region of China to destinations in Germany exceeds 7 thousand kilometers. The distance between Almaty (Kazakhstan) and major economic centers in China is over 4 thousand kilometers which compares with crossing the United States from coast to coast.

Taking into account the typical distances on the EATL network and the absence of the inland water routes railways should be the dominating mode developing very fast. Unfortunately, the EATL railways face the common problem – national borders.

These borders do not only cause the delays for border-check and customs formalities. If so, the interruption and the fragmentation of the railway traffic could probably have been successfully removed. But the existence of national borders separates national railway systems which, in turn, leads to fragmentation of railway services.

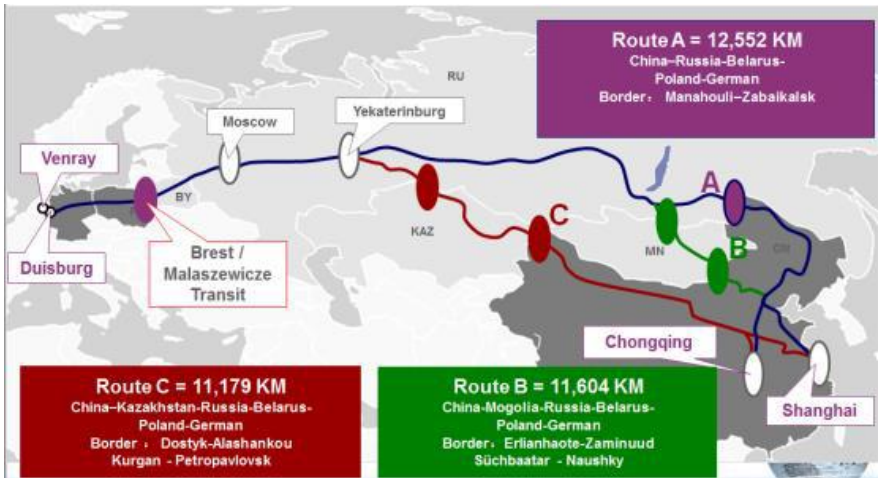
Different technological standards (including different gauge), different types of electric power traction, different tariff systems, different management principles, uneven quality and capacity of network sections and, finally, the contradictory economic interests of neighboring railways, all brought together, create a serious problem of railways interoperability. It is enough to say that the European railway reform carried on for 15 years within the integrated economic environment and aimed to solve the same problem is far enough from successful ending.

In spite of that numerous logistic companies operate Euro-Asian railway services using the principle advantage of the surface route – shorter lead time in comparison with maritime routes. Some of the cases are described in the next paragraph.

Railway container services across the EATL routes

COSCO Logistics.COSCO Logistics, the largest 3PL in China uses the routes shown in the Figure 2.6. The commodities transported include equipment, tools and building materials for cement production, electrical power station equipment including capacitor set, capacitor voltage transformer substation, and monitoring system and finally well drilling, logging, and well cementation for Kazakhstan oil fields. Currently, COSCO is examining other options with combination of sea and rail transport for transportation between China and Europe. One of the options is for the cargo to enter Europe through the port of Piraeus in Greece and then be transported by rail to central and northern Europe. [IDWP#5]

Figure 1.31
COSCO Logistics railway routes



DHL.Deutshce Post -DHL uses several routes to establish the services from Asia to Europe. Since 2011, DHL has been running a daily intermodal service from Shanghai to Moscow via the Trans-Siberian Railway. A weekly express freight train service was launched in 2013 from Chengdu in western China, across Kazakhstan to its cargo port in Poland and then in Russia and

Belarus by truck or train, with travel time of 12-14 days. The transported products are mainly electronics, machinery, pharmaceuticals and chemicals.

In January 2014 the company introduced the first temperature-controlled rail container service between China and Europe on a year-round basis. In March 2014, DHL Global Forwarding announced the development of rail-based forwarding services on the China-Europe route via a new joint venture called United Transport and Logistics Company (UTLC), which plans to operate door-to-door delivery times of 21 days[IDWP#5].

DB Schenker. In 1973 the company started providing rail services through the Eurasian land bridge by running the first container along the Trans-Siberian railway route. In 2008 the first train with goods between Beijing and Hamburg was launched and in the beginning of 2009 a weekly regular service between Shanghai and Beijing with Hamburg, Nuremberg and Duisburg was offered. The products transported are mainly from the automotive industry, chemical industry and manufactures of household goods. In 2009 in cooperation with the Russian Railways (RZD), DB Schenker Logistics established the Trans Eurasia Logistics GmbH.

DB Schenker operates also in the Northern rail route from Shanghai to Moscow and then to Duisburg through the Trans-Siberian line with a transit time of 18-20 days. In September of 2011 a regular train service began to operate for BMW on the route from Leipzig to Shenyang (eastbound). In November, a daily container train service was launched for this destination exclusively for BMW for automotive components. From 2012 the company offers a weekly service from Chongqing to Duisburg for IT customers. The transport time for a block train to reach its destination in Duisburg is 18 days. Further to this service, in September 2014 the first freight train run from Hamburg to Zhengzhou in China. The duration of the journey is around 17 days and is about 20 days faster than by sea. [IDWP#5].

KTZ Express.KTZ Express, established in 2013 and being the national multimodal transport and logistics company of Kazakhstan Railways (KTZ), provides rail freight services that take 16 days through Kazakhstan territory, twice or thrice less compared to sea shipping. The products transported are pharmaceuticals, farm produce and electronics with a focus on electronic companies that have their plants in Chongqing or to their suppliers such as Foxconn Technology for Apple Inc. and Acer Inc. Industries such as Hewlett Packard and Toyota Tsusho already use this rail route. There is also an interest from Europe for dedicated block train services to Asia for products such as fruit and automotive parts [23]. In October 2014, the company plans a new rail freight service from Shenzhen, Guangzhou, Wuhan and Xi'an to Europe, announced by the Governments of China and Kazakhstan [IDWP#5].

Yuxinou (Chongqing) Logistics Co., Ltd.TheYuxinou (Chongqing) Logistics Co., Ltd. provides freight railway services between Asia and Europe. One of the main services is the Yuxinou train which travels from China via Kazakhstan, Russia, Belarus and Poland to Germany with travel time 16 days. It's one of the weekly services leaving the industrial hub of Chongqing and having as customer electronic companies such as Hewlett-Packard Co., Acer Inc., Apple Inc. and supplier Foxconn Technology Co [IDWP#5].

The Far East Land Bridge Ltd.The Far East Land Bridge is one of the first logistic companies, which provided railway services between Europe and Asia and has its base in Vienna, Austria. In 2007 they started providing two-way container rail services via the Trans-Siberian Railway route and European and Chinese rail networks. The main customers of the company are industries such as BMW, Audi, Volkswagen and Samsung [IDWP#5].

Wuhan-Europe freight trains. The Wuhan-Europe freight train is express cargo train that carries containers between Wuhan and European cities. At present, Wuhan-Europe freight train links

Wuhan with over 20 countries, including Germany, Poland, Czech Republic, Russia, Belarus, 5 countries in Central Asia, etc. Besides customized trains and public trains, random trains and LCL services were also provided to serve small and micro enterprises.

In 2014, Wuhan-Europe freight train ran 4 lines, with two passing customs at Alataw Pass, and the other two passing customs at Khorgos and Manzhouli, respectively.

2015 has witnessed the opening of two-way freight trains linking Wuhan with Hamburg and Duisburg in Germany, as well as a "Russia-Manzhouli-Wuhan" timber train. A train linking Wuhan with Minsk of Belarus was launched on Sept. 24, 2015. Besides, the China-Europe freight train links Wuhan with Moscow on Oct. 24, 2015, forming a bilateral flow with the previous "Russia-Manzhouli-Wuhan" timber train.

Figure 1.32
Wuhan-Europe freight trains operation scheme (source – Hubay Government site)

In November 2015, Wuhan Asia-Europe Logistics Co., Ltd signed commerce and trade logistics strategic reciprocal agreement with 12 Chinese and Russian logistics companies. Wuhan Asia-Europe Logistics Co., Ltd. announced on January 5, 2016 that Wuhan freight trains ran a total of 164 shifts in 2015, carrying 14,912 TEUs. The growth rate exceeded 500%, ranking first nationwide. The main cargoes transported are:

- from Wuhan: electronic equipment, automobiles, clothes, general merchandise of companies including Foxconn, Dongfeng, AOC, WISCO, etc.;

- from Europe: plastic floor, plastic compression roller, auto parts, cosmetics, fishing gears, timber, etc.

It is planned that Wuhan-Europe freight train will extend operations westwards and establish offices in countries like France [19].

China Railway Express .China Railway Express Co., Ltd. was founded in 1993 and is based in Beijing, China. The first China – Europe container block train under the family brand "China Railway Express" arrived in Poland. On 8 June 2016 the train set off from station in Chengdu, the capital of the Chinese province of Sichuan, then crossed the territories of Kazakhstan, Russia and Belarus and arrived 12 days later in Warsaw.

The twenty-two carriage train delivered electronics goods and auto parts to the Polish State Railways (PKP) Cargo Terminal in Warsaw. The arrival of the China Railway Express marked

the opening of the New Silk Road - a Chinese project to open a new commercial route linking Asia and Europe. At the same time a container block train with Polish goods set off in the opposite direction to China.

OSJD site

http://en.osjd.org/newso/public/en?STRUCTURE_ID=5049&layer_id=5541&refererLayerId=5543&refererPageId=4&id=45

The business model of railway transportation within the described supply chains is currently based on the "corporate" scheduled block trains serving individual shippers and operating from plant to plant (or from the plant to logistic center). These trains support constant guaranteed industrial cargo flows of the selected customers. Most of the examples described in the previous paragraph follow this model.

The next step – introduction of public regular services for customers shipping less than full train loads – is more complicated. To make the business viable and to attract enough traffic the transport operator should contact numerous shippers not only in the origin point, but all along the route. Intermediate stops on the way mean also contracting local terminal operators and probably freight forwarders.

At the moment there are few known services of this type. Some of them had started as scheduled services but then shifted to the "departure on readiness" regime.

Prospects and opportunities for EATL transit rail routes

In spite of fact that numerous railway services have been introduced or tested on the overland EATL rail routes connecting Europe and Asia (see above), they still play a marginal role for transcontinental transit traffic. Different opinions exist on the future growth of Euro-Asian freight volumes to be captured by these routes (Rastogi et al, 2014) but most of the sources points to the fact that maritime transport will likely remain the dominant mode in the Europe-Asia transport market (no less than 95 percent), at least for some years to come.

There are many causes for low use of the land bridge for transcontinental trade. Some of them can be eliminated or, probably, "softened" in the course of physical improvement of the infrastructure and the institutional reforms. Others (railway costs vs. shipping costs, border procedures, different technical standards on railways) will likely be in place for decades.

Most of the commentators agree that three main factors can influence the development of the overland railway Eurasian services: a) development unified legal regime across the Eurasian railway links b) appropriate choice of the business/commodity segment by railway and logistic operators and c) smart logistic decisions, probably, in synergy with maritime or air transport transportation.

Development the unified legal regime. The principle problem for EATL area is that different legal regimes for rail transportation are in place across it. The majority of the EATL countries are members of the OSJD and party to their legal agreements, such as the SMGS. Others are members of the OTIF and their legal regimes, such as the COTIF/CIM 92, and some are members of both. European countries are also members of the OTIF and contracting parties to the COTIF/CIM, with some countries – Poland, the Baltic States and several others (9 states in total) being members of both organizations and contracting parties to both legal regimes.

When the railway route lays across countries using different regimes two different consignment notes for rail freight, each based on the respective legal regime, are to be filled in. Railway operators or freight forwarders therefore have to re-write a consignment note when crossing into the territory where the different legal regime applies.

The legal regimes also differ in other important aspects such as liabilities, and therefore increase uncertainty for cross-border rail freight transport crossing EATL countries.

A common CIM/SMGS consignment note has been developed to avoid reissuing of transport documents and in so doing to simplify customs clearance. But, according to DB Schenker, "CIM/SMGS consignment notes in both directions are only used in26–27 per cent of cases" as not all customs administrations accept the document.

Customs authorities should accept the joint CIM/SMGS consignment note as an equivalent to a transit customs declaration. The benefits of the joint CIM/SMGS are significant for reducing delays in cross-border rail transport as mentioned by DB Schenker -"its use reduces the standing time of rolling stock at borders from three days to 1.5 hours. This considerably increases the competitiveness of rail freight transportation."

The CIM/ SMGS consignment note is also issued as an electronic document so that it can be exchanged electronically in advance with authorities and other transport parties.

Certain steps are made to change the legal situation in the radical way.

In 2013 a joint declaration expressing willingness to create a common legal regime for rail traffic across Asia and Europe was signed by 37 countries at a ministerial meeting in Genève. The signatories are: Armenia, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, The former Yugoslav Republic of Macedonia, Malta, Moldova, Mongolia, Netherlands, Pakistan, Poland, Portugal, Romania, Russia, Serbia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Ukraine, Uzbekistan.

The aim is to establish 'a unified set of transparent and predictable legal conditions for international rail freight transport "from the Atlantic to the Pacific", equivalent to the regimes for competing road, air and water transport.

The planned general conditions of transport for Euro-Asian rail transport, known as GTC EurAsia, would include a common consignment note and 'to the extent possible' a single liability regime.

Operators, associations and other stakeholders have been invited to co-operate in the development of GTC EurAsia, which is supported by the United Nations Economic Commission for Europe.

Following the declaration signature, the Group of Experts set up for this purpose by the UNECE has started its work to give substance to this unified law.

Rather than creating law overarching the two legal regimes of the CIM UR and SMGS, or creating autonomous law, OTIF advocates and will defend the establishment of an interface regime between the CIM UR and SMGS, with a common consignment note and a common liability regime. With this in mind, the validity of COTIF/CIM and SMGS for transport that is governed strictly by their respective rules would not be called into question.

The question of the legal form of the institution intended to support this new instrument is very complex. OTIF believes this should be discussed at the end of the process, as it depends to a great extent on what the law contains. OTIF uses the model of COTIF to propose high-level provisions, giving the sector the responsibility of deciding the precise conditions for applying them.

At the same time, OTIF's concept was opposed by that of OSJD, which called for the creation of a new convention to replace the CIM UR and SMGS.

OTIF and OSJD agreed to set up a technical working group (joint OTIF-OSJD working group in which CIT will also take part) which could start preparing the application documents for the new Euro-Asian legal regime

In any case, it is essential that the provisions of the new instrument are simple and practical and enable rail transport undertakings to develop. If this is not the case, as at present, the par-ties to the contract of carriage will choose to apply the agreed national law, with all the legal risks this entails. The aim of the developments taking place under the aegis of the UNECE is to avoid this risk.

Choosing appropriate commodities and business segment. The list of commodities suitable for railway transportation in Eurasian trade covers a rather limited market niche which includes high value and small volume goods. Those are goods for which air transport is too expensive, while maritime transport is too slow. Therefore, in the case of products that need to be delivered rather fast and on time, railways offer a good option.

According to [***] the list of such goods includes:

- pharmaceuticals
- electronic products
- IT products
- fashion products
- footwear
- automotive components
- tires
- specific construction materials
- timber and wood
- chemicals
- fertilizers
- white goods
- pipes
- particular agricultural products
- machinery

Cargo not mentioned above is not typically transported by rail and generally does not present good candidate for overland transport. In particular, cheap and bulky products such as raw materials, petroleum products and liquefied gas which form the basis (volumewise) of the cargo flows in world trade are not and probably will not be transported overland between Europe and Asia in reasonably high volumes.

Synergies between railway and maritime transport. Railway+shippingis a typical combination for intercontinental transport and logistics decisions. Currently much attention is devoted to its development.

The main goal of such a synergy is to achieve the most efficient combination of low cost transport (maritime transport) and low travel times (railways).

The strongest synergy between overland and maritime transport occurs in container transportation. In recent decades the containerization of cargoes is developing rapidly due to possibility for easy and fast change of transport modes.

The most developed model of such synergy is the traditional intermodal or "consecutive" modal combination, when the maritime leg is complemented by a railway section of the route.

An example that has gained much attention in recent years is the transport of goods by sea from China to the port of Piraeus (Greece) and then by rail to major distribution centers in Central Europe. This type of transport may be enhanced by further improving the connection and reducing the handling time during the transfer process, between modes.

At the same time, under certain conditions other types of cargo aside from containerized might have strong synergies between overland and maritime transport. Among them are petroleum products, machinery and other manufacturing products, chemicals, building minerals, solid mineral fuels, foodstuffs, agricultural products, crude oil, metal waste and metal products, chemicals and fertilizers. To provide this type of synergy, it is necessary to improve the port infrastructure and access infrastructure from/to hinterland, to synchronize the port operations and to avoid bottlenecks in cargo handling.

For example, the Port of Riga has a strong interoperability between maritime and overland transport for dry bulk cargo from the Russian Federation, Kazakhstan and Central Asian countries. Its maritime infrastructure is fully developed to handle large *Panamax* type vessels, but the rail infrastructure at the port and access to rail infrastructure is not sufficient to receive large amount of dry bulk cargo at the short period of time to allow simultaneous rail-sea handling at the port [**].

The second model of sea-rail synergy is the combination of maritime and railway delivery in parallel commodity flows within a logistic solution known as "faster than sea, cheaper than rail''.

Such a solution allows for more flexibility than shipping and fewer costs than pure rail (or air freight) for time-sensitive shipments. Within this model, unlike the "consecutive" model of sea-rail synergy, the shares of "cheap" and "fast" flows can be regulated. Within these chains rail transportation is used for a minority share freight so as to be able to smooth and reduce their inventory requirements, fill in the "gaps" in market demand or to be fast with some market novelties. This solution is used for time-sensitive supply chains involving manufacturing production such as electronics and auto parts.

According to expert opinions, the following conditions can provide effective and sustainable sea + rail synergy in the logistics chains connecting Asia and Europe:

Asian terminal points should be located in western and central China (for example, as far east as Chongqing),

European terminal points should be located in Eastern Europe (as far west as Berlin)

Guaranteed flow of high-value and time-sensitive cargo (automotive parts, electronics, etc.) from one shipper or a limited group of shippers as a basis for sustainable regular service.

Railway reforms in EATL countries

The end of the 20-th and the beginning of the 21-st century is the period of global railway reforms. The general aim of these reforms is to make railway industry competitive with road transport under the current economic conditions.

"Traditional" state-owned railways with their monolith opaque structure and monopolistic business approach usually fail to meet the requirements of modern logistic market and supply chains. They are not flexible enough, their tariffs are not market-oriented, service quality is poor. The picture can be added by unsatisfactory punctuality of traditional railway services. This is not a surprise that railways in almost all the economics were losing market in favor of road transport in spite of higher costs and bad environmental reputation of the trucking industry.

One of the most demanded services of railways in modern supply chains, including transcontinental, is transportation of containers (and other intermodal units – contrailers and swap-bodies) by block trains on regular basis. To provide this service certain technological level is obligatory, but not enough.

To provide competitive rail-based intermodal services the independent entity should exist that will specialize on this particular activity. This entity should be able to:

- make free deals with freight forwarders, terminal operators, trucking companies, logistic providers to subcontract additional services (or, in turn, to be subcontracted in the third party's business);

- provide cost-based competitive tariffs and have the opportunity to change them according to the market situation;

- make arrangements with the infrastructure operators about routes and schedules necessary to design the competitive service;

- undertake all the mentioned above not only within the borders of the national railway, but on the cross-border basis as well.

In other words, effective long-haul container railway service developing on their own economic basis without the artificial support from outside needs a liberalized market-oriented environment across the railways all along the entire route. Such an environment can be created in the course of the railway structural reforms.

This section contains the brief overview of the railway reforms progress in EATL countries.

For the purpose of this review all the EATL states can be divided into several groups.

The first group is formed by the EU member states which follow the EC railway reform directives also known as EC railway packages.

The principle idea of the "European reform model" introduced by the directives is separating the infrastructure management from operations to establish the platform for competition of carriers "on rails". Besides reaching this main goal the enormous efforts are undertaken to provide the interoperability of national railways and railway operators in technological, economical, commercial and legal aspects.

In particular, the EC railway directives envisage the following **basic** principles that should be implemented by the Member States (MS):

Management independence of Railway Undertakings (RU)

RUs according to EU law means any public or private undertaking the principal business of which is to provide services for the transport of goods and/or passengers by rail with a requirement that the undertaking must ensure traction; this also includes undertakings which provide traction only.

MS must take the appropriate measures to ensure that RU are independent with regards to management, administration and internal control over administrative, economic and accounting matters, thereby holding assets, budgets and accounts separate from those belonging to the State.

MS must also take the necessary action to enable RU to adapt their activities to the market and allow their own management bodies to be responsible for the management of their activities, and to be managed according to principles which apply to commercial companies.

Separation between infrastructure management and transport operations

The body or undertaking responsible in particular for establishing and maintaining railway infrastructure is called Infrastructure Manager (IM).

MS must ensure the separation of infrastructure management and transport operations by keeping separate profit and loss accounts and balance sheets and publishing them individually for business relating to the provision of transport services by railways undertakings and for business relating to the management of railway infrastructure.

Access to railway infrastructure and capacity allocation

The Railway Undertakings will be accorded access to the infrastructure in all other EU MS for the operation of all rail freight services and international passenger services.

Infrastructure capacity is allocated by an independent body, which may be the IM provided it is totally independent of the railway undertakings.

Network statement

Infrastructure management (IM) must publish a network statement containing the following information in particular:

- the nature of the infrastructure which is available to railway undertakings and the conditions for accessing it;

- the charging principles, including likely changes over the next five years;

- the principles and criteria for capacity allocation (characteristics, restrictions, procedures and deadlines).

Infrastructure charges

Infrastructure charges should be set and collected by an independent charging body, generally the IM - provided it is not dependent on the railway undertakings

Regulatory bodies

MS must establish a regulatory body (RB) which is independent of IMs, RUs or any other authority involved in the award of a public service contract. Any RU which considers that it has been unfairly treated or discriminated against may appeal to this body.

Operating licenses

The MS must designate the body responsible for issuing railway operating licences. The licensing authority's decisions are subject to judicial review.

The licensing authority may regularly review the situation, ay suspend, revoke or amend the operating license under certain circumstances. RU shall also comply with those provisions of national law which are compatible with EU law with regard to safety, workers protection, customs, etc.

Infrastructure integration to provide competitive freight transportation

MS has to establish international market-oriented Rail Freight Corridors to meet three challenges concerning:

- the European integration of rail infrastructures by strengthening co-operation between Infrastructure Managers on investment and traffic management;

- a balance between freight and passenger traffic along the Rail Freight Corridors, giving adequate capacity and priority for freight in line with market needs and ensuring that common punctuality targets for freight trains are met;

- the intermodality between rail and other transport modes by integrating terminals into the corridor management and development.

Besides that, certain requirements concerning safety provision, accidents and incidents investigation, certification and others are envisaged by the EC railway directives.

Although different EU-member states implement the requirements envisaged by the EC railway packages in their own way sand at different pace, considerable general progress is reached in this work and the main development direction is quite clear. For this reason the experience of Belgium, Bulgaria, Croatia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Spain, is not described in this section[2].

The second group is formed by the EATL countries that have expressed their intention to join the EU.

[2] Cyprus and Malta have no railways

Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey are now within the Stabilization and Association Process which precedes the country's accession to the European Union. The political choice made by these countries predetermines the development of railway system restructuring – it is to be designed according to the principles of the EC railway packages described above.

The EU experts regularly evaluate the progress the candidate countries make in their preparation to join the EU, in particular – in the sphere of railway reforms. The results of such observations published in 2013 and 2015 (together with other relevant information) are used in this section.

Bosnia and Herzegovina. The railway network in Bosnia and Herzegovina extends for some 1,017 km. It is based on a standard gauge (1,435 mm) and the majority is single track (92 percent). Around 76 percent of the network is electrified. The only non-electrified part of the railway network is located in the north-eastern part of the country, around Tuzla, but it is important in traffic terms. All lines are single-track, except one section of 87 kilometers of Corridor Vc between Zenica and Doboj.

Prior to 1991, the railways in Bosnia and Herzegovina were a fully integrated part of the former Yugoslavian railways. When Bosnia and Herzegovina become independent in 1991, a new state railway company was formed and soon divided into three regional state owned companies reflecting the ethnic divisions of the country. In 2001, according to a new railway the railway companies in the Croat and Bosnian parts of the country were merged to create *Željeznice Federacije Bosne i Herzegovine* (ŢFBH). However, the railway in the RS, *Željeznice Republike Srpske*(ŢRS), remained separate.

Currently the sector includes two vertically integrated railway companies, and a state level coordinating body, *Bosne i Herzegovine i Bosanskohercegovacke Željeznice Javna Korporacije (*ZBHŢJK).

Both railway companies linger in acritical financial situation. In both companies the separation of operational functions from infrastructure management has not yet occurred.

Railways of Republika Srpska have not yet adopted their network statements. The opening of the rail market is at an early stage. The railway institutions fall short of staff.

Rehabilitation works on rail tracks are in progress. However, the bottleneck at Ivan Tunnel and Bradina ramp, which prevents the transit of Ro-La (trucks on train) trains and 40ft containers from the port of Ploče, is hampering the development of combined transport.

According to the EU experts [23], preparations in the railways area are at an early stage.

The Former Yugoslav Republic of the Macedonia. The rail network of FYR Macedonia is small, with 699km of single track rail—with only 235 km electrified. The main line of Pan-European Corridor X traverses FYR Macedonia from Tabanovce to the capital Skopje to Gevgelija, as well as the branch Corridor Xd from Veles to Bitola to Kremenica (146 km). Along Corridor X the line is electrified. The country is also traversed by Pan-European Corridor VIII. This corridor connects the Black Sea through Bulgaria and FYR Macedonia to Albania and the Adriatic Sea.

International transport accounts for 98 percent of freight transport, most of which is transported through Corridor X.

In 2007 FYR Macedonian Railways (*Makedonski Železnici*; MŢ) was reorganized into two separate joint stock companies—a public enterprise in charge of infrastructure management,

Macedonian Railways Infrastructure (MŢ-I) and a transport company in charge of passenger and freight operations, Macedonian Railways Transport (MŢ-T). This change was part of a broader railway reform program aimed at making the FYR Macedonian rail sector comply with EU directives.

A new set of railway legislation was adopted, that regulated, in particular, general organization of the railway system, principles of access to the railway infrastructure, mechanism the collection of the track fees, methods of assignment of the infrastructure capacities, the network statement preparation, the functions of the independent and autonomous regulatory body, relations between the railway undertakings and the infrastructure manager, financing of the railway infrastructure and other issues. Almost all the requirements of the first EC railway packageDirectives have been implemented by this legislation.

An independent Regulatory Agency was established in 2009. The network statement is published.

At the same time, high track-access charges and market closure further constrainthe income of the infrastructure manager without having resulted in the tangible effects on thestate operator or the transport sector as the government had hoped for. The rail marketremains closed to licensed EU operators until accession.

According to the EU experts [26], further alignment with the EC railway packages is necessary as the railway market remains closed to competition.

Currently the EBRD is making a loan of up to €145 million to finance the modernization of railway infrastructure in FYR Macedonia and to strengthen the country's regional transport links.

http://www.worldbank.org/projects/P083499/railways-reform?lang=en&tab=overview

http://www.ebrd.com/news/2014/ebrd-connects-macedonian-railway-corridor-to-turkey-.html

http://www.seetoint.org/wp-content/uploads/downloads/2012/11/769_fyrom2-taiex-rw-.pdf

http://library.tee.gr/digital/m2476/m2476_evmolpidis.pdf

Montenegro. The rail network consists of 248 km of track only. Of these, 168 km are electrified and there are no double lines. A 167 km main line connects the Port of Bar on the Adriatic city to the capital, Podgorica, and to the border with Serbia with an 83 km second line that connects Niksic to Podgorica and to the Albanian border. Rail lines are standard gauge, with the line to Bar electrified. In general, the terrain is mountainous and the line has numerous bridges and tunnels.

Three rail companies operating in Montenegro are Railway Infrastructure of Montenegro (ŽICG), Railway Transport of Montenegro (ŽPCG), and Montecargo AD. The former rail company, ŢeljezniceCrne Gore (ŢCG), was transformed into a public company in 1989; it was partly privatized in June 2002 as a vertically integrated rail company. In accordance with the Law on Railways, adopted in 2004, ŢCG was replaced by two newly established joint stock companies: ŢICG and ŢPCG. In 2009, ŢPCG was further restructured, by spinning off the freight division and establishing this as Montecargo, which is a fully independent joint stock company.

Concession is offered for infrastructure management and for stations operation. The main regulatory bodies are established. Network Statement is approved and published. In accordance

with the network statement of Montenegro's rail infrastructure manager for 2015, track access charges in Montenegro for all types of trains are EUR 3 (includeing VAT) per train km.

The renewed Railway law was adopted in May 2013aiming at setting a new regulatory framework for managing the railway infrastructure and transport services, defining the competences of the Railway Directorate as the regulatory body, and improving the competitiveness and quality of transport. A five-year business planwas prepared by the Railway Directorate for 2013-2017.

The agreement on border railway transport between Montenegro and Albania was ratified in March 2013.

According to the EU experts [24], the alignment with EU Directives is almost complete.

Serbia. The length of Serbian railways is about 4100 km. The main line goes from North-West to Sowth-East: border with Hungary – Subotica – Novi Sad – Belgrad – Lapovo – Nish. From this point the lines go to Preshevo – Border with FYR Macedonia and to Dmitrovograd – border with Bulgaria. For other lines connect this main rail communication with Croatian, Montenegro, Romanian, and FYR Macedonian borders.

In 2013, the Serbian Parliament adopted the new Law on Railway, which came into force on 30 May 2013. The law represents the framework legislation for this area and replaces the old act on railway that was in force since 2005.According to the Government, the Law on Railway is aimed at introducing the necessary reforms into the country's railway system, opening competition into this sector, improving effectiveness of the country's railway system and integrating it into the market of transportation services and EU railway system.

The Law on Railway had introduced the principle of separation of railway infrastructure from operations. The separation is supposed to be implemented in the form of the separate accounting and, to a certain extent, management of a commercial entity managing infrastructure from a commercial entity managing transport of passengers and goods. At the same time, the Law on Railway does not explicitly prescribe that such separation has to be formally accomplished through the formation of separate legal entities.

Despite the formal separation between railway infrastructure and operations, the railway infrastructure itself remains in the ownership of the Republic of Serbia and represents a so-called good in public use, while the management of the railway infrastructure is deemed to be an activity in the public interest. However, another important novelty is that an entity that manages railway infrastructure no longer needs to be organized in the form of a "public enterprise", a category of legal entities formed by the Serbian state, provinces or municipalities. This opens the way for potential participation of private entities in the management of railway infrastructure.

The network statement is also introduced by the Law on Railway.

The Law on Railway also provides for the preparation and adoption of a periodical National Program on Railway Infrastructure. The program should be prepared and proposed by the Serbian Government and, subsequently, adopted by the Serbian Parliament for a term of five years.

Overall, the Law on Railway appears to represent an important step in the direction of liberalization of the Serbian railway system. However, it is yet to be seen with what degree of efficiency and diligence the important novelties that the law contains will be implemented.

It also remains to be seen to what extent the relevant state-owned railway operator will adjust to the new setting and whether such setting will bring effective liberalization to the market of railway services. According to some initial, informal reactions by the relevant public bodies to the Law, the entire railway network currently in existence should continue to be managed by the relevant state-owned railway operator, while possible new routes and/or existing routes that are potentially found in the future as being no longer viable for use by the state-owned railway operator could be possibly offered to private operators (e.g. new routes could be potentially constructed through a PPP/concession model). If so, the true liberalization of the Serbian railway market may still be some years away.

According to the EU experts [25], open access to the railway market, with transparent track access charges and capacity allocation, still needs to be achieved.

http://www.kinstellar.com/insights/detail/147/new-law-introduces-reforms-into-serbian-railway-system

Turkey. The length of the railway network is about 11 000 km. 19% of the total length is electrified.

EATL railway corridors 3 and 4 pass theough the Turkish railway network.

Turkish Railways, *Türkiye Cumhuriyeti Devlet Demiryolları* (TCDD), is the public enterprise that operates the public rail system in Turkey. It operates the state railways and several large ports; it also manufactures and repairs locomotives, wagons, and passenger coaches. As the sole train operator in the country, Turkish Railways operates all passenger, freight and suburban trains, including domestic and international departures. There were no separate accounting procedures for its various operations.

Turkish Railways is the largest loss-making state public enterprise in Turkey, although the ports are profitable and cross-subsidize rail transport.

Although the government and TCDD completed an EU-funded programme on restructuring and strengthening the Turkish railway sector in January 2007, no progress was made on implementing EU regulations or national legislation proposed by the project.

The acting law on liberalization of railways does not comply with the EC directives in creating the conditions for a competitive and transparent market where the independence of essential functions is ensured. Legislation on network access was published, but other legal provisions, on issues such as licensing, rolling stock registry and safety, are still not in place which prevents any effective opening-up to the private sector.

The incumbent railway operator, Turkish State Railways, has still not been unbundled as required by law. In its role as infrastructure manager, the company owns and finances rail operations, contrary to the EU requirements. The Directorate-General for Rail Regulation still acts as both the regulatory authority and the safety authority and does not enjoy sufficient independence from the Ministry of Transport.

According to the EU experts [27], further alignment efforts are required.

environment-transport-energy/reforming-turkish-railways.html

Summarizing what was said about the countries of this group it should be mentioned, that

a) certain progress is reached in the course of railway reforms in the mentioned above countries which are following the main provisions of the EC railway directives;

b) in spite of all the positive changes, there are no new entrants in their railway markets which seem to be practically closed;

c) the pace of reform seems to be slower than it was planned which can be explained, besides the rest, by the general economic problems and decreased market demand for rail transportation.

The third group of countries contains the former republics of the USSR: Armenia, Azerbaijan, Belorussia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine ,Uzbekistan. They are united by the common "Russian" railway gauge (1520 mm) and the common heritage of technology and organization of the soviet railway system. Some of these countries still keep this heritage; others had undertaken certain structural reforms aimed to adjusting the railway industry to market conditions.

Armenia. Armenian railways have the 845 km total length. The entire network is electrified. The system is a part of EATL corridor 3.

There were no structural reforms in the Armenian railway industry since the collapse of the USSR.

In 2007, the government of Armenia conducted a tender process for the modernization and operation of Armenian Railways. Russian Railways was the only bidder and established South Caucasus Railway (CJSC) as a wholly owned subsidiary to run the Armenian Railways. On 1 June 2008, South Caucasus Railway officially commenced its modernization and operation program and, as part of the concession agreement, received all the assets owned by Armenian Railways. The concession agreement was concluded for 30 years, with a right of extension for another 20 years after the first 20 years of operation. It means that the structure and the operation model of the Armenian railway system in the foreseeable future will be the copy of those used by Russian Railways.

http://ppp.worldbank.org/public-private-partnership/library/concession-agreement-tranfer-armenian-railway-system-south-caucasian-railway

Azerbaijan. Currently, the total length of main railroads is 2932 km including 815 km of double-track sections. 1272 km of the total length is electrified. EATL railway corridors 3,5 and 8 pass through the Azerbaijan railway system.

Azerbaijan Railways (Azerbaijani: *Azərbaycan Dəmir Yolları*) is the national state-owned rail transport operator in the Republic of Azerbaijan that continues to operate as a fully integrated state monopoly. The core railway businesses (infrastructure, passenger, freight, etc.) are operated by this entity. Little progress has been made in terms of competition and privatization. Freight tariffs were liberalized while passenger tariffs remain determined by the government.

It is reported that one of the biggest financial problems was the practice of barter transactions among state entities (i.e. state owned companies did not pay for services in cash), which was banned in 2006. No information on the planned structural reforms is currently available.

http://www.ebrd.com/downloads/country/strategy/azerbaijan-country-strategy.pdf

Republic of Belarus. The national railway network consists of 5,512 km, and 874 km of it are electrified. Belorussian railways are the part of EATL corridors 1 and 2. The entire system is

operated by the *Belaruskaya Chugunka* (Belarusian Railway – BR) - the national state-owned railway company of Belarus.

Official documents do not envisage any substantial reforms in the industry that is still "soviet-shaped". The Belarussian state program for development of rail transport in the period of 2011-2015 provides only for modernization of the sector within the existing model, in which the BR is a government corporation subordinate to the Ministry of Transport and Communications of Belarus. Besides, some legal changes necessary to improve the international operations must be undertaken.

At the same time, the Belarusian scientific community has developed a reform concept that is discussed currently.

The concept provides for a vertically integrated entity. At the central level, management of all railway enterprises should be concentrated in a holding company called Belarusian Railways, which is to be taken out of the jurisdiction of the Belarussian Ministry of Transport and Communications and must report directly to the Council of Ministers.

In turn, five companies will be subordinated to the holding general directorate: a freight company, a passenger company, a locomotive company, an engineering company (repair and maintenance of infrastructure), and an engineering company (design work). Each of these entities should perform the full range of functions supporting its type of transport operations.

The reform concept is radically different from the Russian model and is contrary to some basic principles laid down in the railway directives of the EC described above, in particular – there is no market competition within the proposed system.

http://en.cfts.org.ua/articles/railway_reform_in_belarus_a_special_way

Georgia. The national railway network consists of 1,576 km, and 1534 km of it are electrified. Georgian railways are located on the shortest route between Europe and Central Asia. EATL corridors 3 and 8 passes through Georgian territory.

Georgian Railway LLC (*Sakartvelos Rkinigza*) is the national fully state-owned railway company of Georgia. There were several attempts to involve the railway industry into the market-oriented reforms by privatizing the company.

In the summer of 2007, the government handed over management rights for 99 years to the London-based Parkfield Investment which had pledged to invest $1 billion into the Georgian railway network over the next decade. But by October 2007 the deal had collapsed.

In 2008 the concession tender was announced and five entities from Kazakhstan, Sweden, USA and Russia expressed their intention to purchase the 100% of shares and invest into the company's development. But the procedure was suspended by the government without any explanations.

It is reported that the reason of the privatization problems is the strategic position of Georgian railway within the Caucasus region. The government foresees the risk of unpredictable behavior of the entity that could have become the owner.

No information about planned structural reforms is available.

http://www.eurasianet.org/departments/insight/articles/eav013108a.shtml

http://www.forbes.ru/ekonomika/vlast/59658-pochemu-u-tbilisi-poluchilis-reformy

Kazakhstan. The national railway network consists of 13 431 km, and 3000 km of it are electrified. Kazakhstan railroads are at the crossroad of EATL routes: railway corridors 1, 2, 3, 4, 5, 7 and 9 pass through the country.

The lines used to be under the control of three separate Soviet regional railway administrations, but were unified under state-owned Kazakhstan Temir Zholy enterprise (KTZ), supervised by the Ministry of Transportation and the Ministry of Finance.

The reforms in the industry were undertaken in three stages.

During the first stage (2001-2005) the "social sphere objects" were outsourced, operations were separated from technical maintenance, private capital was attracted to the latter activity.

During the second stage (2004 – 2006) the entities involved in technical maintenance were privatized. Separate directions were established for infrastructure management and operations. Two companies were established: "Lokomotive" (providing the traction services) and "Kaztemirtrans" (wagon fleet operator).

The first two stages envisaged the industry transformations very much alike those in Russia. But later the direction of the reforms was changed.

The third stage which is now implemented envisages the separation of network management and operations. At the same time, the holding will be established under the KTZ control containing the "KTZ-infrastructure" (network management), "KTZ-cargo transportation", "KTZ-passenger transportation", "KTZ-manufacturing and repair". The cargo and passenger carriers will operate their own locomotives and wagon fleets. The government is subsidizing the passenger services and finances the network development. This model is very close to the EU railway industry structure.

Besides other goals, the current development strategy is aimed at winning market position of transcontinental transit. It is also planned to develop distribution centers for transporting goods on the following routes: 1) From East Coast and inland provinces of China to the EU countries (northern corridor TARN); 2) TRACECA corridor - the countries of Central Asia, the Caspian and the Black Sea (South Caucasus, Turkey) and Iran; 3) North-South - Iran, Middle East, India.

http://sk.kz/news/view/4494/4?lang=en

http://www.ktzh-gp.kz/new-ru/index.php

Kyrgyzstan. The railway network has the total length of 424 km. The railway lines in Kyrgyzstan are the separated dead-end sections entering the country from Kazakhstan in the North and from Uzbekistan in the South. These are the branches of EATL corridor 3.

The state owned company *Kyrgiz Temir Sholu (*Kyrgyz Railways) is the only operator in the industry. The share of railways in the national transport balance does not exceed 4%.

No information about the structural reforms is available.

Moldova. Moldavian railway network has the total length of 1232 km of which 1218 km are 1,520 mm (Russian gauge), and 14 km are 1,435 mm (standard gauge). The entire network that is single track and not electrified. EATL corridor 3 crosses the country.

CaleaFerată din Moldova (Railways of Moldova - RM) is the sole railway operator responsible for passenger and cargo transportation, as well as railway infrastructure maintenance within the country. There were no structural reforms in the industry since Moldova became the independent state.

At the same time, Moldavian railways are in urgent need of fundamental restructuring to provide adequate services and compete with other means of transport which was demonstrated by numerous projects held by international experts teams. Currently the EBRD is providing €52.5 million loan to RM. The loan will be used to co-finance the acquisition of new multi-purpose locomotives and the rehabilitation of rail infrastructure. It will also support a broader reform of the railway sector to improve safety and efficiency. Action plans to restructure the railway sector and to strengthen the institutional capacities in the key areas of environment, procurement and corporate governance will be developed with the EBRD. It is reported that the reform proposals will be based on the principles of the EC railway directives.

http://www.ebrd.com/news/2014/ebrd-and-partners-put-moldovan-railway-on-track-for-change.html

http://www.railway.md/?lang=ru

Russian Federation. Russian railway system is one of the world biggest; the length of the rail network is more than 85.3 thousand km. Rail is the main transport mode for Russian Federation.

EATL corridors 1, 2, 5, 6 , 7, and 8 pass through the Russian territory.

Before 2001 all the railway activities were carried out by the Railway Ministry that combined the functions of political leadership and the economic management in the industry.

In 2001, the government adopted the Railway Structural Reform Programme that set out strategic priorities for the rail industry up to 2010 and beyond with the aim of improving the efficiency and profitability of rail services in Russia, encouraging investment for modernization and creating an effective railway holding company. The reform was developed in three phases.

- Phase I(2001-2002): Ministry of Railways was separated into two entities: the Federal Railway Transport Agency (integrated into the Ministry of Transport) and the Open Joint-Stock Company Russian Railways (*Rossiiskie Zheleznie Dorogi* - RZD). RZD had assumed all assets and business operations of the former Ministry of Railways. The set of relevant legal acts had been adopted;

- Phase II (2003-2005): RZD assets were unbundled along functional lines. RZD subsidiaries were established for passenger services, container transportation, refrigerated transportation, technical service functions. Many non-core businesses were outsourced. Cross-subsidizing of passenger operations was phased out. By the end of Phase II RZD still kept the full monopoly in infrastructure, traction and most transportation businesses;

- Phase III(2006-2011): introduction of competition and private capital. The main feature of this phase is the development of the independent wagon-operating companies. First their share was relatively small; eventually the entire fleet of cargo wagons was transferred to this segment (including the wagons owned before by RZD). The passenger segment was outsourced. Besides that, IPOs and/or privatization of local passenger, repair & construction, and some other subsidiaries was undertaken.

As a result, Russian railway industry had acquired the structure that does not fit neither the European (separation of infrastructure management and operations, competition “on commonly

used rails") nor the American (competition of vertically integrated railway companies "on parallel tracks") industry models:

- RZD as a single state-owned monopolistic railway carrier, the owner of infrastructure and the long haul locomotives with no wagons in operation. RZD manages and executes transportation, issues waybills and follows the state-regulated tariff;

- more than 1400 wagon operators, mainly – private owned, with the total fleet of 1,6 million railcars offer capacity to customers together with a set of additional services (forwarding, paperwork, relationship with RZD, etc.). Competing on free-price market.

The reform had reached certain positive results. The private capital had entered the industry. About 50 billion USD in comparable prices were attracted in 10 years. That had solved the rolling stock shortage problem and gave good incentives to wagon-building. The first competitive segment in the industry – wagon operating – is successfully developing. Many private wagon operators are ready and eager to develop as full-scale railway carriers.

Obvious success is achieved in the long-haul passenger segment where the carrier company is outsourced and independent operators exist.

On another hand, many problems still exist. There is still no competition in the freight transportation sector. RZD, being the monopolist here, has no incentives to improve services and decrease costs.

As a result, railways are losing freight in favor of road transport. The freight turnover index 2014 to 2007 is 10% for railways and 19% for trucking.

Currently the plans of further industry transformations are being prepared.

http://eng.rzd.ru/statice/public/en?STRUCTURE_ID=23

Tajikistan. Tajikistan railway network is 680 km long with no electrification. The system connects the main urban centers of western Tajikistan with points in neighboring Uzbekistan and Turkmenistan. EATL corridor 3 and 9 enter Tajikistan.

Tajikistan railways are fully owned and operated by the government. No information about the structural reforms is available.

Turkmenistan. Turkmenistan railway network is 4,980 km long. EATL corridor 3 passes across Turkmenistan.

The only railway operator is the state owned company *Türkmen demir ýollary* (Turkmen Railways). The company belongs to the Ministry of Railways of Turkmenistan. No information about the structural reforms is available.

Ukraine. Ukrainian railway network is 22.3 thousand km long; 9.7 of them are electrified. EATL corridors 1, 6, 7, 8 pass through Ukrainian territory.

The Ukrainian Railways are managed by the State Administration of Railway Transport of Ukraine "Ukrzaliznytsia", which was established in December 1991.

Numerous programs of reforms had been developed in Ukraine during in the post-soviet time. In 2006 the government had adopted the concept of the State Program for the Railway reform. The plan had three stages. In 2009 and 2011 the implementation of the Program was postponed;

currently it should be realized until 2019. The ideas of the Program are very close to those of the reform implemented in Russia; one principal difference is that in Ukraine there are no plans to get rid of non-profile social oriented objects like it was done in Russia. By now there are no tangible results of the reforms in the Ukrainian railway industry.

Uzbekistan. Uzbekistan railway network is 4200 km long; more than 1600 km is electrified. EATL corridors 3,4 and 9 pass through Uzbekistan.

The national state railway operator, *Uzbekiston Temir Ullari* (Uzbekistan Railways) In 2001 according to the state program of reforming of railway transport was transformed from the unitary state enterprise into the open joint stock company with 100% of state ownership.

The Uzbekistan government with the support of the Asian Development Bank had for a long time investigated the possibilities of the railway reform. In 1997 the railway reform committee was established and the reform plan was published. The plan included certain standard components: outsourcing of non-profile activities and entities, phasing out internal cross-subsidizing, introduction of the international standards of book-keeping, staff optimization. At the same time, the plan did not envisage any measures aimed at competition development.

In 2001 several decrees were adopted pointed at vertical separation of the industry following the Russian reform model. According to these plans, several divisions of the company were converted into joint-stock companies: JSC Uztemiryulkonteyner (container transportation), JSC Yulreftrans (refrigerated goods transportation), JSC Uztemiryulyulovchi (passenger transportation), JSC Uztemirvagon (wagon repair).

http://railway.uz/en/gazhk/istoriya/

Summarizing the review of the group of post-soviet countries, it can be noted, that they, in turn, can be separated according to the achieved reforms progress:

- countries that have made certain progress in reforms developing the “Russian” reform model that is not alike neither “European” nor “American” one: Russian Federation and Kazakhstan;

- countries, where reforms are widely discussed and some legal acts are adopted, although practical steps seem to be moderate: Ukraine and Uzbekistan;

- countries, where reforms had not been even seriously planned: Armenia, Azerbaijan, Belarus, Kyrgizstan, Moldova, Tajikistan, Georgia, Turkmenistan.

Group four includes Asian countries that do not belong to neither of the previous three groups. They are characterized by completely different situation in the railway industry and railway reforms: Afghanistan, China, Iran, Mongolia, and Pakistan.

Afghanistan. Afghanistan railway system consists of two lines:

- 75-kilometre long stretch connecting Mazar-e-Sharif with the border of Uzbekistan which was open in 2011. According to studies conducted by the Afghan Government, the railroad is a success and has helped to ease a bottleneck of goods at the Hairatan dry port on the Uzbek-Afghan border. The line serves as a major hub for almost 50 per cent of the country’s total imports (before the line was opened the goods were reloaded to trucks at the border). This line operated by Uzbekistan railways is the connection to EATL corridor 3;

The - 6 km long line between the Turkmen border and Towraghondi.

The railway activities in the country are controlled by the Afghanistan Railway Authority (AfRA) established in 2015. Its task is to develop, design and maintain railway network in Afghanistan.

Actually, the railway industry in Afghanistan is at the starting point of its development.

http://mopw.gov.af/en/news/afghanistan-railway-authority-afra-is-a-newly-established-organisation-which-is-responsible-to-develop-design-and-maintain-railway-network-in-afghanis

http://www.centrasia.ru/newsA.php?st=1287260880

China. China has the second longest railway network in the world (121 000 km) with 24,100 km of multiple track and 18,900 km of electrified lines. The Chinese railway system is the starting part of the Eurasian railway corridors 2,3,4,7.

The railway sector in China has undergone several major rounds of reform and institutional restructuring since 1986. The most radical transformation was undertaken in 2013 when China's Ministry of Railways (which used to be one of the last world railway ministries combining political management and operations) has been split into three. The railway planning and policy making functions were entrusted to the Ministry of Communications (MOC), other administrative functions rest with a newly established State Railways Administration (SRA), while commercial activities passed to the new China Railways Corporation (CRC).

CRC is a state-owned company reporting directly to the central government. It is financed by the Ministry of Finance and regulated by MOC and SRA.

CRC transports passengers and freight, and is responsible for operating and managing the country's rail network. CRC drafts investment plans for railway construction, is responsible for implementing railway projects and is accountable for safety.

In other words, the absolute monopolist position that historically belonged to the Ministry of Railways, is practically preserved within the CRC.

Incorporation of the railway sector into MOC is part of the reform scheme aimed at building up a comprehensive national transport system. With simultaneous handing down of power by the central government, overall planning is expected to make railway construction more economic, with better use of human and material resources. The government expects railway operations to become more efficient, with stricter work standards set and policed by SRA, and improved services.

At the same time, some experts [28] argue that the transformation from the mixed-function Ministry of Railways to China Railway Corporation will not necessarily lead to better railway management. It should also be mentioned, that CRC inherited some problems from the Ministry of Railways, in particular – enormous debts that amounted to about 400 billion USD, internal cross-subsidizing of social-sensitive passenger services, etc.

http://www.railjournal.com/index.php/policy/china-implements-radical-railway-reform.html

http://www.tandfonline.com/doi/abs/10.1080/10670564.2015.1030957?journalCode=cjcc20

Iran. Iran railway network is about 12000 km long with the standard gauge; 148 km are electrified. Iran is crossed by the EATL corridors 4, 5 and 8.

Republic of Iran Railways (RAI) is the state organization in charge of railway activities.

After the sanctions against Iran were dropped in 2016, the country has good opportunities to upgrade and modernize its railway network. According to the plans, by 2025, existing lines will be electrified and double-tracked and about 12,000 km of new lines will be built, doubling the size of the network.

No information about the structural reforms is available.

http://www.globalconstructionreview.com/markets/how-islamic-republic-set-become-land-br8i8d8ge/

Mongolia. Mongolian railway network is 1815 km long. EATL corridor 1 reaches Mongolia from the North.

The main player in the sector is the Ulanbataar Railways company (UBTZ) founded in 1949 and jointly owned by the Government of Mongolia and the Russian Railways. It is responsible for infrastructure and operation on the main line between the Russian and Chinese borders.

In 2008 the Mongolian Railway Company (MTZ) - 100% state-owned joint-stock company - was established in order to manage the development of national railways and to act as a recipient of the foreign aid.

Besides that, the Boroo Tumur Eruu Gol, an iron ore company, owns 85 km of racks and 3000 wagons hauled by the UBTZ on the UBTZ network.

The State policy on railway transportation adopted in 2010 envisages the liberalization of the freight market and modernization of the regulatory framework. It is expected that the private sector will be involved into the industry development.

https://books.google.ru/books?id=kbjWCwAAQBAJ&pg=PT12&lpg=PT12&dq=mongolian+railway+reform&source=bl&ots=I4WCZZY0aV&sig=TAtCzUwHfpjh7cmEBGkAXFKvodA&hl=ru&sa=X&ved=0ahUKEwj3m67_pvbOAhVmEJoKHX2GC3kQ6AEIJDAB#v=onepage&q=mongolian%20railway%20reform&f=false

https://www.legendtour.ru/rus/mongolia/informations/ubzd.shtml

Pakistan. The total length of Pakistan railway network is 7,791 km of track all across Pakistan, stretching from Torkham to Karachi. Pakistan Railways used to have a mixture of gauges, including 1,676 mm, or "Indian gauge" track; 1,000 mm; and 762 mm narrow gauge. Currently only the Indian-gauge railway lines are operational. EATL corridor 4 reaches Pakistan from the West.

Pakistan Railways is the national state-owned railway company of Pakistan. It is reported that the company constantly faces serious economic problems; some experts even say “it is dying a slow death”. At the same time, no serious efforts to restructure the system are undertaken. Attempts to carry on the privatizing of the Pakistan Railways were rejected by the court.

http://www.railwaygazette.com/news/policy/single-view/view/pakistan-railways-out-of-intensive-care.html

I.3.4. EATL road routes and road transport

The EATL **Road Route 1** starts on the eastern borders of the EU with Belarus as well as the RussianFederation and continues across the Russian territory to the nation's Pacific coast, extending PETCs II,V and IX. Parts of the route belong to the AH network. It runs parallel to the Trans-Siberian railway. The uneven quality of road infrastructure implies that Route 1 is unlikely to be used widely for transcontinental trucking or passenger car trips,especially during the winter months.

The EATL **Road Route 2** is parallel to the Rail Route 2. It extends PETCs II and IXand almost the whole route belongs to the AH network.

The EATL **Road Route 3** starts on the eastern borders of the EU with Ukraine and ends on the Chineseseaboard (Lianyungang and Shanghai ports), passing through the Ukraine, Russian Federation, Kazakhstan,Kyrgyzstan and eastern China. Route 3 extends PETCs II, IV, V, VIII and IX eastward and parts of theroute belong to the AH network. Altogether, there are eight border crossings between the EU points oforigin and final destinations in China. The road quality varies significantly, especially in Central Asia.

The EATL **Road Route 4** connects South-Eastern Europe to the Lianyungang and Shanghai ports, passingacross Romania, Georgia, Azerbaijan, Kazakhstan, Uzbekistan, Kyrgyzstan and eastern China. It providesan extension to PETCs IV, V and IX. Route 4 involves two Ro-Ro ferry crossings (from Romania toGeorgia and Azerbaijan to Kazakhstan) and eight border crossings. The quality of the route is uneven,changing from a broad four-lane highway to a narrow two-lane road in some parts.

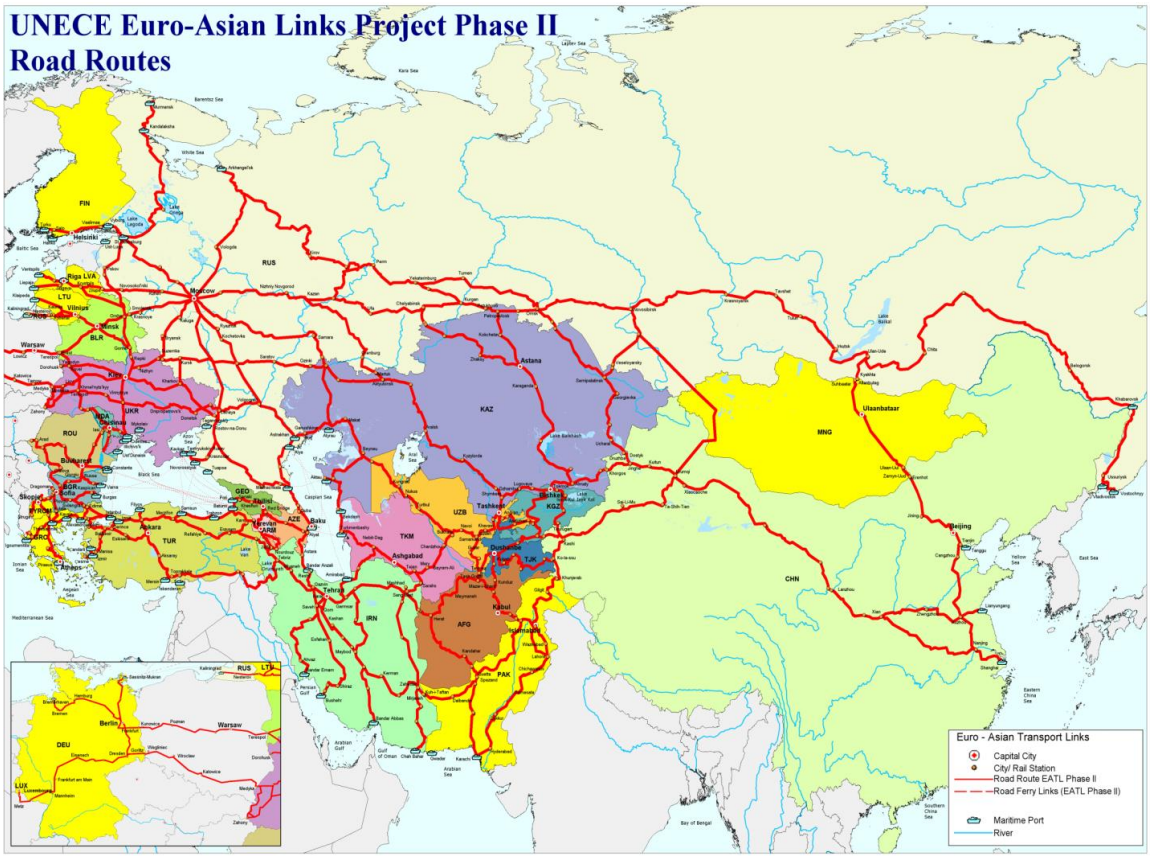
The EATL **Road Route 5** connects South-East Europe to the Lianyungang and Shanghai ports, startingon the Serbian-Bulgarian border and continuing through Bulgaria, Turkey, Iran, Afghanistan,Uzbekistan and Kyrgyzstan. It extends PETCs IV, V, VIII and IX. Significant parts of the route belongto the AH network. There are eight border crossings and the road quality varies significantly in CentralAsia.

The EATL **Road Route 6** connects northern Europe to Iran, extending from the Finnish-Russian bordersouthward to the Caspian Sea and terminating at the port of Bandar Abbas in the Persian Gulf. Almostthe whole route belongs to the AH network and it runs in parallel to the EATL Rail Route 5.

The EATL **Road Route 7** connects the Murmansk port on the northern shore of the Kola Peninsula(in the proximity of Finland and Norway) with the Odessa port in southern Ukraine while passing throughnorthwest Russia and Belarus. Between St Petersburg and Odessa, Route 7 coincides with the PETC IX.

EATL Road routes are shown at Figure 2.8 and table 2.3.

Figure 1.31
Map of the EATL road routes



Source: UNECE

Table 1.20
EATL road routes

1	West (N and E EU (Finland, Latvia, Lithuania, Poland, Hungary)) to East (Russia Pacific and connects to China and Mongolia – Parallel to Trans-Siberian-Railways
	Countries crossed: Russia, Belarus or Ukraine
2	West (N and E EU (Finland, Lithuania, Poland, Hungary)) to East (China) Parallel to Trans-Siberian-Railways with branches to Kazakhstan and Kyrgyzstan
	Countries crossed: Ukraine, or Belarus, Russia, Kazakhstan, China
3	West (E EU (Poland, Hungary) to East (China)
	Countries crossed: Ukraine, Russia, Kazakhstan, Kyrgyzstan, China
4	West (SE EU (Bulgaria) to East (China)
	Countries crossed: Georgia, Azerbaijan, Kazakhstan, Uzbekistan, Kyrgyzstan, China
	Number of ferry crossings: 2 Ro-Ro ferry crossings
5	West (SE EU (Bulgaria and Slovakia) to South (Iran) and East (China)
	Countries crossed: Turkey, Iran, Afghanistan, Kyrgyzstan, Tajikistan, Uzbekistan
6	North (N EU (Finland)) to South (Iran)
	Countries crossed: Russia, Azerbaijan, Iran Kyrgyzstan, Turkmenistan
	Number of ferry crossings: 1 Ro-Ro ferry crossings /Caspian Sea
7	North (N Russia) to South (Ukraine)
	Countries crossed: Russia, Belarus and Ukraine
8	North (NW (Russia)) to South (China)
	Countries crossed: Russia, and China
9	North (Central Russia) to South (China)
	Countries crossed: Russia and China

The role of road transport varies significantly across the EATL countries. In the European Union (EU 28) road transport accounts for about 75% of total freight turnover. At the same time, in Central Asian region the share of international transportation by trucks as compared with rail is lower in all Central Asian countries (with the exception of Kyrgyz Republic and Republic of Tajikistan). Here it accounts on average for less than 6 percent.

In European countries shippers prefer truck due to relatively short distances (even in international haulage), perfectly developed road network and high logistics quality and flexibility offered by road transport companies operating on the high competitive trucking market.

In the Asian part of the EATL region distances are much higher while the quality of the roads is uneven and many operators are not enough qualified and reliable.

Nevertheless the importance of road transport is increasing practically everywhere, in particular for regional and cross-border connections. The geography of the most heavily used routes underlines the importance of the west-east routes to and from China, but also the north-south corridors extending through Uzbekistan to and from Afghanistan, the Islamic Republic of Iran, and the Russian Federation.

Local cross-border market is served by small individual companies with old trucks or local market traders transporting their own merchandise.

Long-distance trade over 1,000 km is provided by comparatively modern companies operating according to international agreements in trucking industry TIR and CMR. Significant long-haul transportation is found in Central Asia, mostly under the TIR provision connecting the region with Russia and Europe. Despite the distance, time-sensitive or expensive commodities have a more reliable supply chain by roads. Uzbekistan and Kazakhstan are the most important countries for transit by road serving also the needs of their neighbors.

Prospects and opportunities for EATL road routes

Main market segments. It can be assumed that the role of road transport will grow in the most of the EATL countries following the demand for high quality and flexible logistic services. In particular, the following main spheres look reasonable:

- short-run cross border trade;

- long haul transportation on the lanes where railway links do not exist or can’t provide effective services for certain commodities (perishable, expensive, etc.);

- “road section” of intermodal rail-road transport service. This section connecting the consignor (consignee) and intermodal terminal or logistic center can be hundreds or even thousands kilometers long.

The last option is the most important one from the point of view of logistic supply chains transport provision and improving the competitiveness of EATL links.

In the EU region combined transport development is the general line of the transport policies and many shippers make their choice in favor of combined transport instead of “straight trucking”. The main reason is lower costs but environmental factor is also more and more considered. Within the highly developed intermodal networks additional effects are available such as “synchrologistic” management of flows switched from one mode to another according to the market situation. The combined rail-road services, if developed across the Euro-Asian trade

lanes, could link together the Asian and European transport systems not just technologically but also within the high-quality logistic service chains.

Certain examples of projects of this kind can be found on the market. Deutsche Post DHL has developed its new service in partnership with Chinese rail operator YHF Logistics. The once-a-week service runs through to its intermodal hub in Malaszewicze, Poland, and the company then trucks shipments to Moscow to offer a 20-day transit time between Chengdu and Moscow (figure 1.32). The common sense says there is no reason to ship freight through Russia to Poland before trucking it back to Moscow, but the company representatives say this option avoids potential problems with the rail network going into Moscow.

It turned out that the intermodal decision in fact cuts transit time and transport costs significantly by overcoming potential delays that can be encountered when entering Moscow by rail [http://postandparcel.info/56547/news/innovation/dhl-launches-weekly-train-link-from-china-to-poland/].

Figure 1.32
Deutsche Post DHL combined service

Road parameters. Long and heavy road vehicles. The harmonizing of road parameters and introduction of long and heavy vehicles (LHV), or road trains, seems to be one of the opportunities to increase the efficiency of road transportation in the EATL area.

The average standard gross weight of the freight road vehicle all around the world is about 40 tons which provides the payload of about 20 tons. The allowed length of the road combination rarely exceeds 20 meters. The full vehicle weight is limited by the bridges construction; the allowed axle load depends on the carrying capacity of the road. The vehicle length depends on road safety standards adopted in certain country.

It is very important to have the road limitations equal for all the sections of the long-haul road route. If this condition is not fulfilled, it is necessary either to pay fees for overloading on certain sections or even to partially unload the cargo and use another vehicle to pass through the leg with more strict limitations. Unfortunately, in practice it happens not only in case of two neighbor countries with different road standards but also within one country with uneven road quality.

Besides the harmonizing the road limitations across the main corridors, it is worth mentioning the option of using heavy and long vehicles.

Many countries have the experience in allowing (on certain sections of the road network) the road vehicles with weight and length that exceed the generally accepted standards. The goal is to improve the efficiency of transportation on the most loaded trade lanes.

This trucking concept is used in remote areas of Australia, the United States, and Western Canada. A road train consists of a relatively conventional prime mover, but instead of pulling one trailer or semi-trailer, the road train pulls two or more of them.

Australia has the largest and heaviest road-legal vehicles in the world, with some configurations topping out at close to 200 tons of the gross vehicle weight. The majority are between 80 and 120 tons. The train length reaches 53 meters (see figure 1.33).

Axle loads of the road train do not exceed the limit because the number of axles supporting the LHV is higher according to its increased length. As for the high gross vehicle weight, it sometimes makes necessary to enforce or rebuild the bridges along the routes where the LHV are operated.

Driving and maneuvering the Australian road trains safely without unduly obstructing traffic is only possible because of the sparse traffic and extremely flat and straight terrain through the Australian outback. The same requirements are taken into account in all the countries where LHV are allowed. Strict regulations also apply regarding licensing and driving experience. The multiple trailers are unhooked, the dollies removed and then connected individually to multiple trucks at assembly points (often located at terminals or logistic centers) when the road train gets close to populated areas with dense traffic.

Many of the EATL countries, especially in the Central Asian region, have conditions the make operation of the LHV possible. But this concept is developed not only in the regions with low economic and transport density.

In Europe the so called European module system (EMS), or Eurokombi concept is widely discussed currently. The idea is to allow longer and heavier combinations within one road vehicle using the existing equipment. Figure 2.11 shows how three standard European combinations can be converted into two by just recoupling the equipment. The EMS road train has the 25,25 m maximal length and the gross weight of 60 or 44 tons for different combinations (for volume or for weight cargoes). The average economic effect in comparison with traditional combinations is about 20-25%.

The Eurokombi vehicles are used for many years in Sweden and Finland and are already tested in the Netherlands, Denmark and Germany with positive experience.

The supporters of the LHV idea argue that this type of vehicle:

- increases transport efficiency and economic competitiveness;

- dramatically reduces the number of vehicles for a given amount of goods;

- reduces environmental impact of trucking;

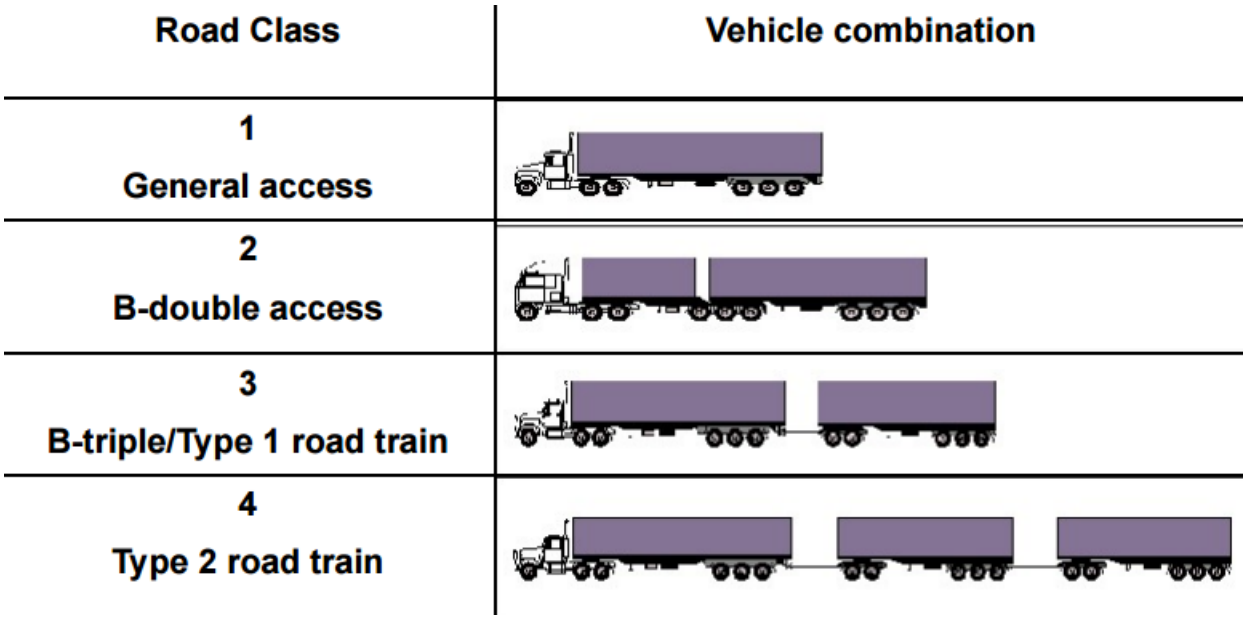
- reduces road congestion and road wear;

- supports intermodal transport.

There is no doubt that the EMS concept as well as the experience of LHV operation in other regions of the world is worth serious attention of the EATL countries. The best results can be

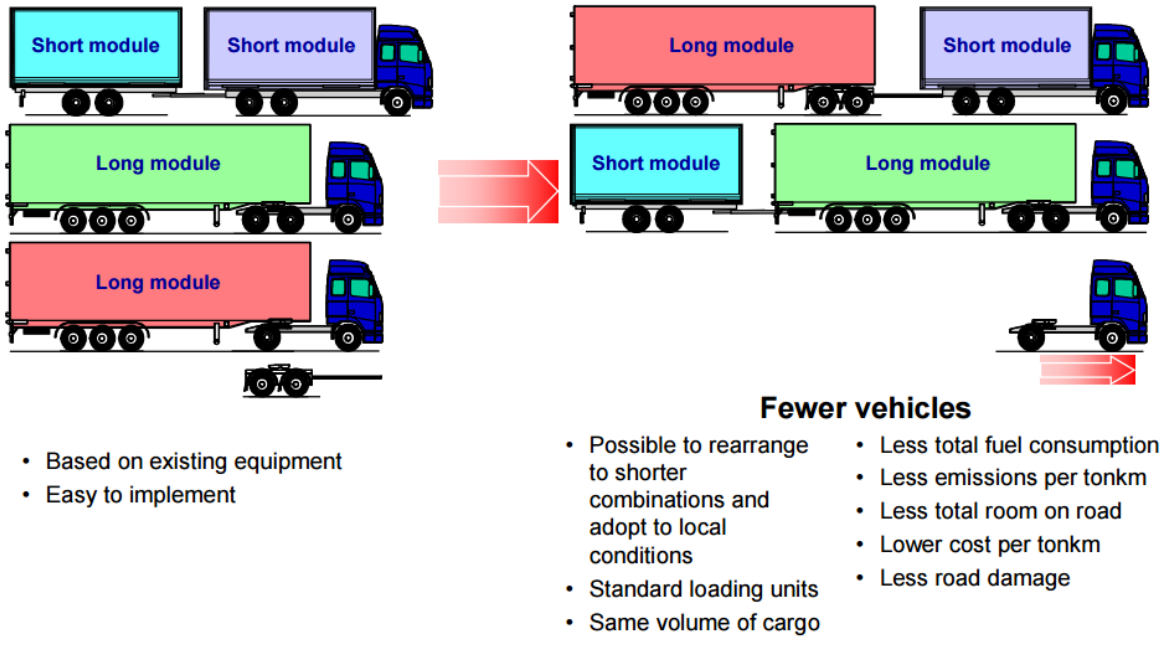
achieved if the EATL countries work at recommendations to support a harmonized application of the LHV.

Figure. 1.33
Australian road vehicle types.



Source: Anders Lundström President of the International Forum for Road Transport Technology, IFRTT. Potential of High-Productivity Vehicles. Workshop presentation, June 24, 2009, Brussels)

Figure. 1.34
Eurokombi concept

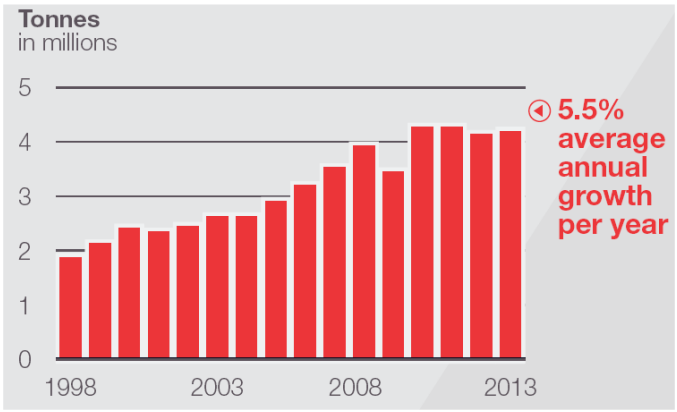


Source: Stefan Larsson, Director, Regulatory Projects. Weight and dimensions of heavy commercial vehicles as established by Directive 96/53/EC and the European Modular System (EMS). Workshop presentation ,June 24, 2009, Brussels)

1.3.5. Air routes and main airports

As Boeing in its "World Air Cargo Forecast 2014-2015" reported[3], the Europe-Asia[4] market comprises approximately 19.6% of the world's air cargo traffic in tonne-kilometers and 10.0% in tonnage.

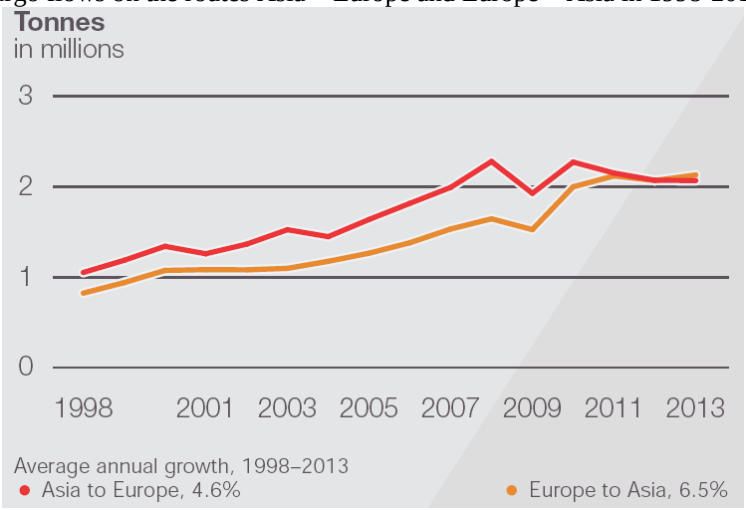
Figure. 1.35
Volume of Europe – Asia air cargo traffic in 1998-2013, millions tonnes



Source: World Air Cargo Forecast 2014–2015

Europe-Asia air cargo traffic has averaged 5.5% growth per year since 1998. The market contracted 3.1% in 2012 but then grew 1.4% in 2013. The Europe-Asia annual growth chart shows overall air traffic flows between Europe and Asia that also contain some sixth-freedom traffic that flows into or out of other regions. The chart does not represent the actual trade flows by direction. Therefore, comparisons should not be made between the chart and the following air trade flow analysis.

Figure. 1.36
Annual growth of air cargo flows on the routes Asia – Europe and Europe – Asia in 1998-2013, %



Source: World Air Cargo Forecast 2014–2015

[3] World Air Cargo Forecast 2014–2015. Boeing, Seattle, 2014

[4] For the purposes of forecast, the Boeing defines Europe as all 27 member countries of the European Union plus Switzerland, Norway, Iceland, Turkey, Albania, Gibraltar, and all the countries of the former Yugoslavia. Asia is defi ned as Japan, China, Hong Kong, Taiwan, South Korea, Singapore, the Philippines, Indonesia, Malaysia, Thailand, Vietnam, Macau, Cambodia, New Zealand, and Australia.

During the early 1990s, Europe's imports showed no growth as the recession that followed the 1991 Gulf War took a heavy toll on the European economy. At the same time, Asia's demand for Europe's goods increased dramatically.

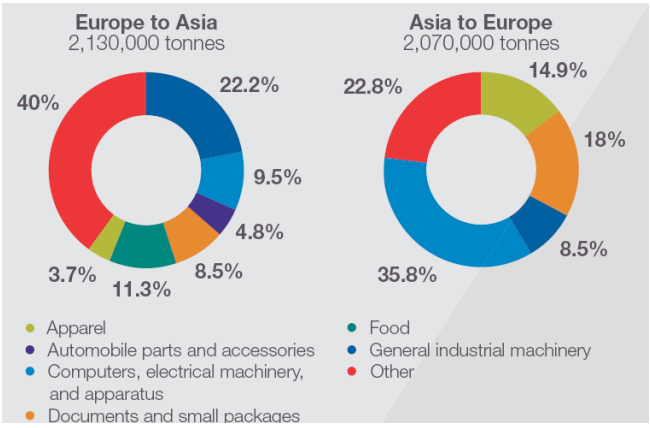
Since 1998, Asia-to-Europe flows have exceeded Europe-to-Asia flows. By 2008, Europe was importing 2.3 million tonnes from and exporting 1.6 million tonnes to Asia. The gap between Europe's imports and exports has reversed as a result of the global economic downturn of 2008 and 2009 and of attendant aggressive financial stimulus in Asia. China led the way with a stimulus package equivalent to 3.2% of its GDP in 2009, exceeding the 2% GDP stimulus recommended by the International Monetary Fund. The European economy continued to struggle from 2011 through 2013, leading European imports to contract. In 2012, the gap between Europe's imports and exports was approximately 2,800 tonnes, In 2013 Europe's exports surpassed imports by approximately 62,000 tonnes.

The overall Europe-Asia market grew 1.4% in 2013 after contracting 3.1% in 2012. The Europe-to-Asia fl ow grew 3.0% in 2013 after declining 2.4% in 2012. In the Asia-to-Europe direction, the fl ow declined 0.1% in 2013 and 3.7% in 2012. The contraction in Europe's imports refl ects the state of the European economy, which grew at a lackluster pace of 0.4% in 2013 and contracted 0.1% in 2012.

Long-term air cargo growth has maintained a steady 5.5% average annual rate since 1998 despite these temporary reversals. The air cargo market in the Europe-to-Asia direction has grown 6.5% per year over the same 15-year period. In the Asia-to-Europe direction, the market averaged 4.6% growth.

The Asia-to-Europe flow consists primarily of consumer goods, while the Europe-to-Asia flow is primarily manufactured goods.

Figure. 1.37
Air cargo structure by main commodity groups on the routes Asia – Europe and Europe – Asia in 2013, %



Source: World Air Cargo Forecast 2014–2015

In the Europe-to-Asia direction, the top six commodity categories account for 60% of air cargo traffic. In descending order, the categories are general industrial machinery, food, computers, electrical machinery and apparatus, documents and small packages, automobile parts and accessories, and articles of apparel. In the Asia-to-Europe direction, the top four commodity categories account for 77% of air trade. The categories are:

- computers,

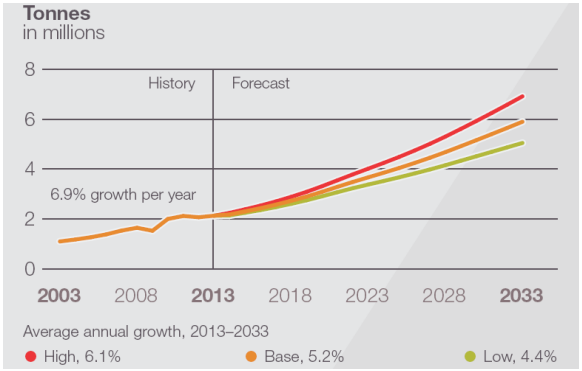
- electrical machinery,
- and apparatus;
- documents and small packages;
- articles of apparel; and
- general industrial machinery.

One particularly fast-growing market segment between Europe and Asia has been documents and small packages, sometimes referred to as "traditional express traffic." This trade flow has averaged 5.9% annual growth in daily shipment count in both directions since 1998, as the movement of business samples, legal documents, and other expedited small-batch items between Europe and Asia has increased. The total bidirectional express market averaged nearly 375,000 shipments per day in mid-2013.

Europe-Asia air cargo market forecast

Base, low, and high models were developed to forecast the Europe-Asia air cargo market. GDP projections of 0.5% below and above the baseline were assessed, and the results of these growth rates are reflected in the low- and high-growth scenarios.

Figure. 1.38
Europe-Asia air cargo market forecast till 2033 by Boeing, millions tonnes

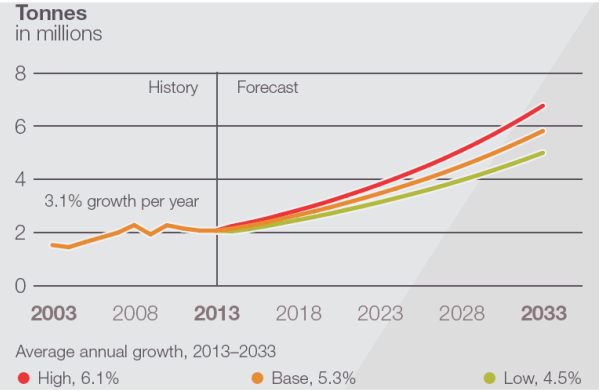


Source: World Air Cargo Forecast 2014–2015

Europe-to-Asia fl ows will average 5.2% growth as China continues to open its markets in accordance with WTO guidelines. Several hundred million people in Asia will become moderately affl uent and are expected eventually to demand increasing quantities of goods from Europe.

Asia-to-Europe fl ows will grow slightly faster, with long-term growth averaging 5.3% during the forecast period.

Figure. 1.39
Asia-Europe air cargo market forecast till 2033 by Boeing, millions tonnes



Source: World Air Cargo Forecast 2014–2015

I.4. EATL related sea ports and their hinterland connections

I.4.1. Sea ports role in EATL corridors

Maritime shipping is the main mode of transport in international trade and seaports remain the crucial nodes of international transport and trade. They act not only as the hubs of global shipping network but also as biggest portals and distribution centers of the continental logistic systems.

The role of seaports in supply chains is evolving with the progress of supply chains themselves. This evolution is most evident in the transport system of the European Union where sea ports are deeply integrated in the whole logistic infrastructure.

Port organization and functions in Europe has gone through several stages. According to [14] the following main stages can be highlighted.

Stage one. Since 1970-s on the wave of containerization enormous efforts were undertaken by different stakeholders involved in port business together with the port authorities to optimize internal port processes and make ports more efficient.

Stage two. Since the 1990scooperative interaction between ports has rapidly gained importance. The main driving forces were the emergence of short sea shipping, increasing vessel sizes and volumes and consequently the growing pressure on port capacity. During this phase different types of ports have emerged each playing special role within the sea-land interface:

- main ports: attract large volumes in all market segments and serve ocean-going vessels;

- transhipment ports: handle large container flows, although their distribution function towards the hinterland is rather limited. The main function of transshipment ports is to interconnect ocean container lines and feeder routes;

- second-tier ports: these have an important cargo-bundling and distribution function. The transshipment function can still be important, but lower volumes are generated than at main and transshipment ports;

- third-tier ports: these are largely focused on the “immediate” hinterland (closely located customers). Often not all market segments are served by these ports.

Stage three. Since the first decade of the century, a ‘terminalization phase’ is going on. Port business is increasingly focused on specialized terminals through which the hinterland is served. Ports are no longer considered to be purely transfer centers, but are becoming comprehensive flow-through areas within logistics chains, which are functionally linked to distribution developments in the hinterland.

Inland logistic centers and terminals are becoming important consolidation hubs for seaports. They act not only as cargo-bundling points, reducing capacity pressure on seaport terminals, but also as distribution centers. Seaports and inland terminals belong to the intermodal transport system serving the European supply chains.

Stage four. While port terminalization is still unfolding, the next phase in the rapidly changing logistics market is already starting to emerge, i.e. the formation of genuine port networks. [14].

In such an environment the sea ports, although competing, are more and more in constant cooperation within supply chains and the cargo flows are flexibly distributed between them following the market situation.

Sea ports are of great importance for EATL countries. They do not just provide overseas trade for maritime and landlocked countries and effective transshipment between marine transport and other modes. Trade and transport flows passing through the sea ports and the port access infrastructure benefit from the economies of scale that makes inland transportation in hinterland areas (which can extend for thousands of kilometers) cost-effective.

Besides that, the logistic infrastructure of ports themselves as well as that of the dry ports, that can be located hundreds of kilometers in the hinterland, provides enormous added value in supply chains.

According to the contemporary logistic approach, sea ports should not be analyzed or developed as isolated units. Development plans should consider also the port hinterland connections and the infrastructural objects located in the hinterland and directly linked to sea ports (logistic centers, dry ports, inland intermodal terminals). Such an approach should be used while developing national transport policies and infrastructure development plans, as well as in the regional documents adopted by EATL countries.

Developing economies' share of world container port throughput in 2014 increased marginally toapproximately 71.9 per cent. This continues the trend of a gradual rise in developing countries'share of world container throughput [Maritime review 2014].

With the strong economic growth of Asia, namely of China, cargo throughput in Asian seaports has steadily grown in the past 10 years. The major European ports Rotterdam, Antwerp, and Hamburg, have only grown by 167 per cent, 159 per cent and 144 per cent respectively in the same period of time. In 2014, the ports of Ningbo-Zhousan, Shanghai, Singapore, Tianjin have become the biggest seaports by tonnage in TEU, and world's biggest container ports.

The EATL route network is connected to many of these major seaports. The 20 important seaports are located in the Baltic and North Sea, in the Mediterranean, on the Pacific coast, and on the Gulf in the Arabian Sea (See Table 1.22).

The biggest seaport on the Baltic Sea is Riga (Latvia) with an annual cargo throughput of 34,040,000 tonnes (2013). In the Mediterranean the biggest port by throughput is Piraeus (Greece) with 40,192,000 tonnes (2013), while on the Pacific coast Shanghai is the biggest port with an annual throughput of 543,000,000 tonnes (2013).

Other important ports that are not direct end points of EATL routes but are in close proximity are the major European ports in the North Sea, such as the port of Rotterdam (Netherlands)- (annual throughput of 406,549,000 tonnes (2013), as well as the ports of Bandar Abbas (Iran) and Karachi (Pakistan)-41,350,000 tonnes (2013-2014) in the Arabian Sea

In addition to maritime seaports the EATL network encompasses also major ports in the Caspian Sea, where the ports of Baku (Azerbaijan), Aktau (Kazakhstan) and Turkmenbashi (Turkmenistan) had an annual cargo throughput of 25,000,000 tonnes and 12,000,000 tonnes respectively (2011), and in the Black Sea, with the port of Ilyichevsk (Ukraine) and the port of Varna (Bulgaria) with annual cargo throughput of 15,530,000 tonnes and 12,950,000 tonnes respectively.

The seaports on the Pacific side, Shanghai (China), Lianyungan (China), Vladivostok (Russia) and Nakhodka/Vostochny (Russia) play an important role for the EATL as they connect Eurasia with the Republic of Korea, Japan and Taiwan Province of China. Car manufacturers such as Daewoo Motors, Kia Motors and Hyundai have been using these ports as entry gates to the Russian and Chinese markets, and use the Trans-Siberian Railways for container freight trains of automotive parts and cars from and to their production sites inside Russia and Uzbekistan.

The Baltic Sea ports of Ventsplis, Riga and Klapeida actively position themselves as regional hubs in the East-West transport link between Europe and Russia[24] and the North—South transport link to the Black Sea and the Caucasus. Many container freight services connecting these ports are a witness of this positioning. The Iranian ports of Bandar Abbas and Chabahar are also looking towards building a landbridge to Afghanistan, Central Asia and China through Central Asia with the Iran Railways currently building a railway connection from Sangan, in the South East of the country close to both ports, to Herat in Afghanistan.

Table 1.22
EATL system seaports and their relation to EATL routes

	Port	EATL rail routes connected	EATL road routes connected
	Aktau (Kazakhstan)	5d,6d	3d,4,6c,6g
	Alexandroupolis (Greece)		5c
	Amirabad (Iran)	5a	
	Anzali (Iran)	5	6
	Arkhangelsk (Russia)		1c
	Astrakhan (Russia)	5,5a,5b,5c	6,6a,6c
	Atyrau (Kazakhstan)		6g
	Baku (Azerbaijan)	3, 3a	4,4f,6a
	Bandar Abbas (Iran)	5	6,6f
	Bandar Imam (Iran)	5e	6d
	Batumi (Georgia)	3, 3g, 3h, 3i, 3h,8d	3e,3f,4,4b,4c, 4d,4e,4i,4j,4n
	Burgas (Bulgaria)	3j	3e
	Bushehr (Iran)	5f	6e
	Chabahar (Iran)	5g	6g
	Constanta (Romania)	3,4,4h,4i	4,5i
	Derince (Turkey)	4,4g,4h	5,5j
	Galati (Romania)	3o	
	Haydarpasha (Turkey)	4	5,5i
	Igoumenitsa (Greece)		5c
	Ilyichevsk (Ukraine)	3g,4b,4g	4c,4i,4m,5d,5j,7
	Iskenderun (Turkey)	3f,4a	
	Izmir (Turkey)	4d,4e	
	Kaliningrad (Russia)*	8b	3c
	Kavala (Greece)		5c
	Kavkaz (Russia)	8c	3e,3f
	Lianyungang (China)	2,3,4,7	2,3,4,5
	Makhachkala (Russia)		3d
	Mersin (Turkey)	3f,4a	
	Murmansk (Russia)	5h	7
	Nakhodka (Russia)		1
	Novorossiysk (Russia)	8d	3e,3f
	Odessa (Ukraine)	3g	4b,4c,4i,4m,5d,7
	Olya (Russia)	5,5a,5d	6,6a,6c
	Poti (Georgia)	3, 3g, 3h, 3i, 3h,8d	3e,3f,4,4b, 4c,4d,4e,4i,4n
	Samsun (Turkey)	4b,4i	3e,4e,4m,4n,5d
	Shanghai (China)	2,3,7	2,3,4,5
	St-Petersburg (Russia)	1a, 2a,5,5h	1,7
	Thessaloniki (Greece)		5c
	Trabzon (Turkey)		4e,4m,4n
	Turkmenbashi (Turkmenia)	3a	4f,6g

	Port	EATL rail routes connected	EATL road routes connected
	Varna (Bulgaria)	3h, 3i,8d	4d
	Vladivostok (Russia)	1,6	1
	Vostochny (Russia)	1,6	1

I.4.2. Ports statistics and trends

The dearth of available port statistics is less prevalent with regard to container ports because they are common user facilities, that is, they represent the trade of thousands of cargo owners. Table 1.23 shows throughput volumes for the world's 20 leading container ports from 2013 to 2015.

Table 1.23
Top 20 container terminals and their throughput, 2013, 2014 and 2015 (Thousands of 20-foot equivalent units and percentage change)

Rank	Port Name	Country	2013	2014	2015	Percentage change 2014-2013	Percentage change 2015 -2014
1	Shanghai	China	33 617	35 290	36 540	4.98	3.54
2	Singapore	Singapore	32 579	33 869	30 922	3.96	-8.70
3	Shenzhen	China	23 279	24 040	24 200	3.27	0.67
4	Ningbo and Zhoushan	China	17 351	19 450	20 630	12.10	6.07
5	Hong Kong	China	22 352	22 200	20 100	-0.68	-9.46
6	Busan	Republic of Korea	17 686	18 683	19 467	5.64	4.20
7	Guangzhou	China	15 309	16 610	17 590	8.50	5.90
8	Qingdao	China	15 520	16 580	17 430	6.83	5.13
9	Dubai Ports	United Arab Emirates	13 641	15 200	15 590	11.43	2.57
10	Tianjin	China	13 000	14 060	14 110	8.15	0.36
11	Rotterdam	Netherlands	11 621	12 298	12 235	5.83	-0.51
12	Port Klang	Malaysia	10 350	10 946	11 887	5.76	8.60
13	Kaohsiung	Taiwan	9 938	10 593	10 260	6.59	-3.14
14	Antwerp	Belgium	8 578	8 978	9 654	4.66	7.53
15	Dalian	China	10 015	10 130	9 450	1.15	-6.71
16	Xiamen	China	8 008	8 572	9 180	7.04	7.09
17	Tanjung Pelepas	Malaysia	7 628	8 500	9 130	11.43	7.41
18	Hamburg	Germany	9 257	9 720	8 821	5.00	-9.25
19	Los Angeles	United States	7 868	8 340	8 160	6.00	-2.16
20	Long Beach	United States	6 648	6 818	7 190	2.56	5.46
	Total top 20		**294 245**	**310 877**	**312 546**	**5.65**	**0.54**

Source: Various sources, including Port of Rotterdam (2015).

The top 20 container ports, which account for 55 per cent of the throughput of the top 100 ports, showed a 95 per cent decline in growth, from 5.6 per cent in 2014 to 0.5 per cent in 2015. Although this does not appear to be true of other smaller ports, which experienced larger gains. The top 100 container ports are estimated to have handled a throughput of 539 million TEUs in 2015, up by about 6.8 per cent from the 505 million reported in 2014 (Informa PLC, 2016) . The list of top 20 container ports includes 15 ports from developing economies, and as in the previous year, are located in Asia; the remaining five ports are from developed countries, three of which are located in Europe (the Netherlands, Belgium and Germany). The top 10 ports continue to be located in Asia. Nine of the top 20 container ports are located in China, and seven of these (excluding Dalian and Hong Kong, China) experienced positive growth. Overall, the top 20 container ports in China grew by 3.7 per cent in 2015, in spite of the economic slowdown

(JOC.com, 2016a). Seven of the top 20 ports experienced a negative growth rate in container port throughput, compared with the previous year, while an additional two barely managed a positive growth rate at less than 1 per cent. The most significant declines occurred in Hong Kong (China), Hamburg (Germany) and Singapore at -9.5, -9.3 and -8.7 per cent, respectively.

Conversely the ports of Port Klang (Malaysia), Antwerp (Belgium) and Tanjung Pelepas (Malaysia) experienced the most growth at 8.6 per cent, 7.5 per cent and 7.4 per cent, respectively. The port of Tanjung Pelepas made significant strides in 2014, with 11.4 per cent growth on the completion of infrastructure investments.

Growth was expected to be reduced to around 4.4 per cent in 2015 but proved much better. Malaysian ports have consistently expanded their throughput during the last decade so that both Port Klang and Tanjung Pelepas are now handling twice the volume of 2005.

Table 1.24 shows improvements in container berth productivity in selected developing countries in 2015, compared with 2014. The highest growth is in the port of Sohar, Oman, 160 km from Dubai, which experienced a doubling in the number of container handling operations following improvements made by its operator, Hutchinson Port Holdings (Handy Shipping Guide, 2015).

Table 1.24
Container berth productivity, selected developing countries, 2015

Terminals	International terminal operators	Ports	Countries	Regions	Improvement (percentage)
Oman International Container Terminal	HPH	Sohar	Oman	Middle East	101
Luanda Container Terminal	APMT	Luanda	Angola	Africa	52
Tanzania International Container Terminal Services	HPH	Dar es Salaam	United Republic of Tanzania	Africa	37
Nam Hai Terminal		Haiphong	Viet Nam	Asia	22
DP World Maputo	DP World	Maputo	Mozambique	Africa	21
Tecon Suape Container Terminal	ICTSI	Suape	Brazil	South America	20
South Container Terminal	DP World	Jeddah	Saudi Arabia	Middle East	20
Shuaiba Area Container Terminal		Shuaiba	Kuwait	Middle East	18
Jawaharlal Nehru Container Terminal	DP World	Nehru	India	Asia	18
Evergreen Container Terminal – LCB2	Evergreen	Laem Chabang	Thailand	Asia	17
Manzanillo International Terminal	SSA Marine	Manzanillo	Panama	South America	16
Panama Ports Company	HPH	Cristobal	Panama	South America	16
First Container Terminal	Global Ports	St. Petersburg	Russian Federation	Europe	14
Société de manutention du terminal à conteneurs	Bolloré Group	Cotonou	Benin	Africa	13
Terminal Petikemas Surabaya	DP World	Surabaya	Indonesia	Asia	11
Korea Express Busan Container Terminal	China Shipping Group	Busan	Republic of Korea	Asia	9
South Harbor International Container Terminal (ATI)	ICTSI	Manila	Philippines	Asia	8
Aqaba Container Terminal	APMT	Aqaba	Jordan	Middle East	7
Walvis Bay Container Terminal		Walvis Bay	Namibia	Africa	6
PSA Singapore Terminals	PSA	Singapore	Singapore	Asia	6
Terminal 2 – Rio Multitermais Container Terminal		Rio de Janeiro	Brazil	South America	5
Dongbu Pusan Container Terminal	Evergreen	Busan	Republic of Korea	Asia	3
Port Akdeniz	Global Ports Holding	Antalya	Turkey	Asia	2
APM Terminals Pecem	APMT	Pecem	Brazil	South America	2

Source:
UNCTAD secretariat calculations, based on the port productivity database of JOC.com (2016b) and other sources.
Note:
For the purpose of this research, berth productivity is defined by JOC.com as "the average number of container moves per crane, per hour while a ship is at berth". The relative improvement has been measured and then weighted by call size to achieve actual improvement in year-on-year performance.

The figures show that double digit growth in terminal efficiency is possible. These terminals often benefit from the experience of a global terminal operator who is part owner, part operator. It is not unusual for more than one competing international terminal operator to have a presence in the same port at different terminals, and in a limited number of cases, within the same terminal. For example, in 2013, the Antwerp Gateway common user terminal at Deurganck Dock was a joint-venture between DP World (42.5 per cent), ZIM ports (20 per cent), the former China Ocean Shipping Pacific (20 per cent), Terminal Link/CMA CGM (10 per cent) and Duisport (7.5 per cent), with DP World acting as the operator (DP World, 2013). As reported in previous editions of the Review of Maritime Transport, improvements in terminal operational performance are difficult to sustain year on year.

Unlike container ports, bulk and liquid ports are not common user ports and tend to represent the interests of a few cargo owners. This makes it difficult to obtain statistics on these sectors. Table 1.25 shows the world's leading ports by volume. Fourteen of these top 20 ports are in China, a further three in Asia and one in Europe.

Table 1.25
World's leading ports by total volume, 2013–2015 (Thousands of tons)

Rank	Port	Country	2013	2014	2015	Percentage change 2014–2013	Percentage change 2015–2014
1	Ningbo and Zhoushan	China	809 800	873 000	889 000	7.80	1.83
2	Shanghai	China	776 000	755 300	717 400	-2.67	-5.02
3	Singapore	Singapore	560 800	581 300	574 900	3.66	-1.10
4	Tianjin	China	500 600	540 000	541 000	7.87	0.19
5	Suzhou	China	454 000	480 000	540 000	5.73	12.50
6	Guangzhou	China	454 700	500 400	519 900	10.05	3.90
7	Qingdao	China	450 000	480 000	500 000	6.67	4.17
8	Tangshan	China	446 200	500 800	490 000	12.24	-2.16
9	Rotterdam	Netherlands	440 500	444 700	466 400	0.95	4.88
10	Port Hedland	Australia	326 000	421 800	452 900	29.39	7.37
11	Dalian	China	408 400	420 000	415 000	2.84	-1.19
12	Rizhao	China	309 200	353 000	361 000	14.17	2.27
13	Yingkou	China	330 000	330 700	338 500	0.21	2.36
14	Busan	Republic of Korea	292 400	312 000	323 700	6.70	3.75
15	South Louisiana	United States	241 500	264 700	265 600	9.61	0.34
16	Hong Kong	China	276 100	297 700	256 600	7.82	-13.81
17	Qinhuangdao	China	272 600	274 000	253 100	0.51	-7.63
18	Port Klang	Malaysia	200 200	217 200	219 800	8.49	1.20
19	Shenzen	China	234 000	223 300	217 100	-4.57	-2.78
20	Xiamen	China	191 000	205 000	210 000	7.33	2.44
	Total top 20		**7 974 000**	**8 474 900**	**8 551 900**	**6.28**	**0.91**

Source: UNCTAD (2016) Review of Maritime Transport 2016

These ports experienced an 85 per cent decline in growth, from 6.3 per cent in 2014 to 0.9 per cent in 2015. Of the seven ports that experienced declines in throughput in 2015, Singapore was the only one not located in China. The Chinese port of Suzhou experienced the largest increase in throughput, 12.5 per cent. The next largest gain in port throughput was recorded by Rotterdam, the Netherlands, which experienced a growth of 4.9 per cent. Rotterdam's growth stemmed from increased trade in liquid bulks, in particular crude oil (up 8 per cent), mineral oil products (up 18 per cent) and liquefied natural gas (up 92 per cent) (Port of Rotterdam, 2016).

I.4.3. Logistic centers and dry ports and in the EATL system

Smooth functioning of the supply chain requires modern infrastructure. Nowadays logistic centers are considered to be the mandatory components of logistic infrastructure carrying on numerous functions in the supply chains.

Europlatforms [20] give the following description of logistic center (LC) concept: "It is a designated area within which all operations connected with transport, logistics and distribution of goods are performed by different operators as part of deliveries, both on the national and international level. These operators may be owners of built and situated in the center: buildings, offices, warehouses, storage yards, parking places, facilities, etc. or use them pursuant to leasing or rental agreements. In order to respect the principles of free competition, the center must ensure access to all companies involved in activities described above. The logistics center must be equipped with devices and facilities available to the general public allowing to provide services. Whenever possible it should also ensure public services for the staff and users' equipment. In order to support the development of inter-modal technologies in cargo relocation, the logistics center should be supported by many branches of transport. It is also necessary that the center be run by an entity appointed especially for this purpose from the public or private sphere".

Logistics centers have the most extensive structure of all components comprising the logistics network. They are composed of many facilities collaborating with each other and co-operating logistics operators. LC enables to conduct operations on goods in connection with warehousing and relocating them between the shipper and the consignee, providing intermodal transportation and value-added services against the transported commodities.

Intermodal terminal is the specific component of the logistic center. It serves not only as a pivot where cargo (usually in containers, contrailers or swap-bodies) is transshipped between the modes. Logistic centers' intermodal terminals are the origin/destination points for regularly operating block-trains linking the LC with other LCs located in sea ports, surface transport nodes, logistic hubs, industrial areas, etc. This is the most attractive feature for logistic operators locating their business on the LC.

The LC idea is currently used in most of the developed economies. Various terms, besides the *Logistic Center*, are used to identify the objects of the type in different countries: *Terminal village*, *Freight village*, *Logistic Village*, *Dry Port* – in English-speaking countries, *GuterVerkehr Centrum* (Center for Freight Transport) – in Germany and Austria, *Interporto* (transshipment point) – in Italy, *Rail Service center* – in Netherlands, *Platform de Fret*, *Platform Logistigue* (Freight platform, logistic platform) – in France.

While in Europe and in North America logistic centers have long ago become the compulsory component of logistic infrastructure, Asia is just in the early stage of LC development. To speed it up, in 2013 the Intergovernmental Agreement on Dry Ports was concluded under the auspices of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). The Agreement is aimed to promote the cooperation of the development of dry ports in the Asia-Pacific region. As of April 2016, the Agreement has been signed by 17 UNESCAP states.

The Agreement identifies a number of existing and potential dry port locations that are to be the basis of a coordinated effort to create nodes along an international integrated intermodal transport and logistics system.

According to the Agreement , a dry port of international importance ("dry port") refers to an "Inland location as a logistics center connected to one or more modes of transport for the handling, storage and regulatory inspection of goods moving in international trade and the execution of applicable customs control and formalities".

The Agreement (in its Annex I) identifies the dry ports subject to the agreement. The locations of the dry ports listed in the Agreement were chosen considering the following factors:

a) inland capitals, provincial/state capitals;

b) existing and potential industrial and agriculture centres;

c) major intersection of railways (Trans-Asian Railways), highways (Asian Highways) and inland waterways;

d) along trunk railways lines (Trans-Asian Railways),major highways (Asian Highways), inland waterways and airports/

The basic functions of dry ports include the handling, storage and regulatory inspection of goods moving in international trade and the execution of applicable customs control and formalities. Additional functions of dry ports may include, but are not limited to receipt and dispatch, consolidation and distribution, warehousing and transshipment.

The dry ports listed in the Agreement should be brought into conformity with the guiding principles for the development and operation of dry ports as described by Annex II of the Agreement. The guiding principles consider dry port functions, institutional, administrative and regulatory framework, design, layout and capacity of dry ports, their equipment and facilities.

According to the Agreement, the Parties adopt the list of dry ports as the basis for the coordinated development of important nodes in an international integrated intermodal transport and logistics system. They also intend to develop these dry ports within the framework of their national programmes and in accordance with national laws and regulations.

The implementation of the Agreement is considered by a Working Group on Dry Ports created according to the Agreement.

It appears that logistic centers in the EATL system should be the relay between transport corridors and regions. They should become international trading centers, interfaces between modes and between agencies participating in transportation and logistic process.

Being created in the hubs of EATL network, logistic centers could become the logistic "pivots" carrying on the following functions:

- acting as the points of local integration/distribution of goods in particular areas;

- serve as effective warehousing zones directly connected to transport services;

- being points of smooth transshipment between rail and road (as well as between different railway links) within intermodal transport services;

- act as platforms for industrial zones linked transport-logistic network;

- provide the possibility for value-added services execution within the supply chains;

- being located nearby the borders – provide infrastructure for effective border check procedures;

- being located on the connection points of different rail gauges – give opportunity to combine boogies exchange or freight transshipment with intermediate warehousing and/or value-added services.

In other words, Logistic Centers developed within the EATL network could become the modern market-oriented nodes of supply chains improving the competitiveness of the entire EATL system.

To be effectively inter-connected dry ports and inland terminal should provide standard – by scope and quality – logistic services. Currently these parameters differ much across the EATL terminal objects.

It seems reasonable to analyze the possibility of developing "Terminal services standard minimum" – first, in a form of recommendations or "Best practices manual". Primarily this task should be done concerning container business.

Figure *illustrates the location of dry ports (envisaged by the 2013 Intergovernmental Agreement on Dry Ports) related to EATL railway routes.

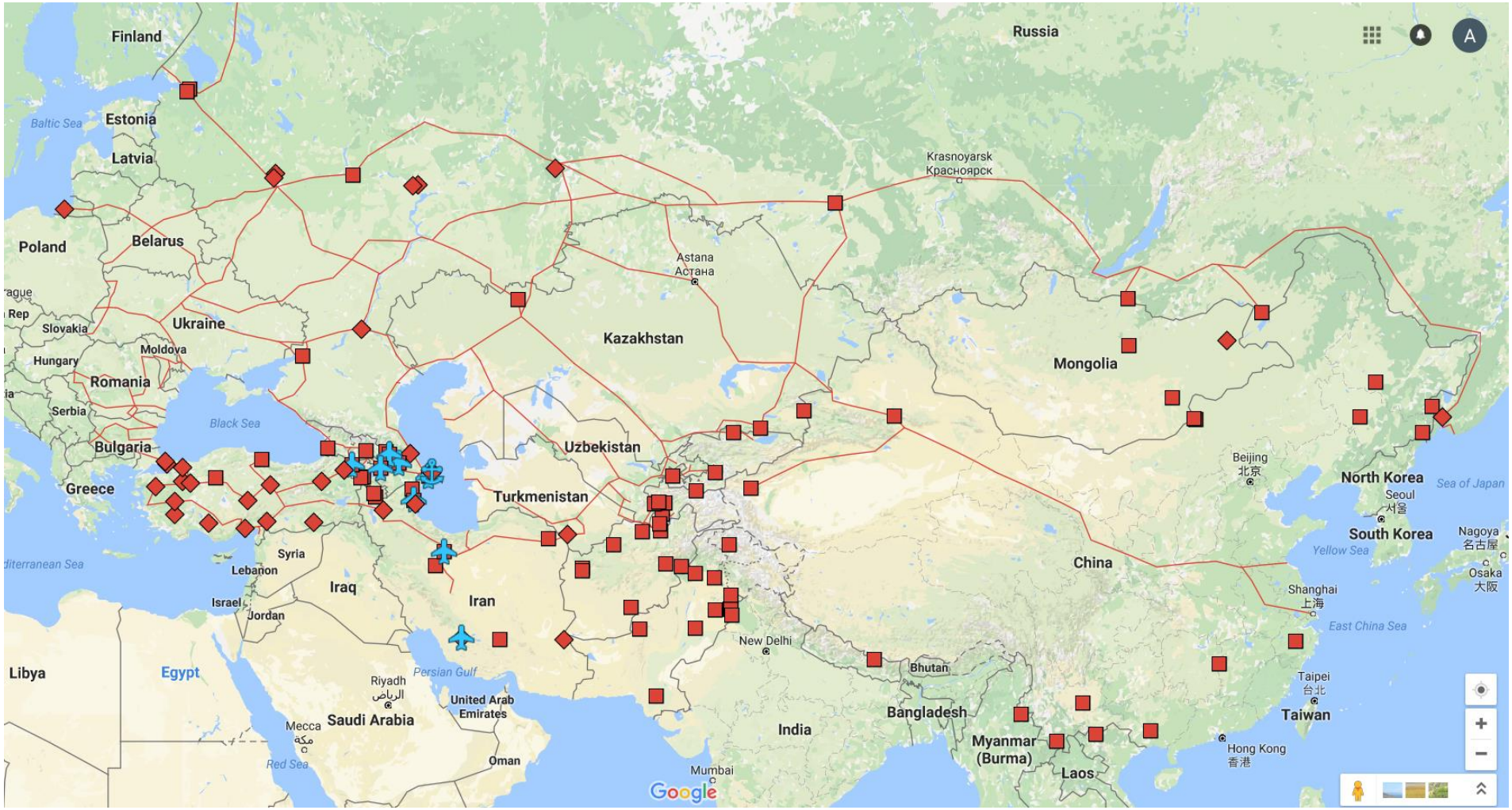


Figure 1.40. Dry ports listed in the 2013 Intergovernmental Agreement on Dry Ports related to EATL corridors

1.5. Comparative analysis of the duration and expenses of different modes of transport between Europe and Asia on selected Euro-Asian routes

General

On May 1998 in St. Petersburg, Russian Federation, during the International Euro-Asian Conference on Transport, European and Asian countries declared the desire to further connect and integrate their transport systems. One of the central ideas of such integration was to benefit from development of overland routes that are obviously shorter than the maritime lines.

At the same time, pure distance itself can not be the practical criteria of the route choice. Total transportation time (including the delays on the way), full delivery costs, service frequency and reliability, cargo "time sensitivity", value added services *en route* and other factors are considered while making such a decision.

For this reason, comparative analysis of maritime and overland routes connecting Europe and Asia is undertaken constantly in numerous studies held by different agencies and researchers. The aims of such an analysis can differ. In particular, they are undertaken in order to:

- demonstrate the principle advantages of particular overland corridors;

- choose the most competitive overland route among several options;

- evaluate the volumes of cargo that can be attracted to the overland routes, and so on.

This section contains several examples of the sea and overland routes comparative analysis:

- the upgraded fragment of the analysis undertaken during Phase II of the EATL research;

- the study undertaken by the Russian Centre for Economic and Financial Research at the New Economic School (CEFIR);

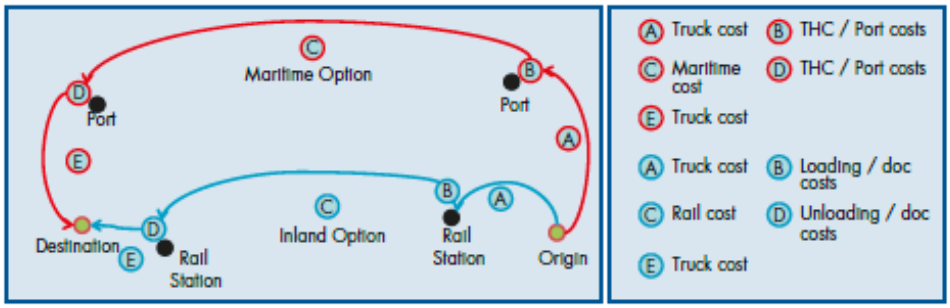
- the research provided by PLASKE – freight forwarding company involved into the Euro-Asian intermodal container transportation;

- theEurasian Development Bank study.

Phase II research

The Phase II study contained the section dedicated to comparative analysis of the maritime and inland Eurasian routes based on the time-cost methodology. The analysis included the total time and costs within the entire supply chain, which include road transport costs of moving containers from/to the warehouse/port, terminal handling charges, and documentation and other administrative costs.The structure of time and cost for compared routes is illustrated by figure *.

Figure 1.41
Structure of time/costs considered by the EATL Phase II study



Nine scenarios were analyzed. In all scenarios, rail transport performed better than maritimein terms of travel time. The Study showed that Euro–Asian rail transport, and its intermodalcombination with maritime and road transport, is a feasible and competitive transportoption provided that efficient rail corridor management is established, governments are willingto cooperate and rail companies serve customers'needs in an effective manner along the whole corridor.

In this section the selected results of this analysis are presented (6 scenarios out of 9, see table *). These results often can not give the definite advantage to certain option because time and costs comparison results can be contradictive (see the "Total Result" column of table * where ++ means both the time and cost advantage of overland route and 0 means that the comparison result is undefined).

Table 1.26
Selected results of the comparative analysis of the maritime and inland Eurasian routes (EATL Phase II study)

Trade lane	Maritime		Overland		Result		
	Time	Cost	Time	Cost	Time	Cost	Total
Khabarovsk - Potsdam	1093	6533	341	6967	+	-	0
Hangzhou - Kaluga	637	6786	277	4715	+	+	++
Tashkent - Varna	529	7550	165	5946	+	+	++
Almaty - Istanbul	672	4970	250	5881	+	-	0
Ussuriysk (Russian Federation) to Kyiv (Ukraine)	463	6290	289	5875	+	+	++
Shanghai - Warsaw	569	6300	446	8937	+	-	0

This comparison was continued and "upgraded" on the base of value of time data used in the World Container Model (see section **). Since the value of time can dramatically differ for different commodities, three options were used for calculations – low, average and high value (see table 1.27).

Table 1.27
Value of time options

	Commodities	Value of time, Euro/day/ton
Low	Solidmineralfuels	1
Average	Foodstuffsandanimalfodder	5
High	Machinery, transport equipment, manufactured and miscellaneous articles	8

For calculations it was assumed that the average payload of the FEU is 15 tons. The values given in table 1.28 were converted into US dollars. After that the "Total costs difference" including all the charges *en route* plus the "time costs" were calculated for all the routes compared. The results are shown in table *.The negative quantity of the total cost difference means that the overland transportation option is preferable.

Table 1.28
Comparison of routes taking into account the value of time

Trade lane	Total cost difference		
	Low	Average	High
Khabarovsk - Potsdam	-92,40	-2221,50	-3814,80
Hangzhou - Kaluga	-2323,00	-3342,25	-4105,00
Tashkent - Varna	-1858,80	-2889,38	-3660,60
Almaty - Istanbul	615,60	-579,19	-1473,30
Ussuriysk (Russian Federation) to Kyiv (Ukraine)	-536,80	-1029,44	-1398,10
Shanghai - Warsaw	2550,90	2202,66	1942,05

The results confirm the general conclusion made during Phase II of the project that at certain conditions many commodities can be effectively transported using the rail EATL routes. Among the analyzed trade lanes the sea option is more effective only the Shanghai – Warsaw direction (for all types of commodities considered) for obvious reason – shortest land leg of the route.

The CEFIR study

The study [16] described in this section was undertaken by the Russian Centre for Economic and Financial Research at the New Economic School (CEFIR) in order to evaluate the transit potential of the Russian Federation in respect to goods flows between Asia and the European Union. The study compiles the information available from the RETRACK project (FP6 EC program) and work done on the development of the World Container Model (WCM). The main goal of the study is to evaluate the Euro-Asian cargo volumes that can be transported via the following routes:

– **TransSib (TSR) (**red line on figure *).This rail link begins in North Eastern China, going North directly into Russia. The Russian TSR ends in Moscow, from which the line continues further via Belarus to central Poland;

– **TransSib – Kazakh**, light blue line. This rail link starts in Western China, going via Kazakhstan in the North-Western direction. It joins the TSR line in Russia and follows the Trans-Siberian corridor further;

– **Central corridor,** brown line. This rail link starts in Western China, going via Kazakhstan in the Western direction and enters Russia in the South, then continues via Ukraine and finally ending in Slovakia;

– **Maritime (Suez) route**, dark blue line. The maritime link starts in the Eastern coastal China, uses Suez Canal to get into the Mediterranean Sea. For the West Europe, the link can be extended further through the Strait of Gibraltar.

– **Arctic route**, green line The potential of this route was a special point of the study; it is not described in this report.

Informal document No. 1

Figure 1.42
Transport routes considered by the CEFIR study

Figure 1: Main rail and maritime bridges connecting Europe and China

The routes studied in this report will comprise:

- **TransSib (TSR)**, red line. This rail link begins in North Eastern China, going North directly into Russia. The Russian TSR ends in Moscow, from which the line continues further via Belarus to central Poland.
- **TransSib – Kazakh**, light blue line. This rail link starts in Western China, going via Kazakhstan in the North-Western direction. It joins the TSR line in Russia and follows the Trans-Siberian corridor further.
- **Central corridor**, brown line. This rail link starts in Western China, going via Kazakhstan in the Western direction and enters Russia in the South, then continues via Ukraine and finally ending in Slovakia.
- **Maritime (Suez) route**, dark blue line. The maritime link starts in the Eastern coastal China, uses Suez Canal to get into the Mediterranean Sea. For the West Europe, the link can be extended further through the Strait of Gibraltar.
- **Arctic route**, green line. The maritime link starts in Eastern coastal China, crosses the Bering Sea and Chukchi Sea, goes along the Northern coast of Russia. The link continues via Barents and Norwegian Seas finishing in the North Sea.

The potential assessment is made using the concept of the total logistics costs. The costs of transport between origin and destination points consist of two main components.

The first component is the cost directly related to physical transport. These include the costs of moving loading units (containers, bulk units) between loading and discharge points and costs of transshipment (deep sea terminal costs, rail terminal costs, etc.). These are the so-called "out of pocket" costs that the cargo owners have to pay to move their goods.

The second component of the total logistics costs is related to the time that the goods spend in transit. The goods in transit freeze capital, causing the so- called pipeline stock keeping costs. However, the cost for capital frozen in transported goods is often not the greatest time-related cost component. While the goods are in transit, the market situation can change. Demand variability leads to the necessity to carry safety stocks to cover the uncertainty in demand during the period of transportation. Transit time also reduces company ability to react to other market events, such as introduction of new products by the competitors. In the case of new product introduction, the goods arriving later lose a substantial part of their value and are sold at a discount. The time-related component of the logistics costs can be summed up in the Value of Time (VOT) value, which is commodity-specific.

The relevant estimations of time value for different goods are used in the World Container Model (WCM)[5]. The model has been calibrated on the basis of observed flows and VOT values used in the model have thus been proven to be realistic estimates.

For the assessment of the rail/rail and rail/land bridge potential the total logistics costs for three rail corridors and the deep sea routes indicated above were compared. The assessment of the corridors is based on their economic attractiveness: the corridors with smaller total logistics costs will be more attractive for the cargo owners.

[5]A strategic network choice model for global container flows: specification, estimation and application, LórántTavasszy, MichielMinderhoud, Jean-François Perrin, Theo Notteboom, Journal of Transport Geography, Volume 19, Issue 6, November 2011, Pages 1163–1172

For the objectives of the calculation, China had been split into 4 distinct regions, each having different growth prospects, economy properties, available infrastructure and various access costs to the Eastern deep sea ports: Western China (CN1), Central China (CN2), Coastal China North (CN3), Coastal China Center / South (CN4).

The model performs computations for the 4 Chinese regions, linking the regions to each of the 27 EU countries. All trade and transport volumes go to / come from the "centers" of those 4 regions.

Table 1.29
Regionalization of trade between EU and China within Chinese regions

ChineseRegion	Share of import / export
Western China	0,05
Central China	0,05
Coastal China North (CN3)	0,45
Coastal China Center / South (CN4)	0,45

The model estimated the average distances to and from each of the 27 EU countries to the European end points of the corridor. The same was also done for China: the distances were estimated between the 4 considered Chinese regions and the starting points of the corridors. These distances were used to determine the total logistics costs of transport to and from the rail corridors

The scenario 2020 used estimations over the expected at the time trade growth between China and the EU-27, expected improvements in rail infrastructure and spatial changes in the Chinese economy for the decade.

The Value of time in the model was expressed in euro/day/tonneper NSTR (*Nomenclature uniforme des marchandises pour les Statistiques de Transport, Revisée*)commodity typecomputed for the World Container Model (WCM). Commodity groups and corresponding Value of Time considered are presented in table 1.30.

Table 1.30
NSTR/1 commodity classification and value of time for commodity groups

NSTR/1 code	Commodity type	Value of time (Euro/day/ton)
NSTR0	Agricultural products and live animals	3,8
NSTR1	Foodstuffsandanimalfodder	5,0
NSTR2	Solidmineralfuels	1,0
NSTR3	Petroleumproducts	3,4
NSTR4	Oresandmetalwaste	2,6
NSTR5	Metalproducts	7,0
NSTR6	Crude and manufactured minerals, building materials	1,0
NSTR7	Fertilizers	1,0
NSTR8	Chemicals	7,0
NSTR9	Machinery, transport equipment, manufactured and miscellaneous articles	8,0

Main model parameters are presented in table 1.31.

For the basic model (year 2010) transit time wascalculated after the interviews with the stakeholders and expert opinion (RETRACK project[6]). Transshipment and shadow costs (reflecting a "resistance" for the goods flow, in particular, the non-physical barriers) were based on expert opinions and model calibration runs.

As for 2020, the assumption was made that the transit time between Europe and China across the rail corridors will improve. In addition, the ton-kilometer tariff and shadow costs are also expected to be reduced. These assumptions were all based on the proposed investments into therailwaysystems improvement between 2010 and 2020. The shadow costs for the rail corridors were estimated to be lower than in 2010, reflecting expected improvements in infrastructure and service. The maritime shadow costs have been kept constant.

Table 1.31
Main model parameters for 2010 and 2020

Corridor	Distance, km	Transit Time, days		Transport Cost, Euro/tonne/ km		Transshipment and shadow costs, Euro/tonne	
		2010	2020	2010	2020	2010	2020
TSR	8,000	20	14	0,07	0,035	400	300
TransSib – TransKazakh	5,200	16	12	0,07	0,035	500	400
Central	5,500	18	12	0,07	0,035	800	400
Maritime (Suez)	16,000	30	30	0,0025	0,0025	100	100

Table 1.32 shows the model cargo distribution between the corridors.

Table 1.32
Estimated 2010 and 2020 rail corridor and maritime volumes between China and EU 27

Volumes distribution, China – EU27, % to total	2010	2020
TSR corridor	1,4	8,1
TransSib – Kazakh corridor	0,2	6,0
Central corridor	0,3	4,4
Maritime (Suez) corridor	98,1	81,5
Total	100	100

One of the interesting aspects of the modelling was the study of competition between the overland corridors influence. In the basic 2010 scenario the low volumes imply that inter-corridor competition does not have an impact, as the corridors "do not see" each other. The growth, if any, is a result of attracting cargo from marine route. Contrary to the 2010 estimated situation, in 2020 competition would have an effect on rail volumes. The authors of the study conclude that weaker corridors would be more strongly affected by the intra-rail competition than the more attractive ones.

According to the modelling results, in 2010 the TSR and Kazakhstan corridors were the most attractive options, with the Kazakhstan corridor being slightly more attractive than TSR. Central corridor is not a viable option according to the modelling results.

In 2020, the TSR will become the most attractive rail land bridge, while the Kazakhstan land bridge will slightly lose its attractiveness. The most important expectation for 2020 is that the

[6]Retrack – Reorganization of Transport Networks by advanced Rail freight concepts: http://www.retrack.eu/

Central corridor will also become a good transport option, not being far behind the leading corridors.

The increased competitiveness of the TSR corridor in 2020 can be explained by the fact that this corridor has the fewest number of border crossings and transshipments (and the shadow costs are the lowest). Even assuming favorable developments in respect to infrastructure and alleviation of institutional barriers, border crossings and transshipment will still add extra transit time and costs. The extra times and border crossings are a strong structural resistance factor.

Generally, the modelling demonstrated that the total share of overland Eurasian transport can be increased from 1,9 to 18,5%. But to obtain this result, dramatic changes should occur: transit time must decrease by 25-30%, transport costs should be at the 50% level to the 2010 basis, transshipment and shadow costs should decrease significantly as well. It is clear now that this optimistic scenario is not realized in practice.

PLASKE company study

The research described below was provided by the PLASKE company – freight forwarder with experience in Euro-Asian intermodal container transportation [13].

The target of the research was the comparison of time and cost for cargo transportation via three rail EATL routes (No. 1, no. 2 and no. 7) and the sea route from China. The origin points are located nearby the sea (Shanghai), and in the remote from the sea region (Beijing). Destination point is Warsaw (Poland).

The 40'box containing motors for household sewing machines (cargo that requires no additional control measures), net weight 20 tons, was chosen as the object of transportation.

The specified delivery time is the smallest possible on the market.

Seven routes were chosen for the analysis: two of them connecting Shanghai and Warsaw and four between Beijing and Warsaw:

1a) **Shanghai**-Shanghai sea port – containership by sea - port of Gdańsk – railway container train - **Warsaw**;

1b) **Shanghai**- Railway route EATL No. 7 (China-[BCP Alashankou/Dostyk]-Kazakhstan-[BCP Saryagash/Keles]-Uzbekistan-[BCP Beyneu (Karakalpakia) /Oasis]- Kazakhstan -[BCP Aksaraiskaya/Ganyushkino]-Russia-[BCP Gukovo/Krasnaya Mogila] - Ukraine-[BCP Mostiska/Pshemyshl]-Poland), **Warsaw**;

2a) **Beijing**-railway container train -port Shanghai- containership by sea-port of Gdańsk- railway container train - **Warsaw**;

2b) **Beijing** - railway route EATL No. 7 (China-[BCP Alashankou/Dostyk]-Kazakhstan-[BCPSaryagash/Keles]-Uzbekistan-[BCP Beyneu (Karakalpakia) / Oasis]- Kazakhstan-[BCP Aksaraiskaya / Ganyushkino]-Russia-[BCP Gukovo/Krasnaya Mogila] – Ukraine - [BCP Mostiska/Pshemyshl] -Poland), **Warsaw**;

3a) **Beijing**-railway container train -port Shanghai-containership by sea -port of Gdańsk-railway container train -**Warsaw** (coincides with route 2 (a));

3b) **Beijing**-railwaycontainer train route No. 1 EATL (China-[BCPMančžouli/Zabaykalsk]-Russia (Trans-Siberian railway)-[BCP Red/Osinovka]-Belarus-[BCP Brest/Terespol]-Poland), **Warsaw**;

4a) **Beijing**-railwaycontainer train -port Shanghai-containership by sea -port of Gdańsk-railway container train -**Warsaw** (coincides with route 2 (a));

4b) **Beijing**-railway route EATL No. 2 (China-[BCPAlashankou/Dostyk]-Kazakhstan-[BCP Petropavlovsk (Mamlyutka)/Kokchetav]-Russia-[Red/Osinovka]-Belarus-[BCP Brest/Terespol]-Poland), **Warsaw**.

The results of the routes' comparison are presented below.

Case 1. Comparison of routes 1a and 1b (tables 1.33-1.36, figures 1.43-1.46) shows that rail traffic between China and Poland through Central Asia will be competitive for the carriage of containers in container trains only (average speed of 1000 km/day). The difference in delivery times in favor of railways in this case is big enough: 28 days.

Under normal conditions (standard train) this time advantage will likely be lost due to downtime of a train on the border crossings.

At the same time, cost difference here is the largest of all of the scenarios in the study: overland route is more expensive than sea by 8 $ 444.5. United States. The railroad crosses the territory of 7 countries (Kazakhstan, twice), and the total length of the path is 11 653 km-more than from China to Germany.

Table 1.33
Route 1a components

Route section	Length, km	Price, USD (Commercial offer)	Price, USD (Internet data)	Time, hours
Port Handling costs Shanghai sea port	-	100	100	-
Other costs Shanghai sea port	-	150	150	-
Shanghai port-port of Gdansk (by sea)	20486	2189	2350	981
Port Handling costs Gdansk sea port	-	165,5	165,5	-
Other costs Gdansk sea port	-	250	250	-
Port Gdansk- Warsaw (by rail)	373	445	445	14,5
Warsaw rail terminal handling costs	-	35	35	-
Warsaw rail terminal other costs	-	45	45	-
TOTAL	20859	3379,5	3540,5	995,5

Table 1.34
Route 1b components

Route section	Length, km	Price, USD (Railway tariffs)	Time, hours
Shanghairailterminalhandlingcosts	-	25	-
Shanghai rail terminal other costs	-	30	-

Route section	Length, km	Price, USD (Railway tariffs)	Time, hours
China (by rail) Shanghai Jun-gunlu-Alashankou	4529	6247	114
Kazakhstan (by rail) Dostyk-Sary-Agach	1831	910	50
Uzbekistan (by rail) Keles-Karakalpakia	1686	1399	46,5
Kazakhstan (by rail) Oasis-Dina Nurpeisova	796	982	25
Russian Federation (by rail) Kigaš-Gukovo	862	988	27
Ukraine (by rail) Krasnaya Mogila-Mostiska II	1576	718	43
Poland (by rail) Pshemyshl-Warsaw	380	445	9
Warsaw rail terminal handling costs	-	35	-
Warsaw rail terminal other costs	-	45	-
Total	11660	11824	314,5

Figure 1.43
Time – distance diagram for routes 1a and 1b

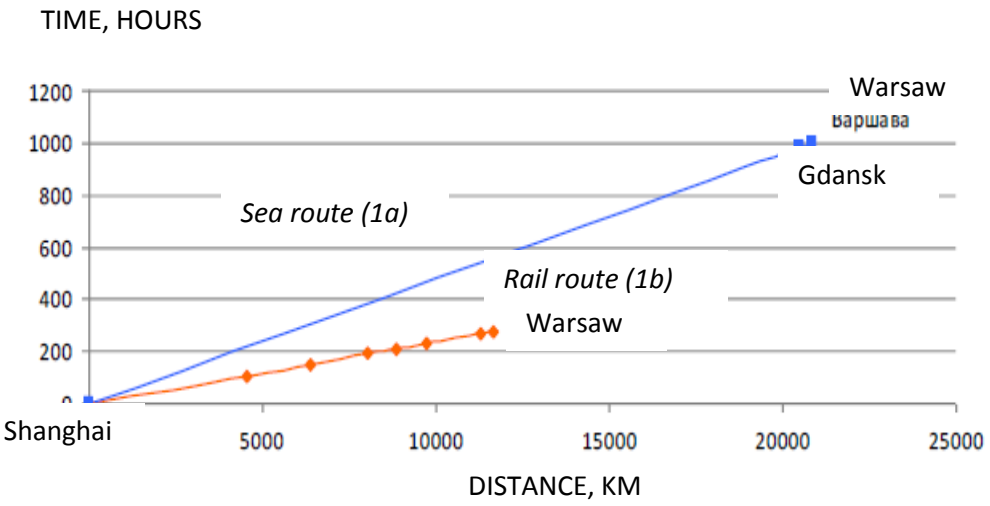


Figure 1.44
Cost – distance diagram for routes 1a and 1b

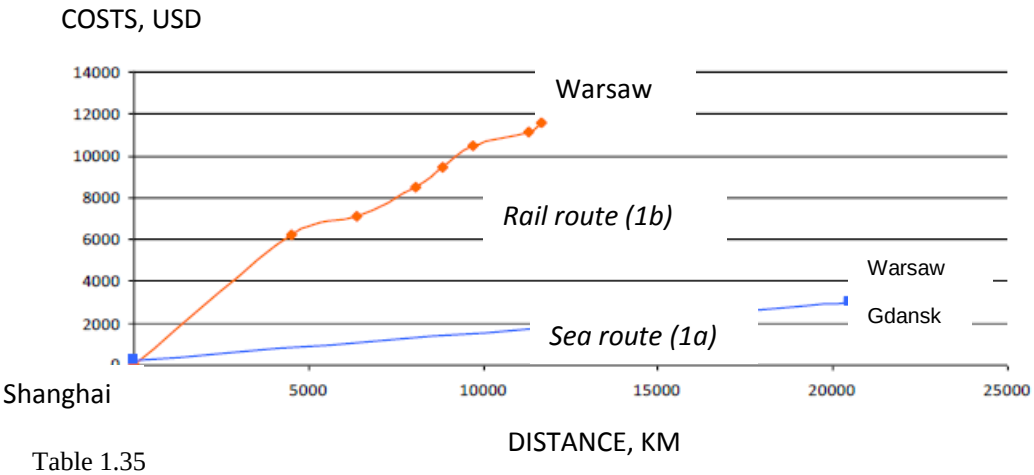


Table 1.35
Route 2a components

Route section	Length, km	Price, USD (Commercial offer)	Price, USD (Internet data)	Time, hours
Beijing – Shanghai sea port (by rail)	1095	1548	1548	26
Other costs Shanghai sea port	-	100	100	-
Shanghai port-port of Gdansk (by sea)	-	150	150	-

Route section	Length, km	Price, USD (Commercial offer)	Price, USD (Internet data)	Time, hours
Port Handling costs Gdansk sea port	20486	2189	2350	981
Other costs Gdansk sea port	-	165,5	165,5	-
Port Gdansk- Warsaw (by rail)	-	250	250	-
Warsaw rail terminal handling costs	373	445	445	14,5
Warsaw rail terminal other costs	-	35	35	-
Other costs Shanghai sea port	-	45	45	-
TOTAL	21954	4927	5088	1021,5

Table 1.36
Route 2b components

Route section	Length, km	Price, USD (Railway tariffs)	Time, hours
Beijing rail terminal handling costs	-	25	-
Beijing rail terminal other costs	-	30	-
China (by rail) Beijing -Alashankou	3354	4724	86,5
Kazakhstan (by rail) Dostyk-Sary-Agach	1831	910	50
Uzbekistan (by rail) Keles-Karakalpakia	1686	1399	46,5
Kazakhstan (by rail) Oasis-Dina Nurpeisova	796	982	25
Russian Federation (by rail) Kigaš-Gukovo	862	1113	27
Ukraine (by rail) Krasnaya Mogila-Mostiska II	1576	718	43
Poland (by rail) Pshemyshl-Warsaw	380	445	9
Warsaw rail terminal handling costs	-	35	-
Warsaw rail terminal other costs	-	45	-
Total	10485	10426	287

Figure 1.45
Time – distance diagram for routes 2a and 2b

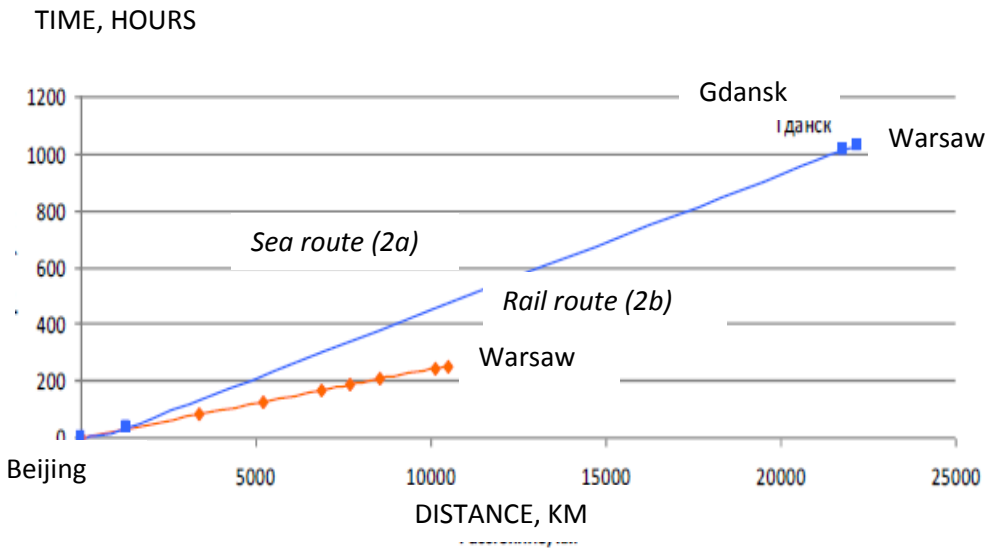
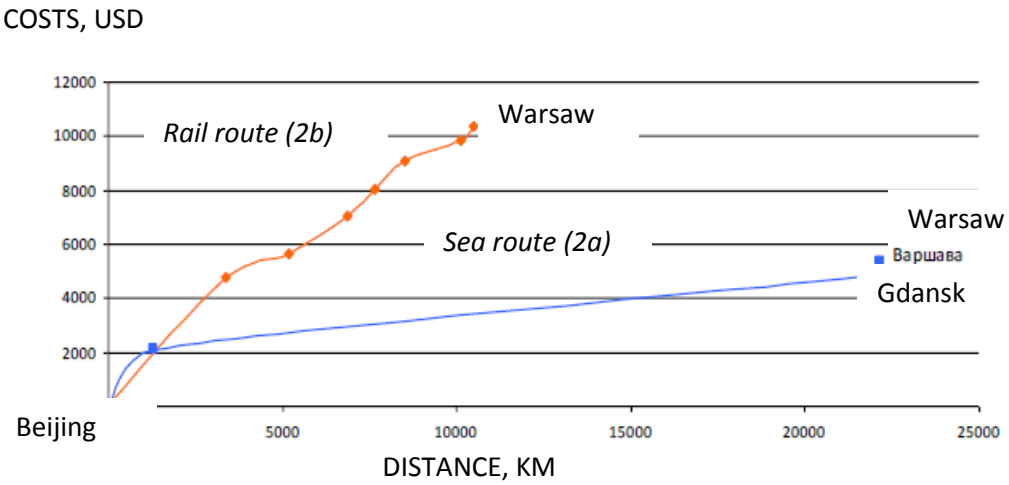


Figure 1.46
Cost – distance diagram for routes 2a and 2b



Case 2. Comparison of routes 2a and 2b shows the same tendency as in case 1.

Case 3. Route 3a is identical to route 2a. Data for route 3b components is shown in table *.

Table 1.37
Route 3b components

Route section	Length, km	Price, USD (Railway tariffs)	Time, hours
Beijing rail terminal handling costs	-	25	-
Beijing rail terminal other costs	-	30	-
China (by rail) Beijing-Manzhouli	2335	3234	62
Russian Federation (by rail) Zabaikalsk-Krasnoe	7069	1806	174
Belarus (by rail) Osinovka-Brest	609	487	20
Poland (by rail) Terespol-Warsaw	210	330	5
Warsaw rail terminal handling costs	-	35	-
Warsaw rail terminal other costs	-	45	-
TOTAL	10223	5992	261

Figure 1.47
Time – distance diagram for routes 3a and 3b

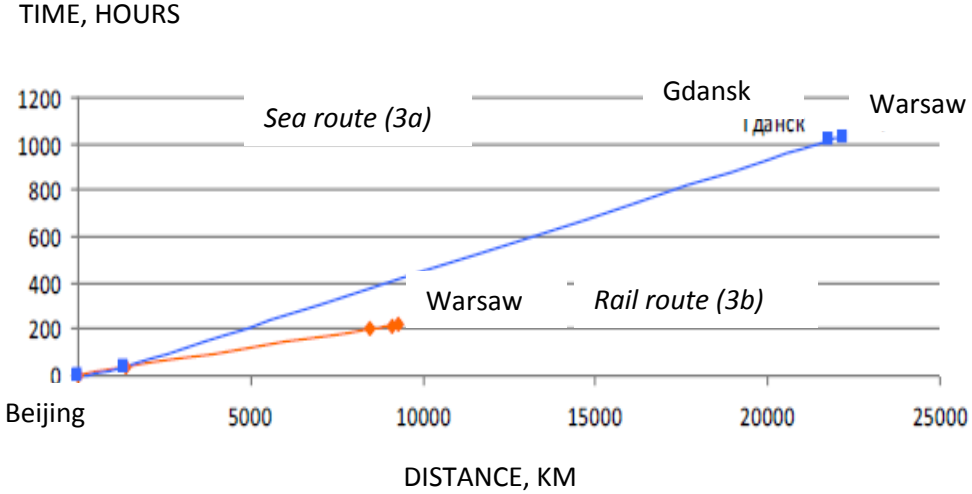
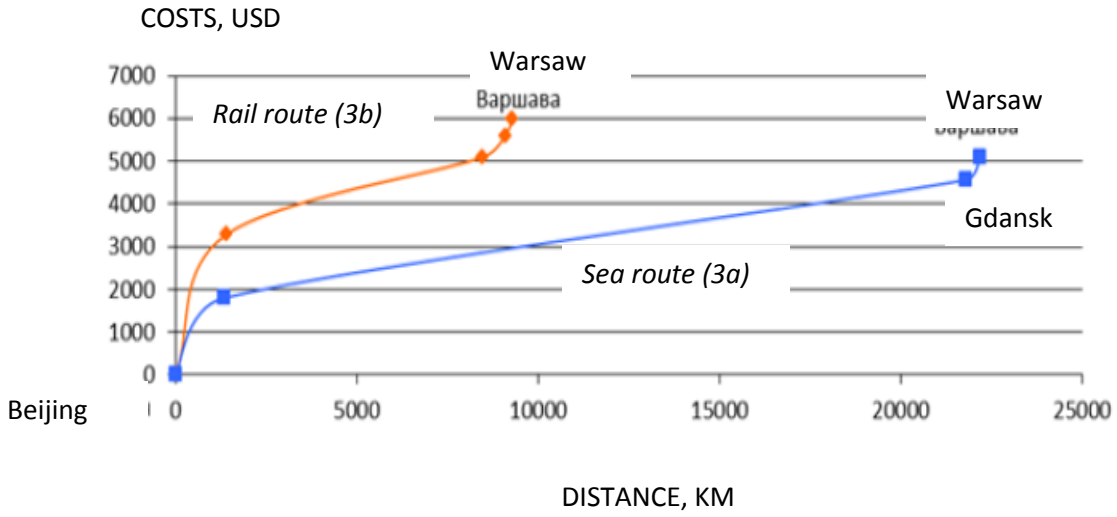


Figure 1.48
Cost – distance diagram for routes 3a and 3b



In this case, the advantage of rail transport is obvious. The difference in delivery times is enormous: -31 days. Due to this and given the cost difference that accounts for only $ 1065railway route be quite competitive with seain this case can.

Case 4. Route 4a is identical to route 2a. Data for route 4b is shown in table *.

Table 1.38
Route 4b components

Route section	Length, km	Price, USD (Railway tariffs)	Time, hours
Beijing rail terminal handling costs	-	25	-
Beijing rail terminal other costs	-	30	-
China (by rail) Beijing -Alashankou	3354	4675	86,5
Kazakhstan (by rail) Dostyk-Petropavlovsk	1904	942	52
Russian Federation (by rail) Petropavlovsk-Krasnoe	2845	1311	74
Belarus (by rail) Osinovka-Brest	609	487	20,5
Poland (by rail) Terespol-Warsaw	210	330	5
Warsaw rail terminal handling costs	-	35	-
Warsaw rail terminal other costs	-	45	-
Total	8922	7880	238

Figure 1.49
Time – distance diagram for routes 4a and 4b

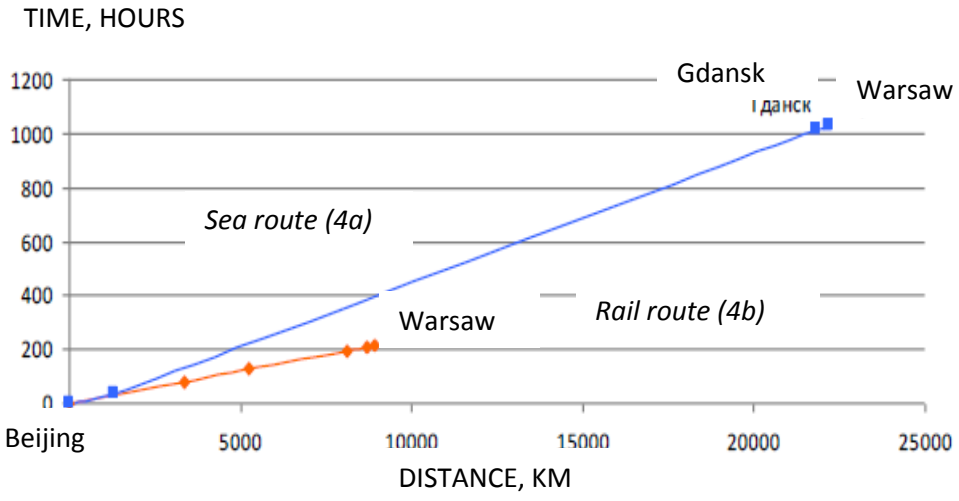
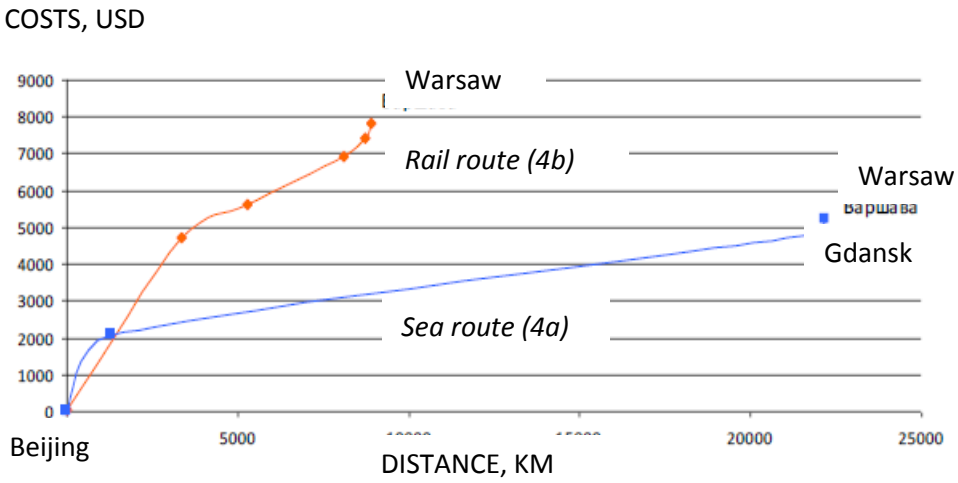


Figure 1.50
Cost – distance diagram for routes 4a and 4b



The difference in the cost of shipping container for these two routes is $ 2953. The above chart clearly reflectsthe impact of generally higher costs for rail transportation. The railroad crosses the territory of 5 countries, and the total length of the path is 8 922 km, which is even smaller than along the route of the Trans-Siberian railway, but due to the territory of Belarus crossing the price for rail transportationincreases significantly. The difference in delivery times compared to maritime transport is 33 days.

It should be noted that all the data relating to the cost of transportation on selected routes is picked from the public open sources: open publication of official statistics of the EATL countries and international organizations); analytical, statistical and empirical publications in specialized media; web sites of state and private companies as well as web resources created for the exchange of trade information.

At the same time, in each particular case price of transportation can and should be the subject of negotiation between shippers, carriers and other interested parties.Typically, this leads to the establishment of an acceptable price for these parties, which can differ significantly from the average, indicative figures obtained in this and other studies.

Eurasian Development Bank study

The Eurasian Development Bank published in 2016 the research note containingsome preliminary estimatesin regard to the potential transportation capacity and investment needs of various Silk Road Economic Belt (SREB) transportation routes that run across the Eurasian Economic Union's countries.

The study argues that currently the huge potential presented by land routes from China through Central Asia to Europe is not being utilized. According to the study, out of all land routes, only two are now in actual operation:

- Urumqi (XUAR) – Kazakhstan – Omsk – Moscow – EU (as regards transit, its estimated utilization ratio at 20%); and

- Shanghai – Trans-Siberian Railroad – Brest (Trans-Siberian Railroad utilization ratio currently reaches 100%).

The land route is considerably more expensive than the marine route. The study estimates the cost of marine transportation along the Shanghai – Rotterdam route as 10 cents per ton per mile, while the cost of railroad transportation is as high as 30 cents per ton per mile. Therefore, meaningful trading volumes can be generated only when dealing with China's western provinces.

The list of goods that can be profitably carried by land from central and eastern provinces is very limited and contains:

- export goods originating from China's western provinces (mostly the Xinjiang Uyghur Autonomous Region, the Tibet Autonomous Region, and the Qinghai Province). The alternative for those provinces is to take the goods to the shore (about 3,000 km), and then carry them by sea;

- limited selection of goods originating from China's central and eastern provinces. These are high unit added value products (electronic devices, automotive parts, pharmaceuticals, standard and costume jewelry, etc.) and goods with critical delivery times (some food products, premium textiles).

The study points out at 6 potential transit corridors that can be used to deliver cargoes along the China – Europe route. These corridors are analyzed regarding their current condition and potential that can be reached after upgrading.

Route 1: Urumqi (XUAR) – Kazakhstan – Omsk – Moscow – EU. The cost of cargo delivery via this route strongly depends on the mode of transportation: it amounts to about US$ 1,300 per 1 TEU for railroad carriage. Design capacity of this route is the highest among all SREB routes at 300,000 TEUs. Its utilization ratio currently does not exceed 20% of maximum capacity.The most established version of the Urumqi – EU route is the transport corridor passing through the following cities: Lianyungang, Zhengzhou, Lanzhou, Urumqi, Khorgos, Almaty, Kyzylorda, Aktobe, Orenburg, Kazan, Nizhny Novgorod, Moscow, and Saint-Petersburg with access to Baltic Sea ports. The bulk of transit cargoes use this route and the Trans-Siberian Railroad. One of its key advantages is that there is only one customs border between China and Kazakhstan. The route's most critical problem is its limited throughput capacity. To make it competitive, it needs to be overhauled, and its transport and logistical infrastructure needs to be expanded.

The volume of funding required to modernize and improve railroads in Russia and Kazakhstan, to develop the Urumqi – Omsk – Moscow – EU route, and to build six major logistical centers (including those already in operation) is estimated at US$ 6 billion. Modernization will make it possible not only to boost cargo turnover, but also to bring railroad transportation tariffs down from US$ 1,300 per 1 TEU to US$ 1,000 per 1 TEU.

Route 2: Shanghai – Trans-Siberian Railroad – Brest; cargoes are delivered from China through Russia's Far East Maritime Province (PrimorskyKrai). The cost of cargo delivery from Vladivostok to Moscow using the Trans-Siberian Railroad currently stands at about US$ 1,100 per 1 TEU, and US$ 1,400 per 2 TEUs. The cost of railroad cargo delivery from Shanghai to Brest (including freight costs) will be about US$ 2,200 per 1 TEU, and US$ 3,000 per 2 TEUs. The overall throughput capacity of the routes is 250,000 TEUs, and it is already being fully utilized. The key problem of the route is that it has to use the busiest section of the Trans-Siberian Railroad: Omsk – Novosibirsk. This route is also longer than the Kazakhstan route. It will require construction of a number of new railroads, in some cases in mountainous areas. Subject to all those factors, this route will hardly prove to be attractive to China.

Estimates of required investments into modernization of the Trans-Siberian Railroad vary. The cost of construction of new additional sorting stations with adjacent container logistical terminals

is estimated at US$ 2 billion. Efficient utilization and modernization of existing private terminals and Russian Railways terminals and construction of several new logistical centers may reduce that cost to US$ 1.2-1.4 billion. This will make it possible not only to increase the cargo turnover, but also to reduce transportation tariffs to less than US$ 1,100 per 1 TEU for the Trans-Siberian Railroad, and to about US$ 1,000 per 1 TEU for the Urumqi – Omsk – Brest route.

Route 3: Urumqi – Aktau – Makhachkala – Novorossiysk – Constanta. The cost of transportation (including transshipment to container carriers) currently stands at about US$ 4,000 per 1 TEU for deliveries to EU, and US$ 3,200 per 1 TEU for deliveries to the south of Russia. In theory, this route can be used to transport about 100 thousand TEUs per year (subject to existing port capacity and available fleet).

Route 4: Urumqi – Aktau – Makhachkala – Tbilisi – Constanta. The cost of cargo deliveries from China to Georgia will amount to US$ 3,700 per 1 TEU. The route's current theoretical throughput capacity does not exceed 50 thousand TEUs per year (subject to existing port capacity and available fleet).

The first issue arising in connection with further development of trans-Caspian routes is that none of the existing Caspian ports is ready to process massive cargo flows. All port facilities require serious modernization. To use trans-Caspian routes, it will be necessary not only to modernize the ports, but also to build new container logistical centers. Another problem is the need to use additional marine transport.

Route 5: Urumqi – Aktau – Baku – Poti – Constanta. The route is the most expensive and has the least throughput capacity of all the routes described above; besides, it has been used very little, if at all. The cost of railroad cargo delivery is as high as US$ 5,000.

This route will require the most significant outlays, including completion of construction of container facilities in Baku and port facilities in Poti, reconstruction of motorways, construction of tunnels and container logistical centers. Total required capital expenditures are estimated at not less than US$ 8 billion. That figure combined with the need to transship cargoes at several ports makes the route basically useless.

Route 6: Urumqi – transit via Kazakhstan – Teheran (Iran). This route is much cheaper, and its throughput capacity is much higher. The cost of railroad cargo delivery is up to US$ 1,700 per 1 TEU. Potential capacity of this route is one the highest among all routes described above, and stands at 300,000 TEUs.

Minimum target investments required to develop this route are estimated at US$ 2 billion (source: Ministry of Transportation of Iran). Design of the route development program is still under way.

Table 1.39 contains the main characteristics of the routes described above.

Table 1.39
SREB Transport corridors and their potential

Route	Estimated route capacity, thousand TEUs	Railroad Transportation Cost, US$/TEU	Potential Trroughput Capacity Post-Modernisation, thousand TEUs	Railroad Transportation Cost Post-Modernisation, US$/TEU
Urumqi (XUAR) – Kazakhstan – Omsk – Moscow - EU	300	1300	1000	1000
Shanghai – Trans-Siberian Railroad - Brest	250	2200	1000	1000
Urumqi (XUAR) – Aktau – Makhachkala – Novorossiysk	100	4000	1000	1600

Route	Estimated route capacity, thousand TEUs	Railroad Transportation Cost, US$/TEU	Potential Trroughput Capacity Post-Modernisation, thousand TEUs	Railroad Transportation Cost Post-Modernisation, US$/TEU
- Constanta				
Urumqi (XUAR) – Aktau – Makhachkala – Tbilisi	50	3700	1000	1600
Urumqi (XUAR) – Aktau – Baku – Poti - Constanta	50	5000		1500
Urumqi (XUAR) – transit to EU via Kazakhstan and Iran	300	1700	1000	

Authors of the study come to a conclusion that transport corridors through Central Asia and Russia may potentially attract about 4% of total China – Europe marine cargo flows. Target export groups include a broad range of products manufactured in China's western provinces (mostly the Xinjiang Uyghur Autonomous Region, the Tibet Autonomous Region, and the Qinghai Province), and a limited selection of goods originating from its central and eastern provinces.

Implementation of development programs and satellite investment projects may increase the throughput capacity of SREB transport corridors to 3 million TEUs (which is about 13% of the current Eurasian container flow).

According to the study, the "ideal" outcome is one where up to 1 million TEUs will travel through Kazakhstan to Russia with subsequent partial delivery on to Europe (up to 30%), and another 1 million TEUs will transit through Aktau in the direction of Novorossiysk via Makhachkala to be evenly divided between the Russian and South-European markets.

The situation with the routes to and through the Caucasus is more complex. Transcaucasian countries do not consume much. Turkey, depending on cargo velocity and political situation, may accept cargoes from Novorossiysk and Iran. Besides, the cost of direct marine transportation to Istanbul and Izmir is too modest to expect that the Transcaucasian route will prove to be efficient even after multi-billion investments.

The study also points out that an important restriction exists: attainment of maximum cargo throughput capacity by the SREB routes will be contingent on the Kazakhstan transportation system becoming capable of digesting 3 million TEUs.

Kazakhstan already has the required basic infrastructure (railroads, motorways, ports) in place. However, there is a major shortage of technological superstructures – modern container processing centers, customs terminals, and related logistical services. Qualified staff is also in short supply. Taken together, those factors constitute a critical infrastructural barrier preventing any major increase of cargo flows in Central Asia.

Eurasian overland routes: conditions for being competitive

The Euro-Asian transport network transport system is mainly already formed. The main routes are demonstrating the practical capability of expensive and time-sensitive cargoes delivery serving as a complement to maritime routes.

For objective reasons the Euro-Asian land bridge likely will never compete in volume with maritime routes. But it may well establish itself as a complement to shipping services increasing the reliability of high-value and time-sensitive supply chains.

The current crisis situation has its negative impact on Euro-Asian overland links in several aspects:

- the general slow-down of transport demand;

- decreasing of the "critical mass" of traffic in landbridge corridors to keep the transport services across them sustainable;

- limitations of the investment potential for infrastructure projects implementation;

- growing gap between the shipping rates and the railway rates (which is one of the main disadvantages of the Euro-Asian landbridge).

At the same time, the current situation has some potential opportunities for the EATL transport routes development.

A portion of time-sensitive transit can be redirected through inland EATL routes due to "slow steaming" introduction on the maritime routes. Besides that, such events as the start of New Silk Way initiative, Creation of the Customs Union between the Russian Federation, Belarus and Kazakhstan, accession of the Russian Federation, Tajikistan and Kazakhstan to WTO improve the general political-economic climate across the EATL area.

EATL transport routes combine the functions and features of different types of transport corridors: transport and trade transit corridors, access corridors and developing corridors. On one hand, this gives wide opportunities to EATL countries; on another, very important is a clear understanding of actual possibilities, costs, benefits and risks that particular projects mean to them and their partners who depend on each other in corridors' development process.

Competition of transport corridors on the Euro-Asian continent is not about the simple choice between transport routes and/or transport modes. It is the competition of logistic decisions based on intermodal services and value-added services and focused at the needs of particular supply chains. Main supply chains requirements are regular services, high punctuality, flexible costs, value added services availability, delivery speed appropriate for certain types of cargo. These requirements do not apply to particular sections of Euro-Asian routes, but to entire transport-logistic chains.

Decision making in supply chains, in particular – choosing the routes and modes - is made usually not by shippers themselves but by logistic operators: freight forwarders, 3 PL – providers, etc., who combine the understanding of the needs of particular supply chain with deep knowledge of transportation market and ability to put together the interests of numerous market players: carriers, terminal operators, infrastructure owners, etc.

Considering that, any transport route within the Eurasian continent will attract traffic and trade only being evaluated in the context of supply chains competition. No political decisions or investment projects developed beyond this context will be successful in this sense. For the same reasons the attempts to bind the freight flows within the corridors to particular fixed routes, points or to selected transport modes seem counterproductive.

Railway transport should play the leading role within the EATL transport links.

In the current situation competitive railway services in EATL transit corridors can develop under the following conditions:

a) location of Asian terminal points in North-Western China

b) location of European terminal points in Eastern Europe and

c) existence of guaranteed flow of high-value and time-sensitive cargo (automotive parts, electronics, etc.) from one shipper or a limited group of "anchor" shippers as a basis for sustainable regular service. Besides, the service should be better operated not by pure railway carrier but by market-oriented logistic operator experienced in design of transport-logistic chains

The road transport within the EATL corridors should be harmonized with railway services and complete them rather than directly compete with rail. The following spheres look most reasonable: a) short-run cross border trade; b) long haul transportation on the lanes where railway links do not exist or can't provide effective services for certain commodities (perishable, expensive, etc.); c) "road section" of intermodal rail-road transport service.

For effective long-haul trucking it is important to provide the even weight/length limitations for road transport along the main EATL routes.

It appears that currently the role of logistic centers in the EATL links development is underestimated. Being created in the hubs of EATL network, logistic centers could play the role of modern market-oriented nodes of supply chains improving the competitiveness of the entire EATL system.

Regular monitoring of corridors functioning is necessary not only for political needs but also as an instrument used by logistic operators willing to arrange the best possible currently transport chain.

II. CURRENT INITIATIVES, PROJECTS AND STUDIES IN EATL REGION

II.1. Overview of international studies, programmes and initiatives on Euro-Asian transport links development

II.1.1. The United Nations Economic Commission for Europe (UNECE)

The United Nations Economic Commission for Europe (UNECE) was set up in 1947. UNECE's major aim is to promote pan-European economic integration. UNECE includes 56 member States in Europe, North America and Asia.

The UNECE has established 57 transport agreements and conventions which are negotiated by government representatives and become legally binding for countries which ratify or accede to them. These agreements and conventions create international safety and environmental standards and regulations for transport and for motor vehicles and their trailers, harmonize national regulations, make border crossings less complicated, and provide for the development of coherent infrastructure networks for road, rail and inland waterway transport.

There are four main transport network agreements aimed at the development of coherent networks for road, rail, inland waterways and combined transport respectively:

a) **The European Agreement on Main International Traffic Arteries (AGR)**, established in1975, provides UNECE governments with the international legal framework for the construction and development of a coherent international road network with a view to developing international road transport and traffic throughout the UNECE region.

The AGR defines the E-road network, consisting of the arteries channeling major international road traffic flows in Europe, and the infrastructure parameters to which those arteries should conform. The AGR is constantly kept under review and updated whenever necessary to adapt it to new political and transport developments, such as the need for new roads in new States or those created by new traffic flows.

One of the major revisionswas undertaken in order to include the international roads of the countries in the Caucasus and Central Asia. States that become Contracting Parties to the AGR commit themselves to its implementation, including the construction or upgrade of the E-roads in their territories, within the framework of their national investment programmes, although they are given complete latitude as to the timing for the completion of construction works.

To date, 37 UNECE Member States have become Contracting Parties to the AGR.

b)**The European Agreement on Main International Railway Lines (AGC)**, established in1985, similarly provides the legal and technical framework for the development of a coherent international rail network in the region. The AGC identifies the rail lines of major international importance, the E-rail network, and defines the infrastructure parameters to which they should conform.

The Agreement comprises the main body of the Agreement plus:

- definition of a network of railway lines of major international importance and

- definition of infrastructure parameters.

The AGC is also revised whenever necessary to take account of political and transportchanges in Europe. It has undergone a major revision in recent years also to include the internationalrail networks of the Caucasus and Central Asian countries.

Contracting Parties to theAGC commit themselves to its implementation, including the construction or theupgrade of the E-rail lines in their territories, within the framework of their national programmes but without any time constraints. To date, 27 UNECE Member States are Parties to the AGC.

c) **The European Agreement on Important International Combined Transport Lines andRelated Installations (AGTC)**, established in 1991, provides the technical and legal framework for the development of efficient international combined road/rail transport infrastructure and services. Combined road/rail transport comprises the transport of containers, swap bodies and entire trucks on railway wagons to and from especially equipped terminals. The AGTC determines important European railway lines used for international combined transport, identifies all terminals, bordercrossingpoints, ferry links and other installations important for international combined transportservices. It also establishes internationally acceptable infrastructure standards for those lines andrelated combined transport installations, and prescribes internationally acceptable performanceparameters of trains and combined transport installations and equipment.

Contracting Parties to the AGTC commit themselves to its implementation, including the construction or the upgrade of the railway lines and related combined transport installations in their territories, within the framework of their national programmes but without any time constraints. To date, 32 UNECE Member States have become Parties to the AGTC.

d) **The European Agreement on Main Inland Waterways of International Importance(AGN), established in 1996**, establishes the internationally agreed European network of inland waterways and ports as well as theuniform infrastructure and operational parameters to which they should conform. The geographicalscope of the E-waterways network, consisting of navigable rivers, canals and coastal routes extendsfrom the Atlantic to the Ural, connecting 37 countries and reaching beyond the European region.

By acceding to the AGN, governments commit themselves to the development and constructionof their inland waterways and ports of international importance in accordance with the uniformconditions agreed upon and within their investment programmes. To date, 18 UNECE Member States have become Parties to the AGN.

These four international Agreements define respectively the E transport networks for different modes as well as the minimum technical requirements according to which the relevant infrastructures should be built.AGTC also includes operational parameters for combined transport services.

UNECE infrastructure agreements are the only Pan-European governmental basis for the longtermdevelopment of coherent international networks for the various modes of inland transport.As such, they were taken as a basis for the determination of the Pan-European transport corridorsat the Pan-European Transport Conferences in Crete and Helsinki.

The E road and E rail networks represent the most useful basis for the identification of priorityEuro–Asian transport corridors.

To ensure seamless connections throughout Europe, including access to markets, UNECE coordinates work on a Trans-European network for motorways (TEM) and rail (TER) in Central, Eastern and South-Eastern Europe.

The UNECE Trans-European Motorways (TEM) Projectestablished in 1977 is a sub-regional cooperation among Central, Eastern and South Eastern European countries. The project is aimed to facilitate road traffic in Europe, to improve the quality and efficiency of transport operations, to balance existing gaps and disparities between motorway networks in Western, Eastern, Central and South-Eastern Europe, and to assist the integration process of European transport infrastructure systems.

TEM is the backbone of the Pan -European Road Corridors in CEE and of the Transport Infrastructure Needs Assessment(TINA) exercise. Initial financial support was provided by the United Nations Development Programme (UNDP); the executing agency is UNECE. There are 15 TEM member countries: Armenia, Austria (associate member), Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Italy, Lithuania, Poland, Romania, Slovakia, Slovenia and Turkey. 4 other countries have observer status: Montenegro, Serbia, Sweden and Ukraine. Azerbaijani membership is currently pending, awaiting signature for accession.

The UNECE Trans-European Railway (TER) Project established in 1990is a sub-regional cooperation among Central, Eastern and South-Eastern European countries. The project is aimed to In order to improve the quality and efficiency of transport operations, to assist the integration process of European transport infrastructure systems, and to develop a coherent and efficient international railway and combined transport system in accordance with the UNECE Pan-European infrastructure agreements: European Agreement on Main International Railway Lines (AGC) and European Agreement on Important International Combined Transport Lines and Related Installations (AGTC).

Initial financial support was provided by the United Nations Development Programme (UNDP); the executing agency is UNECE

There are 17 member countries: Armenia, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Greece, Italy, Lithuania, Poland, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia and Turkey. In addition, a number of observer countries participate in certain activities of the project: Belarus, Latvia, Moldova, Montenegro, the Former Yugoslav Republic of Macedonia and UkraineAzerbaijani membership is pending, awaiting signature for accession

The execution of the TEM and TER projects is provided by the TEM and TER Master Plan which sets out the priority infrastructure needs, the backbone networks and a realistic investment plan to develop them.

The original Master Plan was published in 2006, presenting a reliable and pragmatic short-,medium- and long-term investment strategy for developing road, rail and combined transportbackbone networks in the participating countries. The document was revised between 2008 and 2011 in order to analyze the results of road and rail infrastructure development, to describe the existing statusof road and rail networks; and to set out their development programme until the year 2020.

The revised Master Plan counts for 191 rail and 512 road projects with total cost of 196,97 billion Euros.

Figure 2.1
TEM Master plan revision backbone network

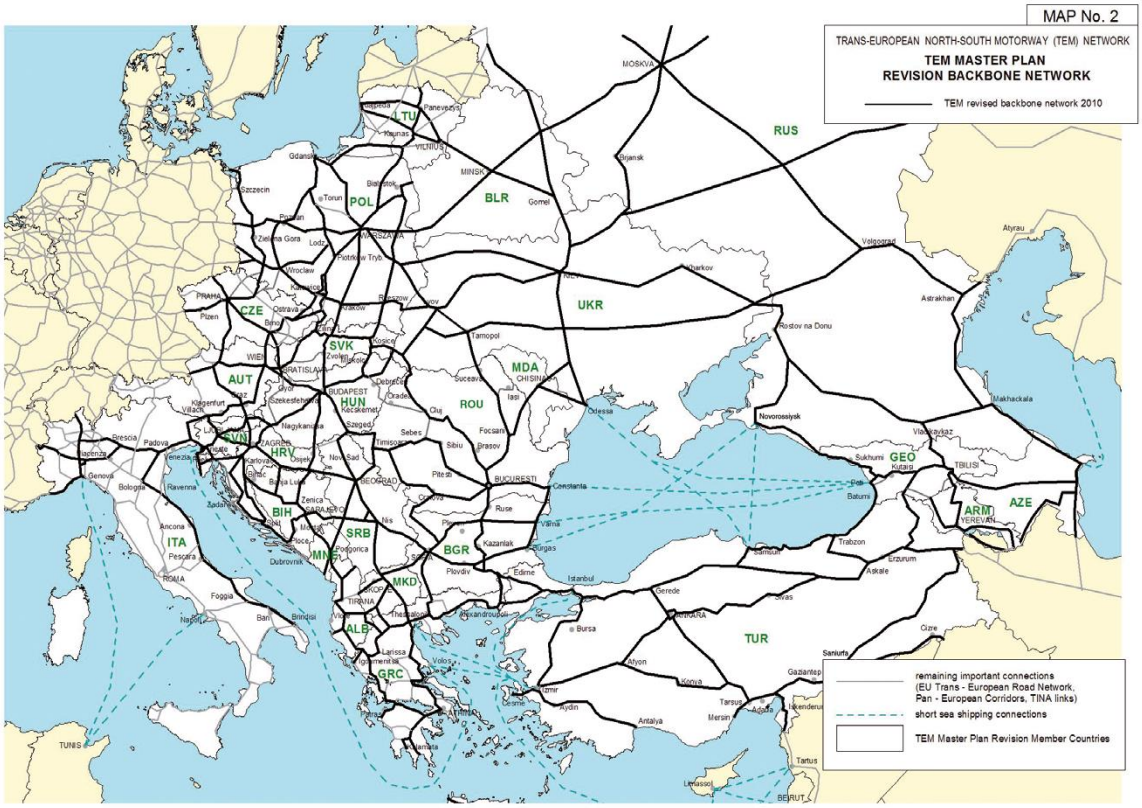
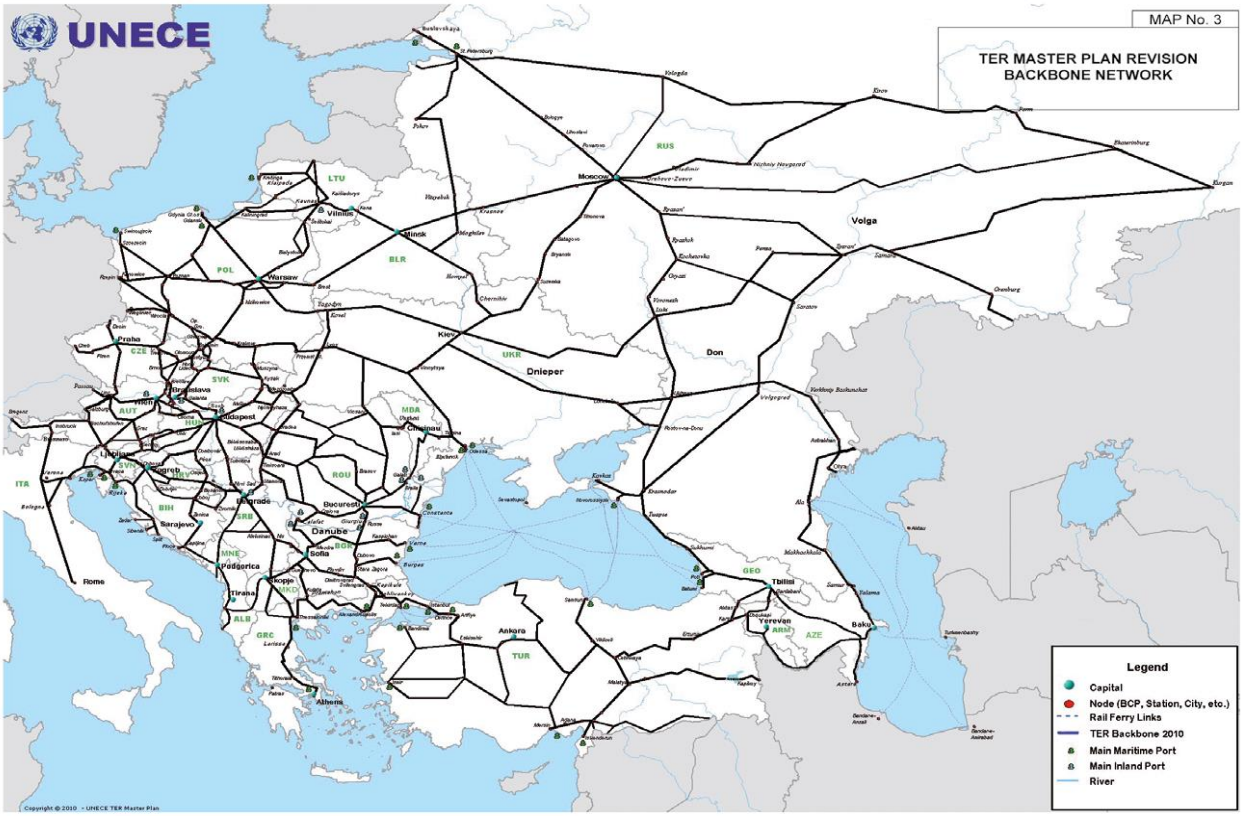


Figure 2.2
TER Master plan revision backbone network



Source: http://www.unece.org/trans.html

II.1.2. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

Made up of 53 Member States and 9 Associate Members, with a geographical scope that stretches from Turkey in the west to the Pacific island nation of Kiribati in the east, and from the Russian Federation in the north to New Zealand in the south, the region is home to 4.1 billion people, or two thirds of the world's population. This makes ESCAP the most comprehensive of the United Nations five regional commissions, and the largest United Nations body serving the Asia-Pacific region.

Established in 1947 with its headquarters in Bangkok, Thailand, ESCAP works to overcome some of the region's greatest challenges by providing results oriented projects, technical assistance and capacity building to member States in the areas of Sustainable Development, Macroeconomic Policy and Financing for DevelopmentTrade, Investment and Innovation, Transport, Social Development, Environment and Development, Information and Communications Technology, Disaster Risk Reduction, Statistics, Sub-regional activities for development.

In the transport sector UNESCAP is supporting the following directions of development:

b) Asian Highway network. The Asian Highway network is a regional transport cooperation initiative aimed at enhancing the efficiency and development of the road infrastructure in Asia, supporting the development of Euro-Asia transport linkages and improving connectivity for landlocked countries.

c) Trans-Asian Railway network. The Trans-Asian Railway network now comprises 117,500 km of railway lines serving 28 member countries. Much like yesterday's Silk Road, today's Trans-Asian Railway aims to serve cultural exchanges and trade within Asia and between Asia and Europe. Recognizing that the network would reach its full operational capabilities through greater harmonization of standards and acknowledging the need for a regional framework to discuss related issues, Member States negotiated an Intergovernmental Agreement on the Trans-Asian Railway Network. The Agreement entered into force on 11 June 2009.

c) Intermodal regional network and dry ports. The Ministerial Conference on Transport held in the Republic of Korea in November 2006 noted that the Asian Highway and Trans-Asian Railway networks constituted two important building blocks for the realization of the vision of an international integrated intermodal transport and logistics system which the ESCAP region needs to serve new trade patterns. Ministers resolved to develop policies along a number of guiding principles which included giving priority to investment in the Asian Highway and Trans-Asian Railway networks, including intermodal interfaces, and promoting the development of economic and logistics activities at intermodal interfaces.

Reaping the benefits of intermodalism requires that these intermodal interfaces such as dry ports or inland container depots be planned carefully to serve as efficient cross-over points where freight can switch modes without delays or damage.

The organization works with its member States to strengthen connectivity, optimize the use of existing infrastructure and increase the level of integration between the different transport modes. In order to finance these transport infrastructure and systems, UNESCAP offers advice on financing options and advocates public-private partnerships including network coordination, diagnostic workshops and online training materials and courses.

Project on Development of seamless rail-based intermodal transport services in Northeast and Central Asia for enhancing Euro-Asian transport linkages and its implementation.

The purpose of this project is to:

(i) review transport documentation, conventions and procedures applying to intermodal cargo transport across maritime and land borders in the sub-region;

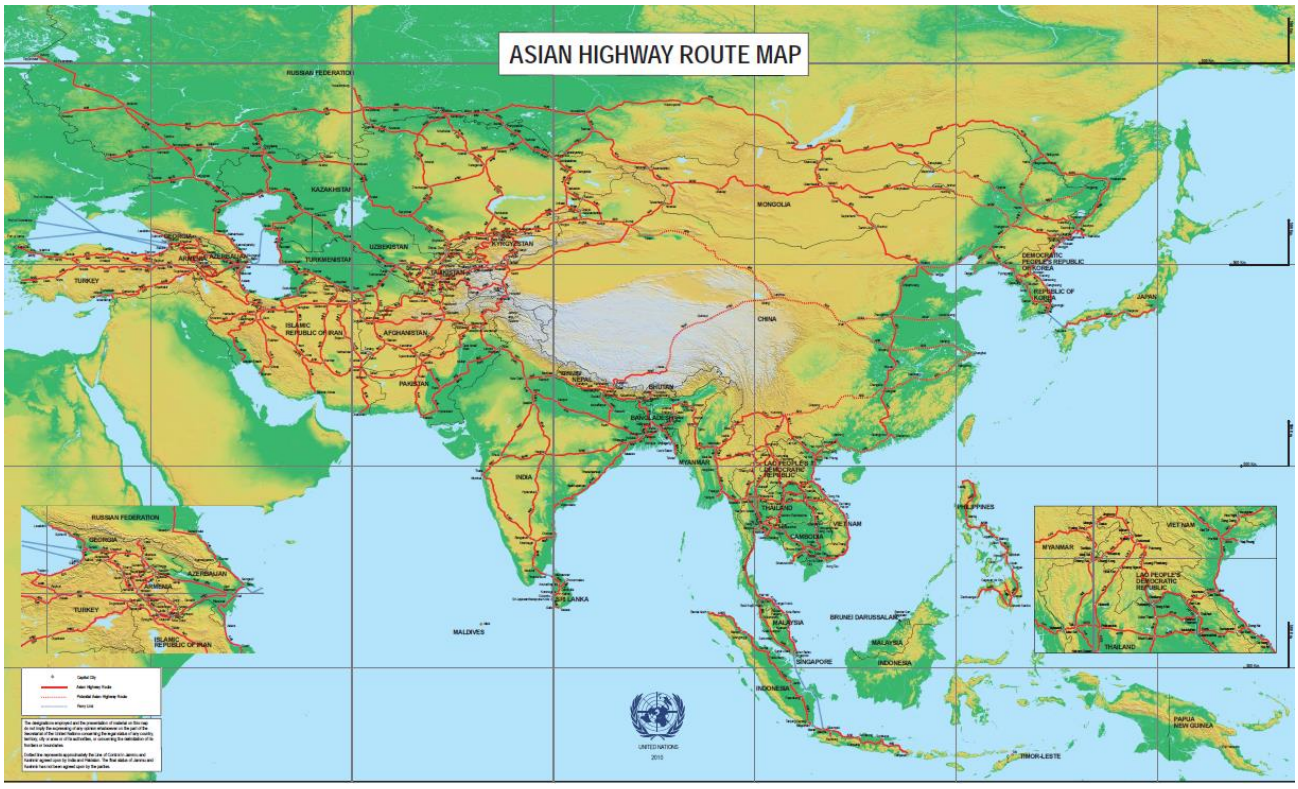
(ii) identify problems related to border crossing efficiency which may be resolved by the streamlining and harmonization of existing documentation and procedures;

(iii) recommend improvements to documentation and procedures with a view to eliminating delays to transport at seaports and land borders and contributing to smooth transport flows across borders.

Fact-finding missions to five participating countries of Northeast and Central Asia - Korea, China, Russian Federation, Mongolia and Kazakhstan - are to be conducted in April and May 2016 for the purpose of identifying current practices and problems with respect border crossing documentation and control.

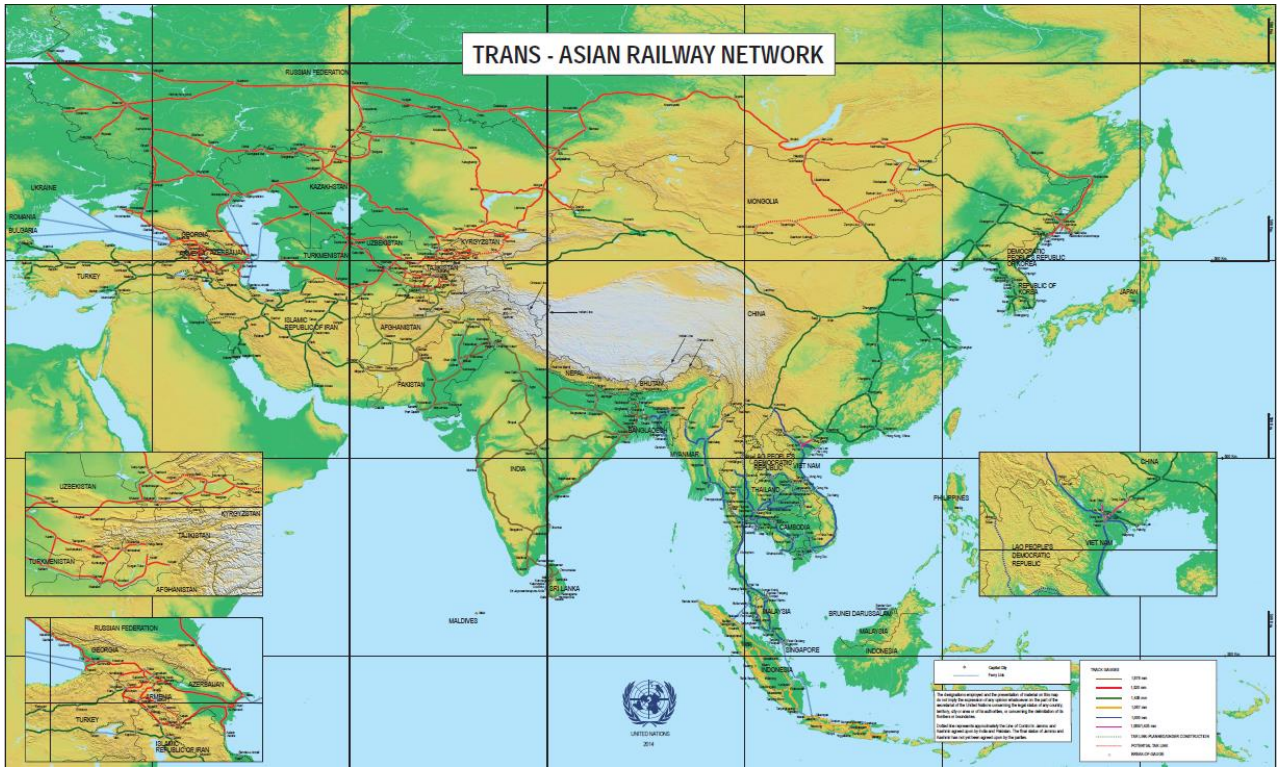
The study was prepared by UNESCAP Secretariat on the basis of desk research and of data collected from freight forwarders and government officials and private sector on the applicable documentation and procedures. The study provides the analysis of the current situation and presents recommendations for the harmonization and improvement of documentation and procedures in this sub-region. In particular, it recommends the adoption of a new transport document which has been designed to accommodate all transport modes, including railways, which have been so far excluded from the coverage of multi-modal transport documents.

Figure 2.3
Asian Highway network



Sorce: http://www.unescap.org/

Figure 2.4
Trans-Asian Railway network



Sorce: http://www.unescap.org/

II.1.3. The United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLLS)

The United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLLS) was established by the United Nations General Assembly in 2001 through its resolution 56/227 with functions recommended by the Secretary-General in paragraph 17 of his report A/56/645.

The key functions of the OHRLLS are as follows:

(a) To assist the Secretary-General in ensuring the full mobilization and coordination of all parts of the United Nations system, with a view to facilitating the coordinated implementation of and coherence in the follow-up and monitoring of the Programme of Action for the Least Developed Countries at the country, regional and global levels;

(b) To provide coordinated support to the Economic and Social Council as well as the General Assembly in assessing progress and in conducting the annual review of the implementation of the Programme of Action;

(c) To support, as appropriate, the coordinated follow-up of the implementation of the Global Framework This Global Framework has now been replaced by the Almaty Declaration and Programme of Action, 2003 for Transit Transport Cooperation between Landlocked and Transit

Developing Countries and the Donor Community and the Programme of Action for the Sustainable Development of Small Island Developing States;

(d) To undertake appropriate advocacy work in favour of the least developed countries, landlocked developing countries and small island developing States in partnership with the relevant parts of the United Nations as well as with the civil society, media, academia and foundations;

(e) To assist in mobilizing international support and resources for the implementation of the Programme of Action for the Least Developed Countries and other programmes and initiatives for landlocked developing countries and small island developing States;

(f) To provide appropriate support to group consultations of Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

In August, 2003, the International Ministerial Conference of Landlocked and Transit Developing Countries and Donor Countries on Transit Transport Cooperation (Almaty Ministerial Conference) was held in Almaty, Kazakhstan, setting the necessities of Landlocked and Transit Developing Countries in a universal document - Almaty Program of Action: "Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries".

The general objectives of the Program were as follows:

- reduce customs processes and fees to minimize costs and transport delays;

- improve infrastructure with respect to existing preferences of local transport modes, where road should be focused in Africa and rail in South Asia;

- implement preferences for landlocked countries' commodities to boost their competitiveness in the international market;

- establish relationships between donor countries with landlocked and transit countries for technical, financial and policy improvements.

During the Second United Nations Conference on Landlocked Developing Countries that was held in 2014 in Vienna, Austria, a 10 year action-plan was adopted – the "Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024".

The Vienna Programme is centered upon addressing the challenges faced by landlocked countries, aims to contribute to the eradication of poverty stemming from their landlockedness, through the implementation of specific actions in the priority areas identified by the document:

Priority 1: Fundamental transit policy issues

Priority 2: Infrastructure development and maintenance

(a) Transport infrastructure

(b) Energy and information and communications technology infrastructure

Priority 3: International trade and trade facilitation

(a) International trade

(b) Trade facilitation

Priority 4: Regional integration and cooperation

Priority 5: Structural economic transformation

Priority 6: Means of implementation

The main innovative feature of the Vienna Programme of Action is the particular focusto the development and expansion of efficient transit systems and transport development, enhancement of competitiveness, expansion of trade, structural transformation, regional cooperation, and the promotion of inclusive economic growth and sustainable development to reduce poverty, build resilience, bridge economic and social gaps and ultimately help transform those countries into land-linked countries.

http://unohrlls.org/

II.1.4. United Nations Conference on Trade and Development (UNCTAD)

The United Nations Conference on Trade and Development (UNCTAD), established in1964, promotes the development-friendly integration of developing countries into the worldeconomy by carrying out three key functions: operating as a forum for intergovernmentaldeliberations supported by discussions with experts and exchanges of experience for consensusbuilding; undertaking research, policy analysis and data collection; and providing technicalassistance to developing countries.

The objective of the Division on Technology and Logistics is to enhance the economicdevelopment and competitiveness of developing countries through efficient trade logisticsservices, transit transport systems, increased access to and sustainable utilization of informationand communication technology, and training and capacity-building programmes for localinstitutions.

As part of the preparatory process of the midterm review of the Almaty Programme of Action,the UNCTAD Expert Meeting held in 2007 provided a forum to explore models and bestpractices to improve international transit transport operations based on practical solutions with aview to enhancing transit transport for the benefit of landlocked and transit developing countries.

In July 2008, UNCTAD organized a global preparatory meeting on the midterm review ofthe Almaty Programme of Action to affirm progress on the implementation of trade facilitationfor the benefit of landlocked and transit developing countries.

Responding to the specific problems of LLDCs requires a multidimensional approach to landlockedness as a development challenge. This notably implies the implementation of policies and measures aimed at economic restructuring and specialization in these countries that take into account their transport-related obstacles. The development of productive capacities is a key element of this process.

In this context, UNCTAD supports LLDCs to tackle persisting and emerging challenges by providing advisory services and organizing high-level expert group meetings, among others to address key challenges facing these countries. Among the main outputs are:

- preparation of policy-focused studies at the request of LLDCs;

- supporting LLDCs to attract Foreign Direct Investments

http://unctad.org/en/Pages/ALDC/Landlocked%20Developing%20Countries/UN-recognition-of-the-problems-of-land-locked-developing-countries.aspx

II.1.5. United Nations Special Programme for the Economies of Central Asia (UN SPECA)

The United Nations Special Programme for the Economies of Central Asia (SPECA), a joint UNECE-UNESCAP initiative, was launched in 1998 to address challenges faced by Central Asian countries. It particularly aims to strengthen sub-regional cooperation and integrate the region into the world economy..

Thematic Working Group on Sustainable Transport, Transit and Connectivity (TWG-STTC) is a subsidiary body of SPECA. It focuses on developing new, and extending existing, road and rail networks in the region, as well as implementing the Programme of action resulting from the Almaty declaration of Land-Locked and Transit Developing Countries.

SPECA Project Working Group on Transport focuses on the development of Euro-Asian transport linkages, including the possible extension of the TER and TEM networks into the region. It plays an active role in the implementation of Vienna Program of Action for Landlocked Developing Countries for the Decade 2014-2024. The activities of the SPECA Project Working Group on transport is supported by the UNECE and UNESCAP in a coordinated and mutually reinforcing way.

Member-states:	Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.
Priorities that are most important for the EATL development	• Implementation of international transport conventions and agreements; • Establishment and operation of national coordinating mechanisms for transport facilitation; • Identification and elimination of major bottlenecks along international transport routes; • Creation of transport database; • Establishment and strengthening of public-private partnerships; • Road safety improvement; • SDGs implementation

The SPECA Governing Council on its tenth session in November 2015 decided to change the title from “Project Working Group on Transport and Border Crossing” to the “Thematic Working Group on Sustainable Transport, Transit and Connectivity” (TWG-STTC) with new objectives added in line with the 2030 Sustainable Development Agenda adopted by the United Nations Sustainable Development Summit 2015 and the commitment to its implementation, including the achievement of the Sustainable Development Goals (SDGs). The 201 session of SPECA Governing Council in Ashgabat confirmed a strong potential of SPECA for supporting

and facilitating the achievement of the SDGs. The SPECA framework, including its Governing Council, Economic Forums, and Working Groups can provide an important platform for supporting progress towards many of the SDGs through the exchange of best practice, capacity-building, joint development and implementation of regional projects and the sharing of experience on the use of new financial mechanisms and partnerships.

The TWG will facilitate policy discussions on strategic issues on strengthening regional cooperation and integration through enhanced transport connectivity and collection and dissemination of transport statistics with special focus on implementation of sustainable development goals. More specifically, the TWG's activity aimed to:

- oversee the implementation of transport-related activities and initiatives at national and subregional level, including development of road and railway networks, dry ports as well as facilitate intermodal transport in SPECA countries;

- support the establishment and operation of national coordinating mechanisms for transport facilitation;

- facilitate the implementation of ESCAP agreements in transport such as the intergovernmental agreements on Asian Highway, Trans-Asian Railway and Dry Ports;

- assist in identification and elimination of major bottlenecks along international transport routes in SPECA region and beyond;

- facilitate the development of the SPECA TWG special database on transport and border crossing activities for the SPECA countries as well as collection of transport statistics;

- promote public-private partnerships in the SPECA region and innovative financing mechanism for transport infrastructure development;

- work towards improving road safety to reduce road traffic fatalities and casualties in the SPECA region;

- support the efforts of the participating countries to implement 2030 development agenda by enhancing the sustainability of transport;

- ensure more focus on those efforts which would result in strengthening regional cooperation aimed at achieving transport related SDGs;

- serve as a forum for inland transport stakeholders to discuss strategic issues, exchange of experiences, lessons learned and good practice, as well as for national and subregional efforts in transport sector related to increasing sustainability of transport and achieving SDGs;

- develop and implement transport projects, when possible, in line with relevant SDGs and targets to contribute to 2030 development agenda;

II.1.6. European Union initiatives

The European Commission aims to develop and promote transport policies that are efficient, safe, secure and sustainable, to create the conditions for a competitive industry that generates jobs and prosperity.

As of January 2014, the EU has a new transport infrastructure policy that will connect the continent from east to west, north to south. This policy aims to close the gaps between national transport networks, remove bottlenecks that still hamper the smooth functioning of the single market and overcome technical barriers such as incompatible standards for rail traffic.

The trans-European transport network, or TEN-T, is a longstanding project to modernize and 'knit together' today's patchwork of national parts into a smooth-running transport network.

With the TEN-T, the EU plans to establish a core transport network by 2030, filling in missing cross-border links and making the network 'smarter', with deadlines to make sure that all projects contributing to the core network are implemented as a priority.

Currently nine core network corridors are identified, based on their added value for TEN-T development and their maturity status. Core network corridors were introduced to facilitate the coordinated implementation of the core network. They bring together public and private resources and concentrate EU support from the CEF, particularly to remove bottlenecks, build missing cross-border connections and promote modal integration and interoperability.

One of the EU constant priorities is the development of effective transport links with their Eastern and Southern neighbor states and, via them – with countries of Central and Eastern Asia.

The regional EU-assistance in transport benefitting the eastern neighbors is channeled, in particular, under the TRACECA-programme, an acronym referring to **Transport Corridor Europe-Caucasus-Asia.** This EU programme was launched in 1993 to develop a transport corridor from Europe to China, via the Black Sea, the Caucasus, the Caspian Sea and Central Asia (see p. ***).

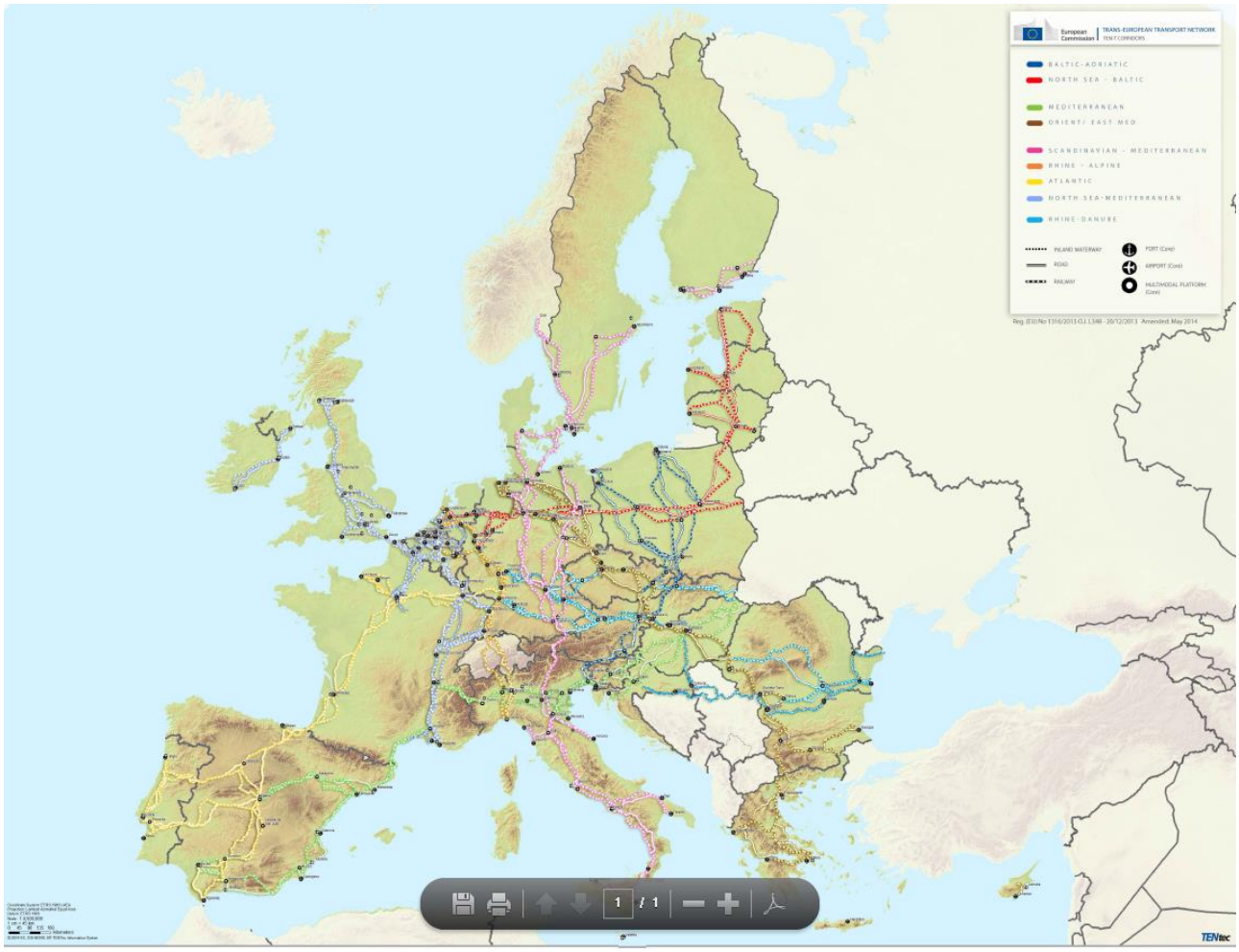
In 2009 EU and six partner countries (Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine) established the Eastern Partnership (EaP), a joint initiative building also on bilateral relations. This cooperation has a certain transportation aspect – the EaP Transport Panel which is is a framework for exchange of information and best practice between the partner countries and the EU Member States. Its goal is to strengthen transport connections both between the partner countries and the EU and between partner countries themselves. It addresses reforms underpinning regulatory convergence across transport modes. Policy work conducted in this area includes certain transportation issues, in particular:

The EaP regional transport network (approved 2013 and included in the indicative TEN-T maps);

Regulatory convergence, which became a priority notably for countries having signed Association Agreements with the EU;

Regional transport cooperation and capacity building actions in all transport modes.

Figure 2.5
Map of TEN-T corridors



Source: http://europa.eu/pol/trans/index_en.htm

II.1.7. Eurasian Economic Union (EAEU)

The Eurasian Economic Union is an international organization established in 2014 for regional economic integration. It has international legal personality and is established by the Treaty on the Eurasian Economic Union.

The Member-States of the Eurasian Economic Union are the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation.

The EAEU provides for free movement of goods, services, capital and labor, pursues coordinated, harmonized and single policy in the sectors determined by the Treaty and international agreements within the Union.

Transportation is among the priorities of the integration process within the Union. Integration in the spheres of transportand natural monopolies (railways among them) are embodied in Section XIX «NaturalMonopolies» and Section XXI «Transport» of the Treaty on the Union.

According to the Treaty on the EAEU, the Union shall conduct coordinated (agreed) transport policy aimed at economic integration, consistent and gradual establishment of a Common Transport Area.

Common Transport Area means a range of transport systems of Member States providing for free movement of vehicles, passengers and cargo as well as vehicle compatibility based on the harmonized transport legislation of Member States.

Member States shall develop coordinated (agreed) transport policy.

The Main Directions and Implementation Stages of the Coordinated (Agreed) Transport Policy of the Eurasian Economic Union were approved by the High Eurasian Economic Council in December 2016.

Eurasian Economic Commission is the Permanent regulatory body of the EAEU. Its main functions in the transport sphere are as follows:

- developing proposals on economic integration in transport sphere;

- developing proposals for transport legislation harmonization of the Union Member States;

- monitoring implementation of the Coordinated (Agreed) Transport Policy by the MemberStates;

- coordinating work on identification and elimination of exemptions, limitations and barriers tothe functioning of the internal Union transport market;

- conducting comparative analysis of the Member States regulation of transport natural monopoly entities;

- promoting harmonization in natural monopolies regulation regarding environmental issues and energy efficiency.

Figure 2.6
Main roads and railway routes on the territory of the EAEU Member States

Source: http://eec.eaeunion.org/en/Pages/default.aspx

II.1.8. New Silk Way: One Belt - One Road Initiative

The refers to the Silk Road Economic Belt and 21st Century Maritime Silk Road, a significant development strategy launched by the Chinese government with the intention of promoting economic co-operation among countries along the proposed Belt and Road routes. The Initiative has been designed to enhance the orderly free flow of economic factors and the efficient allocation of resources. It is also intended to further market integration and create a regional economic co-operation framework of benefit to all.

The National Development and Reform Commission (NDRC) issued its Vision and Actions on Jointly Building the Silk Road Economic Belt and 21st Century Maritime Silk Road on 28 March 2015. This outlined the framework, key areas of co-operation and co-operation mechanisms with regard to the Belt and Road Initiative.

The Belt and Road Initiative upholds the principles of jointly developing the programme through consultation with all interested parties. Existing bilateral and multilateral co-operation mechanisms will be utilized to promote the integration of the development strategies of the countries along the route. Steps will be taken to advance the signing of co-operation memorandums of understanding or co-operation plans for the establishment of a number of bilateral co-operation demonstration projects. Efforts will also be made to set up a sound bilateral joint work mechanism, and to devise an implementation plan and action roadmap for advancing the Belt and Road strategy.

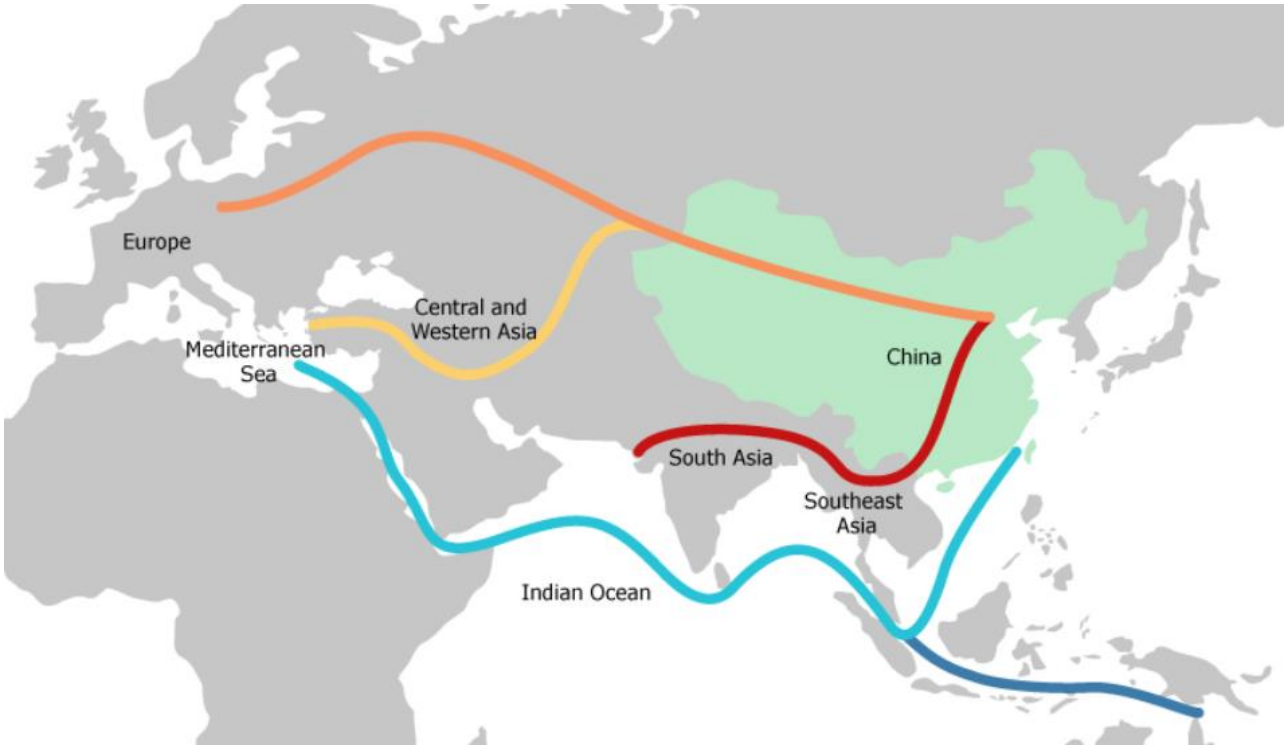
The US$40 billion Silk Road Fund has been established to finance the Belt and Road Initiative. It will invest mainly in infrastructure and resources, as well as in industrial and financial cooperation. The Fund was set up as a limited liability company in December 2014 with its founding shareholders including China's State Administration of Foreign Exchange, the China Investment Corp, the Export-Import Bank of China and the China Development Bank.

The new multilateral development bank - Asian Infrastructure Investment Bank (AIIB) has been set up with a view to complementing and cooperating with the existing MDBs in order to address infrastructure needs in Asia. AIIB will focus on the development of infrastructure and other productive sectors in Asia, including energy and power, transportation and telecommunications, rural infrastructure and agriculture development, water supply and sanitation, environmental protection, urban development and logistics.

Transportwise the Belt and Road Initiative aims to connect Asia, Europe and Africa along five routes. The Silk Road Economic Belt focusses on: (1) linking China to Europe through Central Asia and Russia; (2) connecting China with the Middle East through Central Asia; and (3) bringing together China and Southeast Asia, South Asia and the Indian Ocean. The 21st Century Maritime Silk Road, meanwhile, focusses on using Chinese coastal ports to: (4) link China with Europe through the South China Sea and Indian Ocean; and (5) connect China with the South Pacific Ocean through the South China Sea.

Focusing on the above mentioned five routes, the Belt and Road will take advantage of international transport routes as well as core cities and key ports to further strengthen collaboration and build six international economic co-operation corridors. These have been identified as the New Eurasia Land Bridge, China-Mongolia-Russia, China-Central Asia-West Asia, China-Indochina Peninsula, China-Pakistan, and Bangladesh-China-India-Myanmar.

Figure 2.7
Silk Road Economic Belt and the 21st Century Maritime Silk Road corridors as described in the *Vision and Actions on Jointly building the Silk Road Economic Belt and 21-st Century Maritime Silk Road* document



http://beltandroad.hktdc.com/en/about-the-belt-and-road-initiative/about-the-belt-and-road-initiative.aspx

II.1.9. Organization for Security and Co-operation in Europe (OSCE)

The Organization for Security and Co-operation in Europe (OSCE) has a comprehensive approach to security that encompasses politico-military, economic and environmental, and human aspects. It therefore addresses a wide range of security-related concerns, including arms control, confidence- and security-building measures, human rights, national minorities, democratization, policing strategies, counter-terrorism and economic and environmental activities. All 57 participating States enjoy equal status, and decisions are taken by consensus on a politically, but not legally binding basis.

Transport related issues have been high on the OSCE's agenda in the Economic and Environmental Dimension in recent years.In the field of transport the Office of the Coordinator ofOSCE Economic and Environmental Activities (OCEEA),together with the OSCE field operations, continuesto implement the relevant Ministerial Council Decisionsadopted over the past years, namely MC DecisionNo. 11/06 on Future Transport Dialogue in the OSCE(Brussels, 2006), MC Decision No. 9/08 on Follow-Upto the Sixteenth Economic and Environmental Forum onMaritime and Inland Waterways Co-operation (Helsinki, 2008) and the most recent MC Decision No. 11/11 on Strengthening Transport Dialogue in the OSCE (Vilnius, 2011).

Based on these documents, the OCEEA and partner organizations such as the United Nations Economic Commission for Europe (UNECE) Transport Division and the World Customs Organization (WCO) are engaged in activities described below.

The security of inland transport. This issue has been noted as the weakest in the global supply chain. Relative to seaports and airports, many consider inland transportation to be under-protected. The OSCE has responded by promoting a comprehensive, integrated approach towards inland transport security taking into account the views and concerns of various stakeholders.

Good governance and anti-corruption. The OCEEA assists participating States by providing capacity building and regional training activities aimed at combating corruption in customs and other border services. In carrying out these activities, the OCEEA aims to raise awareness of the existing tools to fight corruption in border services and to work with participating States to identify concrete national follow-up activities in this field.

International legal instruments. The OCEEA assists participating States in organizing regional training activities and national seminars to discuss the implementation of the following international legal instruments in Eastern and South-Eastern Europe, the South Caucasus and Central Asia: United Nations Economic Commission for Europe (UNECE) International Convention on the Harmonization of Frontier Control of Goods ('Harmonization Convention'); World Customs Organization (WCO) revised Kyoto Convention on the Simplification and Harmonization of Customs Procedures; World Customs Organization (WCO) SAFE Framework of Standards to Secure and Facilitate Global Trade.

Assistance to Landlocked Developing Countries.Out of 31 landlocked developing countries globally, nine are OSCE participating States or Partners for Co-operation. The specific transport challenges landlocked developing countries face include lack of direct access to deep water ports and a high level of dependence on the transit services of non-landlocked neighbors. Addressing those challenges requires the development of efficient transport systems through genuine public and private partnerships between landlocked and transit countries and their development partners. While the international donor community, including financial and development institutions and donor countries, have a major role to play in providing financial and technical support for the construction of transport infrastructure, the OSCE has focused on tackling non-physical obstacles to trade and transport. Since 2006 the OSCE has provided political and financial support to the UNECE's Euro-Asian Transport Links Project (Phases I and II).

OSCE-UNECE Handbook of Best Practices at Border Crossings.In February 2012, the OCEEA and the Transport Division of the United Nations Economic Commission for Europe (UNECE) jointly released a OSCE-UNECE Handbook of Best Practices at Border Crossings – A Trade and Transport Facilitation Perspective. The handbook aims to assist OSCE participating States/ UNECE member States, particularly those which are landlocked developing countries with limited access to world markets, in developing more efficient border, transport and customs policies. The publication provides an overview of a range of reference materials and over 120 best practice examples. It covers areas such as available legal instruments, inter-agency and international co-operation, balancing security and facilitation measures, freight processing, risk management, border crossing point design, ICT technology use, human resource management and benchmarking.

http://www.osce.org/eea/98372?download=true

II.1.10. Organization for Cooperation of Railways (OSJD)

The Organization for Cooperation of Railways (OSJD) was established in 1956 by the railway administrations of the 'Eastern Block' countries to create and improve the coordination of international rail transport. Concerning especially the transports between Europe and Asia, it has helped develop cooperation between railways and with other international organizations.

Member-states:	Azerbaijan, Albania, Afghanistan, Belarus, Bulgaria, Hungary, Vietnam, Georgia, Iran, Kazakhstan, China, Democratic People's Republic of Korea, Cuba, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Poland, Russia, Romania, Slovakia, Tajikistan, Turkmenistan, Uzbekistan, Ukraine, Czech Republic, Estonia. Apart from them, OSJD incorporates 7 railways with observer status from:France (SNCF),Germany (DB AG),Finland (VR),Serbia (ZS),Greece (OSE),Austrian-Hungarian company "GySEV",Federal Passenger Company (FPC JSC, Russia).
Priorities that are most important for the EATL development	• Development and improvement of international railway transportation with the traffic between Europe and Asia, including combined transportation; • Development of consentaneous transport policy in the field of international railway traffic; • Improvement of international transport law, administration of the Convention concerning International Goods Traffic by Rail (SMGS) and other legal documents connected with the international railway traffic; • Co-operation on the solution of the problems connected with the economic, information, scientific, technological and ecological aspects of railway transport; • Development of measures aimed at the increase of railway transport competitiveness; • Co-operation in the field of railway operation and technical matters connected with further development of international railway traffic; • collaboration with other international organizations, engaged in railway transportation matters, including those of combined transport.

In 1996, 13 main railway routes between Europe and Asia were identified by the OSJD on the basis of flows of goods between countries on the two continents. On a permanent basis the OSJD performs an analysis of technical and operational indicators and technical equipment of these 13 corridors, collected data on infrastructure and border crossings and studied ways of improving the freight transport technology. This work resulted in comprehensive measures being drafted to improve the organization of international rail transport operations along the transport corridors between Europe and Asia.

The XLIII session of the OSJD Ministerial Conference (Ulan-Bator, Mongolia, June 2-5, 2015) approved Comprehensive plans of carriage improvement and development of OSJD Railway Transport Corridors Nos. 4, 6 and 11 for a period up to 2020 and reported on the progress of the related comprehensive plans for transport corridors Nos. 9, 12 and 13.

The map of the OSJD corridors is presented on Fig.*

The interested countries signed memoranda of understanding for the development of these corridors, which served as a basis for coordinated actions by States to reorganize and modernize pertinent railway lines.

Figure 2.8
OSJD railway transport corridors

One of the projects initiated by OSJD aimed to improve the conditions of Euro-Asian railway transportation is the CIM/SMGS consignment note. This single transport document combines the required CIM and SMGS contracts of carriage into one paper.

The customs authorities officially recognize this document of carriage. The document is valid in the EU/EFTA customs area as transit declaration T and also in the SMGS regime as a national customs (transit) document. The CIM/SMGS consignment note can not only be used for wagonload services, but also for Combined Transport.

Using the new consignment note means documents no longer have to be changed at border crossings between two legal jurisdictions, dispensing with a great deal of administrative expenditure: a first step towards being able to provide through service for freight transport with just minimal border stops.

The development of the action plan on implementation of the Memorandum on cooperation in the technical, operational and commercial development of OSJD railway transport corridors Nos. 1-13 was continued:

The first meeting between the members states of OSJD railway transport corridor No. 1 regarding implementation of the provisions of the memorandum was held in Moscow (Russia Federation) on March 4, 2015. Special attention was paid to the creation of the Coordination Committee.

As part of the panel meeting (April 7-10, 2015, Kishinev, Republic of Moldova), a meeting between the member countries of OSJD railway transport corridors Nos. 12 and 13 was held on the implementation of the provisions of the Memorandum. Special attention was paid at these meetings to the creation of the Coordination Board that should be focused on the analysis of the parameters of the railway infrastructure of the border cross points and preparation of the plan of the infrastructure development and improvement. The analysis of the key components of the Comprehensive Plan of development of the corridors should make a basis for balanced development of the sections of the corridors.

To improve the efficiency of the OSJD railway transport corridors, the experts studied the possibilities of connection of the new lines to the OSJD railway transport corridors, in particular:

- at the suggestion of the Republic of Moldova, the member states of OSJD railway transport corridor No. 12 and Ukraine have agreed to extend OSJD railway transport corridor No. 12 in the territory of the Republic of Moldova from Ocniţa station to Vălcineţ station and then in the territory of Ukraine to Zhmerinka station subject to preservation of the current crossing capacity in the territory of Ukraine at this stage. The relevant changes in OSJD railway transport corridor No. 12 were approved at the annual meeting of the OSJD Commission on Transport Policy and Development Strategy (October 6-9, 2015, the OSJD Committee).

Besides, the member states of railway transport corridors Nos. 2, 5, 8 and 10 accepted the proposal made by the Republic of Kazakhstan on connection of the following railway lines:

- Iletsk – Kabdyagash – Nikeltau – Tobol as a branch line of OSJD railway transport corridor No. 2;

- Zhetygen – Altynkol as a branch line of OSJD Railway Transport Corridor No. 5;

- Beyneu – Uzen – Bolashak OSJD Transport Corridor No. 8;

- Dostyk – Mointy – Zhezkazgan – Saksaulskaya – Beyneu – Aktau-Port OSJD railway transport corridor No. 10.

In this connection, a resolution was passed to update the Comprehensive plans on improvement of the railway operations and development of OSJD railway transport corridors Nos. 2, 5, 8, 10 and 12 up to 2020, as well as the engineering and operational documentation of OSJD Transport Corridors Nos. 2, 5, 8, 10 and 12, and to amend the Memorandum on cooperation in the engineering, operational and commercial development of the OSJD railway transport corridors with regard to the above mentioned corridors.

Ukraine informed the OSJD Committee that the initiative connect port Odessa, port Ilyichyevsk (Ukraine), through the territory of Belarus, with port Klaipeda (Lithuania) was supported by the Byelorussian Railway and the Lithuanian Railways, and suggested that existing OSJD railway transport corridor No. 9 should be extended. The working bodies of the OSJD Commission on Transport Policy and Development Strategy commenced the work on this question on the basis of the OSJD regulatory documents.

Pursuant to the resolution of the OSJD Ministerial Conference, the representatives of the OSJD member states took part in the second joint discussion group on interaction of the OSJD railway transport corridors held in Brussels (Belgium) on June 18 – 19, 2015. The discussion group was also attended by the representatives of the EC railway freight corridors, the OSJD Committee, DG MOVE and other international organisations concerned. A number of agreements was reached on further cooperation between OSJD and DG MOVE with regard to the development of the OSJD transport corridors and EC railway freight corridors and the interchange of experience to enhance the competitive power of the railway operations.

Besides, as part of this sub-subject, a meeting of the representatives of the OSJD member states and member states of EC railway freight corridors No. 8 was held on October 13, 2015 at the suggestion of Bureau on control of this EC corridor.

The activity of OSJD Commission on Freight Traffic in 2015 was carried out in the following directions:

- updating the existing international agreements and contracts in the field of combined transportation between Europe and Asia;

- implementing tariff conditions in regard to the transit freight transportation;

- updating the existing rules on common use of freight wagons in the international traffic for the purpose of ensuring their harmonization with similar international regulating documents;

- harmonising the uniform system of cargo classification and coding;

- planning and organising container block trains between Europe and Asia, including combined transport;

- practical implementation of uniform CIM/SMGS consignments notes in the rail transport between Europe and Asia;

- cooperation with the international organizations in the aim to increase the efficiency and competitiveness of the international railway transport and modal shift from other modes of transport.

II.1.11. Organization of the Black Sea Economic Cooperation (BSEC)

The Organization of the Black Sea Economic Cooperation (BSEC) was established in 1999 tofoster interaction and to ensure peace, stability and prosperity among its Member States.The membership of BSEC currently includes Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Serbia, Turkey, Ukraine.

Since its inception, BSEC paid special attention to cooperation in transport focusing mainly on how to utilize effectively intra-region capacity and growing transit potential of the Black Sea region. At the Meeting of the Ministers of Transport of the BSEC Member States in 2005, it wasconcluded that the development of transport axes connecting the Trans-European TransportNetwork with the Black Sea transport network should be based on the Euro–Asian transportcorridors and on the major routes under the UNECE-UNESCAP EATL framework as well ason other international agreements and initiatives.

BSEC has theWorking Group on Transport has its regular meetings and it carries out its functions as a working organ of cooperation in transport sphere.

The meetings of the Ministers of Transport of the BSEC Member State constitute de-facto a decision making regular high-level transport forum with its mechanism of implementation - working group, steering committees and expert groups. BSEC developed some important mutually supplemented projects in the region.

Cooperation on the gradual liberalization of transportation is going on within the Memorandum of Understanding on Facilitation of Road Transport of Goods in the BSEC Region (signed in Kyiv in 2002). The work on the MoU was institutionalized – the Steering Committee on Facilitation of Road Transport of Goods was established. The BSEC Permanent International Secretariat (PERMIS) carries out the duty of its secretariat. This work is being done in a close cooperation and with valuable support of the International Road Transport Union (IRU) and the Union of the Road Transport Association in the BSEC region (BSEC-URTA).The Steering

Committee works on the issues of gradual liberalization of transport permit system, monitoring of border waiting times, introduction of the International Vehicle Weight Certificate, harmonization of charging policies etc.

Cooperation on the development of road infrastructure was established within the Memorandum of Understanding for the Coordinated Development of the Black Sea Ring Highway (signed in Belgrade on 19 April 2007). The work on the project was institutionalized – the Steering Committee as a main driving force, and Joint Permanent Technical Secretariat were established.

Development of maritime infrastructure and links is under way within the Memorandum of Understanding on the Development of the Motorways of the Sea at the BSEC Region (signed in Belgrade on 19 April 2007). The Cooperation was also institutionalized - it is coordinated by the Ad Hoc Working Group pertaining to this Memorandum of Understanding.

The projects also constitute regional contribution to the extension of Trans-European Networks and the development of Euro-Asian transport links.In the meantime, parallel to its work on these projects, BSEC, as a project-oriented organization, continue exploring new areas where it is desirable and realistic to develop and deepen multilateral cooperation in a regional format in the transport sphere, which carries particular prominence for the BSEC Organization. In this work special attention is paid to cooperation with other international organizations such as UNECE, UNDP, IRU, IRF and BSEC sectoral dialogue partners, BRASS, BASPA, BINSA and BSEC-URTA.

BSEC has worked collaboratively with UNECE on issues related to transport facilitation. TheCooperation Agreement between BSEC and UNECE, signed in 2001, aims at accelerating thedevelopment of international transport infrastructure networks, transport and border-crossingfacilitation, and also harmonizing safety and environment standards in the area of transport.

http://www.bsec-organization.org/aoc/Transport/Pages/Information.aspx

II.1.12. TRACECA Intergovernmental Commission

The Transport Corridor Europe-Caucasus-Asia (TRACECA) programme was launched at a conference in Brussels in 1993 which brought together trade and transport ministers from the original eight TRACECA countries (five Central Asian republics and three Caucasian republics). Currently TRACECA members include Armenia, Azerbaijan, Bulgaria, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Romania, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan.

At the Brussels conference, it was agreed to implement a program of a European Union funded technical assistance to develop a transport corridor on a west-east axis from Europe, across the Black Sea, through the Caucasus and the Caspian Sea to Central Asia.

In 2000, an Intergovernmental Commission (IGC) was established to oversee the implementation of the programme. The Commission’s executive body, the Permanent Secretariat (PS), created in 2001, has its headquarters in Baku and is since 2006 funded directly through contributions of the TRACECA member countries.

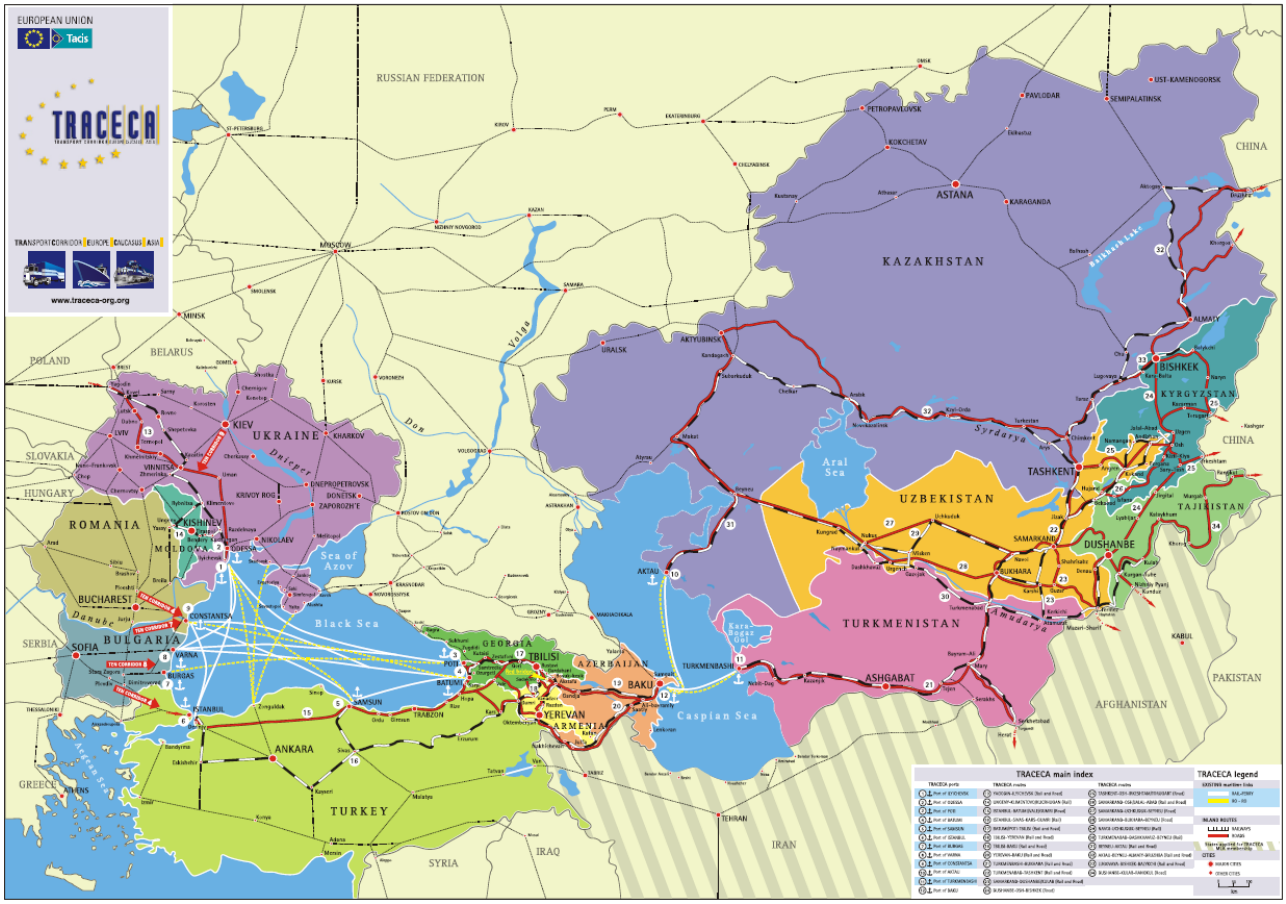
In 2004 the Baku Initiative on Transport was launched involving all 1998 TRACECA MLA signatory states as well as Belarus.

One of the first activities of this initiative was to set up four expert working groups to work out recommendations on transport development in the fields of land transport (road / rail), aviation, security, and infrastructure. These recommendations were presented at the Second Baku Initiative Ministerial Conference and Fifth Annual Meeting of the IGC TRACECA in May 2006 which, in turn, approved the TRACECA long-term strategy till 2015.

The present Action Plan is based on the provisions of the strategy elaborated for the TRACECA corridor region for the period up to 2015. The latter's overall goal is to help deliver a sustainable, efficient and integrated multi-modal transport system between the EU and the TRACECA region but also among the TRACECA countries.

Currently the TRACECA countries are gradually implementing the IGC TRACECA Strategy for development of the international transport Europe-Caucasus-Asia corridor for the period up to 2015, aimed at creation of a sustainable infrastructure chain ensuring multi-modal transport with step-by-step integration of the corridor into the Trans-European Transport Networks (TEN-T).

Figure 2.9
Main TRACECA routes



Source – TRACECA.org

II.1.13. Economic Cooperation Organization (ECO)

The Economic Cooperation Organization (ECO) is an intergovernmental organization established in 1985 by Iran, Pakistan, and Turkey to promote economic, technical, and cultural cooperation among the member states. In 1992, the Organization was expanded to include seven

new members, namely: Afghanistan, Azerbaijan, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

The main goals of the ECO include sustainable economic development, economic liberalization and privatization, mutually beneficial cooperation with regional and international organizations, the removal of trade barriers, and the development of transport and communications infrastructure.

The transport and communications sector, since the early years of ECO, is on the top of the agenda. The ECO Directorate of Transport and Communications has played a significant role in facilitatingECO Agreements and Declarations in the transport and communications field to foster economiccooperation, integration and cohesiveness in the ECO region.

Key documents in this field are: the Quetta Plan of Action; the Istanbul Declaration (ECO Long Term Perspectives); the Almaty Outline Plan for the Development of Transport Sector in the ECO region; the Ashgabat Declaration of 1997; the Programme of Action for ECO Decade of Transport and Communications; and the Transit Transport Framework Agreement.

The ECO transport sector hasachieved considerable progress in, for example, interconnecting road and railway networks inCentral Asian Republics with Iran, Pakistan and Turkey, and in international road transportamong all ECO countries via bilateral agreements and the construction of missing links in the ECO region.

II.1.14. Organization for Democracy and Economic Development - GUAM

The **GUAM Organization for Democracy and Economic Development** is a regional organization of four post-Soviet states: **G**eorgia, **U**kraine, **A**zerbaijan, and **M**oldova.

Another of the issues associated with GUAM is competition between two proposed transportation corridors to better link Europe with Asia. Russia, Azerbaijan, and Iran have already been through rounds of negotiation on their plan, the North-South Transportation Corridor (INSTC); neighbouring countries (formerly, but no longer with the exception of Armenia) have expressed enthusiasm as well. This corridor would travel along the border between Russia and the Baltic states of the European Union, then continue south through Ukraine.

According to the provisions of the Joint Statement on the future development of Euro-Asian transport links, signed at the Ministerial meeting held in Geneva under the auspices of UNECE on February 19, 2008, the development of more efficient, secure and more reliable Euro-Asian transport routes should enable the provision of additional transport options to existing and future trade flows between Europe and Asia, and facilitate the participation of these national economies in the world economy. During the GUAM Baku summit (June 18-19, 2007), held under the motto “GUAM: Bringing continents together”, which defined the long-term priorities for the organization’s development, Heads of State instructed their governments to intensify efforts regarding the transit potential of GUAM member states and to attract international support and investment to this end. At the international conference "GUAM-Transit", held in Baku on April 29-30, 2008, projects on developing the GUAM transport corridor in the direction of Baku-Tbilisi-Poti (Batumi)-IlyichevskKiev-Chisinau were presented. At that time, the main issues that needed to be urgently resolved in order to enable fully realising the corridor’s potential were also

discussed. The Baku conference created an opportunity to outline the basic contours of future actions in this direction. At the GUAM summit in Batumi, held on July 1, 2008, Heads of State instructed their governments to develop a comprehensive concept of the GUAM transport corridor, also entailing involvement on the part of the private sector. Economic changes and their accompanying processes in advancing foreign economic relations require a new approach to developing transport, and redistributing freight and passenger traffic flows. Extending international cooperation, intensifying integration processes and expanding international trade requires a favourable environment for the unhindered flow of cargo and passenger traffic connected with providing interstate economic and cultural ties. The growth of transit traffic increases the efficiency of using national transport systems' carrying capacity reserves, and stimulates their replenishment and improvement. Concluding intergovernmental agreements, adhering to existing international conventions and treaties, and developing a unified interstate strategy should make it possible to avoid tension in international relations with regard to competition between the sovereign states, on the territories of which there exist alternative transport routes. Finding the appropriate solution to these problems will make it possible to avoid tensions and moreover, will become a long-term stabilising factor in developing relationships. Whatever political and economic changes may take place, he traffic transit route chosen, developed and tested in practice along the GUAM corridor shall be a stabilising long-term factor. The present concept is being developed in accordance with the above-mentioned instructions by the Heads of State and is intended to promote the development of the GUAM transport corridor, to ensure its competitiveness, to improve the network of communication routes along the corridor, and to increase the international traffic flow through the Republic of Azerbaijan, Georgia, Ukraine and the Republic of Moldova, thereby contributing to economic prosperity and creating a zone of integration and security within the GUAM region.

II.1.15. The World Bank

The World Bank is an international institutionestablished in 1944 and providing financial and technical assistance to developing countries. The World Bank Group is headquartered in Washington, D.C. 10,000 employees work in more than 120 offices worldwide.

The World Bank Groupconsists of two development institutions, namely the International Bank for Reconstruction and Development (IBRD), focusing on middle income and creditworthy poor countries, and the International Development Association (IDA), focusing on the poorest countries. Besides them, the World Bank Group includes also and three other affiliated development institutions.

The transport sector constitutes a significant part of the World Bank's portfolio.World Bank transport projects span all transport modes and operational environments: rail, road, aviation, waterborne transport, urban transport, rural access, etc.

The World Bank's strategy in the transport sector, and companion business plan for the next three years (2016-18), aims to facilitate the movement of people, goods and ideas in developing countries by focusing on mobility solutions that provide greater access, efficiency and safety, all in a climate-friendly way.

World Bank (IBRD/IDA) transport commitments in fiscal year 2015 (FY15) amounted to US$5.4 billion. Furthermore, in FY15, there were 197 active Bank projects with total net commitments of US$41 billion, representing 21 percent of the Bank's total lending portfolio.

In FY15, the International Finance Corporation (member of World Bank Group) committed $585 million in transportation and logistics, and mobilized another $253 million from third-party investors. Overall, IFC has a $3 billion portfolio of transportation investments covering ports, airports, railways, canals and other sectors.

Rural and inter-urban roads remain the largest sub-sector with 48 percent of lending in FY15 (US$2.6 billion). However, the transport sector has rebalanced its portfolio with more operations in urban transport, road safety, aviation, ports, and railways, including projects that aim to improve trade competitiveness. Urban transport is a growing business for the Bank, increasing its financing share from 10 percent ($893 million) in FY11 to 20 percent (US$1.1 billion) in FY15.

According to the Infrastructure Strategy Update 2012 – 2015, in Asian region the World Bank Group will focus on supporting countries to ensure sustainable development of sub-national level roads to ensure good quality, all-year access and value for money in investments.

http://www.worldbank.org/en/topic/transport/overview#2

http://siteresources.worldbank.org/EXTINFRA/Resources/WB_InfraStrat_Brochure_EastAsiaPacific_2-16.pdf

II.1.16. Asian Development Bank (ADB) and Central Asia Regional Economic Cooperation (CAREC) Program

The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 10 countries (Afghanistan, Azerbaijan, China, Kazakhstan, Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan and Uzbekistan) and six multilateral development partners (Asian Development Bank, European Bank for Reconstruction and Development, International Monetary Fund, Islamic Development Bank, United Nations Development Programme, and World Bank) working to promote development through cooperation, leading to accelerated economic growth and poverty reduction.

Asian Development Bank (ADB) serves as the CAREC Secretariat and takes the lead in organizing institutional events, such as ministerial conferences, senior officials' meetings, and sector and sector coordinating committees' meetings as well as liaising with partner governments and institutions.

ADB is involved in all priority sectors of CAREC—transport, trade facilitation, trade policy, and energy. Between 2001 and 2011, it has provided $5.1 billion in loans and grants in transport, trade, and energy. It has also produced CAREC-related studies.

To guide the CAREC Program in the next 10 years, ministers of CAREC countries endorsed the CAREC 2020: A Strategic Framework for the Central Asia Regional Economic Cooperation Program 2011-2020 (CAREC 2020).

Transport is among the CAREC top priorities. The CAREC Transport and Trade Facilitation Strategypresents a shared vision of transport and trade facilitation development across the region to 2017, identifying three transport goals:

- establish competitive transport corridors across the CAREC region;

- facilitate efficient movement of people and goods across borders; and

- develop safe, people-friendly transport systems.

CAREC focuses investment and other activities on the development of six competitive transport corridors that link north, south, east, and west through the pivot of Central Asia:

Corridor 1: Europe-East Asia;

Corridor 2: Mediterranean-East Asia;

Corridor 3: Russian Federation-Middle East and South Asia;

Corridor 4: Russian Federation-East Asia;

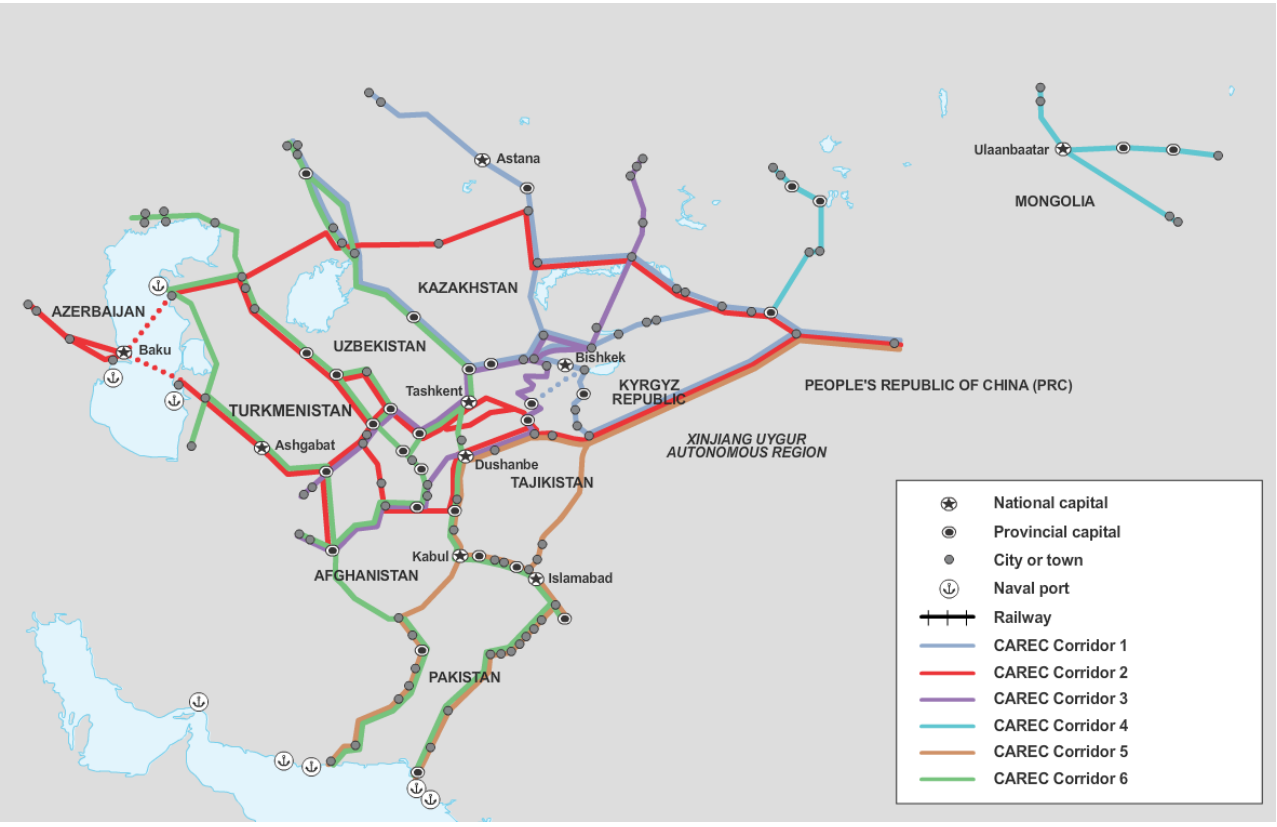
Corridor 5: East Asia-Middle East and South Asia;

Corridor 6: Europe-Middle East and South Asia.

The six CAREC corridors link the region's key economic hubs to each other, and connect the landlocked CAREC countries to other Eurasian and global markets. Each corridor improves access for CAREC countries to at least two large Eurasian markets; and the warm-water ports of Karachi and Gwadar in Pakistan open up truly global trade opportunities.

Corridors are not final products, however: once a corridor is established, it must meet the needs of its users. This means improving physical infrastructure is only part of the equation. It is also necessary to ensure border-crossing times and costs as well as other transshipment operations are completed as seamlessly as possible.

Figure 2.10
CAREC corridors



Source : http://www.carecprogram.org/index.php?page=carec-program

The Implementation Action Plan for the CAREC Transport and Trade Facilitation Strategy presents an aggressive investment plan to upgrade all six transport corridors to international standards by 2017.

CAREC 2020—the strategic framework for the CAREC Program, 2011–2020—lays out the next phase of priority investments in transport infrastructure along the corridors. CAREC expects additional investments over the coming decade to complete the infrastructure network and begin the process of developing the transport corridors into logistics corridors and—ultimately—economic corridors.

II.1.17. The Islamic Development Bank (IDB)

The Islamic Development Bank (IDB) is an international financial institution with headquarters in Jeddah, Saudi Arabia and regional offices in Almaty (Kazakhstan), Kuala Lumpur (Malaysia), Rabat (Morocco) and Dakar (Senegal). IDB was established in 1973 to support the economic development and social progress of its Member Countries.

In line with the strategic thrusts of the IDB, regional transport corridors continued to receive high priority in IDB's transport financing activities. In particular, IDB is financing numerous projects across the CAREC area, where the IDB had assisted the countries in construction and reconstruction of almost 1,300 km of motorways and 325 km of railways that are the part of the CAREC road corridors.

Currently (2014 – 2016) the IDB is participating in the following projects in EATL region:

- three road projects of regional importance, two in Azerbaijan and one in Kyrgyz Republic thus committing in total US$ 471 million;

- theAlternative road corridor North-South in Kyrgyz Republic;

- road reconstruction project in Uzbekistan from Guzar to Beyneu, which is the part of Uzbek National Highway project and lies along the CAREC corridors;

- the construction of the road length Kulyab to Khalaikum in Tajikistan, which will open the new road corridor to China.

While transport corridors are developing, the IDB pays a great attention to the trade facilitation and removal of trade barriers. For this purpose the Bank via its frequent respective programs and workshops encourages its member-countries to adopt the advanced examples of international trade.

http://www.carecprogram.org/uploads/events/2015/029-14th-CAREC-Ministerial-Conference/Key-Documents/Statements/2015-CAREC-MC-MI-Statement-IDB.pdf

http://www.isdb.org/irj/go/km/docs/documents/IDBDevelopments/Internet/English/IDB/CM/Publications/39YearsInDevelopment.pdf

II.1.18. The European Bank for Reconstruction and Development (EBRD)

The European Bank for Reconstruction and Developmentwas established in 1991 in London with the aim of promoting transition to market-oriented economies in the countries of Central and Eastern Europe and Central Asia.Currently the EBRD has 63 members (61 countries, the European Union and the European Investment Bank), with a total of 29 countries of operations in central and eastern Europe, Central Asia and the Caucasus - and soon in north Africa.

Considering that transport is a key enabler of growth, providing the physical networks and services upon which the economy depends for the movement of people and goods, the EBRD is striving to develop safe, secure and sustainable transport systems, which balance economic, environmental and social needs.

The EBRD priorities within the transport sector include:

- promoting market based transport. The EBRD works to improve the efficiency, market-orientation and financial sustainability of the transport sector. This includes supporting the development of the private market for transport services and increasing private sector participation in the provision of transport infrastructure through concessions;

- developing sustainable transport. The EBRD is committed to supporting the development of sustainable transport networks in the region. Climate change mitigation and adaptation, integrated network development, pollution prevention, air quality and biodiversity protection, economic inclusion and gender equality and road safety are all important sustainable transport issues which we continue to address at the policy and project level;

- broadening activity within the sector. The Bank is committed to expanding the boundaries of its activities in the transport sector to finance the needs of emerging sub-sectors. The need for freight services is growing, including road freight, and the Bank aims to promote sustainable development and reducing CO2 emissions given the potential of logistics operations to lower energy consumption through optimized networks.

Since 1991, the EBRD has invested €14.2 billion in 280 projects in the transport sector, including 47 per cent in roads, 33 per cent in the rail network, 14 per cent in port, intermodal and logistics operations, as well as 6 per cent in the aviation sector.Among the projects, financed by EBRD, are the following:

- the railway reform In Kazakhstan. After supporting the initial restructuring of the national railways company KTZ, the Bank made several investments to help the company finance increasingly advanced efficiency measures. The Bank also participated in a bond issuance, which helped the company finance much-needed logistics infrastructure to increase cargo transit along the trade route from China to Europe;

- participation in the AIG Silk Road Fund in Azerbaijan. AIG Silk Road Fund is a private equity investment fund targeting Kazakhstan, Uzbekistan, Azerbaijan, Kyrgyzstan, Tajikistan and Turkmenistan The project will provide equity finance to small and medium-sized private sector enterprises and joint ventures operating in the countries of Central Asia;

- East-West road corridor project in Kazakhstan;

- the Eurasia Tunnel under the Bosphorus Straits in Turkey, which was the first PPP in the country. A Turkish-Korean joint venture was selected through an international tender to build and operate the tunnel.

http://www.ebrd.com/what-we-do/transport/overview.html

http://www.ebrd.com/news/2016/ebrd-at-25-transport.html

II.1.19. International Road Transport Union (IRU)

The International Road Transport Union (IRU) was founded in 1948 to represent the interests of the international road transport industry. The goals of IRU are to ensure the mobility of people and goods while improving the safety and environmental performance of road transport. The IRU holds Euro–Asian Road Transport Conferences biennially to promote and revive the "Silk Road" linking Europe and Asia.

In 2009 the New Eurasian Land Transport Initiative (NELTI) was implemented. The project aims to encourage regular roadfreight shipments between Europe and China and to assist in achieving the transit potentialparticularly of nations in Central Asia and the Caucasus.

The objectives of the project are to:

- contribute to the implementation of the UN Millennium Development Goals and of theAlmaty Programme of Action for landlocked developing countries in order to developEurasian land transport links;

- assist in the development of trade in landlocked countries and regions and to broadenaccess for their goods to international markets;

- increase the contribution of road transport to international trade and socioeconomicdevelopment

- offer alternative delivery routes to maritime shipments to assist businesses in landlockedcountries.

NELTI consists of commercial deliveries of industrial and consumer goods across the Eurasian landmass, performed by independent transport companies from Eurasian countries along five different routes (see figure 2.11).

In the course of Phase I of the project a series of successful demonstration road transport caravans was undertaken in 2002-2007 (Lisbon-Vladivostok, Beijing-Brussels, and Black Sea Ring Caravan). One of the objectives, along with solution of commercial and political tasks, was also building up and adjusting mechanisms of logistic support and stimulating haulage, in the longer run, of Chinese freights by road transport routes along the historic Great Silk Road.

Within the framework of Phase Two of NELTI (2009-2011), the development of the system of regular road transport haulage between Asian and European countrieswas continued, with China involved in this system. Certain measures were enforced in accordance with the provisions of Memorandums of Understanding and regional agreements aimed to further the development of Euro-Asian transport communications, remove the barriers therein, simplify the border crossing procedures, harmonize the legal provisions in the transit countries, etc.

Figure 2.11
NELTI routes

NELTI is developed in consequent phases.

NELTI-3 was launched **in June 2011to identify the main impediments and non-physical barriers to international road transport within the** Economic Cooperation Organization (ECO) **region and help governments implement the appropriate UN multilateral instruments to stimulate economic growth by facilitating trade and international road transport.**

In September 2012 IRU had launched NELTI-4 in cooperation with Arab Union of Land Transport (AULT) in the Arab world.

One of the most important aspects of the NELTI project during all its phases is monitoring. Monitored data collected *en route* by NELTI drivers - applying internationally recognized UNESCAP methodolology for data collection - on road conditions, waiting times at border-crossing points, quality of road infrastructure, administrative barriers etc., are subsequently analyzed by the Dutch Transport Research Institute (NEA) to develop road maps identifying the issues to be solved and the measures required to reduce the time and cost of road transport haulage between China and Europe.

NELTI monitoring has unveiled a high competitive potential for the development of the NELTI northern, central and southern routes. However, the data has also highlighted that 40 % of road transport time along the routes of the Silk Road is lost at borders due to inappropriate border crossing procedures which impede trade growth along the entire Eurasian landmass. In addition, approximately 30% of the transport costs were due to unofficial payments, borne by the hauliersen route and at border crossing points.

II.1.20. International Union of Railways (UIC)

UIC is the worldwide professional association representing the railway sector and promoting rail transport. To enable UIC to effectively fulfil its mission, 3 levels have been defined for international cooperation activities:

- **strategic level:** coordination with and between the 6 UIC Regions (represented by UIC Regional Assemblies for Africa, Asia, North America, South America, Europe and Middle-East);

- **technical/professional** cooperation level structured around the following railway activities: Passenger, Freight, Rail System – including infrastructure, rolling stock, operations – and Fundamental Values including cross-sector activities such as Sustainable Development, Research Coordination, Safety, Security, Expertise Development). Strategic priorities for technical cooperation activities are set out by forums and platforms composed of member representatives;

- **support services level:** Finance, Human Resources, Legal, Communications and Institutional Relations.

UIC promotes intercontinental and transcontinental rail traffic and has a dedicated group of experts dealing with this issue - the Global Team of Experts (GTE) Members of the group represent rail and non-rail key stakeholders (railway undertakings, freight forwarders, rail associations, potential customers, shipping lines and others). The GTE serves as a platform for exchange among all stakeholders, and to initiate and steer projects creating the right framework conditions for developing long-distance rail traffic.

Following the results of the study ICOMOD (project aimed at establishing the viability of a rail link between Europe and Asia and at assessing the market size) and in the light of the strengthening cooperation between UIC and other International Associations, the year 2012 was aimed at reposi-tioning the UIC group. A gap analysis identified the need to continue market oriented research activities. The GTE activities are now focused on the following issues:

- analyzing and generalizing information on technical compatibility and interoperability within ITCs;

- summarizing the results of activities among international organizations and certain railway operators aimed at improving transportation along ITCs;

- forecasting of freight and passenger transportation volumes, establishing a data base of freight points of origin and destination as well as volumes structure;

- developing a marketing approach to improve the appeal of ITCs for freight owners and forwarders, presenting the opportunities and prospects offered by ITCs at international forums.

http://www.uic.org/corridors#documents

Trans-Caspian International Transport Route (TITR)

As a part of the “New Silk Road”intermodal East-West transport infrastructure initiative, Azerbaijan, Kazakhstan, Georgia and Turkey agreed on creation of the Trans-Caspian International Transport Route (TITR).

In the framework of the TITR project, a cargo train that launches from China will be able to reach Europe in less than 14 days, which is the most competitive route in terms of transport time. For instance, it takes around 15-19 days for a cargo train that departs from China and passes through the Russian territories to reach Europe, and it takes more than a month for a cargo from the Eastern China to arrive in Europe using the current maritime route. Therefore, the TITR would have obvious advantages over the existing inland and maritime routes.

The agreement on the establishment of the Coordination Committee to develop the Trans-Caspian International Transport Route was signed by the representatives of the national railway companies from Azerbaijan, Kazakhstan and Georgia, and the representatives of the ports of Aktau and Baku during the 2nd International Transport and Logistics Business Forum "New Silk Road" in November 2013. During the 5th meeting of the Coordination Committee on the development of the TITR on October 20,2014 participants of the TITR project agreed to accept the Turkish State Railways to the Coordinating Committee.

Currently, the regular meetings of the working group of the Coordination Committee are attended by the heads of the JSC "NC Kazakhstan Temir Zholy", the Turkish State Railways, the JSC "Azerbaijan Rail--ways", the JSC "Georgian Railways", the JSC "NC Aktau International Sea Trade Port", the Baku International Sea TradePort, the JSC "Azerbaijan Caspian Ship--ping Company" and the LLC "Batumi Sea Port".

The most significant result of the TITR working group meeting was reached in Batumi on July 24, 2015, namely, in coordination with the Chinese transport company, Minsheng Logistics. The parties managed to launch the first container train over the Trans-Caspian International Transport Route. On July 28, 2015, the test cargo train departed from the Xinjiang province in China, travelled along theShihezi-Dostyk-Aktau-Alyat-Keshla routethrough the territories of Kazakhstan and Azerbaijan, and arrived at the Baku International Trade Port complex, located in the town of Alyat (around 30 miles south west of Baku).

The train carried caustic soda and consisted of 41 platforms and 82containers, weighing 20 tons each. It traveled for 6 days and for more than 4,000kilometers, passing through the Kazakhport of Aktau. Therefore, it was the first successful attempt to launch a cargo train from China to the Caspian region through the Caspian Sea.

The test train showed the principle capability of the parties to reach an agreement on tariff policy and on harmonized customs procedures providing a competitive route from Asia to Europe.

The second container train via the Trans-Caspian International Transport Route arrived in Georgia on October 3, 2015. The train, consisting of 44 containers, departed from the Chinese Xinjiang province, travelled on the Alashankou-Dostyk-Aktau-Alyat-Tbilisi route and arrived in Georgia in eight days. The second test train showed that the organization of the container service on the China-Kazakhstan-Azerbaijan-Georgia-Turkey route could really meet the expectations of the TITR members.

It is expected that approximately 300,000-400,000 containers will be transported via the Trans-Caspian International Transport Route by 2020ensuring an average speed of up to 1,100km a day. Participants predict that the TITR will initially be able to transport up to5.5 million tons of cargo annually, increasing gto 13.5 million tons per year by 2020.

During the meeting in Baku in January2015, the Coordination Committee reached an agreement on the adoption of measures for utilizing the new Zhezkazgan - Beineurailway lines and on the capacity of Kazakhstan's Aktau and Azerbaijan's Baku seaports in order to create favorable tariff conditions.

Despite the agreements, there remains one important missing part of the TITR, namely, the 826-kilometer Baku-Tbilisi-Kars (BTK) railway connection. Opening of the BTK railway with an annual carrying capacity of 6.5 million tons by the end of the year with further integration with the "Marmaray" rail project under the Bosporus Strait will allow freight trains to travel between Europe and Asia along the fully launched Trans-Caspian International Transport Route.

However, even if all parts of the TITR corridor are linked together, there will still be a necessity to increase the transit capacity of the existing infrastructural facilities. For instance, the "Kazakhstan Temir Zholy" transport company is about to finish the expansion works in the Aktau port, which will allow to put in operation anew grain terminal with a capacity of 1.5million tons and two additional dry-cargo terminals with a total capacity of 1.5 million tons. Moreover, two universal ferries will be purchased within the framework of implementation of the new state program. Herewith, the port capacity will increase from 16.8 million tons to 21 million tons per year. In addition, Azerbaijan is also upgrading its maritime infrastructure. In accordance with the plans for modernization of the Caspian Sea infrastructure, Azerbaijani officials made a decision to launch a new port complex in Alyat as part of the Baku seaport. The first ferry terminal in Alyat with transshipment volume of 10 million tons of cargo per year was opened in 2014. At the final stage of the construction works, the Alyat port complex is expected to have an annual transport capacity of up to 25 million tons. In conclusion, it should be noted that the sharp drop in oil prices has increased the significance of benefits of freight transportation, especially for countries such as Kazakhstan and Azerbaijan. Therefore, establishing the Trans-Caspian International Corridor should be considered as a mutually beneficial project, which could potentially pave the way to build new multimodal transportation hubs in Eurasia.

Source: Eurasian Research Institute Weekly e-bulletin 06.10.2015-12.10.2015 • No: 36/ DEVELOPMENT OF THE TRANS-CASPIAN INTERNATIONALTRANSPORT ROUTE.

II.1.21. Global Partnership for Sustainable Transport (GPST)

The GPST was created to contribute to the implementation of UN transport-related Declarations, Resolutions and other recommendations at the national, regional and international levels through advocacy, awareness generation, partnership building and through technical and analytical work. As a global, business and industry-led, multi-modal, strategic, action-oriented, multi-stakeholder platform, the GPST recognised that public-private partnerships would play a vital role in helping UN Member States to implement their decisions, in order to achieve maximum positive economic, environmental and social impact[7].

GPST Members and Partners also acknowledged that given the resources, expertise and competence they possess, they could be effective in translating UN Member State commitments into actionable, result-oriented recommendations that can be implemented by governments and businesses.

Since it was launched in 2015, the GPST has continued to exercise a leadership role in supporting governments to take actions to strengthen the international legal framework for

[7] GPST (2016) Business and Industry Contributions Sustainable Transport and the 2030 Agenda for Sustainable Development 12 January 2016

sustainable transport in order to achieve progress in promoting more conducive environments for trade, transport and transit facilitation[8]. The GPST works closely with businesses in the transport industry to identify best practices that promote global development objectives and win-win outcomes for both governments and businesses, and disseminates these best practices widely.

In 2016 the GPST announced "The New Global Silk Routes Initiative" (GSR). Initially, the focus of the GSR will be threefold[9]:

(i) Removal of impediments to globalization of trade along the Silk Routes, including facilitation of efficiency in border crossings and implementation of relevant UN conventions, such as the Harmonization Convention3 and TIR Convention;

(ii) Exchange of information on best practices between private and public players across all modes of transport and relevant countries along the Silk Routes necessary for trade facilitation; and GSR has identified particular action areas and projects for its immediate focus, summarized below.

(iii) Development of best practices for investments in transport infrastructure, including ancillary infrastructure and public-private partnerships.

(iv) To achieve its goals, GSR is expected to cooperate closely with a range of international organizations, such as the Asian Development Bank (ADB), and in particular, CAREC (Central Asia Regional Economic Cooperation); the Economic Cooperation Organization (ECO); the Eurasian Economic Community (EurAsEC); the European Bank for Reconstruction and Development (EBRD); the European Commission (EC); the Organization for Security and Cooperation in Europe (OSCE); the Shanghai Cooperation Organization (SCO); TRACECA (Transport Corridor Europe-Caucasus-Asia); the United Nations Economic Commission for Europe (UNECE); the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the World Bank, etc.

[8] http://gpst2030.org/upload/iblock/c23/summary_of_gpst_strategy.pdf
[9] GPST (2016) Global Silk Routes Initiative By Global Partnership for Sustainable Transport

II.2. Most important national level programmes and projects

Azerbaijan Republic

In 2015, the Azerbaijani Railways carried 17.09 million tons of goods, including 13 million tons carried as international operations[10]. Special attention is paid to the modernisation of the railway infrastructure in section Bejuk-Kjasik –Ganja. Baku – Sumgait section was reconstructed.

In 2015, two container block trains China – Kazakhstan – Azerbaijan – Georgia and China – Kazakhstan – Russia –Azerbaijan – Georgia were put into service.

2838 new freight wagons, 4 new electric multiple units and 8 new diesel locomotives were purchased.

Republic of Belarus

In 2015, the volume of cargo transportation on the Belarus Railway made up 131.4 million tons of goods[11]. The number of regular container block trains running between China and West Europe has been steadily grown. In 2015 8 trains run between Belarus and Germany, Poland, Czech Republic and Lithuania.

Due to the improvement of train handling procedures, the time of cargo trains stops at the Brest border crossing point reduced from 36 to 10 hours with transshipment and to 6 hours without transshipment.

The Belarus Railways are completely opened for transportation of freight in all directions using the CIM/SMGS consignment note. During 2015 more than 29 thousands TEUs run under such a consignment note.

In 2015, as part of development of the railway infrastructure, the projects: "Extension of the receiving-departure lines of Orsha-Centralnaya railway station and Sitnitsa railway station" and "Development of the second stage of the Project "Electrification of the 86 km of Gomel – Zhlobin section" were successfully completed. In 2015, 279 new freight wagons were purchased.

Bulgaria

In 2015, ***the Bulgarian Railways*** continued reconstruction and modernisation of OSJD Railway Corridor No. 6, and modernised Septemvri – Plovdiv and Plovdiv – Burgas sections. Now, Plovdiv intermodal terminal is under construction.

In 2015, the National Railway Infrastructure Company (NRIC) entered the TIS (the Train Information System) of the International Organisation of Rail Infrastructure Managers on a permanent basis; that enables Bulgarian and foreign operators to monitor their international

[10] Report on the activities of the Organisation for Cooperation between Railways (OSJD) in 2015. Warsaw, 2016
[11] Report on the activities of the Organisation for Cooperation between Railways (OSJD) in 2015. Warsaw, 2016

trains in real-time. Besides, the train information system makes it possible to monitor train delays at the border crossing points and causes thereof.

China

In 2015, ***the Chinese Railways*** carried 2.71 billion tons of cargo and 2.53 billion passengers.

9531 km of new railway lines were put in operation, of which 3306 km are high-speed ones.

The Chinese Railways have introduced the principle of independent administrative and economic functions. In order to promote the innovative structural systems and acceleration of the railway construction, measures were developed aimed at:

- further transformation of the governmental functions;

- facilitation of the administrative procedures;

- consolidation of the railway transport control and management;

- promotion of railway tariff reform;

- coordination of further railway transport development.

Kyrgyz Republic

The Kyrgyz Railway has modernized above 150 km of railway lines of the northern and southern sections with the laying of new reinforced concrete and timber sleepers for 2011-2015 years. Six new modern Evolution fifth generation diesel locomotives TE33A were put in service. Two car-repair plants were established for the purpose of modernisation and repairs of freight wagons and passenger coaches that allows extending the life of wagons.

Fibre-optic communication line is laid at Lugovaya – Bishkek – Rybachye section.

The strategic projects of construction North – South trunk railways are being successfully implemented as part of the Russia –Kazakhstan – Kyrgyzstan – Tajikistan project and China – Kyrgyzstan project.

Latvia

In 2015, the Latvian Railway carried 55.6 million tons of goods, of which 53.9 million tons – internationally.

The new Bolderāja-2 – Krievu railway line was put in service, with the construction of new Bolderāja -2 railway station.

In 2015, 47.2 km of railway lines were modernized and 93.8 km were reconstructed. The second 56 km track at Skrīveri – Krustpils section was opened.

Lithuania

In 2015, the Lithuanian Railways carried 48.1 million tons of goods.

1,435 mm gauge railway line of 115.2 km from the state border with Poland to Kaunas railway station was put in service as a result of implementation of the project "Rail Baltic".

The projects of modernisation of the railway infrastructure of OSJD corridor No. 9 (Kena – Vilnius – Siauliai – Klaipeda), construction of the second track on Kyviskes – Valciunai section, as well as on Pavenciai – Raudėnui, Telšiai – Dusaikai and Kūlupėnai – Kretinga sections were successfully completed.

As a result of modernisation of 1,520 mm gauge infrastructure, 53.7 km of new lines and 4 bridges have been constructed and 44.1 km of the existing tracks have been reconstructed.

A computer-based system of commercial inspection of trains and wagons was installed at Kena and Kibartai border stations, as a result of which the duration of commercial inspection of trains was significantly reduced and made more exact, with the recording of all cases of incorrect loading and load securing, technical and commercial condition of wagons and coaches and cargo shortage in case theft.

Republic of Moldova

In 2015, the Moldova Railway spent more than 1.5 million US Dollars for rehabilitation project and entered into a loan agreement with the European Bank for purchase of 10 new main-line locomotives, modernisation of locomotive depots, and recovery of the railway infrastructure for 100 million Euros in aggregate.

The Railway of Moldova State Enterprise and the State Administration for Railway Transport of Ukraine signed an Agreement for electronic data exchange in the international freight transport. A significant progress is availability of all types of control (border control, customs check, sanitary inspection, veterinary inspection, etc.) on the principle of "the single window" at all railway border stations of Moldova.

Approximately 25 thousands consignments were carried over the territory of the Republic of Moldova using the CIM/SMGS consignment note in 2015.

Mongolia

In 2015, the volume of freight transit through the Ulan-Bator Railway increased by 101.38%. Two new container lines Chengdu (PRC) – UBZD – RZD – Łódź (Poland), Zhengzhou (PRC) – UBZD – RZD – Duisburg (Germany) were opened.

A new 24.5 km railway line for iron ore transportation was put in operation. Three new remote control crossing loops were constructed and put into operation.

Annex No. 9 to the International Convention on Harmonisation of Frontier Controls of Goods is successfully implemented, that is witnessed by reduction by 45 minutes of the time of border control of freight trains between Russia and Mongolia.

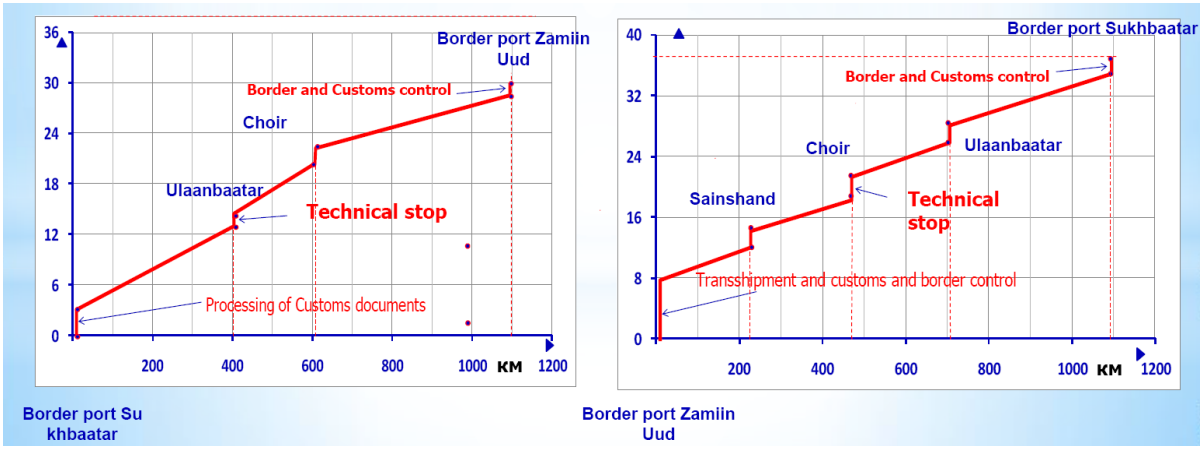
Figure 2.12
Transit rail corridors in Mongolia

Time of railway transit via territory of Mongolia (fig **):

- Corridor Sukhbaatar – Zamiin-Uud 30 hours;

- Corridor Zamiin-Uud - Sukhbaatar 36 hours.

Figure 2.13
Time of railway transit via territory of Mongolia, hours



Poland

In 2015, the Polish Railways (PKP Cargo JSC) carried 117.59 million tons of goods, including 48.26 million tons on international routes. Over 800 km of railway lines were modernised due to which the train en route time in Trójmiasto – Wroclaw, Poznan – Krakow, Warsaw – Bielsko-Biala, Olsztyn – Bydgoszcz sections significantly reduced.

The PKP Cargo JSC has been effectively developed the container terminals at Poznan-Franovo station in Poland (owned by PKP Cargo), as well as in Czech Ostrava- Paskov (a terminal owned by Advanced World Transport, an affiliate of PKP Cargo Group).

The PKP Cargo JSC actively participates in the stimulation of the railway traffic from China to West and South Europe as part of the New Silk Road (to more than 10 trips weekly).

The PKP Cargo JSC has purchased 15 Siemens Vectron multisystem freight locomotives for service on the trans-border lines. For the purposes of strengthening of the cargo protection, security improvement and train monitoring, unmanned aerial vehicles are now used, as a result of which losses have been reduced almost by 60%.

Russian Federation

The cargo turnover of the Russian Railways JSC made up 2.302.738 million tons (100.3%), of which 1.304.478 million tons (100.7% to 2014) – on the international routes. 25 new container train lines: Duisburg – Korla, Värtsilä –Korla, Sergeli – Nakhodka, Hefei – Hamburg, Nakhodka-Vostochnaya – Khovrino, Koity – Novorossiysk, etc., were put into operation.

In 2015, 3.4 km of new railway lines were put into operation. Reconstruction of Babaevo station of the Oktyabrskaya Railway and construction of new Chernyshevskoye border station of the Kaliningradskaya Railway were successfully completed.

Technical upgrading of Petushki – Nizhni Novgorod section of the Gorkovskaya Railway was in progress. Tonnelnaya station of the Northern Caucasian Railway, Cherepovets-II station of the Northern Railway, Volkhovstroy-I station of the Oktyabrskaya Railway, Kinel stations of the Kuybyshevskaya Railway, Ekaterinburg-Sortirovochnaya station of the Sverdlovskaya Railway are under reconstruction.

500 new locomotives and 240 rolling stock units were purchased.

The development of market relations and competition in the freight wagon operations encouraged investments in the construction and modernisation of the carriage rolling stock: private investments of over 10 billion US Dollars were attracted, as a result of which the freight car fleet was significantly renovated and the total number of wagons reached 1 million 124 thousand units.

Republic of Tajikistan

The Rohi Ohani Tojikiston State Unitary Enterprise (Tajik Railway) carried 6.1 million tons of goods in 2015.

The construction of the new Vahdat – Yavan railway is in progress; the railway lines at Rahaty – Vahdat – Elok and Kurgantube – Yavan sections are being modernized; the construction of 40.7 km Vahdat – Yavan section is expected to be completed in 2016, on the occasion of the 25th anniversary of independence of Tajikistan.

Romania

In 2015, the Romanian Railways carried 23.821 million tons of goods (103% to the previous year level). CFR-Marfa – Romanian Freight Operator - carried 19922 operations with the unified CIM/SMGS consignment note.

The railway lines Câmpina – Predeal, Bucharest – Braşov, Curtici – Simeria, Braşov – Simeria were actively modernized to cause train running at the maximum speed of 160 km/h.

16 railway stations: Giurgiu, Slatina, Bistriţa Nord, Botoşani, Vaslui and other, have been modernised.

Republic of Uzbekistan

In 2015, the freight traffic on the Uzbek Railways made 81.8 million tons.

The first stage of electrification of 140.8 km Marakand – Karshi railway section was successfully completed. 55 locomotives and 1258 freight wagons were successfully modernised, 11 new freight electric locomotives, 650 freight wagons were delivered.

Ukraine

The Ukrainian Railway was effectively involved in the establishment of new container train lines: European countries – Ukraine (Chop), Batevo/Izov – Ilyichyevsk-Paromnaya – Georgia (Poti/ Batumi – Gardabani) – Azerbaijan – (Bejuk- Kjasik – Alyat) – Kazakhstan (Aktau-Port – Dostyk) – China through ferry crossing Ilyichyevsk – Poti/Batumi and Alyat – Aktau – Aktau-Port.

Operation on the border stations and checkpoints is now based on the principle of the “single window”, when all public control services are accessible.

The transport infrastructure of the international transport was actively developed, the amount of works totaled to 650.47 million grivnas.

In 2015, 76128 carriage operations were made under the unified CIM/SMGS consignment note that is by 10% more than in 2014.

II.3. Container block-trains in the EATL trade-

II.3.1. Block trains role in the Euro-Asian logistics

In 2015, The railways of the following countries: Belarus, Bulgaria, Latvia, Lithuania, Kazakhstan, China, Mongolia, Poland, Russia, Uzbekistan, Ukraine and other countries successfully continued to create new, container routes, thus having increased the number of container block trains running on the railways of OSJD member countries up to 280, of which 100 run on the regular basis.

Within the framework of OSJD activity on "Organisation of large-scale container traffic between Europe and Asia" the following works have been performed:

In 2015 815 container block trains were organised in the direction of China – Europe – China, of which from China to the countries of Europe - 550 trains, and 265 trains back (according to the information of the Chinese Railways).

For the past few years the number of regular freight trains running between China and Western Europe has been steadily growing, as more and more wide range of consignors begins to perceive railways as a real alternative to the sea and air traffic.

Nowadays eight container trains have been running in the traffic China – Western Europe – China through the Byelorussian Railway in the direction of Germany, Poland, Czech Republic and Lithuania along the following routes:

- China – Poland (Chengdu – Lodz);

- China – Germany (Zhengzhou – Hamburg);

- "New Silk Way" China – Germany (Chongqing – Duisburg);

- "BMW" Germany – China (Leipzig – Shenyang);

- "Ford" Germany – China (Duisburg – Chongqing);

- China – Germany (Wuhan – Hamburg);

- China – Spain (Yiwu – Madrid).

The running frequency of container trains from China to Europe has already reached 4 times a week, and once a week – in backward direction.

Travel time of container block trains through the Byelorussian Railway from the station Krasnoje (state border with Russia) to Brest is less than 12 hours, with an average speed, respectively, of 1400 km/day and with the minimum waiting time at stations.

Following the results of work for 2015 positive dynamics of container traffic growth between China – Europe – China have been reached of up to 28.6 thousand containers in TEU (growth by 1.9 times from 2014).

In 2015 1269 container trains proceeded through the network of the Railway of Kazakhstan in the transit traffic; the number of container trains increased by 255 trains as compared to 2014

(growth by 25%), incl. 581 trains China – Europe – China - grown by 327 trains (or by 2.2 times).

Container trains have proceeded in transit through Kazakhstan along the following main routes:

- Chengdu (China) – Lodz (Poland) - 61 trains (+16 trains against 2014, have been running since 19 December 2012);

- Zhengzhou (China) – Hamburg (Germany) - 49 trains (-22 trains against 2014, have been running since 17 July 2013);

- Chongqing (China) – Duisburg (Germany) - 146 trains (+55 trains against 2014, have been running since 19 March 2011);

- Wuhan (China) – Pardubice (Czech Republic) - 23 trains (+7 trains against 2014, have been running since 5 June 2014);

- Wuhan (China) – Hamburg (Germany) - 62 trains (+61 trains against 2014, have been running since December 2014);

- Yiwu (China) – Madrid (Spain) - 17 trains (+16 trains against 2014, have been running since 8 December 2014);

- Hefei (China) – Hamburg (Germany) - 3 trains (a new route);

- Lanzhou (China) – Hamburg (Germany) - 1 train (a new route);

- Putyan (China) – Terespol (Poland) - 1 train (a new route);

- Duisburg (Germany) – Chongqing (China) - 118 trains (+99 trains against 2014, have been running since March 2013);

- Hamburg (Germany) – Zhengzhou (China) - 32 trains (+24 trains against 2014, have been running since September 2014);

- Hamburg (Germany) – Wuhan (China) - 15 trains (+15 trains against 2014, have been running since December, 2014);

- Lodz (Poland) – Chensyan (China) - 26 trains (a new route);

- Madrid (Spain) – Yiwu (China) - 2 trains (+2 trains against 2014, was organised in December 2014);

- Kotka (Finland) in the direction of China - 7 trains (a new route);

- Hamburg (Germany) – Lanzhou (China) - 32 trains (a new route).

Besides, on 28 July 2015 the first demonstration container train “Nomad Express” was launched through the Trans-Caspian international transport route with participation of railway and sea transport/ferry operators along the route of Shikhezi (China) – Dostyk (Kazakhstan) – Aktau Port (Kazakhstan) – Kishly (Azerbaijan).

On 29 November 2015 the second container train “Nomad Express” set off along the route Lianyungang (China) – Dostyk – Aktau-Port (Kazakhstan) – Baku (Port Alyat) (Azerbaijan) –

Uzlovaya/Poti (Georgia) – Istanbul (Turkey) including the section of Poti – Istanbul with the delivery by road.

According to the Lithuanian Railways JSC (LG) a Hoptrans Italy Express container train was organized in April 2015 in the direction of Lithuania – Poland – Czech Republic – Austria – Italy. The Hoptrans Italy Express container train represents the first innovative logistic project connecting the Baltic Sea region to the southern part of Europe (Italy). The project has been implemented by the Hoptrans Projects CJSC in cooperation with Italian and Polish partners. In April 2015 along the route of Sestokai (Lithuania) – Piadena (Italy) – Sestokai (Lithuania) two container trains were launched. Duration of containers delivery has averaged 12 days. The container train has transported 72 loaded containers of 45 feet long. The planned frequency of train running is two times a month, further on – once a week.

Since the end of 2014 and till April 2015 the Ulan-Bator Railway JSC (UBZD JSC) together with the railways of the People's Republic of China, Russia, Belarus, Poland and Germany has organised successfully the runs of 18 transit container trains through the territory of Mongolia in the traffic Asia – Europe – Asia in the following directions:

- from Germany to China along the route of Hamburg – Brest – Naushki – Ulan Bator – Zamyn-Uud – Erlian – Zhengzhou (3 trains);

- from China to Poland along the route of Chengdu – Erlian – Zamyn-Uud – Sukhe-Bator – Naushki – Brest – Lodz (6 trains);

- from China to Germany along the route Zhengzhou – Erlian – Zamyn-Uud – Sukhe-Bator – Naushki – Brest –Hamburg (9 trains).

At present negotiations are underway aimed at increasing the number of container trains running both in transit, and in other relations.

According to the Ukrainian Railway PJSC transportation of containers as a part of container trains has constituted 27% of the total amount of containers carried through the territory of Ukraine.

For all container trains technical and technological conditions of their operation have been worked out, as well as reduced tariffs for the transportation of goods by the specified trains have been established.

To attract sufficient volumes of container cargoes to be transported by the "Viking" and "Zubr" trains the project participants (railway administrations of Ukraine, Belarus, Lithuania, Latvia, Estonia, Moldova, Romania and Bulgaria) have prolonged tariff rates for 2015 which were in effect throughout 2014.

The train schedule for the "Viking" and "Zubr" trains for 2015/2016 has been worked out according to the time provided for in it the train can run on the daily basis. Frequency of their running has been also established: three times a week for departing of the train from the Black Sea region.

In order to improve the train organisation of the "Viking" combined transport and to expand the geography of its operation a few new participants have joined the project in May 2014: National Society of Railway Cargo Transportation of Romania "CFR Marfa", and in March 2015 – Georgian Railway JSC.

Container train traffic has been also organised along the route Romania (Dorneşti) – Ukraine (Vadul Siret – Zernovo) – Russia (Tolyatti) for the transportation of car accessories and spare parts.

Container train has been successfully performed along the route Slovakia (Kosice) – Ukraine (Uzhgorod – Zernovo) – Russia (Perspektivnaya). Car and vehicle accessories are transported by this train.

Along with the trains running in the specified routes, traffic has been organised with large containers to cut the time of goods delivery which arrive into the territory of Ukraine through the Black-Sea ports. Flexible policy is pursued in regard to the departure of the trains: they are sorted and depart upon the arrival of containers in ports.

Moreover, since 2015 Ukrzaliznytsia PJSC have been working towards organising container train traffic along the following route: countries of Europe – Ilyichyevsk-ferry (Ukraine) – Batumi (Georgia) – Bejuk-Kjasik – Buck (Azerbaijan) – Aktau-Port – Dostyk (Kazakhstan) – China through the ferry crossings Ilyichyevsk – Batumi and Alyat – Aktau-Port. Use of this transport route's potential will make it possible to attract additional volumes of container traffic between EU Member States and the countries of Caucasus region, Central Asia and China.

According to the Azerbaijani Railways CJSC, dynamic wagon weighbridges have been installed at the border stations of Bejuk-Kjasik and Yalama by the customs authorities, and X-ray wagon inspection equipment has been installed at Yalama station by the border guard.

Table 2.1
List of container trains and contrailer traffic on the railways of OSJD Member Countries (as of 16.10.2015)[12]

No. of Train	Route	Train Characteristics	Run Frequency
Byelorussian Railway (BC)			
1022/1021	Russia – Lithuania – Belarus – Russia (Kaliningrad – Kybartai – Gudogaj – Krassnoje – Kunzevo-2 / Moscow-Tov.-Smolenskaja / Kupavna)	Container	on request
1025/1026	China – Russia – Belarus (Zabaikalsk – Krassnoje – Brest)	Container	on request
1027/1028	Russia – Belarus (Nakhodka / Nakhodka-Wost. – Krassnoje – Brest)	Container	on request
1037/1038	China – Russia – Belarus – European Countries (Zabaikalsk – Krassnoje – Brest – Malaszewicze)	Container	on request
1039/1040	Russia – Belarus – European Countries (Zabaikalsk / Vladivostok / Nakhodka-Wost. – Krassnoje – Brest – Malaszewicze)	Container	on request
1062/1061	European Countries – Belarus – Russia (Bruzgi – Krassnoje – Nowoijerusalimskaja)	Container	on request
1064/1063	France – Poland – Belarus – Russia (Malaszewicze – Brest – Krassnoje – Vorotinsk)	Container	on request
1066/1065 "East Wind"	Germany – Poland – Belarus – Russia (Malaszewicze – Brest – Krassnoje – / Kunzevo-2)	Container	on request
1068/1067	Germany – Poland – Belarus – Russia (Malaszewicze – Brest – Krassnoje – Moscow-Tov. / Kunzevo-2 / Silikatnaja)	Container	on request
1070/1069	Czech Republic / Slovakia – Poland – Belarus – Russia – Kazakhstan (Malaszewicze – Brest – Krassnoje – Kartaly-1 – Zashchita)	Container	on request

[12] Information on container trains operating with regular itineraries between Europe and Asia. Transmitted by the Organization for Cooperation between Railways (OSJD). Informal document WP.5/GE.2 (2015) No. 3/Rev.1, 17 May 2016

No. of Train	Route	Train Characteristics	Run Frequency
1072/1071	Belarus – Russia – Kazakhstan (Brest – Krassnoje – Kartaly-1 – Kostonaj)	Container	on request
1074/1073	Germany – Poland – Belarus – Russia (Malaszewicze – Brest – Krassnoje – Nakhodka-Wost.)	Container	on request
1076/1075	Germany – Poland – Belarus – Russia – Kazakhstan – China (Berlin / Duisburg / Hamburg – Malaszewicze – Brest – Krassnoje – Iljezk-1 – Almaty-1 – Dostyk / Altynkol – Chongqing / Zhengzhou) Poland – Belarus – Russia – Kazakhstan – China (Malaszewicze – Brest – Krassnoje – Iljezk-1 – Dostyk – Chengdu)	Container	on request
1078/1077 "Kazakhstan Vector"	Germany – Poland – Belarus – Russia – Kazakhstan (Malaszewicze – Brest – Krassnoje – Semiglavy Mar – Arys-1)	Container	on request
1080/1079	Belarus – Russia (Brest – Krassnoje – Kaluga-1 / Perspektivnaja)	Container	on request
1082/1081	Belarus – Russia (Brest – Krassnoje – Kaluga-1 / Perspektivnaja)	Container	on request
1084/1083	Poland – Belarus – Russia (Malaszewicze – Brest – Krassnoje – Tikhonovo / Silikatnaja)	Container	on request
1086/1085 "Mongolian Vector"	Belarus – Russia – Mongolia (Brest – Krassnoje – Nauschki)	Container	on request
1088/1087	Belarus – Russia (Brest – Krassnoje – Kaluga-1 / Perspektivnaja)	Container	on request
1090/1089	Belarus – Russia (Brest – Krassnoje – Kostarikha / Nizhny Novgorod-Avtozavod)	Container	on request
1096/1095	Belarus – Russia (Brest – Krassnoje – Nizhny Novgorod-Avtozavod)	Container	on request
1219/1220 "Merkurij"	Lithuania – Belarus – Russia (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Kunzevo-2 / Moscow-Tov.-Smolenskaja / Kresty / Silikatnaja / Severnaja)	Container	on request
1221/1222 «Saule 2»	Lithuania – Belarus – Russia – Kazakhstan – Uzbekistan – Afghanistan (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Semiglavy Mar – Karakalpak – Galaba)	Container	on request
	Lithuania – Belarus – Russia – Kazakhstan – Uzbekistan (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Semiglavy Mar – Karakalpakstan – Ulugbek)	Container	on request
	Lithuania – Belarus – Russia – Kazakhstan (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Semiglavy Mar – Aktobe / Almaty-1)	Container	on request
1226/1225 "Baltic-Wind"	Lithuania – Belarus – Russia – Kazakhstan (Paneriai / Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Kartaly-1 – Kostonaj)	Container	on request
1253/1254 New Silk Way	China – Kazakhstan – Russia – Ukraine – Slovakia / Hungary (Dostyk / Altynkol – Iletsk-I – Zernovo – Chop – Dobra / Chop, Batevo – Budapest)	Container	on request
1259/1260 "Saule"	Kazakhstan – Russia – Belarus – Lithuania (Zhinischke – Semiglavy Mar – Zakopyt'e – Gudogaj – Klaipeda)	Container	on request
	China – Kazakhstan – Russia – Belarus – Lithuania – European Countries (Dostyk – Iljezk-1 – Krassnoje – Gudogaj – Draugiste (Port	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
	Klaipeda) / Šestokai)		
1260/1259 **"Saule-1"**	Lithuania – Belarus – Russia – Kazakhstan (Draugiste (Port Klaipeda) / Šestokai – Gudogaj – Krassnoje – Kartaly-1 – Almaty-1)	Container	on request
1263/1264	Kazakhstan – Russia – Belarus (Zhinischke – Semiglavy Mar – Zakopyt'e – Brest)	Container	on request
1401/1402 **"Zubr"**	Estonia – Latvia – Belarus – Ukraine – Moldova (Ülemiste / Muuga – Valga – Bigossowo – Berezhest – Iljichovsk / Iljichovsk-Paromnaja / Odessa-Port / Mogilev-Podolski – Oknica)	Container	on request
1421/1422	Russia – Belarus – Lithuania – Russia (Griwno – Krassnoje – Gudogaj – Kybartai – Lesnoje-Nowoje)	Container	on request
1423/1424	Russia – Belarus – Lithuania – Russia (Griwno – Krassnoje – Gudogaj – Kybartai – Lesnoje-Nowoje)	Container	on request
1425/1426	Russia – Belarus – Lithuania – Russia (Akulowo / Griwno – Krassnoje – Gudogaj – Kybartai – Lesnoje-Nowoje)	Container	on request
1427/1428	Poland – Belarus – Russia (Malaszewicze – Brest – Krassnoje – Michnevo)	Container	on request
1429/1430 "Viking"	Ukraine – Belarus – Lithuania (Iljichovsk /Iljichovsk-Paromnaja / Odessa-Port – Berezhest – Gudogaj – Draugiste (Port Klaipeda))	Container and contrailer train	daily
	Moldova – Ukraine – Belarus – Lithuania (Oknica – Mogilev-Podolski / Iljichovsk / Iljichovsk-Paromnaja / Odessa-Port – Berezhest – Gudogaj – Draugiste (Port Klaipeda))	Container and contrailer train	daily
	aioamo – Moldova – Ukraine – Belarus – Lithuania anean (– Mogilev-Podolski – Berezhest – Gudogaj – Draugiste (Port Klaipeda))	Container and contrailer train	daily
	Bulgaria – Ukraine – Belarus – Lithuania (Iljichovsk-Paromnaja – Berezhest – Gudogaj – Draugiste (Port Klaipeda))	Container and contrailer train	daily
1435/1436 «Neman»	Lithuania – Belarus (Kaunas – Gudogaj – Koliadichi)	Container and contrailer train	on request
Holding „Bulgarian State Railways" (Holding BDZ)			
40770	Tekirdağ (Turkey) – Bulgaria – Serbia – Hungary – Vienna (Austria)	Container	5 times a week
40773	Vienna (Austria) – Hungary – Serbia – Bulgaria – Tekirdağ (Turkey)	Container	once a week
40781	Sopron (Hungary) – Romania – Bulgaria – Cerkezköy (Turkey)	Container	on request
40782	Cerkezköy (Turkey) – Bulgaria – Romania – Sopron (Hungary)	Container	on request
40783	Sopron (Hungary) – Romania – Bulgaria – Cerkezköy (Turkey)	Container	on request
40784	Cerkezköy (Turkey) – Bulgaria – Romania – Sopron (Hungary)	Container	on request
40785	Sopron (Hungary) – Romania – Bulgaria – Cerkezköy (Turkey)	Container	on request
40774	Cerkezköy (Turkey) – Bulgaria – Serbia – Sopron (Hungary)	Container	on request
40775	Sopron (Hungary) – Serbia – Bulgaria – Cerkezköy (Turkey)	Container	on request
40776	Cerkezköy (Turkey) – Bulgaria – Serbia – Sopron (Hungary)	Container	once a week

No. of Train	Route	Train Characteristics	Run Frequency
40777	Sopron (Hungary) – Serbia – Bulgaria – Cerkezköy (Turkey)	Container	on request
40779	Sopron (Hungary) – Serbia – Bulgaria – Cerkezköy (Turkey)	Container	on request
40820	Halkali (Turkey) – Bulgaria – Serbia – Croatia – Ljubljana (Slovenia)	Container	on request
40821	Ljubljana (Slovenia) – Croatia – Serbia – Bulgaria – Halkali (Turkey)	Container	on request
41520	Halkali (Turkey) – Bulgaria – Dornesti (Romania)	Container	once a week
41521	Dornesti (Romania) – Bulgaria – Halkali (Turkey)	Container	once a week
40834	Tekirdağ (Turkey) – Bulgaria – Serbia – Curtici (Romania)	Container	on request
40835	Curtici (Romania) – Serbia – Bulgaria – Tekirdağ (Turkey)	Container	on request
40838	Halkali (Turkey) – Bulgaria – Serbia – Hungary – Dunajska Streda(Slovakia)	Container	7 times a week
40839	Dunajska Streda(Slovakia) – Hungary – Serbia – Bulgaria – Halkali (Turkey)	Container	7 times a week
40860	Sindos (Greece) – Bulgaria – Romania – Sopron (Hungary)	Container	on request
40861	Sopron (Hungary) – Romania – Bulgaria – Sindos (Greece)	Container	on request
40862	Thessaloniki (Greece) – Bulgaria – Romania – Sopron (Hungary)	Container	on request
40863	Sopron (Hungary) – Romania – Bulgaria – Thessaloniki (Greece)	Container	on request
41378	Stamboliyski (Bulgaria) – Serbia – Hungary – Zeltweg (Austria)	Container	on request
41379	Zeltweg (Austria) – Hungary – Serbia – Stambolijski (Bulgaria)	Container	on request
41400	Warna (Bulgaria) – Romania – Sopron (Hungary)	Container	on request
41401	Sopron (Hungary) – Romania – Warna (Bulgaria)	Container	on request
41500	Thessaloniki (Greece) – Bulgaria – Ploiesti (Romania)	Container	on request
41501	Ploiesti (Romania) – Bulgaria – Thessaloniki (Greece)	Container	on request
41503	Kjazhna (Romania) – Bulgaria – Sindos (Greece)	Container	on request
41504	Triasio (Greece) – Bulgaria – Curticii (Romania)	Container	on request
41505	Curticii (Romania) – Bulgaria – Triasio (Greece)	Container	on request
41530	Halkali (Turkey) – Bulgaria – Curticii (Romania)	Container	on request
41531	Curticii (Romania) – Bulgaria – Halkali (Turkey)	Container	on request
41532	Halkali (Turkey) – Bulgaria – Curticii (Romania)	Container	on request
41533	Curticii (Romania) – Bulgaria – Halkali (Turkey)	Container	on request
41740	Plovdiv (Bulgaria) – Serbia – Curticii (Romania)	Container	on request
42500	Sofia (Bulgaria) – Curticii (Romania)	Container	on request
42501	Curticii (Romania) – Sofia (Bulgaria)	Container	on request
42502	Plovdiv (Bulgaria) – Curticii (Romania)	Container	on request
42503	Curticii (Romania) – Plovdiv (Bulgaria)	Container	on request
42504	Stara Zagora(Bulgaria) – Curticii (Romania)	Container	on request
42505	Curticii (Romania) – Stara Zagora(Bulgaria)	Container	on request
46880	Halkali (Turkey) – Bulgaria – Romania – Sopron (Hungary)	Container	on request
46881	Sopron (Hungary) – Romania – Bulgaria – Halkali (Turkey)	Container	on request
46961	Sopron (Hungary) – Romania – Bulgaria – Thessaloniki (Greece)	Container	on request
48120	Lüleburgaz (Turkey) – Vetovo (Bulgaria)	Container	3 times a week
48121	Vetovo (Bulgaria) – Lüleburgaz (Turkey)	Container	3 times a week
Hungarian State Railway CJSC (MAV CJSC)			
40600	Tekirdag (Turkey) – Kelebia (Hungary) – Györ (Hungary) – Köln (Germany)	Container	3 times a week
40601	Köln (Germany) – Györ (Hungary) – Kelebia (Hungary)	Container	3 times a week
40602	Tekirdag (Turkey) – Kelebia (Hungary) – Györ (Hungary)	Container	3 times a week

No. of Train	Route	Train Characteristics	Run Frequency
	– Köln (Germany)		
40603	Köln (Germany) – Györ (Hungary) – Kelebia (Hungary)	Container	3 times a week
40633	Vienna (Austria) – Györ (Hungary) – Kelebia (Hungary) – Halkali (Turkey)	Container	3 times a week
40634	Halkali (Turkey) – Kelebia (Hungary) – Györ (Hungary) – Vienna (Austria)	Container	3 times a week
40664	Cerkezköy (Turkey) – Kelebia (Hungary) – Györ-Rendez (Hungary) – Sopron-Rendez (Hungary)	Container	3 times a week
40665	Ulm (Germany) – Györ-Rendez (Hungary) – Kelebia (Hungary) – Cerkezköy (Turkey)	Container	3 times a week
40764	Thessaloniki (Griechenland) – Kelebia (Hungary) – Györ (Hungary) – Vienna (Austria)	Container	3 times a week
40765	Sopron-Rendez (Hungary) – Györ (Hungary) – Kelebia (Hungary) – Thessaloniki (Griechenland)	Container	3 times a week
40770	Halkali (Turkey) – Kelebia (Hungary) – Györ (Hungary) – Sopron-Rendez (Hungary)	Container	3 times a week
40772	Hisar (Turkey) – Kelebia (Hungary) – Györ (Hungary) – Sopron-Rendez (Hungary)	Container	3 times a week
40773	Sopron-Rendez (Hungary) – Györ (Hungary) – Kelebia (Hungary) – Halkali (Turkey)	Container	3 times a week
40776	Halkali (Turkey) – Kelebia (Hungary) – Györ (Hungary) – Sopron-Rendez (Hungary)	Container	3 times a week
40838	Halkali (Turkey) – Kelebia (Hungary) – Komarom (Hungary) – Dunajska Streda (Slovakia)	Container	2 times a week
41126	Soroksar-Terminal (Hungary) – Hegyeshalom (Hungary) – Neuss (Germany)	Container	5 times a week
41127	Neuss (Germany) – Hegyeshalom (Hungary) – Soroksar-Terminal (Hungary)	Container	5 times a week
41129	Neuss (Germany) – Hegyeshalom (Hungary) – Soroksar-Terminal (Hungary)	Container	5 times a week
41170	Dobra TKD (Slovakia) – Slovenske Nove Mesto (Slovakia) – Hegyeshalom (Hungary) – Villach Süd (Austria)	Container	once a week
41171	Villach Süd (Austria) – Hegyeshalom (Hungary) – Slovenske Nove Mesto (Slovakia) – Dobra TKD (Slovakia)	Container	once a week
41172	Dobra TKD (Slovakia) – Slovenske Nove Mesto (Slovakia) – Hegyeshalom (Hungary) – Villach Süd (Austria)	Container	once a week
41173	Villach Süd (Austria) – Hegyeshalom (Hungary) – Hidasnemeti (Hungary) – Dobra TKD (Slovakia)	Container	once a week
41355	Vienna (Austria) – Hegyeshalom (Hungary) – Soroksar-Terminal (Hungary)	Container	on request
41356	Soroksar-Terminal (Hungary) – Hegyeshalom (Hungary) – Vienna (Austria)	Container	on request
41357	Vienna (Austria) – Hegyeshalom (Hungary) – Soroksar-Terminal (Hungary)	Container	on request
41378	Stambolijski (Bulgaria) – Kelebia (Hungary) – Hegyeshalom (Hungary) – St. Michael (Austria)	Container	once a week
41379	Zeltweg (Austria) – Hegyeshalom (Hungary) – Subotica (Serbia) – Stambolijski (Bulgaria)	Container	once a week
41382	Soroksar Ut (Hungary) – Hegyeshalom (Hungary) – Austria	Container	5 times a week
41384	Soroksar-Terminal (Hungary) – Hegyeshalom (Hungary) – Austria	Container	5 times a week
42020	Koper (Slovenia) – Hodos (Slovenia) – Soroksar-Terminal (Hungary)	Container	5 times a week
42021	Soroksar-Terminal (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	5 times a week
42022	Koper (Slovenia) – Hodos (Slovenia) – Soroksar-Terminal (Hungary)	Container	5 times a week
42023	Soroksar-Terminal (Hungary) – Hodos (Slovenia) – Koper	Container	5 times a week

No. of Train	Route	Train Characteristics	Run Frequency
	(Slovenia)		
42025	Soroksar-Terminal (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	5 times a week
42050	Koper (Slovenia) – Hodos (Slovenia) – Budaörs (Hungary)	Container	2 times a week
42051	Budaörs (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	2 times a week
42052	Koper (Slovenia) – Hodos (Slovenia) – Budaörs (Hungary)	Container	2 times a week
42402	Chiajna (Romania) – Curtici (Romania) – Györ (Hungary) – Lambach (Austria)	Container	3 times a week
42403	Lambach (Austria) – Györ (Hungary) – Curtici (Romania) – Chiajna (Romania)	Container	3 times a week
42900	Rijeka (Croatia) – Gyekenyes (Hungary) – Soroksar-Terminal (Hungary)	Container	once a week
42403	Lambach (Austria) – Györ (Hungary) – Curticii (Romania) – Chiajna (Romania)	Container	3 times a week
42900	Rijeka (Хорватия) – Дьекенеш (Hungary) – Шорокшар-Терминал (Hungary)	Container	once a week
42901	Soroksar-Terminal (Hungary) – Gyekenyes (Hungary) – Rijeka (Croatia)	Container	once a week
43796	Koper (Slovenia) – Gyekenyes (Hungary) – Soroksar-Terminal (Hungary)	Container	on request
	Vintu de Jos(Romania) – Lökösháza (Hungary) – Hegyeshalom (Hungary) – Koper (Slovenia)	Container	once a week
	Hallein (Austria) – Hegyeshalom (Hungary) – Lökösháza (Hungary) – Vintu de Jos (Romania)	Container	once a week
	Bilk Kombiterminal (Hungary) – Satoraljaujhely (Hungary) – Velka Ida (Slovakia)	Container	on request
	Bratislava (Slovakia) – Rajka (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	on request
	Vratimov (Czech Republic) – Rajka (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	on request
	Dobra (Frydek-Mistek) (Czech Republic) – Rajka (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	on request
	Zilina (Slovakia) – Rajka (Hungary) – Hodos (Slovenia) – Koper (Slovenia)	Container	on request
	Koper (Slovenia) – Hodos (Slovenia) – Rajka (Hungary) – Bratislava (Slovakia)	Container	on request
	Koper (Slovenia) – Hodos (Slovenia) – Rajka (Hungary) – Vratimov (Czech Republic)	Container	on request
	Koper (Slovenia) – Hodos (Slovenia) – Rajka (Hungary) – Dobra (Frydek-Mistek) (Czech Republic)	Container	on request
	Koper (Slovenia) – Hodos (Slovenia) – Rajka (Hungary) – Zilina (Slovakia)	Container	on request
	Torokbalint (Hungary) – Gyekenyes (Hungary) – Rijeka (Croatia)	Container	on request
Georgian Railway JSC (GR)			
1201/1202	Poti / Batumi (Georgia) – Sadakhlo – Airum – Karmir Blur / Erevan (SCRW) Erevan / Karmir Blur – Airum – Sadakhlo – Poti / Batumi	Container	according to plan
1203/1204	Poti / Batumi (Georgia) – Ayrum / Masis / Karmir Blur / Erevan („SKE“ CJSC) Erevan / Karmir-Blur / Masis / Ayrum – Poti / Batumi	Container	according to plan
National Company “Kazakhstan Temir Zholy“ JSC (KZH)			
1029/1030	Russia – Kazakhstan – Uzbekistan (Vladivostok / Nakhodka-Wost. – Kulunda – Saryagash – Sergeli / Tashkent-Tov. / Chukursaj)	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
	Russia – Kazakhstan (Nakhodka-Wost. / Bratsk / Ust-Ilimsk / Lessosibirsk – Kulunda – Kostonaj)	Container	on request
	China – Russia – Kazakhstan (Zabaykalsk – Kulunda – Almaty-1)	Container	on request
1031/1032	Russia – Kazakhstan – Uzbekistan (Rybniki / Vladivostok / Nakhodka-Wost. – Lokot – Saryagash – Ablyk / Ulugbek / Nukus / Pytniak / Kungrd/ Karshi / Buhara-2)	Container	on request
	Russia – Kazakhstan – Uzbekistan – Afghanistan (Nakhodka-Wost. – Lokot – Saryagash – Galaba)	Container	on request
	Russia – Kazakhstan (Nakhodka-Wost. / Bratsk / Ust-Ilimsk / Lessosibirsk – Lokot – Zashchita / Jeti-Su / Zhinischke / Aksu-1 / Astana / Almaty-1) (Zhinischke / Aksu-1 – Lokot – Nakhodka-Wost.) (Vladivostok – Lokot – Almaty-1) (Vladivostok – Lokot – Jeti-Su)	Container	on request
1033/1034	Russia – Kazakhstan (Noworossijsk – Kartaly-1 – Kostonaj)	Container	on request
1035/1036	Russia – Kazakhstan (Buslowskaja – Semiglavy Mar – Zhinischke)	Container	on request
	Russia – Kazakhstan (Vorsini – Semiglavy Mar – Almaty-1)	Container	on request
1070/1069	Czech Republic / Slovakia – Poland – Belarus – Russia – Kazakhstan (Malaszewicze – Brest – Krassnoje – Lokot – Zashchita)	Container	on request
1072/1071	Belarus – Russia – Kazakhstan (Brest – Krassnoje – Kartaly-1 – Kostonaj)	Container	on request
	Kazakhstan – Russia – Belarus (ksu-1 – Kartaly-1 – Krassnoje – Brest)	Container	on request
1076/1075	Germany – Poland – Belarus – Russia – Kazakhstan – China (Berlin / Duisburg / Hamburg – Malaszewicze – Brest – Krassnoje – Iljezk-1 – Almaty-1 – Dostyk / Altynkol – Chongqing / Zhengzhou)	Container	on request
	Poland – Belarus – Russia – Kazakhstan – China (Malaszewicze – Brest – Krassnoje – Iljezk-1 – Dostyk – Chengdu)	Container	on request
1078/1077 “Kazakhstan Vector”	Germany – Poland – Belarus – Russia – Kazakhstan (Malaszewicze – Brest – Krassnoje – Semiglavy Mar – Arys-1)	Container	on request
1142/1141	Slovakia – Ukraine – Russia – Kazakhstan (Dobra – Chop – Zernovo – Kartaly-1 – Zashchita)	Container	on request
1160/1159	Hungary – Ukraine – Russia – Kazakhstan (Budapest – Chop, Batevo – Zernovo – Iljezk-1 – Almaty-1)	Container	on request
1221/1222 “Saule-2”	Lithuania – Belarus – Russia – Kazakhstan – Uzbekistan – Afghanistan (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Semiglavy Mar – Karakalpak – Galaba)	Container	on request
	Lithuania – Belarus – Russia – Kazakhstan (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Semiglavy Mar – Aktobe (ECP 6600-6640, 6648-6728, 67771-67772, 69740, 6976-6997, 6999, 7030-7042 ,7044-7047, 7057, 7049, 7059-7075) / Almaty-1)	Container	on request
1226/1225 “Baltika-Wind”	Lithuania – Belarus – Russia – Kazakhstan (Paneriai / Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Kartaly-1 – Kostonaj)	Container	on request
	Lithuania – Belarus – Russia – Kazakhstan	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
	(Paneriai / Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Kartaly-1 – Karagandy)		
1251/1252 "New Silk Road"	China – Kazakhstan – Russia – Ukraine – Poland (Dostyk – Iljezk-1 – Zernovo – Izov – Slawkow)	Container	on request
1255/1256	China – Kazakhstan – Uzbekistan (Altynkol – Saryagash – Ablyk / Sergeli / Chukursaj)	Container	on request
1257/1258	China – Kazakhstan – Kyrgyzstan (Altynkol – Lugowaja – Alamedin)	Container	on request
1259/1260	Kazakhstan – Russia (Jeti-Su – Semiglavy Mar – Obninskoje) China – Kazakhstan – Russia (Dostyk – Semiglavy Mar – Moscow-Tov.-Paveletskaja)	Container	on request
	Kazakhstan – Russia – Belarus – Lithuania (Zhinischke – Semiglavy Mar – Zakopyt'e – Gudogaj – Klaipeda)	Container	on request
1259 "Saule"	China – Kazakhstan – Russia – Belarus – Lithuania – European Countries (Dostyk – Iljezk-1 – Krassnoje – Gudogaj – Draugiste (Port Klaipeda) / Sestokai)	Container	on request
1260 "Saule-1"	Lithuania – Belarus – Russia – Kazakhstan (Draugiste (Port Klaipeda) / Sestokai – Gudogaj – Krassnoje – Kartaly-1 – Almaty-1)	Container	on request
1262/1261	China – Kazakhstan – Uzbekistan (Altynkol – Saryagash – Ablyk / Sergeli / Chukursaj)	Container	on request
1263/1264	Kazakhstan – Russia – Belarus (Zhinischke – Semiglavy Mar – Zakopyt'e – Brest)	Container	on request
1265/1266	China – Kazakhstan – Russia – Belarus – Poland – Germany (Dostyk / Altynkol – Iljezk-1 – Krassnoje – Brest – Malaszewicze)	Container	on request
1267/1268	China – Kazakhstan – Russia – Belarus – Poland – Germany (Dostyk / Altynkol – Iljezk-1 – Krassnoje – Brest – Malaszewicze)	Container	on request
1269/1270	China – Kazakhstan – Russia (Dostyk / Altynkol – Semiglavy Mar – Novorossijsk)	Container	on request
1275/1276	Russia – Kazakhstan – Uzbekistan (Vladivostok / Nakhodka-Wost. – Lokot – Saryagash – Ablyk / Ulygbek / Nukus / Pytniak / Chukursaj / Sergeli)	Container	on request
	Russia – Kazakhstan (Vladivostok / Nakhodka-Wost. – Lokot – Zashchita / Jeti-Su / Almaty-1)	Container	on request
1278/1277	Russia – Kazakhstan – China (Buslovskaya – Iljezk-1 – Dostyk)	Container	on request
1280/1279 «Nomad Express»	China – Kazakhstan – Azerbaijan – Georgia (Dostyk – Aktau-Port-Parom – Aliat Port – Biejuk-Kiasik – Poti)	Container	on request
1282/1281	China – Kazakhstan – Russia – Azerbaijan – Georgia (Dostyk – Semiglavy Mar – Samur – Biejuk-Kiasik – Tbilisi-Uzlovaja)	Container	on request
1292/1291	Russia – Kazakhstan – China (Wiartsila – Iljezk-1 – Dostyk)	Container	on request
1350/1349 "Eurasia-1"	Latvia – Russia – Kazakhstan (Riga – Zilupe – Semiglavy Mar – Aktobe)	Container	on request
1415/1416	Estonia – Russia – Kazakhstan (Muuga – Pechory-Pskovskije – Iljezk-1 – Almaty-1)	Container	on request
	Estonia – Russia – Kazakhstan – Uzbekistan – Afghanistan (Muuga – Pechory-Pskovskije – Semiglavy Mar – Karakalpak – Galaba)	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
	Estonia – Russia (Muuga – Pechory-Pskovskije – Togliatti / Zhigulewskoje More)	Container	on request
1418/1417 "Baltic-Transit"	Estonia / Lithuania – Latvia (Resekne) – Russia – Kazakhstan – Uzbekistan (Valga / Eglaine – Zilupe – Semiglavy Mar – Aktobe – Saryagash – Chukursaj)	Container	on request
	Estonia / Lithuania – Latvia (Resekne) – Russia – Kazakhstan (Valga / Eglaine – Zilupe – Semiglavy Mar – Almaty-1)	Container	on request
	Estonia / Lithuania – Latvia (Resekne) – Russia – Kazakhstan – Uzbekistan – Afghanistan (Valga / Eglaine – Zilupe – Semiglavy Mar – Karakalpak – Galaba)	Container	on request
1420/1419 "Baltic-Transit-2"	Estonia – Russia – Kazakhstan – Uzbekistan (Muuga / Paldiski – Narva – Petropavlovsk – Saryagash – Chukursaj)	Container	on request
	Estonia – Russia – Kazakhstan – Kyrgyzstan (Muuga / Paldiski – Narva – Petropavlovsk – Lugowaja – Alamedin)	Container	on request
	Estonia – Russia – Kazakhstan – China (Muuga – Narva – Petropavlovsk – Almaty-1 / Dostyk)	Container	on request
"Chinese Railways" Corporation (KZD)			
	Urumqi (China) – Berlin (Germany)	Container	
80619	Lianyungang (China) – Almaty-1 (Kazakhstan)	Container	
80309	Tianjin (China) – Almaty-1 (Kazakhstan)	Container	
	Shenzhen, Alaschankou (China) – Dostyk (Kazakhstan) – Iljezk-1, Suzemka (Russia) – Zernovo, Chop (Ukraine) – Hungary via Kazakhstan, Russia, Ukraine	Container	once a week
Latvian Railway SJSC (LDZ)			
1401/1402 "Zubr"	Estonia – Latvia – Belarus – Ukraine (Ülemiste / Muuga – Valga – Indra – Slovechno – Iljichovsk / Odessa)	Container	2 times a week
1350/1349 "Eurasia-1"	Latvia – Russia – Kazakhstan (Riga – Resekne – Sebezh – Ozinki / Aktobe)	Container	on request
1356/1355 "Riga-Moscow"	Latvia – Russia (Riga / Moscow-Tov. / Selatino)	Container	on request
1354/1353 "Riga Express"	Latvia – Russia (Riga / Liepaja – Kunzevo-2 / Moscow-Tov. / Silikatnaja / Khovrino)	Container	2 times a week
„Lithuanian Railways" JSC (LG)			
1022/1021	Kaliningrad – Kybartai (Russia) – Vaidotai – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Kunzevo-2, Moscow-Tov.-Smolenskaja, Kupavna (Russia)	Container	on request
1220/ 1219 "Merkurij"	Draugiste (Port Klaipeda) – Vaidotai – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Kunzevo-2, Moscow-Tov.-Smolenskaja, Silikatnaja, Kresty, Sewernaja (Russia)		
1210/1209 "Vilnius Shuttle"	European Countries – Lithuania Draugiste (Port Klaipeda) – Paneriai – Draugiste (Port Klaipeda) (Lithuania)	Container	once a week
1222/1221 "Saule-2"	Draugiste (Port Klaipeda) – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Ozinki (Russia) –	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
	Semiglavy Mar – Oasis (Kazakhstan) – Karakalpak – Galaba (Uzbekistan) – Afghanistan Draugiste (Port Klaipeda) – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Ozinki (Russia) – Semiglavy Mar – Aktobe, Almaty-1 (Kazakhstan)		
1226/1225 "Baltic-Wind"	Paneriai, Draugiste (Port Klaipeda) – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Kartaly-1 (Russia) – Aksu (Oblast) – Kostonaj, Karagandy (Kazakhstan)	Container	on request
1259/1260	Zhinischke – Semiglavy Mar (Kazakhstan) – Ozinki – Zlynka (Russia) – Zakopyt'e – Gudogaj (Belarus) – Kena – Klaipeda (Lithuania)	Container	on request
1259 "Saule"	Dostyk – Iljezk-1 (Kazakhstan) – Kanisaj (Russia) – Krassnoje (Russia) – Osinovka – Gudogaj (Belarus) – Kena – Draugiste (Port Klaipeda), Sestokai (Lithuania) – European Countries	Container	on request
1260 "Saule-1"	Draugiste (Port Klaipeda), Sestokai – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Aksu (Oblast) (Russia) – Kartaly-1 – Almaty-1 (Kazakhstan)	Container	on request
1418 /1417* "Baltic-Transit"	Draugiste (Klaipeda) – Rokiskis (Lithuania) – Eglaine – Resekne – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar – Aktobe – Saryagash (Kazakhstan) – Keles – Chukursaj (Uzbekistan) Draugiste (Port Klaipeda) – Rokiskis (Lithuania) – Eglaine – Resekne – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar – Almaty-1 (Kazakhstan) Draugiste (Port Klaipeda) – Rokiskis (Lithuania) – Eglaine – Resekne – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar – Oasis (Kazakhstan) – Karakalpak – Galaba (Uzbekistan) – Afghanistan	Container	on request
1430/1429 "Viking"	Draugiste (Klaipeda) – Kena – Gudogaj – Slovechno (Belarus) – Berezhest – Odessa-Port, Iljichovsk-Paromnaja, Iljichovsk – Mogilev-Podolski (Ukraine) – Oknica (Moldova) Draugiste (Klaipeda) – Kena (Lithuania) – Gudogaj – Slovechno (Belarus) – Berezhest – Iljichovsk-Paromnaja (Ukraine) – Bulgaria	Container and contrailer train	daily
110191/ 110190 "Sestokai Ekspres"	Gądki – Trakiszki (Poland) / Mockawa – Sestokai (Lithuania)	Container	once a week in both directions
Railway of Moldova State Enterprise (CFM)			
1401/1402 "Zubr"	Ülemiste / Muuga – Valga (Estonia) – Lugazhi – Indra (Latvia) – Bigossowo – Slovechno (Belarus) – Berezhest (Ukraine) – Iljichovsk / Iljichovsk-Paromnaja / Odessa-Port / Mogilev-Podolski / Izov (Ukraine) – Valcinet – Oknica (Moldova) / Hrubieszow – Slawkow (Poland)	Container	3 times a week
1362/1361 "Viking"	Draugiste Port – Kena (Lithuania) – Gudogaj – Slovechno (Belarus) – Berezhest – Odessa / Iljischowsk / Iljischowsk - Paromnaja (Ukraine) – Bulgaria – Mogilev-Podolski (Ukraine) – Oknica (Moldova)	Container and contrailer train	2 times a week
experimental	Rybnica – Kolbasnaja (Moldova) / Slobodka – Izov (Ukraine) / Hrubieszow – Zamosc (Poland)		
Ulan Bator Railway JSC (UBZD)			
1406 "Mongolian	Brest (Belarus) – Nauschki (Russia) / Süchbaatar (Mongolia) – Ulan Bator (Mongolia)	Container	2 times a month

No. of Train	Route	Train Characteristics	Run Frequency
Vector"			
1405	Xingang (China) – Erlian (China) / Zamyn-Uud (Mongolia) – Ulan Bator (Mongolia)	Container	on request
1201/1202 "Ostwind"	Zamyn-Uud (Mongolia) – Ulan Bator (Mongolia)	beschleunigter Containerzug	2 trains daily
1285	China – Mongolia – Russia – Belarus – European Countries (Erlian / Zamyn-Uud – Ulan Bator – Sukhe-Bator / Naushki – Brest)	Container	4 times a month
1286	European Countries – Belarus – Russia – Mongolia – China (Brest – Naushki / Sukhe-Bator – Ulan Bator – Zamyn-Uud / Erlian)	Container	2 times a month
Polish Railways JSC (PKP Cargo)			
42475	Hamburg (Germany) – Pruszkow (Poland)	Container	7 times a week
42467 42466	Hamburg (Germany) – Mlawa (Poland) Mlawa (Poland) – Hamburg (Germany)	Container	3 times a week once a week
42479 42478	Hamburg (Germany) – Wroclaw (Poland) Wroclaw (Poland) – Hamburg (Germany)	Container	4 times a week 2 times a week
42473 42474	Hamburg (Germany) – Warszawa-Praga (Poland) Warszawa-Praga (Poland) – Hamburg (Germany)	Container	6 times a week 3 times a week
42471	Hamburg (Germany) – Poznan (Poland)	Container	2 times a week
41363 41369/41362	Rotterdam (Netherlands) – Poznan (Poland) – Rotterdam (Netherlands)	Container	4 times a week
42477	Bremerhaven (Germany) – Poznan (Poland)	Container	4 times a week
42468	Poznan (Poland) – Bremerhaven (Germany)	Container	once a week
402404/ 42405	Ruhland (Germany) – Poznan (Poland) Ruhland (Germany) – Warszawa-Praga (Poland)	Container	5 times a week
42333; 42331/42330	Rotterdam (Netherlands) – Warszawa-Praga (Poland) Warszawa-Praga (Poland) – Rotterdam (Netherlands)	Container	3 times a week
41365	Rotterdam (Netherlands) – Malaszewicze (Poland) – CIS countries	Container	once a week
42452 "West Wind"	CIS countries – Malaszewicze (Poland) – Seddin (Germany)	Container	5 times a week
40503 40504	Piacenza (Italy) – Gliwice (Poland) Gliwice (Poland) – Piacenza (Italy)	Container	2 times a week once a week
42463	Duisburg R.H. (Germany) – Pruszkow (Poland)	Container	3 times a week
42455 42462	Duisburg (Germany) – Pruszkow (Poland) Pruszkow (Poland) – Duisburg (Germany)	Container	once a week 4 times a week
4572/5472	Zilina (Slovakia) – Skandawa (Poland) – Zilina (Slovakia) – Tschernjachowsk (Russia)	Container	7 times a week
43202,43206/ 43205,43209	Mlada Boleslav (Czech Republic) – Malaszewicze (Poland) – Mlada Boleslav (Czech Republic) – Kaluga (Russia)	Container	12 times a week
42467 42466	Hamburg (Germany) – Mlawa (Poland) Mlawa (Poland) – Hamburg (Germany)	Container	once a week once a week
41372 42476/42472 42471 42475	Poznan (Poland) – Hamburg (Germany) Poznan (Poland) – Hamburg (Germany) Hamburg (Germany) – Poznan (Poland) Hamburg (Germany) – Poznan (Poland)	Container	once a week 4 times a week 4 times a week 5 times a week
49408 49407	Malaszewicze (Poland) – Wolfsburg (Germany) Wolfsburg (Germany) – Malaszewicze (Poland)	Container	5 times a week once a week
40424 40419	Malaszewicze (Poland) – Vesoul (France) Vesoul (France) – Malaszewicze (Poland)	Container	5 times a week in both directions
41369/41367 41368	Rotterdam (Netherlands) – Poznan (Poland) Poznan (Poland) – Rotterdam (Netherlands)	Container	2 times a week 2 times a week
42477 42468	Bremerhaven (Germany) – Poznan (Poland) Poznan (Poland) – Bremerhaven (Germany)	Container	4 times a week inboth directions

No. of Train	Route	Train Characteristics	Run Frequency
42404 42405	Poznan (Poland) – Ruhland (Germany) Ruhland (Germany) – Warszawa-Praga (Poland)	Container	5 times a week 5 times a week
42331 42333 42330	Rotterdam (Netherlands) – Warszawa-Praga (Poland) Warszawa-Praga (Poland) – Rotterdam (Netherlands)	Container	3 times a week in both directions
40701 40702	Malaszewicze (Poland) – Györ (Hungary) Györ (Hungary) – Malaszewicze (Poland)	Container	3 times a week in both directions
42453 “Ostwind”	Großbeeren (Germany) – Malaszewicze (Poland) – CIS countries	Container	3 times a week
42452 “Westwind”	Malaszewicze (Poland) – Großbeeren (Germany)	Container	3 times a week
43303 43302	Duisburg R.H. (Germany) – Walbrzych (Poland) Walbrzych (Poland) – Duisburg R.H. (Germany)	Container	once a week in both directions
42463	Duisburg R.H. (Germany) – Pruszkow (Poland)	Container	3 times a week
42462	Pruszkow (Poland) – Duisburg (Germany)	Container	2 times a week
4572/5472	Zilina (Slovakia) – Skandawa – Zilina (Slovakia) – Tschernjachowsk (Russia)	Container	7 times a week in both directions
43202 43209	Mlada Boleslav (Czech Republic) – Malaszewicze (Poland) – Mlada Boleslav (Czech Republic) – Kaluga (Russia)	Container	7 times a week in both directions
41840 41841	Velka Ida (Slovakia) – Malaszewicze (Poland) – Velka Ida (Slovakia) – Kaluga (Russia)	Container	7 times a week in both directions
17078 71078	Malaszewicze (Poland) – Kobylnica (Project Kaluga) Kobylnica – Malaszewicze (Poland) (Project Kaluga)	Container	once a week in both directions
Individual timetabele	Portogruaro (Italy) – Malaszewicze (Poland) Malaszewicze (Poland) – Portogruaro (Italy)	Container	once a week in both directions
112002	Chengdu (China) – Malaszewicze – Łódz Olechów (Poland)	Container	once a week
	Zamośc Bortatycze LHS (Poland) – Rybnica Oknica (Moldova) Rybnica Oknica (Moldova) – Zamośc Bortatycze LHS (Poland)	Container	4 times a week in both directions
Russian Railways JSC (RZD JSC)			
1022/1021	Kaliningrad Sort. (Russia) – Nesterov (Russia) – Kybartai (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Kunzevo-2, Moscow-Tov.-Smolenskaja (Russia)	Container	on request
1023/1024	Mandschurei (China) – Zabaikalsk – Suzemka (Russia) – Zernovo – Chop / Batevo (Ukraine) – European Countries	Container	on request
1025/1026	Mandschurei (China) – Zabaikalsk – Krassnoje (Russia) – Osinovka – Brest (Belarus)	Container	on request
1027/1028	Nakhodka, Nakhodka-Vost. – Krassnoje (Russia) – Osinovka – Brest (Belarus)	Container	on request
1029/1030	Nakhodka-Vost., Vladivostok – Kulunda (Russia) – Kurkamys – Saryagash (Kazakhstan) – Sergeli, Tashkent-Tov., Chukursaj, (Uzbekistan); Nakhodka-Vost. – Bratsk, Ust-Ilimsk, Lessosibirsk – Kulunda (Russia) – Kostonaj (Kazakhstan)	Container	on request
1031/1032	Zhinischke / Aksu-1 (Kazakhstan) – Lokot, Nakhodka-Wost. (Russia)	Container	on request
	Zabaykalsk / Vladivostok / Nakhodka-Wost. / Bratsk / Ust-Ilimsk / Lessosibirsk / Lokot (Russia) – Zashchita / Jeti-Su / Almaty-1 (Kazakhstan)	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
	Zashchita (Kazakhstan) – Lokot (Russia) – Moscow-Tov.-Paveletskaja / Kunzevo-2 / Sbornaja-Ugolnaja / Moskow-Tov. (Moskow)	Container	on request
1033/1034	Novorossijsk – Kartaly 1 (Russia) – Kustonaj (Kazakhstan)	Container	on request
1035/1036	Buslowskaja – Ozinki (Russia) – Semiglavy Mar – Zhinishke (Kazakhstan)	Container	on request
	Vorsino (Russia) – Ozinki – Semiglavy Mar (Kazakhstan) – Almaty-1	Container	on request
1037/1038	Zabaikalsk – Krassnoje (Russia) – Osinovka – Brest (Belarus) – Malaszewicze (Poland) – European Countries; Vladivostok, Nakhodka-Vost. – Krassnoje (Russia) – Osinovka – Brest (Belarus) – Malaszewicze (Poland) – European Countries	Container	on request
1039/1040	Zabaikalsk, Vladivostok, Nakhodka-Vost. – Krassnoje (Russia) – Osinovka – Brest (Belarus) – Malaszewicze (Poland) – European Countries)	Container	on request
1062/1061	European Countries – Bruzgi – Osinovka (Belarus) – Krassnoje – Nowoijerusalimskaja (Russia)	Container	on request
1064/1063	France – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Vorotinsk (Russia)	Container	on request
1066/1065 “Ostwind”	Berlin / Großbeeren (Germany) – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Bekassovo-Sort., Kunzevo-2, Vorsino (Russia)	Container	on request
1068/1067	Germany – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Kunzevo-2, Silikatnaja (Russia); Germany – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Moscow-Tov. Oktjabrskaja, via Khovrino (Russia)	Container	on request
1070/1069	Czech Republic / Slovakia – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Lokot (Russia) – Zashchita (Kazakhstan)	Container	on request
1072/1071	Brest – Osinovka (Belarus) – Krassnoje – Kartaly-1 (Russia) – Kostonaj (Kazakhstan)	Container	on request
1074/1073	Germany – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Nakhodka-Vost. (Russia)	Container	on request
1076/1075	Berlin / Duisburg / Hamburg (Germany) – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Kanisaj (Russia) – Iljezk-1 – Almaty-1 – Dostyk / Altynkol (Kazakhstan) – Chongqing / Zhengzhou (China); Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Kanisaj (Russia) Iljezk-1 – Dostyk (Kazakhstan) – Chengdu (China)	Container	on request
1078/1077 “Kazakhstan Vector”	Germany – Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Ozinki (Russia) – Semiglavy Mar – Arys-1 (Kazakhstan)	Container	on request
1080/1079	Brest – Osinovka (Belarus) – Krassnoje – Kaluga-1, Perspektivnaja (Russia)	Container	on request
1082/1081	Brest – Osinovka (Belarus) – Krassnoje – Kaluga-1, Perspektivnaja (Russia)	Container	on request
1084/1083	Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Silikatnaja, Tikhonovo (Russia)	Container	on request
1086/1085 “Mongolian Vector”	Brest – Osinovka (Belarus) – Krassnoje – Nauschki (Russia) – Süchbaatar (Mongolia)	Container	on request
1088/1087	Brest – Osinovka (Belarus) – Krassnoje – Kaluga-1, Perspektivnaja (Russia)	Container	on request
1090/1089	Brest – Osinovka (Belarus) – Krassnoje – Kostaricha, Nizhny Novgorod-Avtozavod (Russia)	Container	on request
1156/1155	Dornesti (Romania) – Vadul-Siret – Zernovo (Ukraine) – Suzemka – Togliatti, via Kustarevka (Russia)	Container	on request

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No. of Train	Route	Train Characteristics	Run Frequency
1158/1157 «Odessa»	Odessa-Port – Zernovo (Ukraine) – Suzemka – Moscow-Tov.-Paveletskaja (Russia)	Container	on request
1162/1161	Kosice (Slovakia) / Czech Republic – Uzhgorod (Ukraine) – Perspektivnaja, Nizhny Novgorod-Avtozavod (Russia)	Container	on request
1164/1163	Dobra (Slovakia) – Chop – Zernovo (Ukraine) – Suzemka – Moscow-Tov.-Paveletskaja, Silikatnaja (Russia)	Container	on request
1219/1220 “Merkurij”	Draugiste (Port Klaipeda) – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Kunzevo-2, Moscow-Tov.-Smolenskaja, Kresty, Silikatnaja, Severnaja (Russia)	Container	on request
1221/1222 «Saule 2»	Draugiste (Port Klaipeda) – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Ozinki – Semiglavy Mar (Kazakhstan) – Karakalpak – Galaba (Uzbekistan) – Afghanistan	Container	on request
	Draugiste (Port Klaipeda) – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Ozinki – Semiglavy Mar (Kazakhstan) – Aktobe / Almaty-1 (Kazakhstan)	Container	on request
1226/1225 “Baltic-Wind”	Panariai / Draugiste (Port Klaipeda) (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje – Kartaly-1 (Russia) – Karagandy (Kazakhstan)	Container	on request
1251/1252	Zabaykalsk / Rybniki / Vladivostok / Nakhodka-Wost. / Bratsk / Ust-Ilimsk / Lessosibirsk – Kulunda (Russia) – Kurkamys – Saryagash (Kazakhstan) – Sergeli / Chukursaj (Uzbekistan)	Container	on request
1275/1276	Ablyk / Ulygbek / Nukus / Pytniak / Karshy / Buchara-2 – Jizzakh (Uzbekistan) – Saryagash – Iljezk-1 (Kazakhstan) – Kanisaj – Moscow-Tov.-Paveletskaja / Kuncevo-2 / Sbornaja-Ugolnaja / Moskow-Tov. (Russia)	Container	on request
1285/1286	Rybniki / Vladivostok / Nakhodka-Wost. / Bratsk / Ust-Ilimsk / Lessosibirsk – Lokot (Russia) – Saryagash (Kazakhstan) – Ablyk / Ulygbek / Nukus / Pytniak / Karshy / Buhara-2 / Jizzakh (Uzbekistan)	Container	on request
1253/1254 “New Silk Road”	China – Dostyk – Iljezk-1 (Kazakhstan) – Kanisaj – Suzemka (Russia) – Zernovo – Chop, Batevo – Dobra (Slovakia) / Budapest (Hungary)	Container	on request
1255/1256	China – Altynkol / Dostyk – Saryagash(Kazakhstan) – Ablyk / Sergeli / Chukursaj (Uzbekistan)	Container	on request
1257/1258	Kustonaj (Kazakhstan) – Kartaly-1 – Moskcow Tov.-Paveletskaja / Kuncevo-2 / Sbornaja-Ugolnaja / Moskow-Tov. (Russia)	Container	on request
1267/1268	Jeti-Su – Semiglavy Mar (Kazakhstan) – Ozinki – Obninskoje (Russia)	Container	on request
1259/1260 «Сауле» «Сауле 1»	Zhinischke – Semiglavy Mar (Kazakhstan) – Ozinki – Zlynka (Russia) – Zakopyt'e – Gudogaj (Belarus) – Kena – Klajpeda (Lithuania)	Container	on request
	China – Dostyk / Altynkol – Iljezk-1 (Kazakhstan) – Kanisaj – Krassnoje (Russia) – Osinovka – Gudogaj (Belarus) – Kena – Draugiste (Port Klaipeda) / Šeštokai (Lithuania) – European Countries	Container	on request
	Draugiste (port Klaipeda) / Šeštokai – Kena (Lithuania) – Gudogaj – Osinovka (Belarus) – Krassnoje (Russia) – Kartaly-1 – Almaty-1 (Kazakhstan)	Container	on request
1263/1264	Zhinischke – Semiglavy Mar (Kazakhstan) – Ozinki – Zlynka (Russia) – Zakopyt'e – Brest (Belarus)		
1265/1266	China – Dostyk / Altynkol – Iljezk-1 (Kazakhstan) – Kanisaj – Krassnoje – Ozinki (Russia) – Brest (Belarus) – Malaszewicze (Poland) – Germany	Container	on request
1269/1270	China – Dostyk / Altynkol – Semiglavy Mar (Kazakhstan) – Ozinki – Novorossijsk (Russia)	Container	on request
1278/1277	Buslovskaja – Kanisaj (Russia) – Iljezk-1 – Dostyk (Kazakhstan) – China	Container	on request

No. of Train	Route	Train Characteristics	Run Frequency
1282/1281	China – Dostyk – Semiglavy Mar (Kazakhstan) – Ozinki – Samur (Russia) – Yalama (Azerbaijan) – Beyuk-Kyasik – Tbilisi-Uzlovaja (Georgia)	Container	on request
1284/1283	China – Dostyk (Kazakhstan) – Kartaly-1 – Formachev (Russia)	Container	on request
1292/1291	Viartsila – Kanisaj (Russia) – Iljezk-1 - Dostyk (Kazakhstan) – China	Container	on request
1350/1349 “Eurasia-1»	Riga – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar – Aktobe (Kazakhstan)	Container	on request
1354/1353 „Riga Express”	Riga / Liepaja – Zilupe (Latvia) – Posin – Bekassovo Sort., Kaluga-1, Kunzevo-2, Moscow-Tov.-Okt., Khovrino, Moscow-2-Mytkovo, Obninskoje, Vorotinsk (Russia)	Container	on request
1356/1355 „Riga Express-2”	Riga – Zilupe (Latvia) – Posin – Bekassovo-Sort., Moscow-Tov.-Okt. (Russia)	Container	on request
1409/1410	Muuga – Kojdula (Estonia) – Pechory-Pskovskije – Moscow-Tov.-Oct., Khovrino, Shushary, Moscow-2-Mytkovo, Kaluga-1, Kunzevo-2, Obninskoje, Tuchkovo, Vorotinsk (Russia)	Container	on request
1411/1412	Muuga – Kojdula (Estonia) – Pechory-Pskovskije – Moscow-Tov.-Oct., Vorotinsk (Russia)	Container	on request
1415/1416	Muuga – Kojdula (Estonia) – Pechory-Pskovskije – Kanisaj (Russia) – Iljezk-1 – Almaty-1 (Kazakhstan)	Container	on request
	Muuga – Kojdula (Estonia) – Pechory-Pskovskije – Ozinki (Russia) – Semiglavy Mar (Kazakhstan) – Karakalpak – Galaba (Uzbekistan) – Afghanistan	Container	on request
	Muuga – Kojdula (Estonia) – Pechory-Pskovskije – Togliatti, Zhigulevskoje More (Russia)	Container	on request
1418/1417 “Baltic-Transit”	Valga (Estonia) / Eglaine (Latvia) – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar – Aktobe – Saryagash (Kazakhstan) – Chukursaj (Uzbekistan)	Container	on request
	Valga (Estonia) / Eglaine (Latvia) – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar – Almaty-1 (Kazakhstan)	Container	on request
	Valga (Estonia) / Eglaine (Latvia) – Zilupe (Latvia) – Posin – Ozinki (Russia) – Semiglavy Mar (Kazakhstan) – Karakalpak – Galaba (Uzbekistan) – Afghanistan	Container	on request
1420/1419 “Baltic-Transit-2”	Muuga / Paldiski – Narva (Estonia) / Ivangorod-Narvskij – Petropavlovsk (Russia) – Saryagash (Kazakhstan) – Chukursaj (Uzbekistan)	Container	on request
	Muuga / Paldiski – Narva (Estonia) – Ivangorod-Narvskij – Petropavlovsk (Russia) – Lugowaja (Kazakhstan) – Alamedin (Kyrgyzstan) Muuga – Narva (Estonia) – Ivangorod-Narvskij – Petropavlovsk		
	(Russia) – Almaty-1 – Dostyk (Kazakhstan) – China Muuga – Narva (Estonia) – Ivangorod-Narvskij – Blochnaja, Ekaterinburg-Tov. (Russia)		
1421/1422	Grivno – Krassnoje (Russia) – Osinovka – Gudogaj (Belarus) – Kybartai (Lithuania) – Nesterov – Lesnoje-Novoje (Russia)	Container and contrailer train	on request
1423/1424	Grivno – Krassnoje (Russia) – Osinovka – Gudogaj (Belarus) – Kybartai (Lithuania) – Lesnoje – Novoje (Russia)	Container and contrailer train	on request
1425/1426	Akulovo, Grivno – Krassnoje (Russia) – Osinovka – Gudogaj (Belarus) – Kybartai (Lithuania) – Lesnoje – Novoje (Russia)	Container and contrailer train	on request
1427/1428	Malaszewicze (Poland) – Brest – Osinovka (Belarus) – Krassnoje – Michnevo (Russia)	Container and contrailer train	on request
1432/1431	Matiwcy (Slovakia) – Uzhgorod-2 – Тополи (Ukraine) –	Contrailer	on request

No. of Train	Route	Train Characteristics	Run Frequency
	Kartaly-1 (Russia) – Astana (Kazakhstan)		
1101/1102 «Europe-Express»	Berlin – Brest – Osinovka (Belarus) – Krassnoje – Bekassovo-Sortirovochnoje / Kuncevo-2 (Russia)	fast freight	on request
	Kuncevo-2 / Bekassovo-Sortirovochnoje – Krassnoje (Russia) – Osinovka – Brest (Belarus) – Berlin	fast freight	on request
National Railway Company of Romania JSC (CFR Marfa)			
40805/40806	Berceni (Romania) – Piacenza (Italy)	Extending bodies and semi-trailers	once a week
51352/94688	Ciumesti (Romania) – Moscow (Russia) / Togliatti via Dornesti – Vadul Siret	Container	4 times a week
National Railway Company Cargo Slovakia JSC (ZSSK Cargo)			
40736	Budapest – Chop (Hungary) – Sturowo – Kuty (Slovakia) – Lanzhot – Decin (Czech Republic) – Bad Schandau – Bremerhaven (Germany)	Container	once a week
40737	Bremerhaven – Bad Schandau (Germany) – Decin – Lanzhot (Czech Republic) – Kuty – Sturowo (Slovakia) – Chop – Budapest (Hungary)	Container	2 times a week
40738	Budapest – Chop (Hungary) – Sturowo – Kuty (Slovakia) – Lanzhot – Decin (Czech Republic) – Bad Schandau – Bremerhaven (Germany)	Container	once a week
41340	Bratislava – Kuty (Slovakia) – Lanzhot – Decin (Czech Republic) – Bad Schandau – Bremerhaven (Germany)	Container	once a week
41345	Bremerhaven – Bad Schandau (Germany) – Decin – Lanzhot (Czech Republic) – Kuty – Bratislava (Slovakia)	Container	once a week
41349	Bremerhaven – Bad Schandau (Germany) – Decin – Lanzhot (Czech Republic) – Kuty – Bratislava (Slovakia)	Container	once a week
41601	Gratwein – Marchegg (Austria) – Devinska Nova Ves – Liptowski Hradok (Slovakia)	Container	3 times a week
41603	Hallein – Marchegg (Austria) – Devinska Nova Ves – Liptovski Hradok (Slovakia)	Container	2 times a week
41604	Liptovski Hradok – Devinska Nova Ves (Slovakia) – Marchegg – Hallein (Austria)	Container	2 times a week
41170	Dobra TKD – Slovenske Nove Mesto (Slovakia) – Sátorailjaujhely – Hegyeshalom (Hungary) – Villach (Austria)	Container	once a week
41171	Vienna (Austria) – Hegyeshalom – Sátorailjaujhely (Hungary) – Slovenske Nove Mesto – TDK Dobra (Slovakia)	Container	once a week
41172	Dobra TKD – Slovenske Nove Mesto (Slovakia) – Sátorailjaujhely – Hegyeshalom (Hungary) – Vienna (Austria)	Container	once a week
41173	Villach (Austria) – Hegyeshalom – Hidashnemeti (Hungary) – Csanya – TDK Dobra (Slovakia)	Container	once a week
41630	Bratislava (Slovakia) – Marchegg – Vienna (Austria)	Container	once a week
41740	Liskowa – Cadca (Slovakia) – Mosty u Jablunkova – Paskow (Czech Republic)	Container	once a week
41741	Paskow – Mosty u Jablunkova (Czech Republic) – Cadca – Liskowa (Slovakia)	Container	once a week
41752	Bratislava – Kuty (Slovakia) – Lanzhot – Melnik (Czech Republic)	Container	once a week
41753	Melnik – Lanzhot (Czech Republic) – Kuty – Bratislava (Slovakia)	Container	once a week
41807	Melnik – Lanzhot (Czech Republic) – Kuty – Sturowo (Slovakia) – Chop – Budapest (Hungary)	Container	once a week

No. of Train	Route	Train Characteristics	Run Frequency
41840	Zilina – Cadca (Slovakia) – Mosty u Jablunkova – Petrovice (Czech Republic) – Malaszewicze (Poland)	Container	once a week
41841	Malaszewicze – Zebrzydowice (Poland) – Petrovice – Mosty u Jablunkova (Czech Republic) – Cadca – Zilina (Slovakia)	Container	once a week
41842	Zilina – Cadca (Slovakia) – Mosty u Jablunkova – Petrowice (Czech Republic) – Zebrzydowice – Korsze – Skandawa (Poland) – Zhelesnodorozhny – Tschernjachowsk (Russia)	Container	7 times a week
41843	Tschernjachowsk – Zhelesnodorozhny (Russia) – Skandawa – Korsze – Zebrzydowice (Poland) – Petrowice – Mosty u Jablunkova (Czech Republic) – Cadca – Zilina (Slovakia)	Container	7 times a week
42632	Bratislava (Slovakia) – Marchegg – Enns (Austria)	Container	once a week
43600	Koper – Maribor (Slovenia) – Spielfeld – Marchegg (Austria) – Devinska Nova Ves – Zilina (Slovakia)	Container	7 times a week
43601	Zilina – Devinska Nova Ves (Slovakia) – Marchegg – Spielfeld (Austria) – Maribor – Koper (Slovenia)	Container	7 times a week
43602	Koper – Maribor (Slovenia) – Spielfeld – Marchegg (Austria) – Devinska Nova Ves – Zilina (Slovakia)	Container	once a week
43603	Zilina – Devinska Nova Ves (Slovakia) – Marchegg – Spielfeld (Austria) – Maribor – Koper (Slovenia)	Container	once a week
43610	Koper – Maribor (Slovenia) – Spielfeld – Marchegg (Austria) – Devinska Nova Ves – Sladkovicovo (Slovakia)	Container	on request
43630	Koper – Maribor (Slovenia) – Spielfeld – Marchegg (Austria) – Devinska Nova Ves – Bratislava (Slovakia)	Container	3 times a week
43631	Bratislava – Devinska Nova Ves (Slovakia) – Marchegg – Spielfeld (Austria) – Maribor – Koper (Slovenia)	Container	3 times a week
43632	Koper – Maribor (Slovenia) – Spielfeld – Marchegg (Austria) – Devinska Nova Ves – Sladkovicovo (Slovakia) – Bratislava (Slovakia)	Container	once a week
51792	TDK Dobra – Bratislava (Slovakia)	Container	on request
55790	Zilina – Dunajska Streda (Slovakia)	Container	3 times a week
57591	Dunajska Streda – Zilina (Slovakia)	Container	3 times a week
JSC “Uzbek Railways” (UTI)			
1029/1030	Russia – Kazakhstan – Uzbekistan (Vladivostok / Nakhodka-Wost. – Kulunda – Saryagash – Sergely / Tashkent-Tov. / Chukursaj)	container	on request
1031/1032	Russia – Kazakhstan – Uzbekistan (Vladivostok / Nakhodka-Wost. – Lokot – Saryagash – Ablyk)	container, 57 wagons	4 times a week
	Russia – Kazakhstan – Uzbekistan (Vladivostok / Nakhodka-Wost. – Lokot – Saryagash – Ulugbek / Nukus / Pytniak)	container, 57 wagons	once a week
	Russia – Kazakhstan – Uzbekistan – Afghanistan (Nakhodka-Vost. – Lokot – Saryagash – Galaba)	container, 57 wagons	on request
1221/1222	Lithuania – Belarus – Russia – Kazakhstan – Uzbekistan – Afghanistan (Draugiste (Port Klaipeda) – Gudogaj – Krassnoje – Semiglavy Mar – Karakalpak – Galaba)	container, 57 wagons	on request
1255/1256	China – Kazakhstan – Uzbekistan (Altynkol – Saryagash – Ablyk / Sergeli / Chukursaj)	container, 57 wagons	on request
1262/1261	China – Kazakhstan – Uzbekistan (Altynkol – Saryagash – Ablyk / Sergeli / Chukursaj)	container, 57 wagons	on request
1415/1416	Estonia – Russia – Kazakhstan – Uzbekistan – Afghanistan (Muuga – Pechory-Pskovskije – Semiglavy Mar – Karakalpak – Galaba)	container, 57 wagons	on request

Informal document No. 1

No. of Train	Route	Train Characteristics	Run Frequency
1420/1419 "Baltika-Transit-2"	Estonia – Russia – Kazakhstan – Uzbekistan (Muuga / Paldiski – Narva – Petropavlovsk – Saryagash – Chukursaj)	container, 57 wagons	on request
State Administration for Railway Transport of Ukraine (UZ)			
1158/1157 „Odessa"	Odessa – Zernovo (Ukraine) – Suzemka – Moskow-Paveletskaja – Vorsino (Russia)	Container	on request
1430/1429 „Viking"	Draugiste-Port – Kena (Lithuania) – Gudogaj – Slovechno (Belarus) – Berezhest – Odessa / Iljischowsk / Iljischowsk-Paromnaja / Mogilev-Podolski (Ukraine) – Varna – Sofia (Bulgaria) / Valcinet – Giurgiulești / Ugeny (Moldova) – Jassy (Romania)	Contrailer train	3 times a week
1402/1401 „Zubr"	Ülemiste / Muuga – Valga (Estonia) – Lugazhi – Indra (Latvia) – Bigossowo – Slovechno (Belarus) – Berezhest – Iljichovsk / Iljichovsk-Paromnaja / Odessa-Port / Mogilev-Podolski / Izov (Ukraine) – Valcinet – Giurgiulesti (Moldova)	Container	3 times a week
1156/1155	Ciumestii – Dornesti (Romania) – Vadul-Siret – Zernovo (Ukraine) – Suzemka – Togliatti (Russia)	Container	once a week
1162/1161	Villanova d'Asti (Czech Republic) – Kosice – Matiwcy (Slovakia) – Uzhgorod-2 – Zernovo (Ukraine) – Suzemka – Perspektivnaja / Nizhny Novgorod-Avtozavod (Russia)	Container	once a week
1164/1163	Kosice – Matiwcy (Slovakia) – Chop – Zernovo (Ukraine) – Suzemka – Moskow Tov.-Paveletskaja / Kuncevo 2 / Silikatnaja / Vorsino (Russia)	Container	once a week
1023/1024	Mandschurei (China) – Zabaykalsk – Suzemka (Russia) – Zernovo – Chop (Ukraine) – Dobra (Slovakia) – Hungary	Container	on request
	Nakhodka-Wost. – Suzemka (Russia) – Zernovo – Chop (Ukraine) – Dobra (Slovakia) / Budapest (Hungary)	Container	on request
1153/1154	Nakhodka – Suzemka (Russia) – Zernowo – Chop (Ukraine) – Dobra (Slovakia) – European Countries	Container	on request
1152/1151	Slawkow – Hrubieszow (Poland) – Izov – Mogilev-Podolski (Ukraine) – Valcinet – Rybnica (Moldova)	Container	on request
1181/1182 „Krestshatik'	Odessa / Iljichovsk – Kiev-Liski (Ukraine)	Container	on request
1185/1186 „Dneprovez"	Odessa / Iljichovsk – Dnepropetrovsk-Liski (Ukraine)	Container	on request
1183/1184 „Podolje"	Odessa / Iljichovsk – Chmelnyzkyj (Ukraine)	Container	on request
1187/1188 1189/1190 „Nicka"	Nikopol – Iljichovsk (Ukraine)	Container	on request
1193/1194	Mariupol-Port – Kiev-Liski (Ukraine)	Container	on request
1197/1198	Zaporozhye 1 – Iljichovsk (Ukraina)	Container	on request
1433/1434 „Yaroslav"	Lugansk / Kiev – Izov (Ukraine) – Hrubieszow – Slawkow (Poland)	Combined train	on request
1432/1431	Kosice – Matiwcy (Slovakia) – Uzhgorod-2 – Zernovo (Ukraine) – Suzemka – Kartaly 1 (Russia) – Aksu – Astana (Kazakhstan)	Contrailer	on request
1251/1252 1254/1253 „New Silk Road"	Lianyungang / Xian – Alaschankou (China) – Dostyk – Iljezk-1 (Kazakhstan) – Suzemka (Russia) – Zernovo – Chop (Ukraine) – West-European Countries	Container	on request
Czech Railways JSC (CD Cargo)			
40736	Budapest (Hungary) – Kuty (Slovakia) – Decin (Czech Republic) – Bremerhaven (Germany)	Container	once a week

No. of Train	Route	Train Characteristics	Run Frequency
40737	Bremerhaven (Germany) – Decin (Czech Republic) – Kuty (Slovakia) – Budapest (Hungary)	Container	2 times a week
40738	Budapest (Hungary) – Kuty (Slovakia) – Decin (Czech Republic) – Bremerhaven (Germany)	Container	once a week
41341	Hamburg (Germany) – Decin (Czech Republic) – Melnik (Czech Republic)	Container	5 times a week
41342	Melnik (Czech Republic) – Decin (Czech Republic) – Hamburg (Germany)	Container	4 times a week
41343	Hamburg (Germany) – Decin (Czech Republic) – Melnik (Czech Republic)	Container	5 times a week
41344	Melnik (Czech Republic) – Decin (Czech Republic) – Hamburg (Germany)	Container	4 times a week
41345	Bremerhaven (Germany) – Decin (Czech Republic) – Melnik (Czech Republic)	Container	once a week
41347	Bremerhaven (Germany) – Decin (Czech Republic) – Melnik (Czech Republic)	Container	once a week
41348	Melnik (Czech Republic) – Decin (Czech Republic) – Bremerhaven (Germany)	Container	once a week
41349	Bremerhaven (Germany) – Decin (Czech Republic) – Kuty (Slovakia) – Bratyslava (Slovakia)	Container	once a week
41355	Bremerhaven (Germany) – Decin (Czech Republic) – Melnik (Czech Republic)	Container	once a week
41356	Melnik (Czech Republic) – Decin (Czech Republic) – Bremerhaven (Germany)	Container	once a week
41357	Bremerhaven (Germany) – Decin (Czech Republic) – Melnik (Czech Republic)	Container	once a week
41360	Lovosice (Czech Republic) – Decin (Czech Republic) – Duisburg (Germany)	Container	5 times a week
41361	Duisburg (Germany) – Decin (Czech Republic) – Lovosice (Czech Republic)	Container	5 times a week
41362	Lovosice (Czech Republic) – Decin (Czech Republic) – Hamburg (Germany)	Container	once a week
41369	Hamburg (Germany) – Decin (Czech Republic) – Lovosice (Czech Republic)	Container	2 times a week
41378	Lovosice (Czech Republic) – Decin (Czech Republic) – Hamburg (Germany)	Container	4 times a week
41379	Hamburg (Germany) – Decin (Czech Republic) – Lovosice (Czech Republic)	Container	once a week
41720	Dunajska Streda(Slovakia) – Kuty (Slovakia) – Havirov (Czech Republic)	Container	once a week
41721	Havirov (Czech Republic) – Kuty (Slovakia) – Dunajska Streda(Slovakia)	Container	once a week
41730	Dunajska Streda(Slovakia) – Kuty (Slovakia) – Ceska Trebova (Czech Republic)	Container	7 times a week
41731	Ceska Trebova (Czech Republic) – Kuty (Slovakia) – Dunajska Streda (Slovakia)	Container	7 times a week
41732	Dunajska Streda (Slovakia) – Kuty (Slovakia – Ceska Trebova (Czech Republic)	Container	7 times a week
41733	Ceska Trebova (Czech Republic) – Kuty (Slovakia) – Dunajska Streda (Slovakia)	Container	7 times a week
41752	Bratislava (Slovakia) – Kuty (Slovakia) – Melnik (Czech Republic)	Container	2 times a week
41753	Melnik (Czech Republic) – Kuty (Slovakia) – Bratislava (Slovakia)	Container	once a week
42328	Praha Žižkov (Czech Republic) – Decin (Czech Republic) – Hamburg (Germany)	Container	6 times a week
42335	Hamburg (Germany) – Decin (Czech Republic) – Praha Žižkov (Czech Republic)	Container	6 times a week
42340	Praha Žižkov (Czech Republic) – Decin (Czech Republic)	Container	once a week

No. of Train	Route	Train Characteristics	Run Frequency
	– Pirna (Germany)		
42343	Hamburg (Germany) – Decin (Czech Republic) – Praha Žižkov (Czech Republic)	Container	2 times a week
42361	Pirna (Germany) – Decin (Czech Republic) – Praha Žižkov (Czech Republic	Container	once a week
42362	Praha Žižkov (Czech Republic) – Decin (Czech Republic) – Pirna (Germany)	Container	2 times a week
43202	Mlada Boleslav (Czech Republic) – Petrovice (Czech Republic) – Malaszewicze (Poland)	Container	2 times a week
43204	Mladá Boleslav (Czech Republic) – Petrovice (Czech Republic) – Malaszewicze (Poland)	Container	2 times a week
43205	Malaszewicze (Poland) – Petrovice (Czech Republic) – Mladá Boleslav (Czech Republic)	Container	2 times a week
43206	Mladá Boleslav(Czech Republic) – Petrovice (Czech Republic) – Malaszewicze (Poland)	Container	2 times a week
43207	Malaszewicze (Poland) – Petrovice (Czech Republic) – Mladá Boleslav(Czech Republic)	Container	2 times a week
43400	Koper (Slovenia) – Kuty (Slovakia) – Dobra (Czech Republic)	Container	4 times a week
43401	Dobra (Czech Republic) – Kuty (Slovakia) – Koper (Slovenia)	Container	2 times a week
South Caucasus Railway CJSC (SCR CJSC)			
1202/1201	Karmir Blur / Yerevan – Ayrum (Armenia) – Sadakhlo (Georgia) – Poti / Batumi	Container	on request
Estonian Railway JSC (EVR)			
1401/1402 „Zubr"	Ülemiste / Muuga – Valga (Estonia) – Indra (Latvia) – Bigossowo – Slovechno (Belarus) – Berezhest – Iljichovsk / Iljichovsk-Paromnaja / Odessa-Port / Mogilev-Podolski / Izov (Ukraine) – Valcinet – Oknica (Moldova)	Container	on request
1409/1410	Muuga – Kojdula (Estonia) – Pechory-Pskovskije (Russia) – Moscow-Tov.Okt. / Schuschary Okt. / Moscow-2-Mytkovo / Kaluga-1 / Kunzevo-2 / Obninskoje / Tutschkowo / Vorotinsk / Khovrino	Container	on request
1411/1412	Muuga – Kojdula (Estonia) – Pechory-Pskovskije (Russia) – Moscow-Tov.-Okt. / Vorotinsk (Russia)	Container	on request
1415/1416	Muuga – Kojdula (Estonia) – Pechory-Pskovskije (Russia) – Iljezk-1 – Almaty-1 (Kazakhstan)	Container	on request
	Muuga – Kojdula (Estonia) – Pechory-Pskovskije (Russia) – Semiglavy Mar (Kazakhstan) – Karakalpak (Uzbekistan) – Galaba (Afghanistan)		
	Muuga – Kojdula (Estonia) – Pechory-Pskovskije (Russia) – Togliatti / Zhigulewskoje More		
1418/1417 **"Baltic-Transit"**	Muuga – Valga (Estonia) – Resekne (Latvia) – Sebezh – Ozinki (Russia) – Aktobe – Saryagash (Kazakhstan) – Chukursaj (Uzbekistan)	Container	on request
	Muuga – Valga (Estonia) – Resekne (Latvia) – Sebezh (Russia) – Semiglavy Mar (Kazakhstan) – Almaty-1 (Kazakhstan)		
	Muuga – Valga (Estonia) – Resekne (Latvia) – Sebezh (Russia) – Semiglavy Mar (Russia) – Oasis (Kazakhstan) – Karakalpak (Uzbekistan) – Galaba (Afghanistan)		
1420/1419 **"Baltic-Transit-2"**	Muuga – Narva (Estonia) – Ivangorod-Narvskij (Russia) – Petropavlovsk – Almaty-1 (Kazakhstan) / Dostyk (China)	Container	on request
	Muuga / Paldiski – Narva (Estonia) – Ivangorod-Narvskij		

No. of Train	Route	Train Characteristics	Run Frequency
	(Russia) – Petropavlovsk – Lugovaja (Kazakhstan) – Alamedin (Kyrgyzstan)		
	Muuga – Narva (Estonia) – Ivangorod-Narvskij (Russia) – Jekaterinburg-Tov. / Blotschnaja (Russia)		
	Muuga / Paldiski – Narva (Estonia) – Ivangorod-Narvskij (Russia) – Petropavlovsk – Saryagash (Kazakhstan) – Chukursaj (Uzbekistan)		

Source: OSJD

A positive tendency of an increase in container freight shipment quantity under the use of unified CIM/SMGS consignment note has been noticeable, that testifies to the efficiency of its application in the international traffic between Europe and Asia.

III. MAIN OBSTACLES HAMPERING THE EURO-ASIAN TRANSPORT LINKAGES DEVELOPMENT

III.1. General overview

During the Phase I of the project the main Euro-Asian road, rail and inland water transport routes, transshipment points and ports were selected. Projects had been prioritized in order to focus on improvement the certain routes.

311 projects proposed by the participating countries have been evaluated during Phase II of the EATL project from the standpoint of their value to connect Asia and Europe. The assessment of appropriate investment needs was undertaken which formed the basis of the updated EATL Investment Plan.

An enormous work had been done by the governments of EATL countries to implement these decisions and plans. As a result, the current infrastructure seems to generally support the existing transportation flows, whereas the remaining missing links and the upgrade of existing infrastructure is in the focal point of the national transport strategies and the international programs.

At the same time, the existence of high-level transport infrastructure – railways, roads, inland waterways - is a necessary, but not a sufficient condition for efficient and competitive transport routes serving the trade lanes.

Numerous obstacles and bottlenecks along transport routes occur disrupting the traffic and goods flows. These obstacles can be divided into two groups: physical and non-physical barriers.

Physical barriers occur due to of natural reasons, technical and technological inconsistency, poor infrastructure maintenance, shortage of network sections/nodes capacity. A special type of physical barrier is the absence of particular section of transport network or certain object (bridge, intermodal terminal, logistic center, etc.) that could obviously improve the conditions for transportation and trade.

Non-physical barriers represent lack of proper policies, not harmonized legislation, poor regulations and administrative procedures, lack of cross-border administrative interoperability, non-application of trade facilitation standards and best practices, insufficient attention to modern IT equipment for processing and data exchange unskilled personnel. Besides that, one can not skip such issues like contradictions of state and private interests and, in some cases, corruption. Non-physical barriers can cause enormous losses of time and money decreasing the quality of service or even creating the serious barriers on particular trade lanes.

During the general economic crisis and the shortage of infrastructure funding the attention to non-physical obstacles should be, probably, higher than ever. Research results demonstrate that very often investments aimed to construct or rehabilitate infrastructure objects are way less effective than efforts focused on procedures improvement.

In Europe, in EU – in particular, enormous efforts have been undertaken for decades to eliminate such barriers. This work was guided and financed within the general context of creating the common economic space. Smooth transportation had been developed to provide smooth trade and smooth distribution; the whole economic and business environment is been improved under the “integrity” slogan.

The situation in the Central Asia is different.

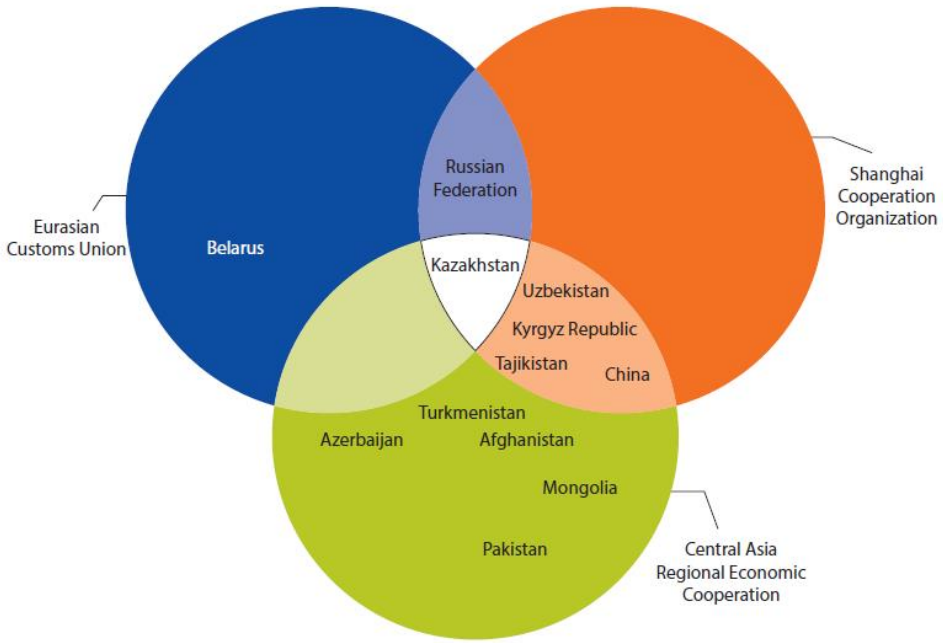
The challenge of re-creating a trade and transportation environment for countries of Central Asia - and more generally, the former Soviet Union republics - have been taken seriously for two decades by various institutions. Visible trends for integration and harmonization are developing in the Central Asia region. Some countries had joined the WTO; certain states have the observer status in this organization. Eurasian Economic Union and the Customs Union creation - as well as the numerous bilateral agreements - is the important step towards the free trade relationships (see p.*).

At the same time, the problem is that this area does not have one single integration idea as a general "umbrella" for regional plans, programs and projects. There is a so-called "spaghetti bowl" situation where numerous initiatives overlap with inconsistent country membership (figure *). Three main groups of initiatives can be shown to improve connectivity (Linn 2012): (1) corridor-based initiatives such as the Central Asia Regional Economic Cooperation (CAREC), (2) the Shanghai Cooperation Organization (SCO) supported by China, and (3) the Eurasian Customs Union, led by Russia.

It will obviously take time to reach the goals set by numerous initiatives. Currently the key word for the Central Asian region in sense of trade lanes is "fragmentation".

Transport communications as well as the trade lanes are still influenced by historical "heritage". Transit operates over long distances and generally involves many transport providers representing different economic systems. Border crossings disrupt the traffic and commodity flows. The supply chain design implies numerous difficulties such as obligatory customs brokers' services or mandatory going through a bonded warehouse or compulsory convoying of traffic. For these reasons, supply chains in the EATL region are especially fragmented and vulnerable.

Figure 3.1
The "Spaghetti Bowl" of Regional Organizations in Central Asia (Lynn 2012, World Bank)



Note: AFG = Afghanistan; AZE = Azerbaijan; BLR = Belarus; CAREC = Central Asia Regional Economic Cooperation; CHN = China; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; MNG = Mongolia; PAK = Pakistan; RUS = Russian Federation; SCO = Shanghai Cooperation Organization; TJK = Tajikistan; TKM = Turkmenistan; UZB = Uzbekistan.

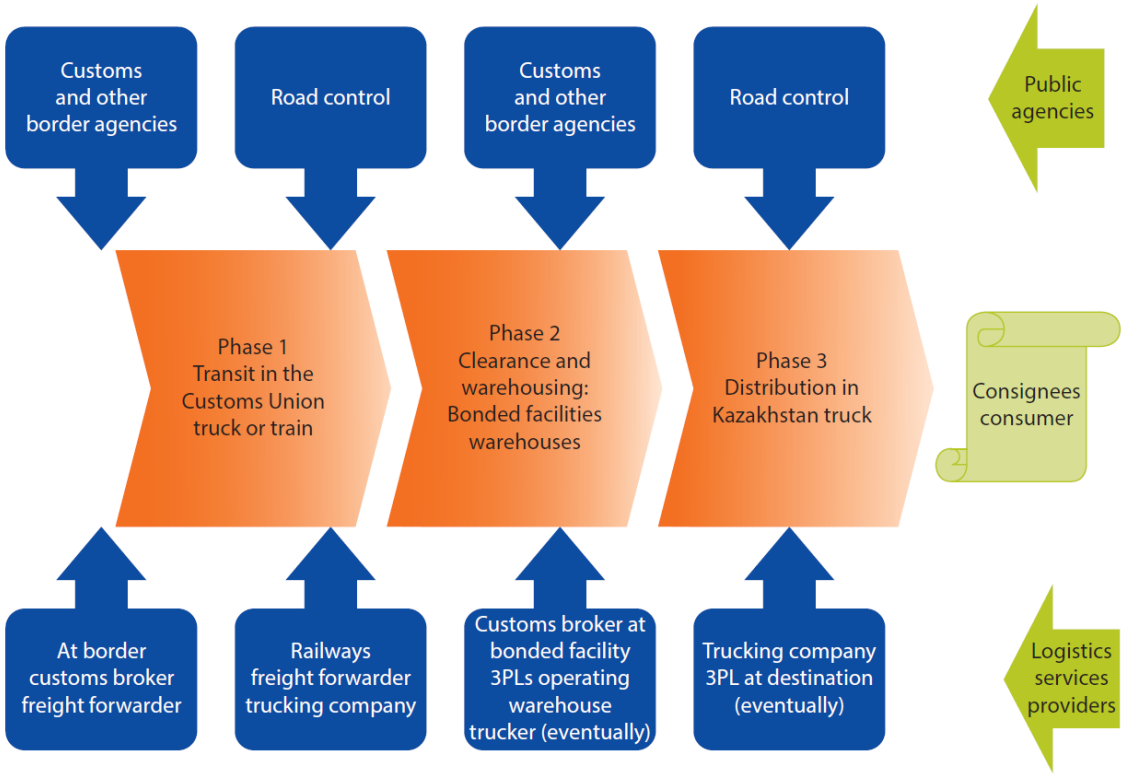
Figure 3.1 illustrates the example of imports of goods to Kazakhstan. According to Rastogi et al (2014), this logistic scheme includes three phases:

- international transit from the Russian Federation or China into Kazakhstan by truck or rail (rail wagons or containers), with intervention of transport companies, brokers, and forwarders;

- clearance and warehousing in one of the main cities in Kazakhstan, with intervention of brokers and border agencies, and third-party logistics providers(3PLs) and

- distribution logistics in Kazakhstan or Central Asia, with interventions of local transport companies.

Figure 3.2
Scheme of imports of goods to Kazakhstan



Source: Rastogi et al (2014)

All the phases of the scheme are more or less independent and the interests of different players overlap in a contradictory way while its implementation.

Non-physical barriers cause significant delays, increase transport and logistics costs, and have a negative impact on visibility and reliability in the transport chain. Traders, shippers, and transport operators face various non-physical barriers of different types and causes, one of the main - long waiting times and queues at border crossing points (BCP) or at en-route check points.

The cross-border control procedures used on particular trade lane, once acceptable, can become outdated and start creating problems if the competing route operator had introduced modern technologies saving time and money.

Most observers and market players argue that the major barriers for transport and trade in the EATL region manifest themselves at the Border crossing points (BCP).

III.2. Border Crossing Points as bottlenecks

Several studies showed that border crossing times on EATL routes in Central Asia vary from a number of days to a few hours, but are on average too long compared to waiting times measured inother regions, such as South Asia and Europe[CAREC 2013, WP5 2015***].

A UNESCAP study on transit rail traffic in Asia and the Pacific point out that "average border-crossing times in Europe are in the 30-40 minutes range", and that "the ECE recommendation for border stopping time is 60 minutes for international shuttle trains and 30 minutes for combined transport".

Both transport modes, road and rail, are affected by the long delays at border crossings, but rail delays tend to be even longer than waiting times in road transport.

The ADB CCPMM data (CAREC 2013) allows a detailed comparison of waiting times in Central Asia at the level of individual border crossings. The report concludes that on a general level border crossing delays on CAREC corridors have not improved since 2009. Slight improvements can be observed for specific borders for road corridors, but rail transport border crossing times are still extremely high ranging from 65.6 hours at Dostyk (Kazakhstan) for cargo coming from China to the comparatively short times measured for the rail border crossing Alat-Farap between Uzbekistan and Turkmenistan where it takes only 6 hours to clear incoming cargo.

Figure 3.3 and 3.4 represent CCPMM data and show that times vary substantially from one border crossing to another.

Clearance time at the Kazakahstan-China border crossing Khorgos can take up to 28.2 hours for goods crossing into Kazakhstan and 11.2 hours for goods going into China. Clearance time for cargo at Tajik border points Dusti and Fatehobad with Afghanistan are, according to the CCPMM, amongst the lowest on the CAREC corridors (5.3 hours in Dusti and 5.1 hours in Fatehobad for incoming cargo). Waiting times at Uzbek border crossings range from 5.7 hours at the border with Kazakhstan in the North, Keles, to 9.7 hours at another border crossing with Kazakhstan further South, Yallama.

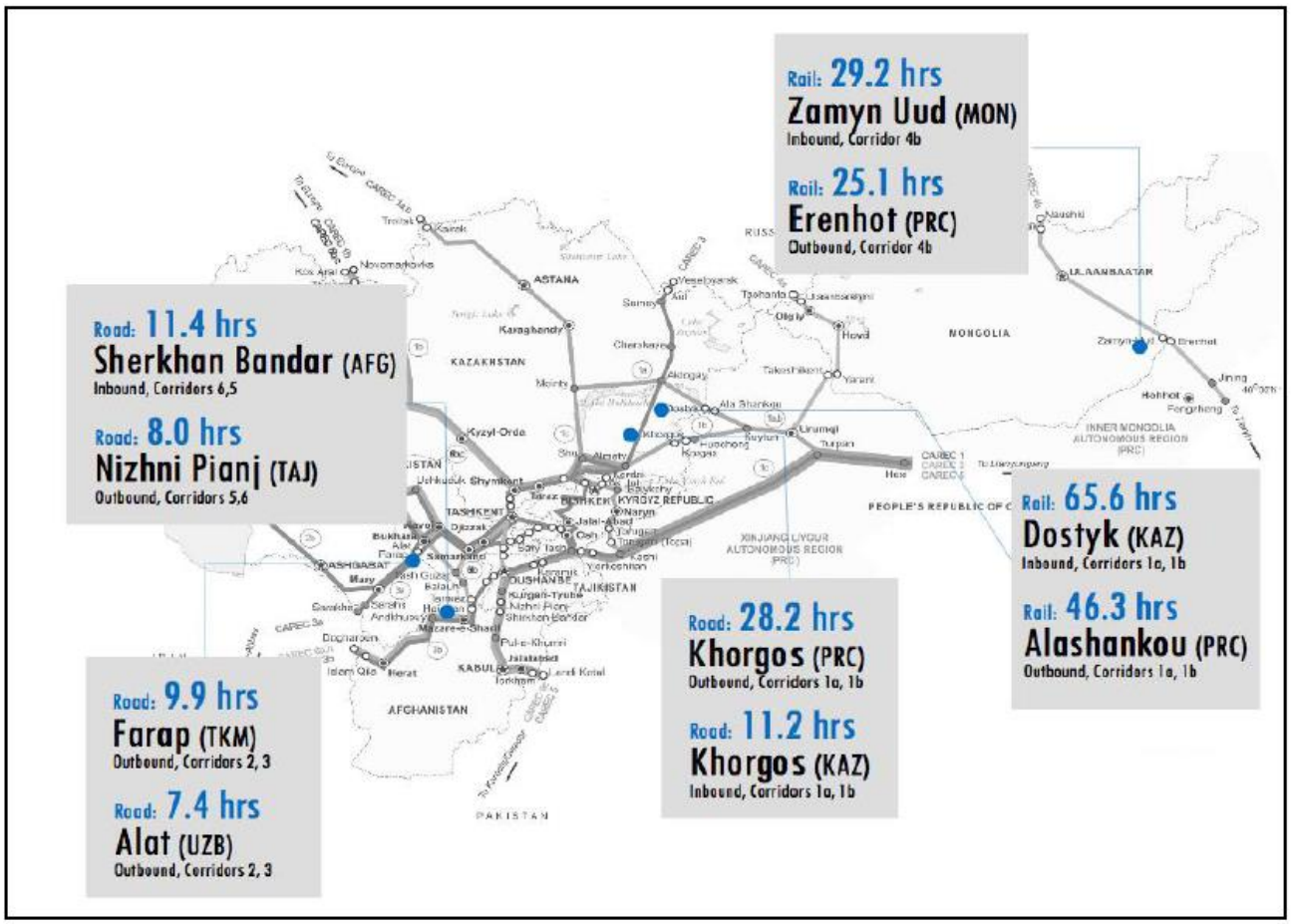
Border crossings waiting times and delays constitute a significant share of the overall travel time spent by trucks and trains on EATL routes and therefore have a strong negative impact on the attractiveness of the routes. A corridor analysis conducted by UNESCAP on the road route from Almaty (Kazakhstan) to Berlin (Germany) via the Russian Federation (Kulin and Krasnoe), Belarus, and Poland, revealed that 50 per cent of the transit time is spend waiting at border crossing points between Kazakhstan and the Russian Federation (3-4 days) and between the Russian Federation and Belarus (4-7days). The overall time for the trip was 10-13 days, instead of the 6 days that were possible, if one assumes a border crossing time of 5 hours.[Informal document WP.5/GE.2, 2015 No 1].

Reliability factor. As it was mentioned above (see p*), one of the main requirements of supply chains is reliability and punctuality of services. In certain cases short lead time is not among the

advantages of the certain route but logistic providers prefer this particular route because of its stable and predictable parameters.

Figure 3.3
Average border crossing times, Uzbekistan road BSP, 2013

Figure 3.4
Average border crossing times for selected BCP, 2013



As for many EATL transport links, especially related to the Central Asian area, stability and predictability of services are at poor level. Unpredictable delays, lowdegree of reliability, the unpredictability of services quality and price create severe disincentives to invest andincrease total logistics costs.

Numerous surveys [**] indicate the following manifestations of this:

Transit time can vary dramatically. “Record” lead times look very attractive for shippers but the variations in everyday practice can be inacceptable for the market. Observers report the 40/90 days difference possible on certain routes

Shortages of rolling stock and equipment occur suddenly causing the delays. In some countries lack of rolling stock at harvest season is typical

Custom regulations, rail tariffs and road charges can change unexpectedly

Transit controls is implemented uniformly, irrespective of the principal’s reliability and competence;

Convoy or escort systems are applied not only against risky cargo or insecure vessels (open trucks), but also on containers or sealed box wagons;

Obsolete freight transport rules and regulations

inadequate carnets and guarantee systems or the poor implementation of widespread transit systems like TIR

Additional charges and fees (often at regional level) can be introduced without warning

Railways can impose shipping bans to neighbor countries or to certain points for limited capacity reasons or to keep the rolling stock on national territory

regulatory barriers that impact the market structure and the quality of key support services (brokers, finance, insurance and other)

Simplified border procedures that are sometimes introduced are not practical because they require a declaration within hours of arrival - while arrival time is unpredictable.

III.3. Barriers concerning goods transported

<u>Customs procedures</u>

Customs procedures are an obligatory process in all international road shipments involving border crossings and are the greatest cause of vehicle delays on delivery routes between Asia and Europe. Despite the World Customs Organization’s International Convention on the Simplification and Harmonization of Customs Procedures (Revised Kyoto Convention) of 1999, the UN International Convention on the Harmonization of Frontier Controls of Goods of 1982 and the UN Customs Convention on the International Transport of Goods under cover of TIR

Carnets (TIR Convention, 1975), customs regulations in practice continue to differ both in terms of requirements and procedures. In addition, there is no integrated information system or information exchange and, in a number of transit countries, customs posts are poorly equipped and employ out-of-date IT equipment that fails to provide data on cargo in a timely manner.

Export and import documents

The number of ***export*** documents varies enormously among EATL participating countries. Georgia, which requests exporters to prepare only four documents, is regarded as a regional best practice, particularly when compared to other EATL participating countries such as Tajikistan, which requests eleven documents. Afghanistan and Uzbekistan request ten, Belarus and Kazakhstan - nine, while Azerbaijan, China, Kyrgyzstan and the Russian Federation require their exporters to complete eight documents.

Good practice examples related to ***import*** documentation include Armenia requiring seven, Bulgaria six, China five, the Republic of Moldova seven and Georgia requiring only four import documents. In comparison, several other EATL countries require importers to complete up to ten documents: Afghanistan, Azerbaijan, Belarus and the Russian Federation. Kazakhstan requires its importers to complete twelve documents and Uzbekistan requires eleven import documents.

In addition to the above, EATL landlocked countries are presumed to need more days to export a container than countries with seaports: it takes on average 82 days to send an export from Tajikistan, 76 days to send an export from Kazakhstan, 74 days to send an export from Afghanistan and 71 and 63 days from Uzbekistan and the Kyrgyzstan, respectively. EATL best practice countries include Georgia with 10 days, Romania with 12 days, Armenia with 13 days and Turkey with 14 days. With regard to imports, best practices include Georgia and Romania with 13 days, Turkey with15 days, and Bulgaria with 17 days leading the EATL region. The highest number of days required for handling and clearing imports are in Uzbekistan, 92 days, Tajikistan, 83 days, Afghanistan,77 days and Kazakhstan, 62 days.

III.4. Barriers concerning border crossing technologies and procedures

BCP infrastructure problems

Inadequately designed border-crossing point infrastructure and equipment, as well as inadequate transport infrastructure connecting border-crossing points with transport networks, strictly speaking, have the physical character. But their impact of creation non-physical obstacles to international road and rail transport cannot be ignored.

Certain countries had designed and built their border-crossing points 20 years ago and these objects still do not have proper equipment. Some border-crossing point approach roads traverse the middle of villages, causing vehicle congestions. Often border crossings do not have enough lanes or windows to meet the peak transport flows.

Opportunities to improve transport links and border-crossing points exist, as per the infrastructure priority projects identified by EATL Phase I and Phase II Studies. Nevertheless, public and private stakeholders need more exposure to international best-practice transport, logistics and border-crossing point infrastructure design and management methods to realize the

full benefits of investment in hard infrastructure, modern non-intrusive detection equipment and different ways to manage expensive border-crossing point assets.

BCP Process inefficiencies

Numerous government agencies are present at border crossings to control compliance with national legislation governing immigration, taxation, environment and health protection, customs and trade policy, transport services and vehicles, and other regulations. Control measures apply to drivers, means of transportation, and goods, and include document checks, weighing, scanning and measuring of vehicles, and physical inspection of the goods. These formalities take time, in particular if the multiple agencies involved do not collaborate and share documents, and information.

As many studies reveal, un-coordinated and repetitive intervention of numerous government agencies on the same shipment, high level of physical inspection of the cargo, and inadequate infrastructure and equipment characterize the border crossings in the region. The high frequency of physical inspection of shipments and cargo at border crossings seems to be the major bottleneck in the clearance processes.

As is reported, Kazakh customs authorities at the border crossing Khorgos, for example, do not trust cargo documents for mixed load containers coming in from China and therefore systematically physically inspect containers coming in from Chinato match the data with the actual goods. Customs authorities also commonly physically inspect the shipments or at least open the loading unit for primary visual inspection. Physical inspections do not only uphold the individual shipment in question but also lead to congestion, as many of the equipment and infrastructure at the border crossing do not match the growing cargo volumes and frequency of such operations.

There are many reasons for the persistence of physical inspection. Often there is no effective risk management system in place that allows the border staff to target their inspections onspecific, high and medium risk cargo and means of transportation, while clearing the other cargo and trucks faster without physical inspection.

Physical inspection is also an effective instrument for rent-seeking, as truck drivers and shippers want to speed up the process. Legislation may attribute a personal responsibility for non-detected fraud or smuggling to the border officials. Furthermore, numerous border crossing points lack equipment for non-intrusive controls, such as scanning or weighing of containers.

And finally, many of the border clearance process requirements are duplications: identical cargo and vehicle documents need to be presented, are reviewed and stamped by various agencies in a sequential process. Processes and document requirements are designed from the isolated point of view of each agency and are not optimized from the overall perspective of achieving a faster border crossing clearance through joint operations and sharing of data.

III.5. Road transportation specific barriers

Bilateral and regional road transport agreements

Currently, the legal framework for undertaking international road cargo shipments between Asia and Europe is mainly based on bilateral intergovernmental agreements on international road

transport. These govern the procedures and conditions for undertaking international shipments and contain provisions for preferential conditions, created for carriers on a mutual basis, as well as conditions for transborder access to markets, including stipulations for transit shipments. Following these bilateral agreements, national bodies issue a fixed number of permits, which grant the right to travel through the territories of the countries specified.

The transit countries, through which the Euro-Asian routes run have, currently have more than 140 bilateral agreements with countries in Europe and Asia, of which75 govern transport between two transit states.

Although these bilateral agreements aim at "facilitating trade" and "balancing bilateral road transport markets" the bilateral nature of the conditions complicate the transport journey when several countries have to be crossed, or when vehicles and drivers come from different countries.

The most important "barrier issues" related to the above are the following:

- international bilateral agreements on road transport lay down differing legal conditions for undertaking cargo shipments between pairs of individual countries. This relates both to preferential conditions with regard to taxes and levies, as well as the existing procedures for issuing permits;

- specific routes and border crossings are fixed by some of the bilateral agreements and therewith limit the actual choice of transport routes for operators from foreign countries;

- the fact that quotas of permits issued have to be equally matched necessitates numerous rounds of negotiations, while the shortage of permits leads to significant delays incurred by hauliers before departing for an operation and/or at border crossings;

- the distribution of permits among carriers is linked in certain cases to corruption and discrimination towards individual hauliers;

- the procedures for agreeing and issuing permits are frequently too bureaucratic and not transparent;

- the permit schemes sometimes create complex formalities that lead to delays and discriminatory processes. For example, Chinese truck operators arriving at the Khorgos border crossing need to go to Almaty to obtain the permit;

- bilateral quotas are often too low, resulting in extremely high prices for road permits on occasion.

Driver's visa formalities

Procedures related to visa issuance also have a strong negative impact on the shipment of cargo along EATL routes, due to the following issues:

- because of multiple border crossings along each proposed route, drivers will have to obtain visas for several transit countries;

- in a number of countries, drivers' visas are not issued at the border, but only at the Consular Sections of their embassies in the country of the driver's residence. This means that drivers are forced to temporarily relinquish their passport, which leads to loss of potential working hours. In addition, if the visa has to be processed *en route* in another transit state, further delays will occur.

Kyrgyz, Tajik and Turkish hauliers, for example, are faced with this problem when travelling through Turkmenistan;

- the procedures for issuing visas are frequently discriminatory – given equal conditions, drivers from one country obtain visas quicker and with fewer formalities than drivers from other countries;

- the visa procedures in the transit countries are not synchronized (neither in the list of documents required, the charges nor the length of time required for processing).

- anumber of countries do not offer long-term multi-entry visas.

- long processing times and high consular charges are a serious disincentive (for example an entry visa for Iran takes up to two weeks to process and a transit visa is issued for a maximum of 10 days).

It is reported by market players that drivers' visa formalities are sometimes used by national transport authorities as protectionist measures.

Arbitrary transit charges

High transit fees and restrictive permits for international road transport are constraining intra-Asian trade and trade with Europe. Road transit fees in certain countries in effect are charges on access to the market rather than charges for infrastructure use. They usually discriminate between operators from different countries, between permit and non-permit holders, and between domestic and foreign operators. The fees are often unclear and changed without notice.

III.6. Rail transportation specific barriers

Railway gauge change

Just as in case of road, barriers for rail transportation most often manifest themselves at the border crossing points. The "classic" problem for international rail transportation is the necessity to shift from one gauge to another at certain border points.

Most of the Western European EATL countries as well as China and Afghanistan use standard 1435 mm gauge. Former Soviet Union states and Finland use the "Russian" 1520 mm gauge. Therefore, some transfer operations are necessary. This is either the cargo transshipment between different types of railcars or (usually in case of passenger transportation) – change of boogies.

Trans-loading the wagons/containers and require specific facilities and equipment such as forklifts, cranes, etc. The equipment of the border crossing points is uneven. For example, Alashankou on the Chinese side has four trans-loading centers, each equipped with a crane that can handle 36 tons, but Dostyk on the Kazhak side, where goods are trans-loaded when travelling eastward, only has one trans-loading facility.

The time spent to change gauges sometimes causes significant delays. The situation worsens when there are not enough tracks for cargo transfer or when there is a long queue of trains during peak periods.

Railway system change

Even if the neighbor countries use one and the same railway gauge, the difference in railway systems lead to operations at the border. “Different railway systems” here means:

- technologies (electric power system, signaling and communication, rolling stock requirements, etc.)

- documentation (waybills, wagon lists, etc.);

- legal network accessibility for foreign locomotives/wagons/locomotive brigades;

- special requirements (for example, Chinese Railways place an armed officer on the train, which often causes delays).

Operations caused by these differences can include:

- documentary checks for matching between consignment notes, wagon lists, and cargo documents.

- classification and switching of wagons, forming the trains to carry the cargo transshipped at the border crossing point. Timely availability of rolling stock seems to be a cause of long waiting times, in particular when trains cross into Europe where different load and train length require the splitting of trains.

- exchange of locomotives and crews;

- rolling stock technical inspections;

- preparation of rail transfer documents.

Delays at border crossing range from 6,5 hours at Saryagash (Kazakhstan) to 42,7 hours at Alashankou (China). The time required for break-of gauge operations ranges from 2,8 hours to 2,5 hours, the classification of trains from 1,7 hours to 1,2 hours, and the customs clearance from 3,7 hours to 15,1 hours.

III.7. Intermodal transportation specific barriers

The main reported specific intermodal transportation problem on the EATL routes is the ferry crossings over the Caspian and Black Seas. Although the situation with the Black Sea ferry crossings is currently stable, the one in the Caspian Sea is significantly more complicated. Trucks travelling from Asiato Europe face delays due to the lack of ferry timing information, and because ferries are primarily geared to transport railway containers (railway companies are given preference on embarkation).

The small quota of ferry slots allocated to lorries leads to queues and lengthy delays in ports, made worse by the short validity period of Turkmen transit visas for drivers. In view of the latter, the development of intermodal transport linkages, coordinating road and maritime connections over the Caspian Sea, requires particular attention in the near future.

III.8. Political situation

"Political" issues can be divided into two segments: caused by international or domestic political conflicts and related to unclear or inconsistent transport and trade policy.

EATL trade and transport routes from time to time suffer from "high policies" instability. Political conflicts amongst EATL countries lead to permanent border closures. Such changes not only create disruptions but also increase uncertainty amongst the operators about the actual situation and reduce the efficiency in the transport chain as contingency times are frequently built into the schedules.

For example, the trade sanctions imposed by the EU-28 and Russia on specific goods had negatively influenced the trade and transport situation. There are reports that some transit cargo is refused to transit by the Federal Customs Service of the Russian Federation(FCS). Some market players are intending to 'bypass' the sanctions regime and design long, complicated and expensive logistics schemes.

In 2016 certain political groups blocked the transit roads in seven border regions of Ukraine stopping Russian trucks bound to Western Europe. Russia undertook the reciprocate measures; the incident damaged the trade badly.

The political instability of certain countries is an additional barrier to trade, and internal unrest has in certain cases resulted in periods of closed borders (as was the case in Kyrgyzstan). Border crossing point between Tajikistan and Kyrgyzstan have been closed frequently in 2013 and 2014 because of border incidents. Uzbekistan frequently closes its borders with Tajikistan in the Fergana valley for short periods, such as 10 days, for the festivities of the Independence Day.

Transport, trade and customs policies instability also is typical for the EATL region. Governments may change the classification of a border crossing points putting in place restrictions for cargo movement. The Kyrgyz Republic for example has re-classified the Karamyk border crossing with Tajikistan, so that transit cargo can officially no longer exit from there to Tajikistan. As Karamyk is an important crossing point for goods from China into Central Asia, the border crossing point is still used for transit cargo from China but truck drivers now have to add 100 km of to their travel route to drive to the next border post to get the exit stamp on the Customs declaration.

Many of the EATL countries are party to the TIR Convention that puts in place a common customs transit clearance procedure and a cross-border transit guarantee, the so-called TIR Carnets. The TIR Convention and its application by Customs authorities is crucial for Central Asia, Eastern European and Caucasus countries and is broadly believed to be well functioning and accepted by Customs authorities. In 2013 the Federal Russian Customs Office of Russia (FCS RF) had introduced the limitations for Carnet TIR procedures; additional securities for Carnet TIR holding transport are required. This decision did not only impose additional costs on international road traffic. The entire functioning of the TIR system had been put in doubt; a lot of concern,

confusion and uncertainty with regards to the new procedure and the validity of the carnet is in place across the market.

III.9. Mismatch of public and private interests

The opinion reflected in several reports [*] based on field visits to border-crossing points and interviews with national and international exporting and importing companies is that the interests of private industry, government, transport and border-control agencies do not match.

The Ministries of Transport and border-control agencies are concerned with border-crossing security, safety and revenue collection issues; in certain cases, their concerns are addressed through a control approach that does not balance them with the needs for national trade facilitation. Sometimes they are not in the position to assist foreign operators and/or states who can benefit from fast and cheap transit.

On the other hand, private companies engaged in supply chains try to avoid delays in operations along their chosen supply routes, paying extra costs as a result. Their staff focuses efforts on tracking their shipments and search for expediting solutions by interfacing with government and border-crossing point officials. Some private companies do not expect policy, procedure and management change and continue to trade despite the challenges, passing on additional transaction costs to the consumer.

IV. EATL: LOOKING INTO THE FUTURE

The initial SWOT-analysis of the EATL transport communications was developed during Phase II of the EATL-project to give the overall picture of a project. Results of SWOT analysis help to gain maximum benefits from strengths, outline the ways to compensate weaknesses, minimize threats and take the greatest possible advantage of opportunities.

The current section of the report contains the upgraded version of the SWOT analysis of the EATL project reflecting the changes and trends identified in the course of the project Phase III.

The following are considered to be EATL inland transport connection strengths:

EATL inland transport routes can often provide faster delivery than maritime routes for the transport of goods between the EU and the Asia-Pacific region.

EATL inland transport routes are an important transport option for EATL landlocked developing countries in the region for their access to international markets and their participation in globalization which means the constant objective attention to their development.

There are unutilized capacities along some parts of the EATL road and railway routes running East-West and North-South.

Some EATL routes are currently the preferred way for certain countries along the EATL to reach their major trade partners.

EATL routes are the integral part and physical extensions of the Trans-European Transport Networks, Pan-European Corridors, AGR, AGC, European Agreement on Important International Combined Transport Lines and Related Installations (AGTC), Asian Highway (AH) network, Trans-Asian Railway (TAR), Trans-European Motorway(TEM), Trans-European Railway (TER), TRACECA and other related corridors and networks of high significance for Europe and Asia. Thus their development is within the general trend of Eurasian trade facilitation supported by numerous international initiatives.

There is political commitment for the development of EATL inland transport routes expressed by concerned governments and various international and subregional organizations promoting related initiatives.

Local partnerships are being developed along the inland EATL routes among key players, including non-governmental organizations and bodies. In principle these partnerships

Since a good portion of EATL routes are in the planning and design phase, they can be constructed according to the best available technological and environmental standards and practice.

The following are considered to be general weaknesses observed on EATL inland transport links (not necessarily present in all the EATL countries):

The costs of goods transportation via inland EATL routes are generally too high compared to competing routes containing the maritime transport leg. The reason for that is not only the objective transport-economic factors but also the (sometimes) unreasonably high transit tariffs, fees and charges that pursue, primarily, the fiscal objectives;

The quality of transport and logistic services across the EATL corridors is rather low compared to that of maritime routes and usually does not match the market standards of developed countries;

Intermodal transportation is generally poorly developed across the EATL region, mainly in the Central-Asian part of it. There are relatively few intermodal services provided on the continental Euro-Asian market; intermodal logistic centers are rear on the transport infrastructure of the region;

Numerous physical and non-physical barriers along the inland EATL routes render transport operations difficult, costly, time-consuming, unpredictable and uncertain. These include, in particular:

inadequate, underdeveloped and poorly maintained road and rail networks with many bottlenecks and missing links on them;

cumbersome and inefficient control procedures leading to long delays at border crossing points;

multiple cargo checks *en route*, mandatory transit convoys, numerous agencies at borders requesting to approve documentation and numerous fiscal charges to be paid at certain points along the routes.

many border posts are poorly equipped and some are closed

transport restrictions, rules and procedures are frequently changed without notice.

The market institutions as well as the conditions for competitive business development are often underdeveloped in EATL countries, particularly:

market oriented railway reforms are not in place and many national railway systems are state-owned and keep their monopoly position. As a result rail rates are uncompetitive, inflexible and often contain hidden charges. The intentions of private operators to arrange competitive railway services often has no legal basis;

although many truck operators along EATL countries are now private, transport monopolies are still in place in some counties, operating under high tariffs and offering inadequate levels of service;

the institute of freight forwarders, cargo integrators, 3 PL providers and other market players facilitating trade and transportation is not adequately developed in many countries(as well as the legal base for their activities)

The level of international co-ordination and harmonization across the EATL routes is not high enough to provide smooth traffic of vehicles and goods. In particular:

there is no harmonized customs transit regime along all EATL routes;

international road permit quotas are in force along EATL, while the grant of visas to professional drivers is cumbersome and costly;

the heterogeneity of existing transport and transit rules and regulations along the inland EATL routes makes monitoring of the EATL corridors situation quite difficult

some regional transport initiatives are aimed at regional competition rather at co-operation within the EATL context;

intentions towards co-operative development of infrastructure are not adequately supported by mutual practical steps, in particular - investments

Widespread corruption along some EATL road routes not only forces international operators to make illegal payments but also makes officially declared procedures unreliable.

There are safety concerns along parts of the EATL road routes and international operators lack security.

Limited institutional and human resource capacities exist.

Generally low level of investment potential of many EATL countries is currently aggravated by the economic crisis that compels the governments to fulfil primarily urgent needs like health, housing, pensions, etc.

Due to low transport network development and insufficient amount of alternative routes (in comparison with the European region) one particular weak segment or missing link in one country can render a whole EATL route economically unviable for international transport.

The following are considered to be EATL inland transport connection opportunities:

In a long term, continuous globalization is expected to increase the transport of goods between Europe and Asia. The rapid growth of China and India generates greater transport demand and thus new opportunities for inland EATL routes.

Several events and trends are expected to promote the development of EATL routes, particularly:

The start of New Silk Way initiative

Creation of the Customs Union between the Russian Federation, Belarus and Kazakhstan

Accession of the Russian Federation (2012), Tajikistan (2013) and Kazakhstan (2015) to WTO;

Economic reforms in certain EATL countries improving the business climate

Developing trade among EATL countries, in particular between landlocked developing countries in Central Asia and their transit developing neighbors

Certain infrastructure projects are being implemented improving the transport-logistic network within the EATL area

A portion of “time-sensitive” transit can be redirected through inland EATL routes. Introduction of “slow steaming” on the maritime routes is expected to enlarge this segment

Further expansion of universal railway legal regime, in particular – enlarging coverage of the CIM/SMGS consignment note along EATL railway routes would facilitate rail EATL transport.

Railway reforms in certain EATL countries improve the environment for long-haul block-trains

Growing practical experience in long-haul container train operation

Best decisions and practices in facilitating border-crossing procedures are generalized, described and open to implementation

Increased efforts and progress in regional cooperation and integration among countries offer new opportunities to address existing challenges in a coordinated way.

The following are considered to be EATL inland transport connection threats:

The increasing trend of economic nationalism, persisting conflicts and political instability along some parts of EATL routes

The extremely low competitive transport costs of maritime routes that maintain them as the most attractive transport option for the majority of supply chains in Euro-Asian trade

Global warming and the expected opening of the Arctic North-West passage to container traffic may result in even more competitive maritime routes

Cost-reducing innovations in the air transport sector also offer challenges.

EATL Roadmap to 2030 ("Challenges – Opportunities – Solutions" matrix)

This section describes proposed steps on national, regional and multilateral level aimed to further EATL development.

The main goal of Project Phase III is to identify the measures that will make the EATL overland links operational.

In fact, these links are already functioning accumulating the everyday experience of trade and transportation over the surface routes connecting Asia and Europe. In this way, the task is to generalize this experience and formulate the coordinated measures that will facilitate the further growth of EATL routes utilization.

Table * presents the *Challenges-Opportunities- Solutions* matrix for EATL area further development. Main project challenges are put together with the opportunities identified during the SWOT analysis.

The principle solutions indicated in the table are itemized below in the form of the recommendations in the following spheres:

- policies;

- facilitation, procedures, and institutions;

- infrastructure development.

Table *.*Challenges-Opportunities- Solutions* matrix for EATL area development

	Challenges		
Opportunities	**POLICIES**	**FACILITATION, PROCEDURES AND INSTITUTIONS**	**INFRASTRUCTURE**
In long-term perspective – increasing trade volumes between Europe and Asia. Actually developing trade between the EATL countries	Continue the activities within the EATL project in co-ordination with other similarly focused initiatives	Movement towards the universal legal regimes and administrative procedures across the Eurasian area based on best international practices	Eliminating bottlenecks and missing links on the potentially most effective overland transit routes and trade routes in the EATL area
Market-oriented economic reforms in certain EATL countries	Analyzing and dissemination of best decisions and models in the sphere of international trade and transport	Introduction of best international practices in new-adopted trade and transport legislation	Encouraging introduction of public-private –cooperation and other market-oriented forms of infrastructure projects financing
Increased efforts and progress in regional cooperation and integration. Development of series of regional initiatives and agreements. Further implementation of infrastructure projects in the EATL area	Improve the monitoring and high-level coordination of regional initiatives, programs and projects	Inter-harmonizing provisions of regional and bilateral agreements	Coordinating of infrastructure programs and projects. Developing the "system approach" to infrastructure programs developing the transport and logistic infrastructure in the interests of the entire economy
Growing practical experience in long-haul overland trade, in particular – in container train operation	Develop co-operation at the business level together with intergovernmental cooperation	Developing institutions and procedures facilitating the long-haul container trains operation and related activities	Advanced development of railway and logistic infrastructure providing effective container transportation
Relative growth of the "time-	Encouraging development of the freight-	Paying special attention to	Paying special attention to

sensitive" segment of cargo in the Eurasian trade	forwarding and high level logistic providers segment	procedures accelerating trade and transport operations	infrastructure projects providing time-effective transportation
Railway reforms in certain EATL countries. Expected expansion of universal railway legal regimes	Put railway reforms among highest policy priorities	Introduction of best international experience in newly adopted railway legislation	Introduction of effective mechanisms of railway infrastructure development in reform programs

V. MAIN RECOMMENDATIONS

POLICIES

EATL seems to be the most comprehensive of all initiatives aimed at facilitation of trade and transportation across the Eurasian region. Thus it seems reasonable to continue the activities under the EATL "umbrella" in the format that will be found appropriate by the EATL countries

Continue the activities within the EATL project in co-ordination with other similarly focused initiatives

accede to relevant international, regional and subregional conventions and other legal instruments related to transit transport and trade facilitation

formulate national transport policies including transit and border crossing provisions with the participation of all relevant stakeholders

integrate EATL achievements in national transport plans and programs

Analyzing and dissemination of best decisions and models in the sphere of international trade and transport

carry out studies on transport-logistical competitiveness based on internationally recognized methodologies

promote policies helping national firms, especially small and medium-sized enterprises, to participate better in international trade and transport

simplify and synchronize visa issuing procedures, introduce long-term multi-entry visas where possible

Improve the high-level coordination and monitoring of regional initiatives, programs and projects

improve the monitoring of infrastructure developments, execution of transport facilitation plans, transport corridors functioning

improve collection and dissemination of transport and trade statistics and other relevant data

collaborate on prompt exchanging trade and transport data between the neighbor countries across the EATL routes

promote harmonization of regional policies, in particular – within regional initiatives and programs - so as to strengthen regional synergy, competitiveness and regional value chains

Support national transport and trade facilitation action plans and committees with participation of all the groups of stakeholders

develop the harmonized approach in trade and transport activities monitoring and forecasting to produce reliable commonly used forecasts

Develop co-operation at the administrative and business level together with intergovernmental cooperation

continue and enhance coordination and cooperation of national agencies and bodies responsible for all kinds of border and customs controls and procedures

promote involvement of transport business associations in public-private partnership, training and knowledge-exchange projects

establish or strengthen national committees on trade and transport facilitation, with the involvement of all relevant stakeholders

introduce the early-warning systems to inform the countries along transport corridors about the changes in the administrative regimes, charges, infrastructure restrictions, etc.

Encouraging development of the freight-forwarding and logistic providers segment

provide legal conditions for market competition development in the transport and logistic sector

undertake efforts to build human capacity in the logistic sector (training, educational programs, international exchange, etc.)

encourage establishing the associations and other non-governmental structures expressing the interests of market players involved in international trade and transportation

Put railway reforms among highest policy priorities

whatever model of the railway reform is used, monopolism in operations should not be in place in the industry

create the favorable conditions for independent national and foreign entities to undertake railway operations

provide the mechanisms for prompt changing railway tariffs according to the market situation

provide necessary market conditions in neighbor segments (e.g., in wagon manufacturing) to avoid lack of equipment and services used by railways

FACILITATION, PROCEDURES AND INSTITUTIONS

During the crisis times high-scale infrastructure investments seem to be a serious burden for many EATL countries. That is why institutional reforms and trade facilitation should be the leading priority in comparison with infrastructure projects

Movement towards the universal legal regimes and administrative procedures across the Eurasian area based on best international practices

standardize trade and transport documents

encourage shift to electronic documents

implement or scale up trade facilitation initiatives such as single-stop inspections, single windows for documentation, electronic payment, etc.

avoid fixing certain routes or border crossing points for international trade and traffic

avoid discrimination in visa regimes for drivers; offer long-term and multi-entry visas

avoid arbitrary derogations or limitations of international agreements concerning trade and transportation

use standardized practical tools to identify the obstacles to trade and transport flows, e.g. *the World Bank Trade and Transport Facilitation Assessment: A Practical Toolkit for Country Implementation*

Introduction of best international practices in new-adopted trade and transport legislation

gradually liberalize road transport services, taking into account specific circumstances in particular countries

introduce the rule of obligatory "early warning" about the changes in rules, tariffs, and procedures related to international trade and transport

provide special easy control procedures for market players with good reputation

limit compulsory convoy or escort by high risk commodities only

implement the best practices in using internationally adopted regimes and procedures like TIR

implement legislation allowing the operation of long-and-heavy road vehicles across the main trade corridors and in the hunterland of logistic centers

Inter-harmonizing provisions of regional and bilateral agreements

exchange information and experience of implementation of trade and transport agreements

promote multilateral and regional permit systems for road transport aimed to eliminate quantitative limits and focused on provision of quality and safety of road transport services

strive to avoid bilateral agreements when and where multilateral agreements exist

Developing institutions and procedures facilitating the long-haul container train operation and related activities

promote a better business environment so as to assist all the interested parties to organize and operate long-haul container trains

encourage the establishment of container pools across the overland operators

encourage organizing of training programs and inter-railway staff exchange programs

organize research work analyzing the successful cases and the failures in overland container train operations

introduce the simplified border procedures providing all the necessary conditions for their actual efficiency for market players

analyze the possibility of developing "Terminal services standard minimum" for use by the terminal staff across the EATL corridors - in a form of recommendations or "Best practices manual"

Paying special attention to procedures accelerating trade and transport operations

streamline and simplify border crossing procedures and practices and harmonize rules and regulations, including accession to relevant international conventions

identify non-physical barriers and evaluate their influence according to agreed common benchmarking procedures

use available customs transit systems (e.g. TIR) to expedite transport and transit operations

avoid maintaining, seeking or adopting any arrangements establishing quotas or other quantitative restrictions to international transportation

simplify visa requirements and formalities for personnel involved in international transportation

remove where possible additional internal checkpoints

record and analyze the reasons for border-crossing point congestion, queuing and time delays

develop and implement the system of border-crossing point Performance Indicators to benchmark the current situation and to evaluate the results of investment projects and changes in procedures

decrease the number of documents necessary for export or import procedures

introduce optimization of border crossing procedures on the basis of through joint operations and sharing of data

Introduction of best international experience in newly adopted railway legislation

follow the provisions of the Joint declaration expressing willingness to create a common legal regime for rail traffic across Asia and Europe of 2013

co-operate in the development of general conditions of transport for Euro-Asian rail transport(GTC EurAsia)

introduce the CIM-COTIF waybill as a transport document for international rail transportation

introduce competition within the railway sector using the most effective international models

envisage the legal conditions for the access of foreign rail operators to the national network, at least, in container train operations

INFRASTRUCTURE

To date, the EATL transport network has been very nearly formed and proved its efficiency foe certain trade lanes and commodities. Numerous initiatives, programmes and projects are undertaken to improve the infrastructure in the EATL region. It seems

reasonable to focus the efforts on coordination, standardizing of infrastructure parameters and implementing the most effective "point-focused" projects

Eliminating bottlenecks and missing links on the potentially most effective overland transit routes and trade routes in the EATL area

Focus at identifying and remove obvious physical bottlenecks rather than at high-scale infrastructure projects

Road and rail transport should complement each other rather than compete in the Eurasian corridors

Logistic centers development in the nodes of the EATL corridors should be envisaged

Encourage the development of international logistic hubs

Encouraging introduction of public-private –cooperation and other market-oriented forms of infrastructure projects

develop the necessary policies and regulatory frameworks to promote private sector involvement in infrastructure development

promote enabling environment to attract foreign direct infrastructure investments

Coordinating of infrastructure programs and projects. Using the "system approach" to infrastructure programs developing the transport and logistic infrastructure in the interests of the entire economy

focus at developing the limited number of transport corridors across the national territory in order to gain the maximum efficiency and economies of scale

encourage creating transport-logistic and industrial clusters in order to fostering knowledge networks and links among companies

promote economies of scale for transport systems through intermodal transport development, creation of dry ports, logistic centers, etc.

provide development of sea ports coordinated with the development of port hinterland connections and the infrastructural objects located in the hinterland and directly linked to sea ports

motivate the developers and operators to co-operate in creation of high-scale multipurpose logistic sites serving domestic, international and transit trade and transportation

create logistic centers and dry ports as market-oriented nodes of supply chains improving the competitiveness of the entire EATL system

harmonize the axle limits along the main road routes to provide the effective road transportation

Further improve GIS applications and develop tools to support “smart” decisions in transportation and supply chains

Advanced development of railway and logistic infrastructure providing effective container transportation

encourage development of multy-purpose logistic centers with intermodal terminals

development of effective reloading capacities for containers and other intermodal units in the gauge-changing points

promote co-operation of railway and port authorities/operators in order to create effective railway intermodal terminals “on the quay” to ensure fast and cost-effective transshipment of containers

promote the cross-border cooperation of railway infrastructure administration to provide the harmonized technologies for container trains’ border crossing

replace the boogie change procedures for container trains to effective container transshipment

Paying special attention to infrastructure projects providing time-effective transportation

Ensure technical and operational interoperability of railway and road systems of neighbor countries

Develop project in sea ports aimed at improvement of sea-rail interoperability to ensure the synergy between the two modes

encourage harmonization of railway technological standards and road axle load limits to facilitate regional connectivity, where feasible

implement IT-systems to ensure transparency in border crossing procedures, customs and transit transport rules, regulations, fees and charges

upgrade border crossing point equipping them with modern surveillance methods for security (vehicle scanning equipment, etc.), as well as the necessary IT infrastructure and supportive systems

develop a Border-Crossing Point Design Guide for border crossing points of different types and scales based on BCP best-practice examples

Introduction of effective mechanisms of railway infrastructure development in reform programs

establishing the independent bodies responsible for infrastructure management and development

introduction of adequate infrastructure fees within the railway industry

encourage private participation in development and operation of certain infrastructure objects (terminals, railway logistic centers, railway sections built and operated by private companies)

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ANNEXES