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TRANS TRITIA

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Intermodal Logistic Centres/Terminals at TRITIA area - Future

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Content

1. INTRODUCTION

The study explores the possibilities and technical requirements for moving part of the freight transport volume in the TRITIA region from road to rail, particularly on the routes of the European corridors. The main purpose of D.T2.3.2 is to describe the opportunities for intermodal transport in the investment, organizational and legislative areas and be input for D.T2.3.4.

1.1. Definition of the area of interest

The area of interest is the TRITIA region, ie economically and thus also the traffic - very exposed area of the border area of the Republic of Poland, the Czech Republic and the Slovak Republic. The region covers an **area of 34,069 km2** and has a population of **7,885,000.**
There are two towns with approximately inhabitants - **Katowice** 312 thousand and **Ostrava** 294 thousand and 15 other cities with more than 80 thousand - Częstochowa 227 thousand, Sosnowiec 222 thousand, Gliwice 197 thousand, Zabrze 189 thousand, Bytom 185 thousand, Bielsko-Biała 174 thousand, Ruda Śląska 145 thousand , Rybnik 141 thousand, Tychy 130 thousand, Dąbrowa Górnicza 129 thousand, **Opole** 128 thousand, Chorzow 114 thousand, Jaworzno 96 thousand, Jastrzębie-Zdrój 94 thousand, Zilina 83 thousand. (settlements of regions highlighted in bold).

Figure 1 – Region Tritia

1.2. Project aim

The project aims to improve coordination between freight transport stakeholders with the aim of increasing multimodal environmentally friendly freight solutions. Means include improving information, planning and coordination between regional authorities, transport network managers and freight participants. The project focuses on cross-border, transnational and interregional cooperation in order to strengthen economic and social cohesion in order to achieve the objectives defined in the Europe 2020 strategy or the EU White Paper on Transport. The specific objective is to explore the possibilities, technical requirements and organizational prerequisites for shifting a significant part of the traffic load from the transport of products from road to rail.

2. EUROPEAN CONTEXT

2.1. EU white paper

The full title of the document is 'Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system' (COM (2011) 144 final).
The objectives formulated in this document are primarily to minimize the environmental impact of transport. In particular, Europe's dependence on oil imports should be reduced, while transport carbon emissions should fall by 50% by 2050 in the context of increasing transport and promoting mobility. In view of the importance of railway transport in achieving these objectives, there is a substantial intention to transfer 30% of road freight transport over 300 km by 2030 to other modes of transport, such as rail or shipping, and by 2050 it should be more than 50 %.

2.2. TEN-T

"Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010 / EU (TEN-T)" does not explicitly include the Odra waterway, but some of the principles contained in it are indicative.
For example, it is a paragraph (31): "The trans-European transport network should, by far, provide a basis for the large-scaled eployment of new technologies and innovations, which can, for example, contribute to increasing the overall efficiency of the European transport sector and reducing its carbon footprint. From the point of view of purely transport, paragraph 32 can be mentioned: "The trans-European transport network must ensure efficient multimodality in order to enable passengers and goods to have a better and more sustainable choice between modes of transport and to allow the consolidation of large volumes transported over long distances.

Figure 2 – TEN-T network

2.3. Revision 92/106 / EEC - Increasing the competitiveness of combined transport

Revision of the proposal for a Directive of the European Parliament and of the Council amending Council Directive 92/106 / EEC on the establishment of common rules for certain types of combined transport of goods between Member States. The idea is to amend the original 1992 directive and become a world leader in the decarbonisation of transport. The directive is intended to encourage the transfer of traffic from road to rail and water. National legislation is not sufficient, as traffic transfer usually takes place on interstate routes, as European states are not generally large enough to have the potential to transfer traffic on national relations.
The aim of the amendment of the Directive should be to introduce measures to increase the competitiveness of combined transport and its share in the freight transport market.
Combined transport is to be understood as a complete system - road / rail vehicle, transport unit, transport route, terminal / transhipment.

Content of the Directive:

- Definition (Art. 1) - combined transport (transport of units, suitable terminal up to 150 km - notification to the Evroep Commission), transport units, Empty transport units, international KD
- The term 'airline' (Art. 1; 3) - 150 km limit - distance measurement for road transport - tax issues and verifiability
- Transport documents and checks in road transport (Article 3) - operations in CD defined (data in the transport document - terminal confirmation), checks according to Regulation 1072/2009
- Cabotage (Art. 4) - Link to the mobility package - whether or not cabotage is involved with a view to establishing the length of the road section within the CD and applying the rules of Regulation 1072/2009

- Statistical monitoring (Article 5) - reporting on the development and conditions of the CD market, infrastructure development and implemented support measures in the area of national support (EC regulation)
- State aid + Terminals (Art. 6) - form of aid and clear procedure for obtaining state aid

The Czech Republic submitted a working document with alternative proposals to supplement the Directive.
In the area of rail transport (and its financial burden), the Czech Republic proposes to include its support in the directive (eg in Article 6), similarly to the tax advantage for road transport operating KD.
Support for combined transport trains should cover the following areas:

- Reduction of the railway infrastructure charge if the prices / charges on the parallel road / motorway are less or none;
- Reduction of charges / sanctions for unused capacity;
- Relief from renewables fees;
- Priority on freight corridors (RFC) - application of Regulation 913/2010 on freight corridors and TEN-T priorities

2.4. Low carbon economy

The document "A Road map formoving to Competitive to Low Carbon Economyin 2050, COM (2011) 112 final", contains above all the intention to keep climate change below + 2 ° C. In essence, the reduction in green house gas emissions by 2050 is by 80-95% compared to 1990. Of course, these plans also concern transport.

2.5. Smart and sustainable growth

The document entitled "A strategy for smart, sustainable and inclusive growth, COM (2010) 2020 final", contains five main objectives. They define what the EU should achieve by 2020. One of these targets relates to climate and energy. The Member States have committed themselves to reducing green house gas emissions by 20 % by 2020, increasing the share of renewable energy in theEU's energy mix to 20 % and achieving the 20 % improvement in energy efficiency. Subsequently, the EU summit on 23 and 24 October 2014 brought the agreed targets by 2030 (30 % reduction in CO2 production, 30 % renewable sources, 27 % energy efficiency improvement). In the EU's winter energy package of 30 November 2016, it is proposed to increase energy efficiency by 2030 by 30 %. This target is unlikely to be achieved without major changes in transport - ie greater use of less energy-intensive intermodal transport.

2.6. Green deal - Green agreement for Europe

The Green Agreement for Europe is a strategic material of the newly composed European Commission that is being developed on its soil. Currently, its first version is submitted for public comment. While some of the provisions of this material are particularly 'sustainable' (converting 75% of volumes to sustainable modes, including national, zero carbon footprint,

etc.) 'very ambitious', it needs to be taken constructively and take the good one thoughts and directions it brings. These include, in particular, the development of transport infrastructure, the reduction of the carbon footprint of transport, the development of more environmentally friendly modes of transport, etc. The Czech Republic, through direct representation and further participation of the Ministry of Transport, will endeavor to actively influence the final design of this material
Given the fact that both investment and legislative adjustments are usually made with a view to decades, it is appropriate that current proposals should, as far as possible, fit the proposed Green Deal material.

3. NATIONAL CONTEXT

Of course, all participating countries also have their national documents, which respond both to the current and promising state of the intermodal transport and to the relevant European documents.

3.1. Czech republic

3.1.1. Government Resolution No. 978/2015

Report of the Ministry of Transport on Government Implementation 978/2015
Part 7. Tasks of the Minister of Transport
- a) enable, by 31 December 2023 from the Operational Program Transport, support for the construction of pumping and charging infrastructure for alternative drives in transport,
- b) ensure completion of the backbone network of road capacity capacities for motor transport by 31 December 2030,
- c) to allow by 31 December 2020 from the Operational Program Transport to support the construction of bypasses of towns and municipalities referred to in Article 18 of the Program and in air quality improvement programs for individual zones and agglomerations,
- d) to submit to the Government by 30 June 2016 information on how to ensure the transfer of at least 30% of freight traffic over 300 km from roads to rail,
- e) issue, in cooperation with the Minister of the Environment, an amendment to Decree No. 527/2006 Coll., on the use of toll roads and amending Decree of the Ministry of Transport and Communications No. 104/1997 Coll. Roads, as amended, reassessing the charging of roads bypassing cities with effect from 1 January 2017,
- f) to elaborate, in cooperation with the Ministers of the Interior and the Environment and the Government, by 30 June 2016 to submit a draft amendment to Act No. 56/2001 Coll., on Conditions of Vehicle Operation on Roads reduction of emissions in road vehicles, including the introduction of sanctions for the removal of such installations, with the proposed effect from 1 July 2017,
- g) to elaborate, in cooperation with the Minister of the Environment and the Government, by 30 June 2016, submit a draft amendment to Act No. 56/2001 Coll., on Conditions of Vehicle Operation on Roads,

3.1.2. Transport Policy of the Czech Republic for 2014-2020 with a view to 2050

The approved transport policy (Government Resolution No. 449 of 12 June 2013) accepts all decisive documents and intentions of European documents. Therefore, all the considerations and calculations contained in the chapter on relevant European documents are fully compatible with the Transport Policy of the Czech Republic.
The following is worth mentioning:

- Regulation of night road haulage
- Support for inland waterway transport under the Naiades and Naiades II programs
- Ensure the functioning of rail freight corridors - modernize by 2030
- Ensure the viability of large railway junctions
- Expansion of regular multimodal freight lines
- Internalize external costs as a source of funding for transport infrastructure

3.1.3. Phase 2 transport sector strategies

Phase 2 transport sector strategies were approved by the Czech Government Resolution No. 850 on 13 November 2013. The strategies deal with future development scenarios, transport forecasts, identification of measures for the development of transport infrastructure, financial possibilities and implementation of transport sector strategies.

This strategy identified bottlenecks in the TEN-T network - the Ostrava hl.n. - insufficient parameters of line 301A Dětmarovice - Mosty u Jablunkova. Furthermore, bottlenecks on the railway infrastructure in terms of insufficient capacity - within the TRITIA region sections on line 305B Bohumín - Ostrava hl. n., Ostrava hl.n. - O.Svinov, line 321 Odb.Odra - Ostrava Svinov, line 301F Ostrava-Svinov - Opava east, line 302B Č. Těšín - Frýdek Místek, line 302A line O.Kunčice - Frýdek Místek, line 310A line Opava East - Krnov - Valšov and on the line 301G railway station Ostrava střed.
The modernization of the Olomouc - Opava - Ostrava line has been included in the list of measures on the railway infrastructure.
Within the RS / VRT routes, the strategy included improving the quality of interconnections in the Přerov - Ostrava - CZ / PL state borders.

3.1.4. Freight transport concept for 2017-2023 with a view to 2030

This document was adopted by the Government of the Czech Republic in its Resolution No. 57 of 25 January 2017. The text analyzes in detail the freight transport market, the prerequisites for its further development and the implementation of the relevant European documents. It also defines suitable regions for the placement of terminals for continental combined transport and the position of neutral (public) multimodal transport terminals. In terms of the structure of meeting freight transport needs, it also analyzes the preconditions for the White Paper target of shifting 30% of the current road freight transport over 300 km in the EU to rail or waterborne transport. It is noted that the Czech government also signed up to Resolution No. 978/2015 to move 30% of road freight transport over 300 km to rail or

water transport by 2030.
Selected measures:

- ensuring interoperability, harmonizing charging
- support for routes for oversized transport
- support for multimodal and combined transport
- greater use of rail and water transport over longer distances
- internalization of externalities
- liquefied gas in road and water transport
- support for public combined transport terminals

3.2. Poland

3.2.1. National Development Strategy

On February 14, 2017, the Council of Ministers adopted a new medium-term development strategy for the country of SRD (called the Strategy for Responsible Development until 2020 (with a perspective to 2030)), which is a key document in the area of medium and long-term economic policy of the state. The objectives, directions of intervention, strategic actions and projects indicated in the SRD should be reflected in the strategic documents. In this sense, the SRD is the basis for the preparation of new sectoral strategies, including transport strategy.
In accordance with art. 9 of the Act on the principles of conducting development policy, the SRD is a document specifying the basic conditions, objectives and directions of the country's development in the social, economic, regional and spatial dimension, covering the period up to 2020, with a perspective up to 2030, implemented by development strategies (including Development Strategy) Transport 2030) and through programs, taking into account the EU programming period. The development of transport is the basis of an effectively functioning economy, directly affecting the implementation of the main objective of the SRD, i.e. creating conditions for the growth of income of Polish residents while increasing social, economic, environmental and territorial cohesion, as well as three specific objectives:

- sustainable economic growth based increasingly on knowledge, data and organizational excellence;
- socially sensitive and territorially sustainable development;
- an effective state and institutions for growth and social and economic inclusion;

To achieve the above SRD objectives will be supported by the implementation of intervention directions and measures indicated in SRT2030, which are a detailed specification of SRD records in the area of transport. The strategy is consistent with the medium-term SRD, including the target set for the transport sector, i.e. increasing transport accessibility and improving the conditions of providing services related to the transport of goods and passengers. SRT2030 also takes into account the directions of intervention specified in the SRD, i.e.: Monitor Polski - 11 - Pos. 1054 13

- improving and developing an integrated, interrelated transport network serving a competitive economy;
- changes in individual and collective mobility;
- improving the efficiency of using public funds for transport projects;

In addition, SRT2030 contains strategic projects in the area of transport specified in the SRD, which have been assigned to the appropriate directions of intervention. In addition to the implementation of the objectives of the SRD, SRT2030 takes into account the objectives and priority actions identified in strategic national and EU documents, including in the Strategy for Smart and Sustainable Inclusive Europe 2020, as well as in the National Reform Program (NRP) for the implementation of the Europe 2020 Strategy and in the White Paper. Plan to create a single European transport area - strive for a competitive and resource-efficient transport system. "

3.2.2. Strategy for Sustainable Development of Transport until 2030 (SRT2030)

SRT2030 is a planning document which, in accordance with the Act of 6 December 2006 on the principles of conducting development policy (Journal of Laws of 2019, item 1295), hereinafter referred to as the "Act on the principles of conducting development policy", is an integral element of management system for national strategic documents. The essence of SRT2030 is to indicate the goal and outline directions for the development of transport, so that by 2030 it will be possible to achieve the goals set in the Strategy for Responsible Development by 2020 (with a perspective to 2030 (hereinafter referred to as SRD)).
The provisions of SRT2030 are consistent with the 'Agenda for Sustainable Development - 2030' adopted by the General Assembly of the United Nations (UN) in 2015 and its 17 Sustainable Development Goals (SDGs). At the same time, SRT2030 maintains coherence and complementarity with the objectives and priority actions indicated in the remaining eight integrated development strategies of the country. It assumes the continuation of intentions indicated in current national planning documents of the transport sector, it also takes into account trends and directions of changes indicated in sectoral and horizontal EU documents. It also introduces new solutions necessary to meet the requirements of the transport sector in the first half of the 21st century. Due to the fact that a significant part of the goals of transport development will be achieved in a time horizon longer than by 2020, this document goes beyond 2020 and thus presents the most important actions necessary to take in the perspective of 2030. These mainly include capital-intensive ones and time-consuming investments in transport infrastructure, transformation of management systems and introduction of innovative ("smart") solutions that facilitate the functioning of infrastructure within the entire transport system and in the intermodal dimension. The implementation of SRT2030 will affect a number of existing development policy documents at national, regional and local level relating to transport. In this case it may be necessary to adapt the abovementioned documents to SRT2030. In the implementation horizon of SRT2030, actions will be taken to use the model-analytical approach in the area of programming the strategic transport policy of the state to a broader extent than before. To this end, a multi-branch traffic model will be developed, which will be one of the important elements of this process[1].
Implementation of the main objective in the perspective up to 2030 involves the implementation of six directions of intervention appropriate for each of the modes of transport:

[1] Depending on the adopted implementation variant of the enabling conditions for the perspective2021-2027 it will be possible for the minister competent for transport to prepare a presentation document results of the demand analysis.

- intervention direction 1: **construction of an integrated, interrelated transport network serving a competitive economy**;
- intervention direction 2: **improving the organization and management of the transport system**;
- intervention direction 3: **changes in individual and collective mobility**;
- intervention direction 4: **improving the safety of traffic participants and of goods transported**;
- intervention direction 5: **limiting the negative impact of transport on the environment**;
- intervention direction 6: **improving the efficiency of using public funds for transport projects**.

3.2.3. Transport development strategy up to 2020 (with prospects until 2030)

The purpose of the document:
It is a mid-term planning document that is an integral part of a coherent system of managing national strategic documents. It indicates the goals and directions of transport development in such a way that, by 2030, it would be possible to achieve the goals set in the Long-term National Development Strategy (DSRK) and the Medium-Term National Development Strategy (NDS 2020).
Strategic objective / priorities in the context of the development of international freight transport.
The basic objective of the national transport policy is to increase territorial accessibility, improve the safety of road users and the efficiency of the transport sector by creating a coherent, sustainable and user-friendly transport system in the national (local), European and global dimension.
Directions of activities / projects relating to the development of international freight transport, particular in the surveyed region concerned by the document (if specified)
The implementation of the main transport goal in the perspective of 2020 and beyond, is associated with the implementation of five specific objectives, appropriate for each of the transport branches. It is about:

- creating a modern and coherent network of transport infrastructure,
- improving the organization and management of the transport system,
- improving the safety of traffic users and transported goods,
- limiting the negative impact of transport on the environment,
- building a rational model of financing infrastructure investments.

3.3. Slovakia

3.3.1. Support of intermodal transportation

The main tools for the support of combined transport in the SR, especially in terms of infrastructure building, are the operational programs of the ICE SR, ie. **Operational Program Transport 2007 - 2013** (in which an intermodal terminal was built in Žilina - Teplička) and the current Operational Program Integrated Infrastructure. **The OPII 2014-2020 under Priority Axis 1** (Railway Infrastructure (TEN-T core) and Mobile Renewal)

mentions the construction of intermodal terminals as one of the objectives, provided that appropriate market conditions are created. At this point, it is stated that, in addition to the modernization of railway lines, an additional opportunity for the development of railway infrastructure is also to increase its capacity utilization and the development of combined transport. This requires building intermodal terminals to cover the increasing volumes in this transport system and ensuring readiness for eventual growth in continental transport, with the prospect of extending Asia's direct link with the EU. The long-term goal of ICE SR is to build a basic network of public intermodal transport terminals to improve access to quality terminal and logistics services. Based on the EC Decision (EC Decision (2013) 4423 of 17 July 2013 on State aid SA.34369 –2013 / C Construction and operation of public intermodal transport terminals), the issue of building public terminals in the Slovak Republic can be reopened after a year. 2018, when the Ministry of Transport will prepare a new analysis of the possibilities of construction of public intermodal transport terminals. In the future, the granting of public financial assistance for the construction of additional terminals will be subject to a new Commission decision on State aid.

Support for combined transport for the years 2020 -2024.
A strategic document of the Ministry of Industry and Trade of the Slovak Republic focusing on the support of intermodal transport is currently under preparation. This support will not affect the construction of new infrastructure (construction or extension of terminals, extension of railway infrastructure and the like).
Two areas to be supported financially over the period 2020-2024:

- Co-financing the costs of setting up and operating new scheduled services between terminals in the framework of continental transport (except for shipping containers).
- Co-financing the purchase of technical equipment for intermodal transport terminals.

The document is in preparation and is being prepared in cooperation with terminal operators in Slovakia. This interconnection will ensure the real usability of funds for the development of combined transport while maintaining the market principles of business in this sector. The final text and complete details will be known upon completion and publication of the document.

In addition to **these instruments**, the state has long supported the combined transport sector through rapid action and strategies:

- In 1994, the Government of the Slovak Republic signed an approach to the AGTC (European Agreement on Major International Combined Transport Routes and Related Objects) agreement, according to which the time limit of 30 minutes of train stay should be respected when crossing state borders,
- Since 1996, the Program of Support for the Development of Combined Transport in the Slovak Republic has been implemented with the validity until the year. 2010. It was a program for small and medium-sized enterprises in the field of combined transport,
- At the initiative of the Combined Transport Department, the Combined Transport Section was created at the Freight Transport Division of the Railway Company a.s. (ZSSK) in 1998,

- On 17.1.2001 the Government of the Slovak Republic approved by Resolution no. 37/2001 "Concept for the development of combined transport with a view to 2010",
- On January 23, 2001 the Agreement between the Slovak Republic and ŽSR on the support of combined transport operation in the RoLa system was signed for 2001-2005,
- The Ministry of Transport, in cooperation with the Ministry of Finance of the Slovak Republic and the Customs Directorate in Bratislava, resolved the customs clearance of integrated KD trains at the combined transport terminals. In cooperation with ŽSR, MÁV, ČD and DB, the issue of handover of combined transport trains across borders was solved in confidence.,
- Motor vehicles that perform combined transport with a total weight of over 7.5 t and trucks with a trailer do not have a traffic restriction on 7 days of working off periods. This is specified in more detail in the Act of the National Council of the Slovak Republic No. 315/1996 Z.z. as amended by later regulations on road traffic (Section 36 (3) (d))),
- Advantages of tax reduction for vehicles used in combined transport according to the conditions of §7 of the Act of the National Council of the Slovak Republic no. 361/2014 Z.z. on motor vehicle tax,
- In the framework of international cooperation, intergovernmental bilateral agreements on combined transport are signed with the Czech Republic, Hungary, Austria, Slovenia, Croatia, Bulgaria, Poland, Latvia, the Netherlands, Romania, Estonia, Ukraine, Macedonia and Serbia,
- On the initiative of combined transport operators, the Association of Forwarders of Slovakia and the Association of Employers of Transport, Posts and Telecommunications of the Slovak Republic, the Association of Combined Transport was established. The Combined Transport Council was established at the Association of Employers of Transport, Posts and Telecommunications of the Slovak Republic (today the Union of Transport, Posts and Telecommunications of the Slovak Republic). The basic objective of the Council is to assist in the development of the CP. The Council is represented by selected central state administration bodies, University of Žilina, ZSSK Cargo, a.s., SPaP a.s., operators of KD, ČESMAD Slovakia, Union of Forwarders of Slovakia,
- Awareness of the importance of combined transport is carried out in professional journals as well as in electronic media. Since 1996, an international conference called EUROKOMBI has been organized and is currently replaced by the international scientific conference Horizons of Railway Transport, organized by the University of Žilina,
- In cooperation with the Ministry of Finance of the Slovak Republic, Principles were issued for the provision of special-purpose subsidies from the state budget for technical equipment of combined transport. The policy was approved by PVM on 2.10.2001. The subsidy was provided for the purchase of new large containers, swap bodies, road carriers, reloading mechanisms for working with NJ KD at combined transport terminals and their loading / unloading points. The amount of the subsidy was determined from their acquisition price by a share of 30 - 50%. The condition for

granting the subsidy was to prove the price of procured funds, to block the agreed amount of money, to conclude an insurance contract for property, to use min. 5 years for KD and conclusion of Contract with MDPT SR. The program of special-purpose subsidies from the state budget began to be implemented as of 1 January 2003. The instrument was canceled by the combined transport development scheme on 23.3.2004,

- An update of the concept of combined transport development was adopted at the meeting of the management of the Ministry on 15 July 2003,
- Resolution of the Government of the Slovak Republic No. 215/2004 approved the use of the Combined Transport Development Scheme in the Slovak Republic in the provision of state aid under the Program for the Support of Combined Transport Development in the Slovak Republic. The scheme of combined transport development in the SR was published in the Commercial Bulletin no. 57/2004 on 23.3.2004. The scheme was canceled on 15.6.2007,
- Ministry of Transport, Posts and Telecommunications of the Slovak Republic pursuant to § 8 par. 2 of Act no. 523/2004 Coll. on budgetary rules of public administration and on amendments to certain acts, as amended by Act No. 584/2005 Z.z. Decree no. 491 / M-2006 of the Ministry of Transport, Posts and Telecommunications of the Slovak Republic of 15 February 2006 on the provision of subsidies in the field of combined transport,
- Within the EU programming period 2007 - 2013, the Ministry of Transport, Posts and Telecommunications of the SR prepared the Operational Program Transport (OPD), which was approved by the Government Resolution no. 1007 of 6 December 2006. This Operational Program ensured the absorption of funds for transport projects in 2007-2013 from the Cohesion Fund and the European Regional Development Fund. The starting document of the Slovak Republic for the development of OPT was “Transport Policy of the Slovak Republic until 2015”, which was approved by the Government Resolution no. 445/2005. Other documents and their strategies defining the priorities and objectives of the transport policy were also taken into account in the development of OPT. In fulfilling all priorities and objectives through OPT, the global objective of OPT was respected, which was to support sustainable mobility through the development of transport infrastructure and the development of public passenger transport. The specific objectives of OPT were modernization and development of railway infrastructure, modernization and development of road infrastructure, modernization and development of intermodal transport infrastructure and development of public passenger transport. In the framework of Priority Axis 3 - Intermodal transport infrastructure, the intermodal terminal Žilina - Teplička was built

4. TRAFFIC FLOW PREDICTION

4.1. In the TRITIA region and countries

4.1.1. Czech republic

(Chapter mainly based on work of Ministry of transport Cech republic)
In 2019, 17 private combined transport transshipment points were operated in the Czech Republic (of which 3 are located in the Mělník public port). According to the information provided by their operators, these docks currently have a storage capacity of 68 530 TEU. 9 combined transport stations have handling means for reloading intermodal road trailers. 3 transshipment points were supported from the public sources (financial settlement of the project has already been carried out) and this became a transshipment point with public access, which ensures non-discriminatory provision of transhipment services on the basis of a level playing field and published price list, which is freely available. It is a reloading company PKP Cargo International in Ostrava Paskov (formerly AWT), ČD - DUSS Terminal in Lovosice and UPLINE CZ in Obrnice. By the end of 2022, other transhipment points supported by public funds, in particular OPT II, will fulfill the conditions of public access.

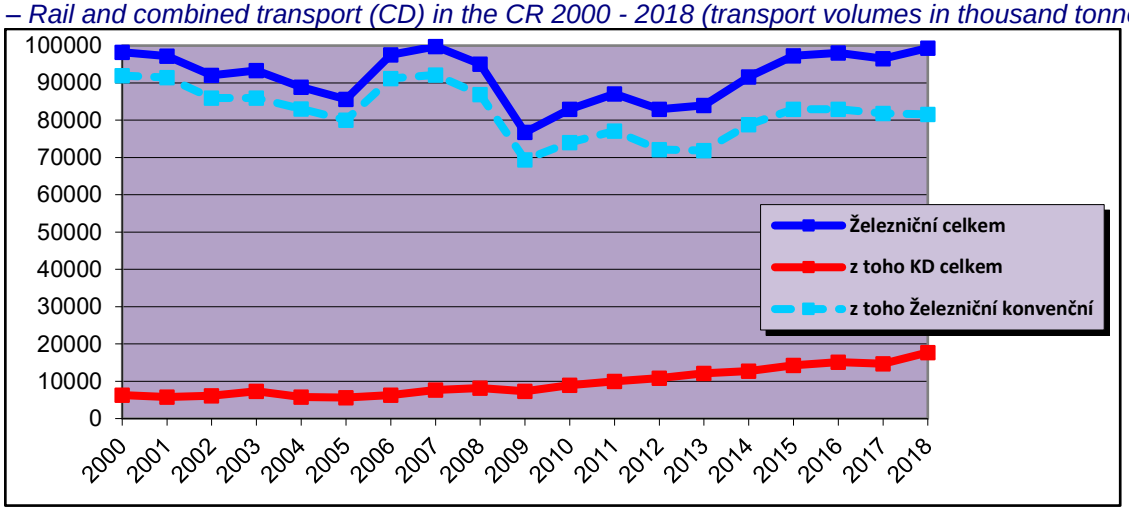
Furthermore, in the Czech Republic are operated private company transhipment, which serves only the needs of the owner or. one exclusive customer, however, in general, these terminals provide services to different customers on the basis of trade agreements.
The Czech Republic does not operate a public transhipment facility owned by a state or other public-law institution as in neighboring EU countries.
In the field of combined transport, the Ministry of Transport also cooperates with professional associations and associations, namely ŽESNAD.CZ (Association of Railway Freight Carriers of the Czech Republic), ČESMAD BOHEMIA, z.s. (Association of Automobile Carriers of the Czech Republic), Transport Union, SCHP CR (Association of Chemical Industry of the Czech Republic) and other professionals.

Figure 3 – Location of container transhipments in the Czech Republic

1 – Praha Uhříněves, 2 – Obrnice, 3 – Česká Třebová, 4 – Mělník (tři překladiště), 5 – Želechovice nad Dřevnicí – Lípa, 6 – Brno, 7 – Šenov, 8 – Nýřany, 9 – Paskov, 10 – Ústí nad Labem, 11 – Lovosice, 12 – Děčín – Loubí, 13 – Přerov, 14 – Pardubice – Černá za Bory

For the operation of combined transport, 10 railway freight carriers can be used, of which the majority of the outputs were performed by 4 carriers - Metrans Rail, CD Cargo, AWT (now PKP Cargo International) and RCC (Rail Cargo Carrier). The continuously increasing share of combined transport in rail freight transport is evident from the following chart.

Figure 4 – Rail and combined transport (CD) in the CR 2000 - 2018 (transport volumes in thousand tonnes)



Note: The development of transport shown in the graph includes the total combined transport, ie. unaccompanied and accompanied transport. Accompanying combined transport operated in the Czech Republic until 2004 under the RO-LA system. It is the transport of the whole road tractor, including the transport unit and accompanied by the driver. After the Czech Republic's accession to the EU, this type of transport was not profitable. The weight shown in the graph includes both loaded and empty transport units. Unaccompanied transport is the transport of the transport unit itself.

Development of combined transport in Czech republic in 2000 - 2018

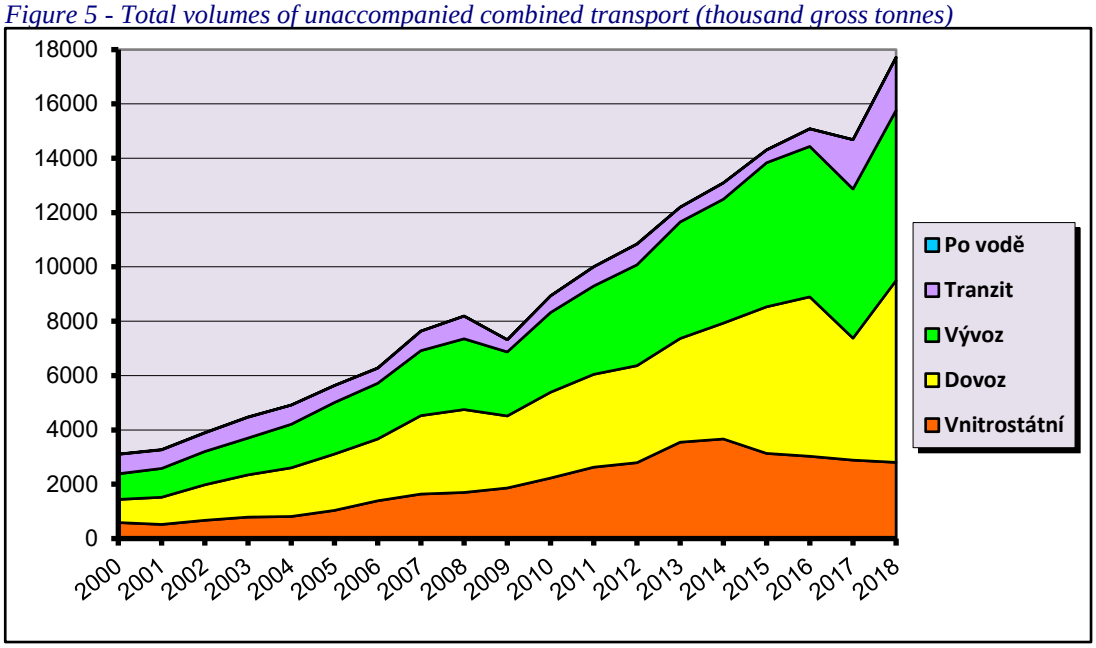
Combined transport in the Czech Republic has been showing an increasing trend over the last five years. The only exception is a step reduction in imports (especially sea containers) in 2017, which was not confirmed in 2018, and the overall trend over the last 5 years is also increasing in the import of goods via combined transport. Furthermore, there is a slight decrease in the use of combined transport in domestic transport, which is an expected trend with regard to the geographical location of the Czech Republic.

The overall increase in combined transport volumes by rail in 2014-2018, regardless of the type of transport unit, **is 35.4%**. In terms of transport flows, imports recorded the highest increase in this period, with a result of 57.2%.

Since 2006, when the statistics of individual types of intermodal transport units are statistically monitored, **the segment of transport of intermodal road semi-trailers, whose transport increased by 25 times in the monitored period** and the most efficient way to achieve the volume transfer from road environmentally friendly modes of transport. The decisive transport unit used in combined transport is containers, mostly ISO 20 and 40 feet (6 and 12 m) containers.

In 2018, 30 970 combined transport trains were transported within the Czech railway network. Shifting freight from road to rail will help to free the road network and reduce the environmental burden of externalities. For simplicity, one semi-trailer equals 2 TEU, while the average train of combined transport is 540 m long, ie. the equivalent of 40 road trailers can be loaded on one train. In general, the aforementioned number of freight trains saved externalities out of the 1.2 million trucks that would carry goods by road.
Combined transport has not been carried out over the last 11 years on inland waterways, primarly because of bad conditions on existing waterways and missing waterways on main freight transport routes in Czech republic.

Figure 5 - Total volumes of unaccompanied combined transport (thousand gross tonnes)



Note: The development of transport shown in the graph includes total loaded and empty transport units.

Figure 6 - Transport of loaded and empty transport units by rail in TEU (thous. TEU)

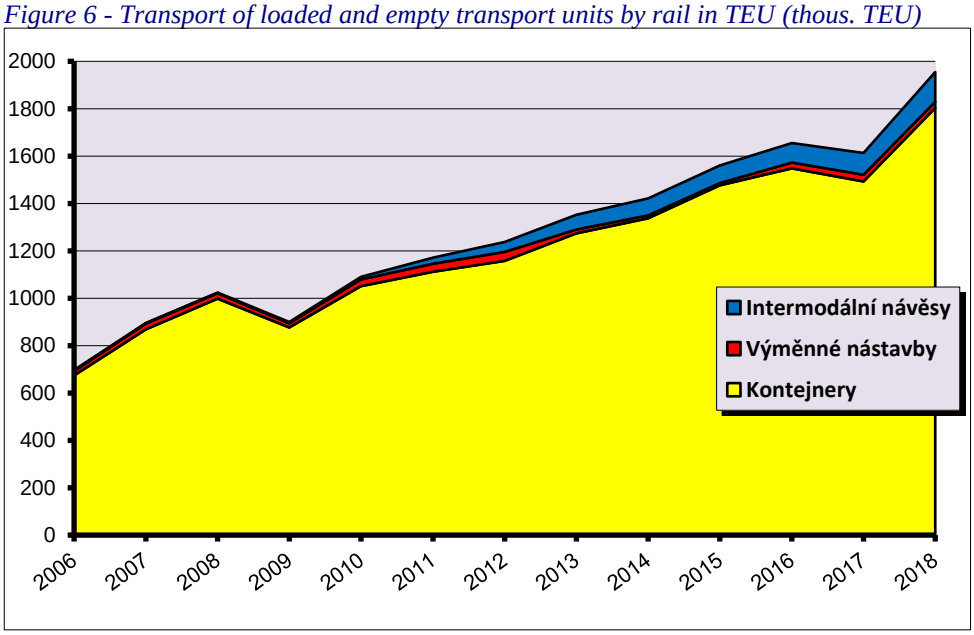
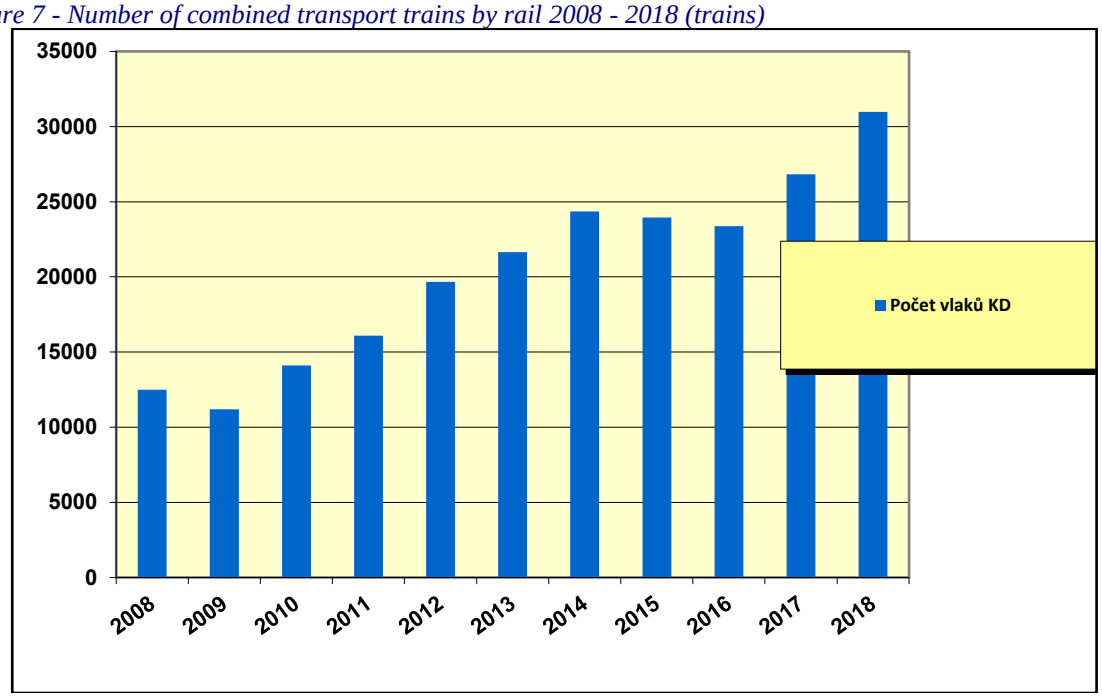


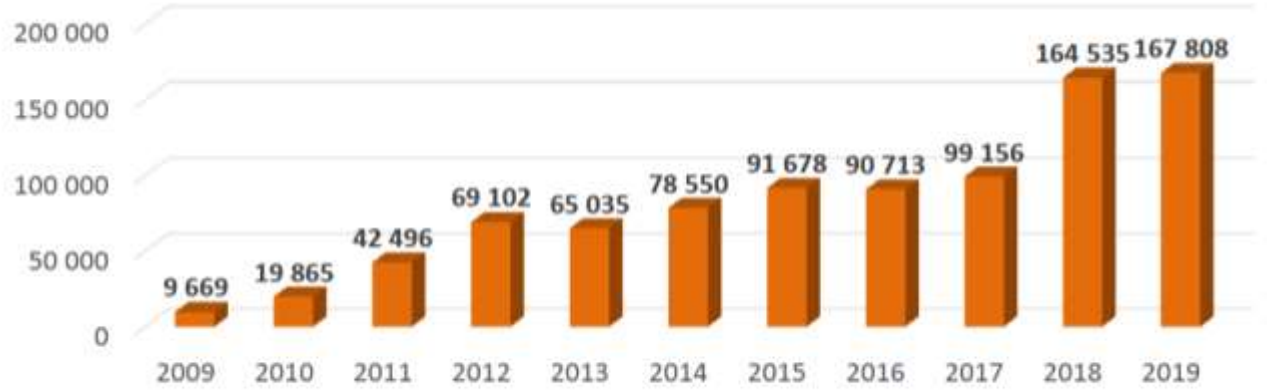
Figure 7 - Number of combined transport trains by rail 2008 - 2018 (trains)



It can be assumed that in international transport, the transport will mainly increase in the north-south direction along the international freight corridor RFC5 via PPS Petrovice near K.- Zebrzydowice, if it permits its throughput and improve the management of international train traffic with minimizing downtime locomotives) between Poland and the Czech Republic. This will be due to an increase in the number of KD lines from the Paskov terminal (eg to the port of Gdańsk, Greece, or possibly to China), the commissioning of the Mošnov terminal and the planned PKP S.A. terminals. in the territory of TRITIA in Poland near the Czech border (Rybnik, Katowice, Gliwice). Metrans can also start new lines connecting its terminals in Poland and the Czech Republic or increase the volume of transhipment at its terminal in Šenov connected to the Hamburg seaports.
Alternatively, the volume of transport through the PPS Bohumín-Vrbice - Chałupki can be expected with regard to the utilization of the Katowice - Tychy line and the emergence of transports in the direction of the Szczecin port, where container transport has begun to develop since 2019.
According to the above graphs, we can generally state a double increase in transport over the last 10 years. With continuous growth, by 2030, there is a real increase of another 50-100%. The example of the intermodal terminal in Paskov, which is currently the largest

transhipment station in the Moravian-Silesian Region, shows even a double increase at the horizon of 5 years.

Figure 8 - Increase in manipulation on the example of intermodal terminal Paskov 2009 - 2019.



The estimate of the number of manipulations in 2019 was not fulfilled - in fact, 161 222 manipulations were carried out. There was a slight decrease compared to 2018.
The terminal is currently connected to the EU by train lines in Germany (Hamburg, Bremenhaven, Herne), Poland (Gdańsk port), Italy (Trieste port), Slovenia (Koper), Russia (Chernihiv). Regular container trains run to Chernihiv in Russia, Hamburg, Bremenhaven, Herne in Germany, Koper in Slovenia and Trieste in Italy.
A total of 20 -24 trains per week leave the terminal.
PKP Cargo International (formerly AWT, a.s.) sees the potential for further growth in the extension of train lines from the port of **Gdańsk**, train lines with trailers from Scandinavia, and the like. connection to the **Greek port of Piraeus** or extension of the **New Silk Road**.
PKP Cargo International, a.s. (part of PKP Cargo, as in Poland) - the number of container and semi-trailer operations in Paskov is at least double due to the similar size of the METRANS terminal in nearby Šenov (located approximately 5 km from the Paskov terminal). Building a terminal in **Mošnov** and putting it into operation in **about 2021** (located approximately 8 km from the Paskov terminal) is likely to **increase the volume** of manipulations in the TRITIA region by another **30%**.

4.1.2. Poland

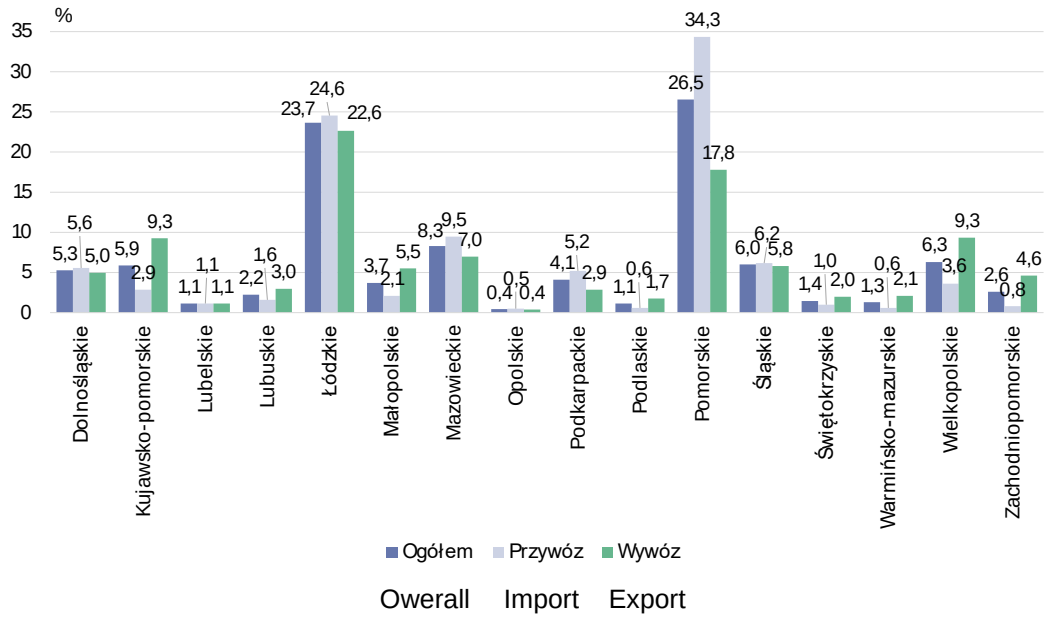
The Central Statistical Office data (intermodal transport in Poland in 2018) shows that 35 active terminals were located in Poland in 2018, of which: 6 handled sea-rail, sea-road (sea terminals), 29 serviced rail - road (land terminals), including 4 are located in the Śląskie

Voivodeship.
The total annual transhipment capacity of intermodal transport terminals was 9.1 million TEU, including offshore terminals - 6.3 million TEU, and land terminals - 2.8 million TEU.
In 2018, a total of 67.3 million tons of containerized cargo, including those transported by sea - 27.6 million tonnes (which accounted for 41.0% of the total cargo transhipped at sea and land terminals), and road transport - 22, 22 were transported at intermodal terminals. 4 million tonnes (33.3%), and rail transport - 17.3 million tonnes (25.7%). In the total number of containers transhipped at sea and land terminals, 40 'containers (59.0%) predominated. The share of 20 'containers was 34.2%, 45' and more containers - 5.5%, and 30 '- 1.3%.
n 2018, intermodal transport was dominated by mixed goods, excluding food - 23.9% (an increase of 10.2 percentage points compared to the previous year),
loads from the group of chemicals, chemical products, artificial fibers, rubber and plastic products; nuclear fuel - 15.5% (increase by 7.4 percentage points) and cargo from the group of food products, beverages and tobacco - 11.7% (increase by 7.2 percentage points).

Transport of containerized cargo by intermodal car transport

In 2018, over 22 million tonnes were transported by intermodal car transport cargo in containers. The share of domestic transport was over 98%. The volume of domestic intermodal road freight loads was transported to and from the Śląskie voivodships: 6%, while Opolskie - only 0.4% of the total. In international transport, as in 2017, transport to and from Germany dominated. The figure below presents the share of voivodships in containerized cargo transport by intermodal road transport in 2018 (based on the number of tonnes).

Figure 9 - Share of voivodships in containerized freight transport by intermodal road transport in 2018 (based on the number of tonnes)

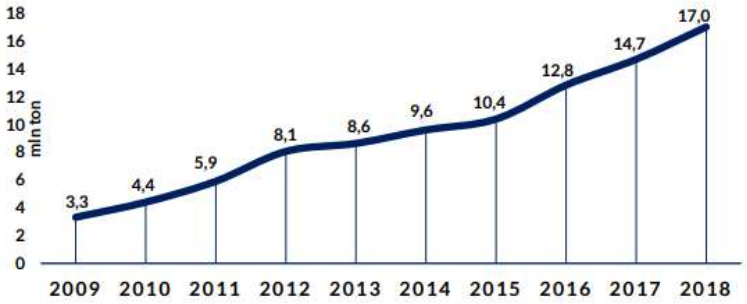


NOTES: The data includes transport to / from intermodal terminals located in Poland. Estimated data.
Source: GUS data, Intermodal transport in Poland in 2018, Warsaw 2019.

Intermodal transport in rail transport

UTK data (2018 in intermodal transport. Summary of the President of UTK, Warsaw 2019) shows that over recent years the volume of intermodal transport has been systematically increasing. In 2018, 17 million tonnes of cargo was transported in intermodal transport, while in 2017 it was 14.7 million tonnes. This means an increase of 15.6%.
The share of intermodal transport in the entire rail transport market measured the weight of transported goods reached 6.8%. The figure below shows intermodal rail transport in Poland in 2010-2018.

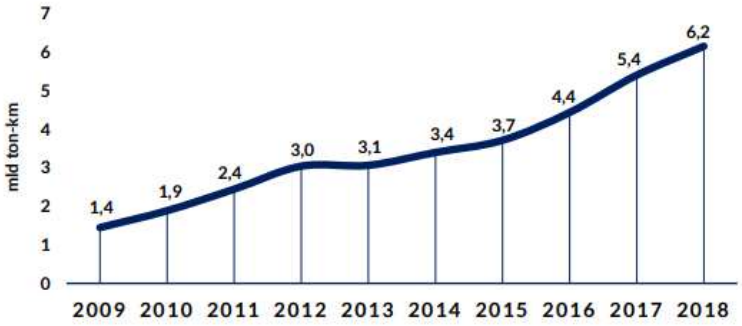
Figure 10 - Drawing. Intermodal rail transport in Poland (in million tonnes)



Source: UTK data, 2018 in intermodal transport. Summary of the President of UTK, Warsaw 2019

The transport performance performed for the transport of goods was at the level of 6.2 billion ton-km (see figure below).

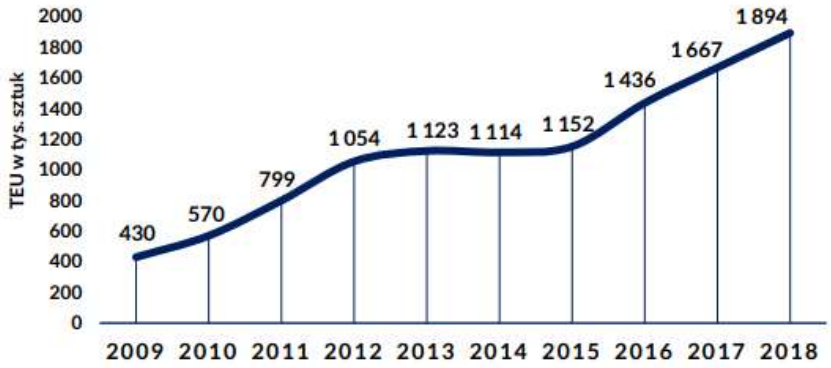
Figure 11 - Intermodal rail transport in Poland (in billion ton-km)



Source: UTK data, 2018 in intermodal transport. Summary of the President of UTK, Warsaw 2019

In 2018, rail carriers transported a record number of load units, which amounted to over 1.2 million units. The market reached the level of 1 259 thousand. pieces, of which nearly 1 212 thousand are containers. The figure below shows the number of TEUs transported in Poland.

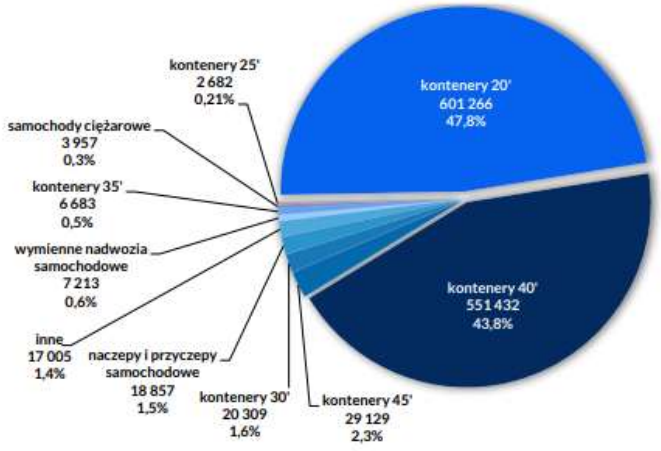
Figure 12 - Intermodal rail transport in Poland (in thousand TEU)



Source: UTK data, 2018 in intermodal transport. Summary of the President of UTK, Warsaw 2019

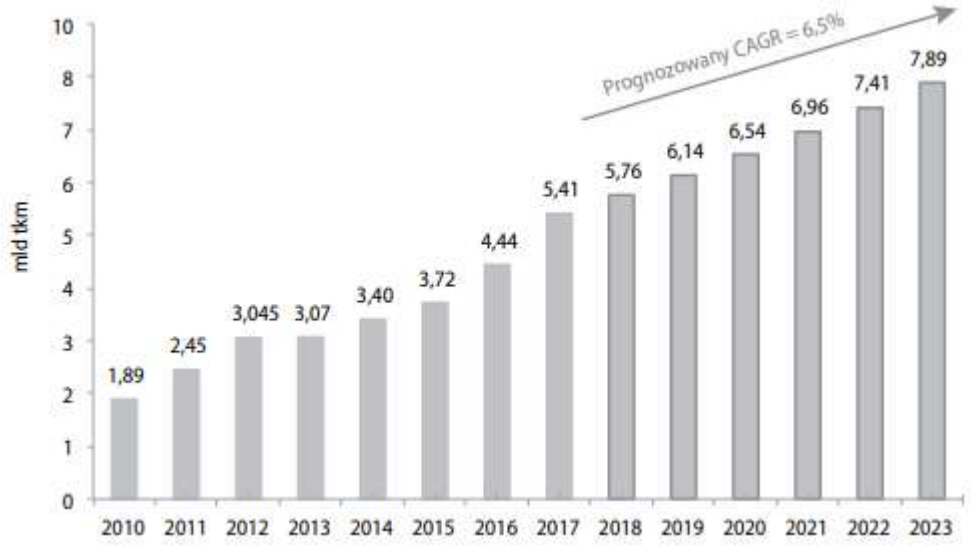
In intermodal transport mainly containers are transported. Their share in the total number of units at the end of 2018 was 96.3%. The largest number of 20- and 40-foot units was transported, which constituted 47.8% and 43.8% of the total number, respectively. The share of other containers was 25-foot - 0.2%, 30-foot - 1.6%, 35-foot - 0.5% and 45-foot - 2.3%, respectively. Car trailers and semi-trailers accounted for 1.5% of the units used, and interchangeable car bodies 0.6%. (picture below)

Figure 13 - Share of individual transport units in 2018



Source: UTK data, 2018 in intermodal transport. Summary of the President of UTK, Warsaw 2019

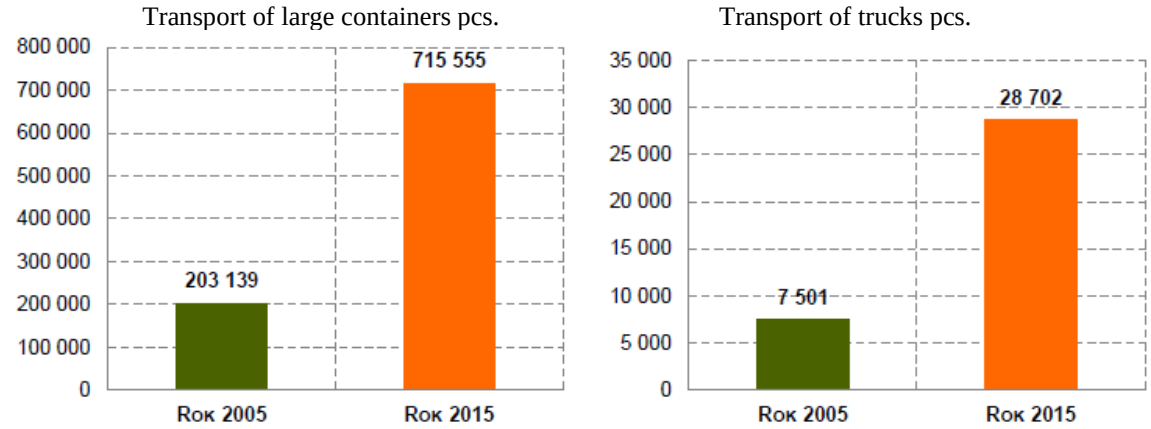
Figure 14 - Forecast for intermodal transport on railway in tonne-kilometers in Poland



Source: Study by PKP S.A. based on UTK data and PKP S.A.'s own forecasts

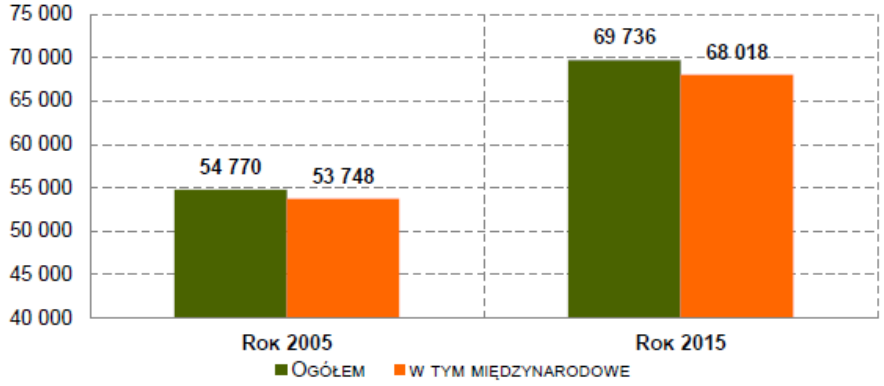
In addition, PKP Cargo plans to invest heavily in the fleet of special container vehicles and also in the purchase of locomotives - in 2019, the purchase of 133 railway wagons and 63 locomotives. In the years 2020 - 2022 they plan to buy about 506 railway wagons and 85 locomotives.
PKP Cargo estimates that the development of intermodal transport will grow by 30% and 6.5% annually.

Figure 15 - Standard gauge rail transport - intermodal transport in 2005 and 2015(transport of large containers and trucks)



Source: Based on CSO data

Figure 16 - Loading volumes in Polish seaports (000 tonnes) in 2005 and 2015



Owerall Of which international

Source: Based on CSO data

4.1.3. Slovakia

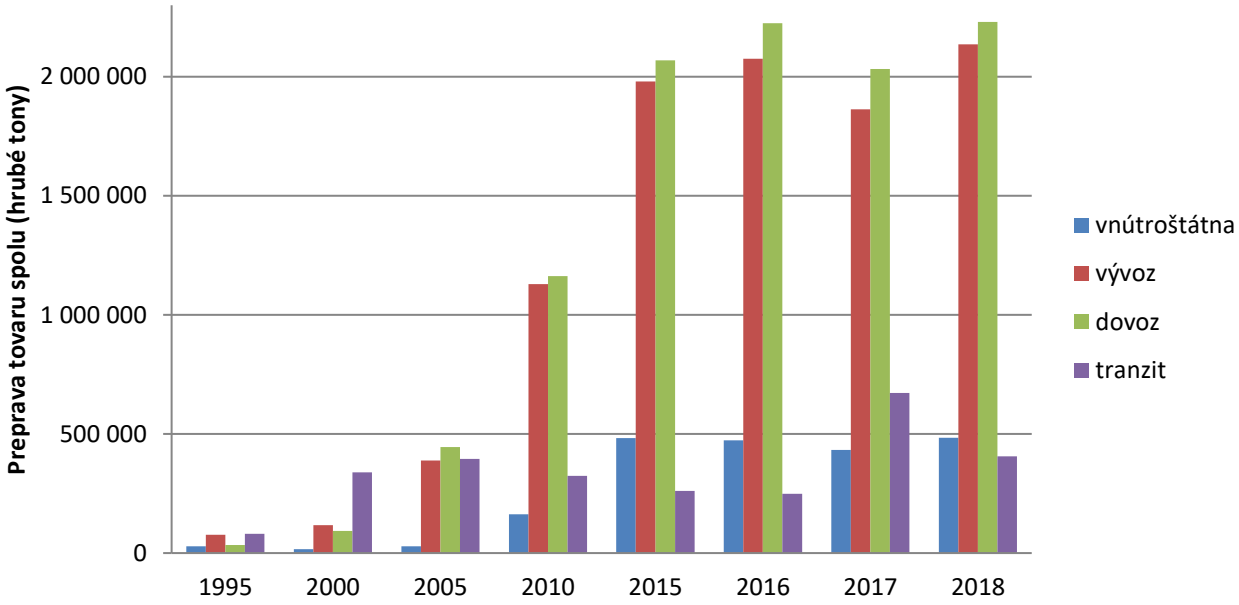
The development of intermodal transport in Slovakia is of a progressive nature resulting from a greater focus on container transport by major production plants. Another important factor contributing to performance growth is the establishment of regular connections with selected terminals within the EU that serve as a link between maritime transport and the continental rail network. Currently, there are no specific activities on the territory of the Slovak Republic aimed at favoring intermodal transport compared to other modes of transport, as is the case in most EU countries, mostly through the financial advantage of selected aspect of transport costs.

Table 1 - Trends in intermodal transport performance between 1995 and 2018

Year	1995	2000	2005	2010	2015	2016	2017	2018
Total transport of goods (gross tons)	220 301	564 228	1 256 000	2 779 126	4 791 633	5 022 921	5 000 332	5 256 500
National	27 880	15 892	28 000	163 024	482 370	473 680	433 338	483 900
Export	77 380	116 909	388 000	1129479	1980692	2 076 067	1862582	2 136 500
Import	34 353	92 924	445 000	1162635	2068072	2 224 576	2 032 631	2 229 500
Tranzit	80 688	338 503	395 000	323 988	260 499	248 598	671 781	406 600

Source: Yearbook of Transport, Posts and Telecommunications 2019

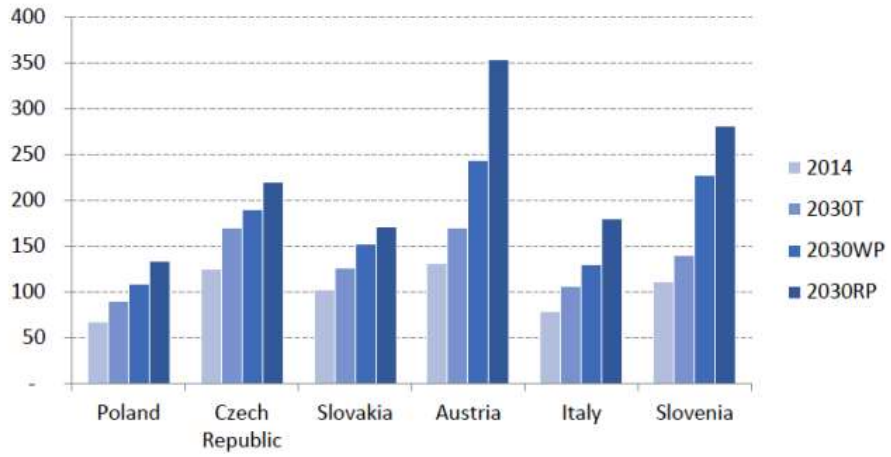
Figure 17 – Intermodal transport of goods in Slovakia in gross tonne-kilometers (national – export – import – tranzit)



The development shows a significant increase in intermodal transport performance in the period under review. The main reason is the arrival of large companies that use containers to transport products destined for the production process and at the same time takeover of selected terminals by private companies operating in this sector. An important factor for the future may be the completion of a network of public terminals throughout Slovakia, which is to ensure good accessibility for all those interested in intermodal transport while ensuring competitive prices motivating carriers to use intermodal transport.
At present, there are no publicly available data on the expected future development of intermodal transport in Slovakia. Given the small number of terminals, the foreseen development of intermodal traffic has a high dependency on each terminal and may show strong fluctuations that are difficult to model in the medium and long term, so that predicted values will also appear highly susceptible to inaccuracy.

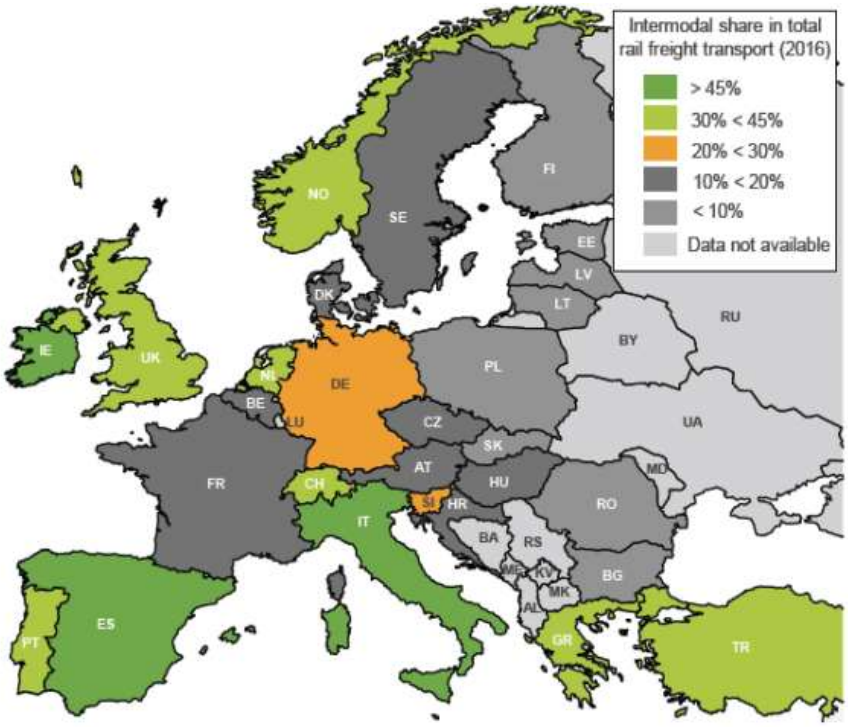
4.2. Within Europe

Figure 18 – Forecasts of transport market development until 2020



Source: EC (2018b), p.

Figure 19 – Share of intermodal transport in rail freight transport in selected countries in 2016 (% of total tkm)



Source: UIC-ETF (2019), p. 5.

Figure 20 – Comparison of the development of intermodal rail transport and rail freight transport (in tons and tkm)

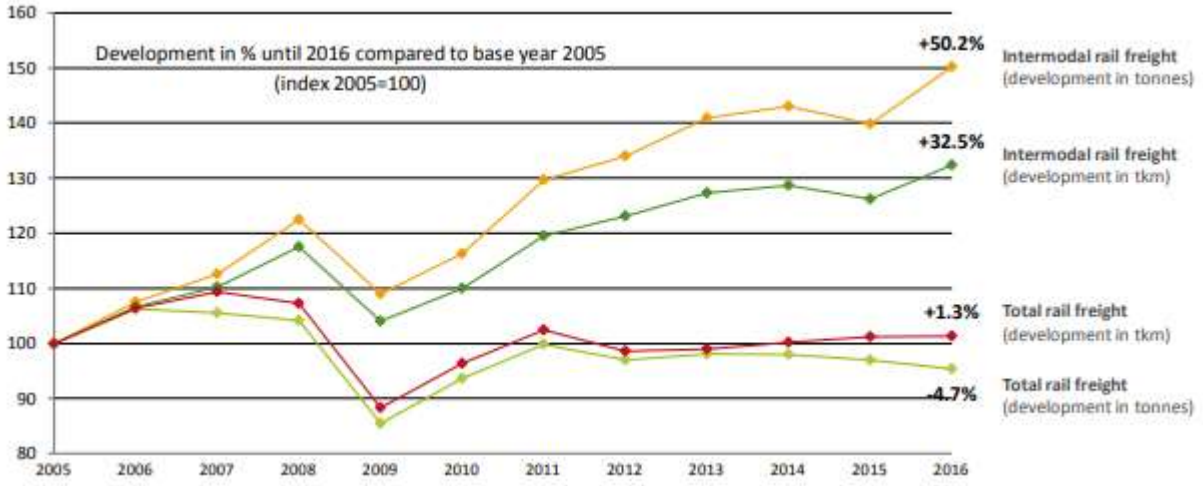
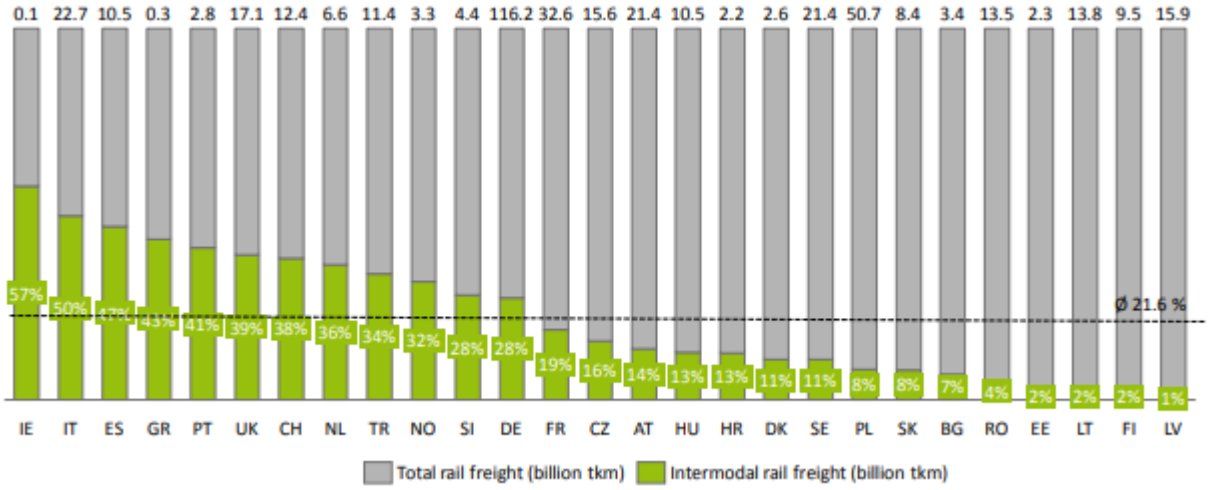


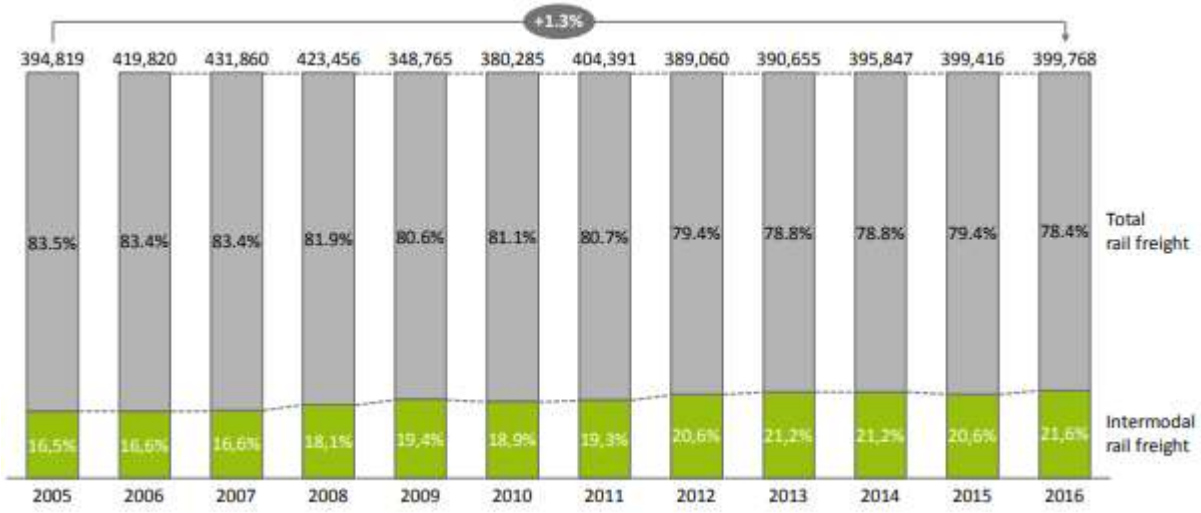
Figure 21 – Share of intermodal rail freight transport in total rail transport by EU countries in 2016 (in bill. Tkm)



Source: Eurostat (October 2018), Analysis of BSL traffic

In 2016, the Czech Republic achieved a 16% share of intermodal iron. transport to total iron. transport, Poland and Slovakia 8% share. This means that it is below the European average of 21.6%.

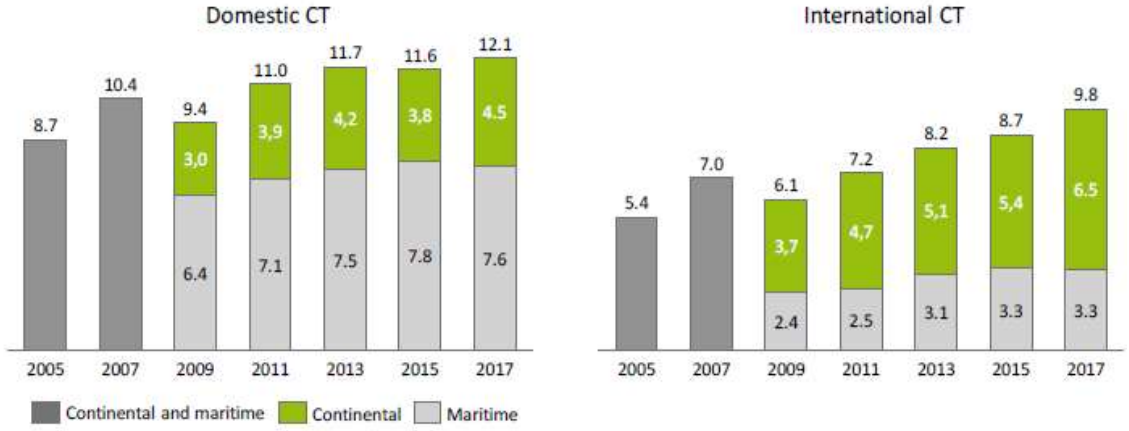
Figure 22 – Development of the share of intermodal rail freight total transport by rail in the 26 selected EU countries in 2005 - 2016 (in tkm)



Source: Eurostat (October 2018), Analysis of BSL traffic

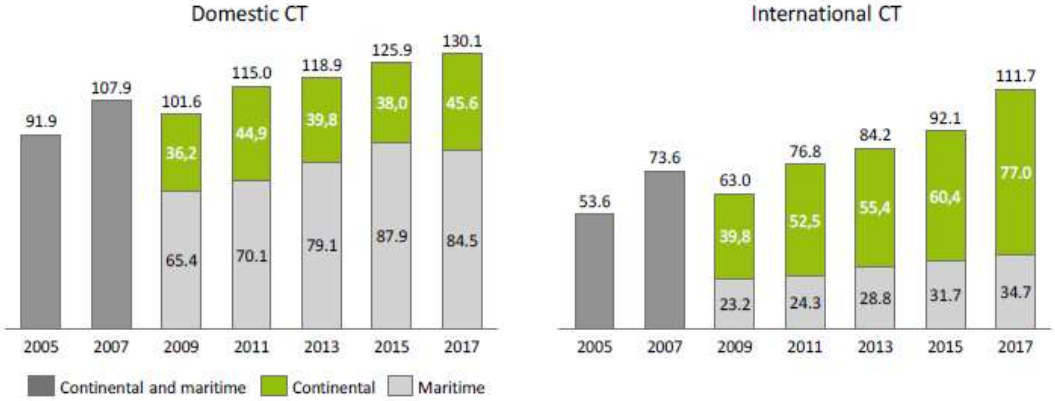
The total share of intermodal transport increased slightly in 2005 - 2016 (reaching 21.6% in 2016) in the total volume of rail freight transport.

Figure 23 - Development of domestic and international unaccompanied CD (in thousands of TEU)



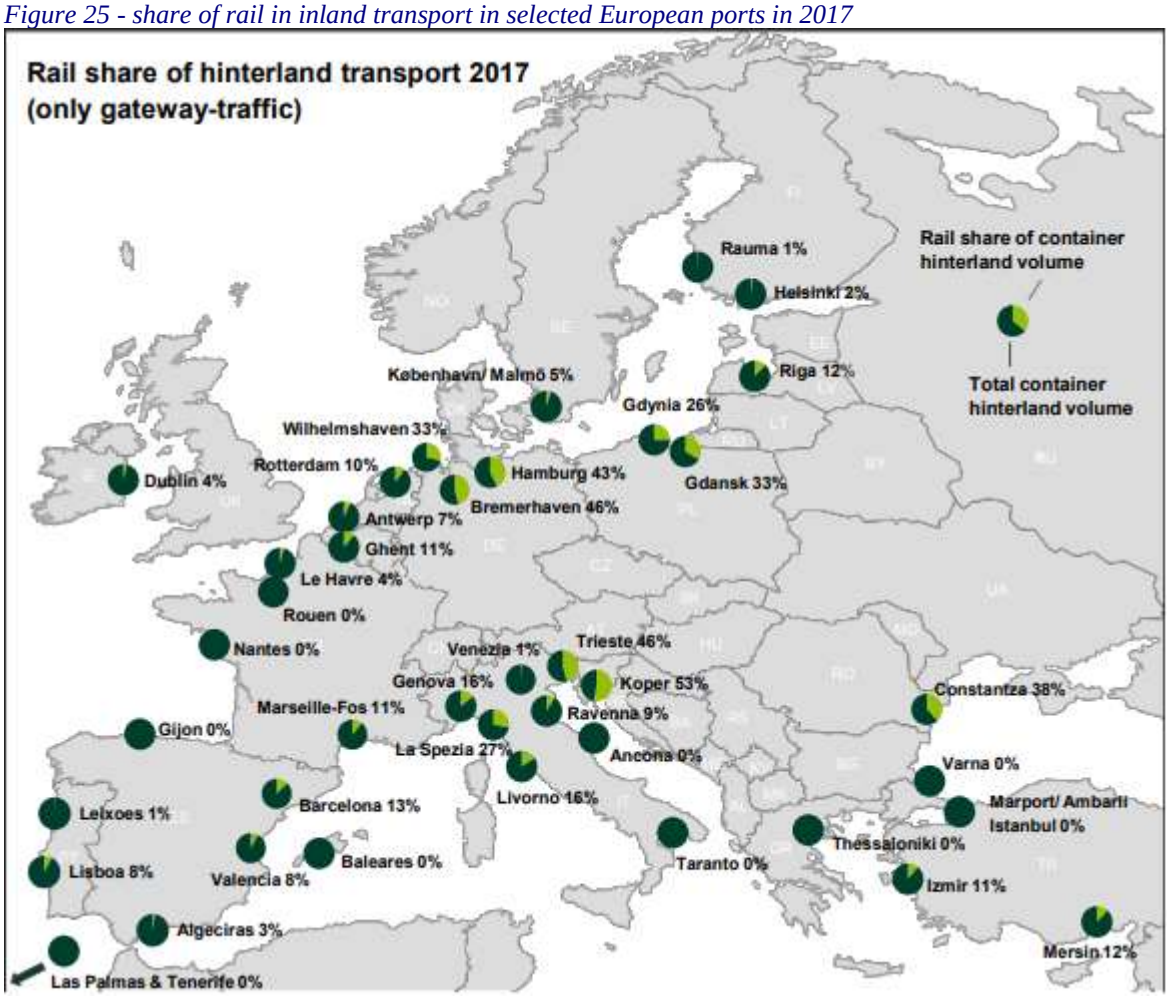
Source: Eurostat (October 2018), Analysis of BSL traffic

Figure 24 - Development of domestic and international unaccompanied CD (in millions of tons)



Note: Both charts show that intra-EU maritime container transport transported almost twice as many containers and tons in international transport than in inland transport. A similar proportion applies to national transport within the EU. This is due to the fact that containers are transported in far greater quantities by seagoing ships than by rail. At sea there are hardly any restrictions on bottlenecks in the network. Continental inland transport, both rail and road, is limited by bottlenecks on the network and the number and location of KD terminals.
Source: Eurostat (October 2018), Analysis of BSL traffic

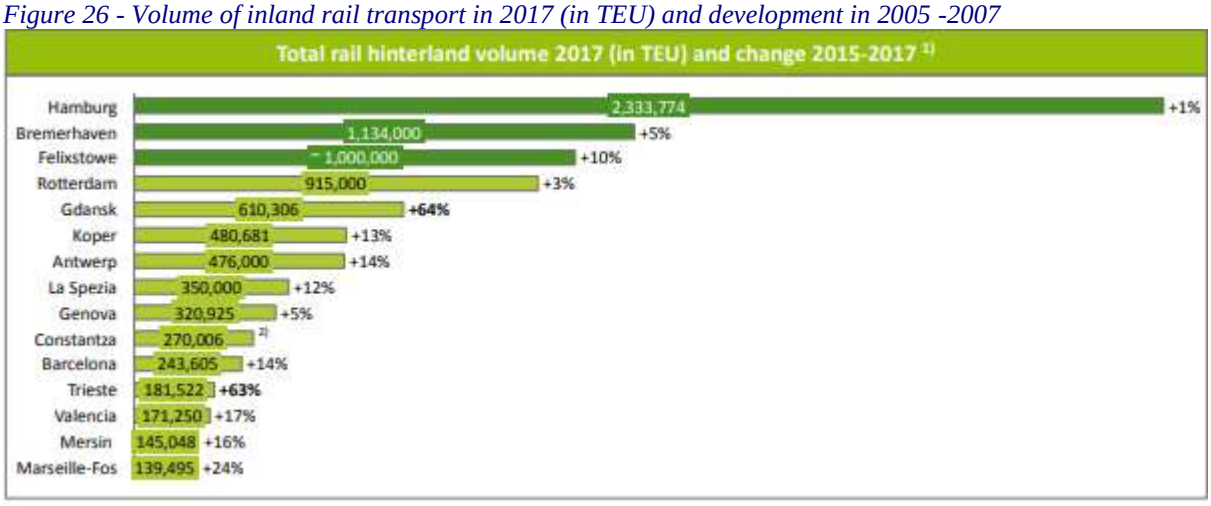
Figure 25 - share of rail in inland transport in selected European ports in 2017



Source: Eurostat (October 2018), Analysis of BSL traffic

In relation to the TRITIA region, we are interested in the shares of rail in inland transport in the ports of Gdańsk (with 33%) and Gdynia (26%), Koper (53%) and Trieste (46%), and the ports of Hamburg (43%), Bremerhaven (46 Rotterdam) (10%).

Figure 26 - Volume of inland rail transport in 2017 (in TEU) and development in 2005 -2007



Source: Eurostat (October 2018), Analysis of BSL traffic

The data in the table shows that the main ports in Europe with the largest volume of inland rail freight containers are the ports of Hamburg, Bremerhaven, Rotterdam, which follow the ports of Gdansk and Koper. The importance of the port of Koper in connection with the inland rail transport of containers is growing faster than the port of Trieste.

4.3. Worlwide transport

<u>Comparison of the situation and prices in maritime and rail transport between Europe and Asia</u>

Approximately 60 million TEU are transported annually between Europe and Asia. The current capacity of the Trans-Siberian Railway is approximately 1.5 million TEU. This means that this route cannot replace the transport of containers by sea. This would require additional railway routes, which is very costly, and the development of the political situation in the Middle and Middle East where these new routes should lead plays a role in deciding on such investments.

Excluding capacity, rail transport between Asia (China) and Europe is currently about half shorter in time - about 3 weeks compared to 5-6 weeks by sea (including delivery to the terminal), but still about once more expensive than a sea trip.

The development of container transport volumes in 2020 is expected to be approximately the same as in 2019. It will continue to depend on the evolution of the US-China economic war and developments in the automotive industry. The UK's withdrawal from the EU is also expected to affect maritime intercontinental shipping. Total volumes, however, no longer grow as in the recent past, double-digit jumps. This year, 2019, is expected to increase to 5% year on year. Large container ships with a capacity of 20,000 TEU are on the market.

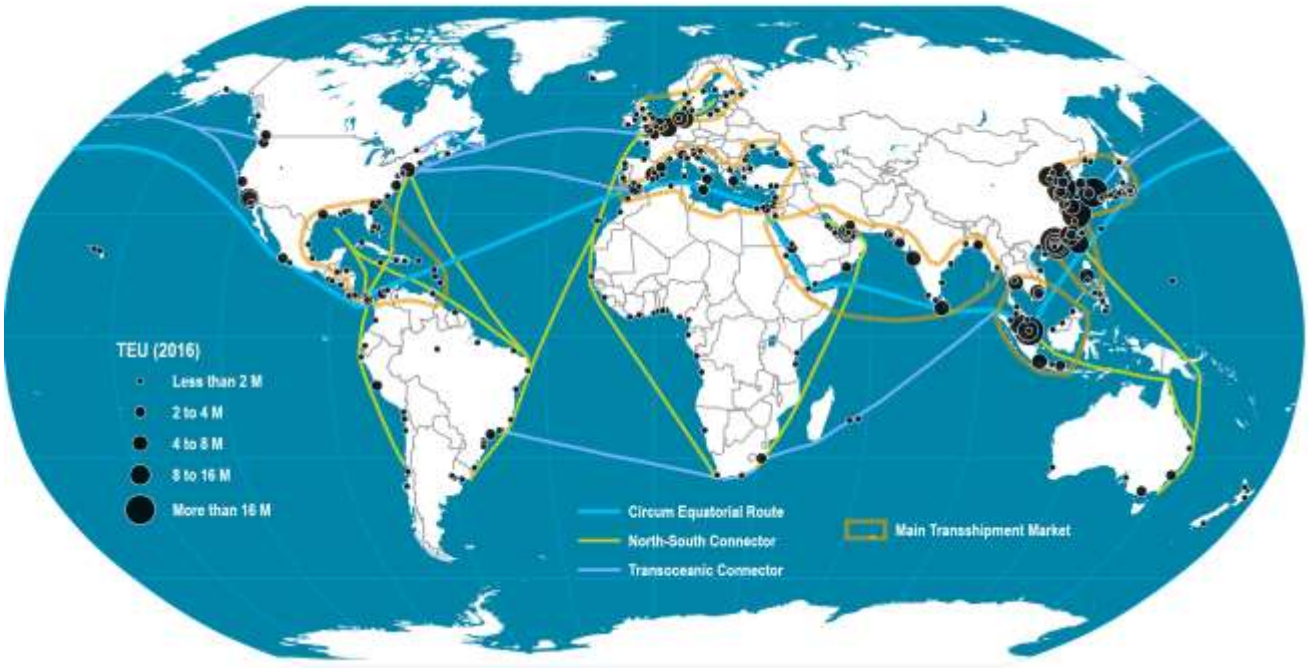
Maersk announced that it will further strengthen its logistics on the mainland. Shipowners are looking for a business with the most comprehensive service offer. They have a different business policy - some have predominantly forwarders as their direct clients and others have direct producers or buyers. Maersk Line has long been a competitor of freight forwarders and their partner. Recently, freight forwarders accounted for less than 10% of the total volume of containers transported by this shipper! The rest was arranged by

the shipowner directly with the sellers or buyers, mostly with large corporations. In the past, the shipowners were able to acquire FCL / FCL-based container transports and also mainly for port / port or terminal / terminal transports. Thanks to the reinforcement of its staff and the introduction of its own comprehensive container. trains (Maersk Line), terminals, customs declarations, warehouses, distribution centers, the "service section" of some shipowners extends - often to house / house, including additional services in logistics.

From 1 December 2019 shipowners introduced surcharges related to the mandatory reduction of sulfur content in emissions from the current 3.5% to 0.5% from 1.1.2020. The mark-up (LSS, GFS, ECC) ranges from about USD70 / TEU up to USD 140 / TEU. With this mark-up, some shippers can improve their economic performance while lowering the basic shipping cost in the fight for goods / clients. Sea transport will become more expensive by this measure and will ultimately be paid by the buyer / final consumer of the goods. Along with the rising price of the workforce in Asia, it will continue to encourage the transfer of some industries to other world regions, often back to an "expensive" Europe. Intra-continental transport, along with other services, is often more expensive than the maritime sector, but that does not mean that you always make more money there than at sea. Overall, since the economic crisis of 2008-2009 there has been an uncontrolled reduction / movement of maritime rates in the fight for cargo. This was partly due to the European Union's forced abolition of maritime conferences, which could to some extent guard this. Often, shipping rates went below their own costs, which is why some shipowners have disappeared or have been purchased by stronger players in the market. The advantage was those who had other activities besides container transport - such as Tankers or Cruisers (luxury passenger ships) or belonged to financial groups operating in other sectors, such as oil, automotive, shipbuilding, etc. It is expected that within about 10 to 15 years, only about 5 to 6 big players will be on the maritime container transport market on the main "world lines" between continents to engulf others.

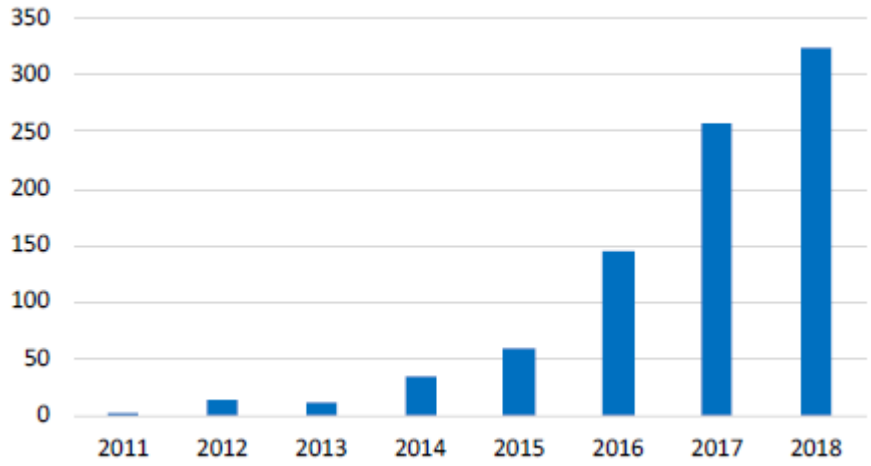
The expected decline in production in the automotive industry did not manifest itself as strongly as expected in maritime transport. Also, fears of the US and China economic war, which were expected to have a greater impact on transport volumes, were not fully met. Both parties alleviated or lifted the declared mutual sanctions. Due to the large increase in timber exports from Europe to Asia, the volumes of transport in this direction (Eastbound) have almost equaled the long-term volumes of transport from Asia to Europe (Westbound).

Figure 27 - Map of main sea connections with container transport (2016)



Source: www.transportgeography.org

Figure 28 - Chart of container transport development between Europe and China in 1000 TEU



Note: Prediction for year 2025 is 1 milion TEU – it is about 50 the biggest container ships.

5. ASSESMENT OF EXISTING LEGISLATION

5.1. Laws

5.1.1. European union

In the light of the European legal framework, it is important to mention in particular the following strategic and legislative documents:

- White Paper COM 144/2011 on Transport (Roadmap to a Single European Transport Area:
- Creation of a competitive and resource efficient transport system)
- UIRR 2050 Combined Transport Roadmap
- Association Agreement Art. 82 (Agreement 158/1997 Coll. (EUROPEAN ASSOCIATION AGREEMENT) concluded between the European Communities and their Member States, of the one part, and the Slovak Republic, of the other part),
- Council of Europe Directive no. Establishing common rules for certain types of combined transport of goods between Member States,
- Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union;
- Regulation 1315/2013 on the Union guidelines for the development of the trans-European transport network and repealing Decision no. 661/2010 / EU
- Regulation 1316/2013 on the establishment of the Connecting Europe Facility, amending Regulation (EU) no. Regulation (EC) No 913/2010 and repealing Regulation (EC) No. And (EC) No 680/2007. 67/2010,
- AGTC Convention - European Agreement on Major International Combined Transport Routes and Facilities;
- AGTC Protocol on Inland Waterways - Protocol on Combined Transport on Inland Waterways to the Europe Agreement on Critical International Combined Transport Routes and Related Objects (AGTC);
- Convention 62/1986 on the safety of containers,
- Council Decision 95/137 / EC on the signing of the Convention on the customs treatment of pool containers used in international transport,
- Regulation 1071/2009 / EC establishing common rules on the conditions to be complied with to pursue the occupation of road transport operator and repealing Council Directive 96/26 / EC;
- Regulation 1072/2009 / EC on common rules for access to the international road haulage market,
- Convention 11/1975 on the contract of carriage in international road freight (CMR),
- Council Decision publishing in full the text of the Customs Convention on the international transport of goods under cover of TIR carnets (TIR Convention) of 14 November 1975, as amended from that date;
- Regulation (EU) no. - Regulation (EC) No 913/2010 of the European Parliament and of the Council of 22 September 2010 on a European rail network for competitive freight,
- Convention concerning International Carriage by Rail (COTIF) of 9 May 1980, as amended by Protocol 1999;
- Agreement on the International Carriage of Goods by Rail (SMGS);

- Directive 34/2012 of the European Parliament and of the Council establishing a Single European Railway Area,
- Council Resolution 82 / C 622 on Community rail policy;
- Council Resolution 95 / C 169 on the development of rail and combined transport;
- Council Resolution 2000 / C 56 on the promotion of intermodality and intermodal freight transport in the European Union;
- Regulation 11/1960 / EEC on the elimination of discrimination in transport rates and conditions,
- Commission Regulation (EC) No. Amending Regulation (EC) No 800/2008 declaring certain categories of aid compatible with the common market (General Block Exemption Regulation).

Directive 92/106 / EEC on the establishment of common rules for certain types of combined transport of goods between Member States

In autumn 2017, the European Commission presented a revision of Directive 92/106 / EEC establishing common rules for certain types of combined transport of goods between Member States (hereinafter referred to as "the revision of the KD Directive"). The revision of the KD Directive should, as the European Commission intends, help to promote the shifting of freight from road to rail and to promote green modes of transport, as stated in the White Paper on Transport. The original proposal sought to achieve the objectives of promoting combined transport, for example by extending the scope of the existing Directive to national combined transport operations, simplifying the definition of combined transport and increasing the flexibility of the road section within combined transport, and extending economic support for investment in transhipment stations in the TEN-T network. The proposal envisaged that Member States should put in place support measures of an economic nature and coordinate them with each other and with the European Commission. After long negotiations, the final proposal for a revision of the Directive has not yet been reached. Unfortunately, the latest working text of the revision practically does not fulfill the original assumptions. The diverging views within the scope of the Directive concern the issue of cabotage and investment in combined transport infrastructure. Completion of the review review can be expected only with the resulting wording, the so-called. Mobility Package I.

The proposal for a Directive of the European Parliament and of the Council amending Council Directive 92/106 / EEC on the establishment of common rules for certain types of combined transport of goods between Member States is currently being withdrawn by the EC. The new proposal will be part of the Greendeal - Green Agreement for Europe. Therefore, the Rail Transport Department will also submit a proposal to amend the Act on Railways and related decrees so that the definition and basic parameters of the combined transport terminal and multimodal transhipment terminal are obvious. It will most likely be a proposal as follows:

- **A multimodal transhipment terminal** (freight terminal) is a place for transhipment of goods (goods) between at least two modes of transport, including the storage of goods (goods) for the purpose of compensating for inequalities between modes of transport, equipped with fixed or mobile devices.
- **Multimodal transport** is the transport of goods by at least two different modes of transport.

- **Combined transport** is a system of transporting goods in one and the same transport unit or road vehicle, where most of the route takes place by rail, inland waterway or sea without manipulation of the goods themselves, the initial (collection) or final (distribution) by road.
- **The transhipment / combined transport terminal** is a site specially equipped for transhipment of intermodal transport units between means of transport of at least two modes of transport, consisting of land, buildings and related technological equipment. Parameters of individual terminals and transhipment points will be elaborated in implementing decrees.
  At present, only the basic parameters based on the requirements of railway transport can be mentioned on the model terminal. The combined transport terminal and, in principle, the multimodal terminal must be able to process a train of 750 m in length. This does not mean that it must necessarily have a track terminal of 800 m in length, but it must be provided with technology that will enable such a train to be handled without problems.

Connecting Europe Facility – CEF
Under the CEF program, two projects in two combined transport transshipment points were supported under the Multimodals Logistics Platforms priority in the call 2015 - MAP Cohesion. The aid granted for these projects amounted to 14.869 mil. (Approx. CZK 371.714 million).

Outlook for the next period
Also in the following programming period it is necessary to count on the development of combined, or multimodal transport. Combined transport is a sustainable form of freight transport. Here it is necessary to realize that public support is an opportunity to develop investments that the applicant himself could not afford, mainly because of the long return on investment. The development of intermodal transport depends on the development of railway infrastructure, which is expensive and costly. Properly equipped and deployed transshipment yards are the first entry into effective development in this area. The development of combined transport is also a priority for the European Union. A strategic document, Operational Program Transport 2023 - 2027, is currently being prepared and will be discussed with the European Commission. After discussing this document, the priorities in the area of state aid in the area of the Ministry of Transport will be known.

The current state of the network of private terminals was due to the segregation and privatization of terminals that were originally owned by state railways, were privatized in the 1990s and are owned by combined transport operators. For the further development of mainly terminal-to-terminal continental transport, it seems appropriate to set up conditions so that there is a transhipment station with public access as part of the public transport infrastructure. The issue of defining public access is still not clearly defined at European level. Strict adherence to non-discriminatory access to combined transport infrastructure is not only a pillar of its development, but also a condition required by public institutions (state administration, self-government, national funds, EU funds, etc.) that provide subsidies for the construction of combined transport infrastructure. In the Czech Republic, combined transport terminals are almost always private entities without state ownership. In addition to providing services related to the transhipment of intermodal transport units, their owners also in many cases also act as train operators. In these circumstances, ensuring non-

discriminatory access to combined transport infrastructure is difficult to achieve and control. A serious barrier that prevents the transition from road to rail transport is the high price required for transhipment of transport units. One of the reasons for the high prices in the Czech Republic is the low productivity of terminals due to the low concentration of transport flows in terminals, among others. as a result of the prevailing principle as a carrier, that of a terminal (instead of a regional principle with public access).
The public subject MDCR has subsidy titles to support but it is not clear from the specification whether it is granted to public entities or companies operating in the industry. In general, it is not wrong to encourage container transport to a private entity, but an alternative should be in the form of public transhipment points, the establishment of which should depend on the needs of the economy as a whole and not the actual business situation of individual firms.

5.1.2. Czech republic

Railways Act no. 266/1994 Coll., as amended
The approval process of the Railway Act concerning the implementation of the market pillar of the 4th railway package is currently being finalized. From the content of this amendment, combined transport operators (combined transport terminal operators) are indirectly affected by changes related to the definition of a publicly accessible siding and the provisions relating to service facilities for rail transport. These are partial changes to the institutes introduced as part of the amendment to the Railway Act with effect from 1 April 2017.
The process of implementing the technical pillar of the 4th railway package is also being launched.
Product factor P4 Combined transport value of 0.65 in the calculation of the price using the transport route. (Runway Declaration for 2019)
Due to the unclear development of discussions on the revision of the Railway Infrastructure Directive, it is not possible to include in the forthcoming technical amendment to the Railway Act the changes resulting from the approved version of the Railway Infrastructure Directive.

Road Tax Act no. 16/1993 Coll.
The Road Tax Act currently has the most precise definition of combined transport within the meaning of the current Directive 92/106. The approved revision of the KD Directive will also need to be implemented in this Act in the future. The wording of § 12 concerning road tax rebates on vehicles used in combined transport.

Road Traffic Act no. 361/2000 Coll.
At present, the Road Traffic Act does not have any definition of combined transport, although under the current Directive 92/106 it provides for exceptions to the ban on driving for road vehicles involved in the combined transport system. The approved revision of the KD Directive will also need to be implemented in this Act in the future.

The construction, modernization and repair of multimodal transhipment stations from public sources is enshrined in **Act No. 104/2000 Coll.,** On the State Fund of Transport Infrastructure, as amended, which shows that this area of transport must not be neglected and deserves attention of both private and public investments leading to further development of environmentally friendly forms of transport.

5.1.3. Poland

At the national level, the need to adopt an intermodal transport law is emphasized, which would precisely define the concept of the institution in question and regulate in a comprehensive manner the basic issues related to this type of transport in Poland. In this regard, it is postulated, among others, to introduce to the market a "intermodal waybill", which would harmonize the conditions of carriage and liability of the intermodal transport operator. By submitting such postulates, it is also pointed out that there are difficulties related to it and resulting from the different specifics of individual transport branches.

Currently binding legal acts in the field of intermodal transport are:

- Geneva Customs Convention of December 12, 1972 on the carriage of goods in containers - Journal of Laws of 1983, No. 7, item 36 and 37
- The Transport Law - Dz. Of Laws 2000 No. 50, item 601, as amended - concerns national regulations on the carriage of goods carried for a fee. Pursuant to art. 1 transport law, the scope of the Act was excluded: sea, air and horse transport. A contrario, this legal act will therefore apply to road, rail and river transport.
- The Act of 6 September 2001 on road transport1, Dz. Of Laws of 2001 No. 125, item 1371, as amended - defining participants in this mode of transport; presenting their duties in general.

In addition, you can mention the regulations for intermodal relief, which was guaranteed for the years 2019-2023 under. agreements of December 21, 2018 for the implementation of the multiannual program "Assistance in financing the costs of railway infrastructure management, including its maintenance and repairs until 2023" concluded between the Minister of Infrastructure and PKP PLK SA. Under this agreement, a 25% discount is assumed, referring to rates of access to infrastructure managed by PKP PLK, except that the agreement also includes restrictions on its total amount paid. If, before the end of the third quarter of a given year, 65% of the amount provided for co-financing of the concession is exhausted, the minister - after exhausting the annual limit of funds - may suspend its payment.

5.1.4. Slovakia

Due to the fact that intermodal transport uses several modes of transport, the legislation intervenes in all transport modes and shows high demands in terms of legislation.
The national legislative framework of the Slovak Republic consists mainly of the following regulations:

- Act 56/2012 on Road Transport,
- Act 8/2009 on Road Traffic,
- Law 361/2014 on motor vehicle tax,
- Act 135/1961 on Roads,
- Act 513/2009 on Railways,
- Act 514/2009 on rail transport,
- Act 338/2000 on Inland Navigation,
- Act 513/1991 Commercial Code, DIEL XIV, Contract of Carriage of Goods,
- Act 124/2006 on health and safety at work,

- Act 125/2006 on labor inspection and on amendment of Act no. 82/2005 Coll. on undeclared work and illegal employment,
- Act No.264 / 1999 on technical requirements for products and conformity assessment,
- Act 199/2004 Customs Act,
- Act 652/2004 on state administration authorities in customs,
- Act 145/1995 on Administrative Fees,
- Act 540/2001 on State Statistics,
- Act 231/1999 on State Aid,
- Law 136/2001 on the protection of competition;
- Act 523/2004 on budgetary rules of public administration,
- Decree 144/1982 on the Customs Convention on the international transport of goods under cover of TIR carnets (TIR Convention);
- Decree 350/2010 on the construction and technical order of railways,
- Decree 123/2001 laying down details on the content, scope and course of the test and on the form of the certificate of professional competence of the carrier in water transport;
- Decree 205/2010 on designated technical equipment and specified activities and activities on designated technical equipment,
- Decree 24/1963 on the Customs Convention and on Containers and the European Convention on the Customs Arrangement of Pallets in International Transport.

5.2. Subsidy programs

5.2.1. Czech republic

a) Operational Program Infrastructure - OPI
Within the OPI 2004-2006, specifically within the sub-program “Measure 2.2 Support for the development of public transhipment points”, 2 projects concerning combined transport were supported. The total support provided for these projects was CZK 82,204 million.

b) Operational programs Transport - OPT
Under OPD I 2007 - 2013, specifically within the program “Support for the revitalization of railway sidings”, a total of 5 projects were supported, which concerned the development of 4 transshipment points of combined transport. The total support provided for these projects was CZK 95.978 million.
Under OPD II 2014-2020 there are two support programs related to support for the development of combined transport. Under the program “Support for the Modernization and Construction of Combined Transit Stations”, approved public support amounts to 49% of the eligible costs of an individual project. Up to now, 7 projects have been supported, which concerned 6 transshipment stations in the Czech Republic. The total approved support for these projects amounts to CZK 487.936 million. The fourth call of this program is currently under way. In total, 13 applications were submitted within the 3 evaluated calls, which corresponds to 54% success rate of submitted projects.
The main project benefiting from subsidies under OP Transport 2014 -2020 in the TRITIA region - Priority Axis 1 - Infrastructure for rail and other sustainable transport, specific objective SC 1.3 - Creating conditions for greater use of multimodal transport will be the

construction of a **container terminal in Ostrava - Mošnov** (ICM - Intermodal Center Mošnov) with public access. The recipient of the subsidy is OSTRAVA AIRPORT MULTIMODAL PARK s.r.o. The date of implementation is expected 1.8.2019 - 1.1.2022. The total costs of the project amounted to CZK 767,543,442.92, the approved contribution from EU funds amounted to CZK 276,833,197.90 (ie 36.06%). In addition, within this program in the TRITIA region, subsidies were approved for the project **Purchase and Renewal of Semitrailers for Combined Transport** of ČSAD LOGISTIK Ostrava a.s. with the realization date 30.4.2019 - 31.5.2020, the total project costs 30 426 176,00 CZK, contribution from EU funds 7 543 680,00 CZK, ie 24,79%. It is the purchase of 20 pieces of semi-trailers mega (lowdeck) and 10 pieces of standard semi-trailers for combined transport.
Overall, the terminal infrastructure was subsidized by EU funds mostly in the amount of about 40% of the total eligible costs and reloading equipment (translators, rail cranes) mostly also around 40%, handling units (semi-trailers, containers) around 25%.
Under the “Acquisition of Combined Transport Units” program, approved public support is 30% of the eligible costs of an individual project. In 2019, 2 calls were announced. Within the first call, two projects were submitted and recommended by the evaluation committee for funding in the amount of CZK 10, 574 million.

c) Connecting Europe Facility – CEF
With the help of the CEF financial instrument, the infrastructure of the Paskov Multimodal Container Terminal (3rd stage of terminal modernization, 2 new tracks of 365 m length and 3 new tracks of 750 m length) was financed by the beneficiary - AWT, a.s. for the period of implementation February 2016 - December 2020. Total eligible costs amounted to EUR 8 896 000, max. EU subsidy EUR 5 871 360 (66%). The project was supported because it is related to the international rail freight corridor RFC 5.

Experience from abroad shows that in order to achieve a greater share of combined transport in total freight transport performance, an appropriately set environment, both through the legislative framework and the support system, is an important condition. These are forms of investment and operational support.

Investment grants are provided in the Czech Republic under two programs:

1. Program No 127 72: “Support for the modernization and construction of intermodal transhipment points”. Support under OP Transport 2014 - 2020. This investment support can be applied for combined transport docks with public access for the purpose of modernization and construction (inter alia trimodal road-rail-water, bimodal road-rail). The deadline for physical implementation of the projects is 31 December 2021. Allocation of CZK 800 million - maximum amount of support 49% of eligible expenditure.
The aim of the program is to create a network of terminals with public access, which is a necessary condition for the creation of continental combined transport lines.

2. Program No. 127 73 “Acquisition of transport units of combined transport” intended for the purchase of transport units for continental combined transport - vertically manipulated (intermodal) semi-trailers, inland containers, swap bodies, eventually new innovative units / technologies. Expected allocation of the entire program up to CZK 400 million. Maximum aid intensity 30% of eligible costs.

3. A form of operating support for combined transport could be considered a **discount on the price for the use of the railway infrastructure for combined transport trains**, which is given and announced by SŽDC in the Statement of Railways for the calendar year.

5.2.2. Poland

The basic source of financing projects related to intermodal transport in Poland is the Operational Program "Infrastructure and Environment". In the 2007–13 programming period, in the years 2012–2013, 14 KD terminals were built or rebuilt on his behalf, 433 special vehicles for KD and 270 intermodal trailers were purchased with a contribution of PLN 4 million. In 2013, 85% of recognized standards at the ports of Szczeźcin and Świnoujście were not supported by the infrastructure of the terminal network, and 50% at the ports of Gdynia and Gdańsk.
In 2014-2020, as part of Measure 3.2 Development of maritime transport, inland waterways and multimodal connections, group C Intermodal transport. The competition was announced on November 30, 2016. The call for proposals lasted until January 8, 2018. In November 2017, the Prime Minister signed a regulation providing for PLN 1 billion (approximately EUR 238 million) for the implementation of projects in the area of intermodal transport under Infrastructure OP and the Environment for 2014-2020. This aid program was an important step in implementing the provisions of the ATS by 2020. It was to help repair the competitiveness of intermodal transport services in Poland.
Intermodal transport operators can also be applicants for subsidies, but also leasing companies that provide leasing to the intermodal transport fleet. The aid intensity was higher, but also the aid intensity (up to 50% of eligible costs). The minimum eligible cost was PLN 10 million. Projects with road or rail connections with terminals were an exception - min. the amount of eligible costs in the amount of PLN 5 million.
Finally, 52 applications were selected - 34 projects, including 3 in the appeal procedure. Their total value is PLN 1.258 billion. 13 applications were evaluated negatively, 4 applicants withdrew themselves, and 1 was left without consideration. Ultimately, the competition will result in the expansion or modernization of 19 terminals, whose transhipment capacity is to be increased by 557 thousand. TEU per year; purchase of 616 intermodal loading units and purchase or modernization of 4,264 rolling stock units. In the Śląskie Voivodeship, a grant of PLN 20,765,222.22 was awarded to the project: **Expansion of the intermodal container terminal in Gliwice** along with the purchase of equipment to operate it, notified by PCC Intermodal S.A.
In addition, one should also mention here the intermodal relief applicable until 2023 (presented in section 5.1.2

5.2.3. Slovakia

The Strategic Plan for the Development of Transport of the Slovak Republic until 2030, which as one of the problems of further development of intermodal transport identified an insufficient strategy of further development of intermodal transport and the segment of individual wagon consignments. The material emphasizes the need for data on the volume, routing and type of commodities transported, and without this knowledge, the requirements for intermodal transport terminals cannot be defined and justified responsibly. The development in the stopped preparation of the construction of other public intermodal

transport terminals depends on the evaluation of the impact of the TIP Žilina - Teplička on the shift of goods transport from the road to the railway and on the development of the performance of other non-public terminals. It proposes to address the further direction of intermodal transport through measures aimed at improving the conditions for combined transport and the operation of coherent freight trains and promoting the interoperability of freight vehicles, while the potential for the development of freight transport lies in combined transport and coherent trains. It is therefore necessary to promote and develop combined transport terminals and to support the development of important railway loading points.

Development of intermodal transport support in Slovakia:

- In 1994, the Government of the Slovak Republic signed an approach to the AGTC (European Agreement on Major International Combined Transport Routes and Related Objects) agreement, according to which the time limit of 30 minutes for the train crossing should be respected,
- Since 1996, the Program of Support for the Development of Combined Transport in the Slovak Republic has been implemented with the validity until the year. 2010. It was a program for small and medium-sized enterprises in the field of combined transport,
- At the initiative of the Combined Transport Department, the Combined Transport Section was created at the Freight Transport Division of the Railway Company a.s. (ZSSK) in 1998,
- On 17.1.2001 the Government of the Slovak Republic approved by Resolution no. 37/2001 "Concept for the development of combined transport with a view to 2010",
- On January 23, 2001, the Agreement between the Slovak Republic and ŽSR on the Support of Combined Transport Operation in the RoLa System was signed for 2001-2005,
- The Ministry of Transport in cooperation with the Ministry of Finance of the Slovak Republic and the Customs Directorate Bratislava resolved the customs handling of integrated combined transport (KD) trains at combined transport terminals, which is a condition of 30 minutes. In cooperation with ŽSR, MÁV, ČD and DB the issue of handover of combined transport trains across borders was solved in trust,
- Motor vehicles that perform combined transport with a total weight of more than 7.5 t and trucks with a trailer do not have any restrictions on public holidays and rest periods. This is specified in more detail in the Act of the National Council of the Slovak Republic No. 315/1996 Z.z. as amended by later regulations on road traffic (Section 36 (3) (d)),
- Advantages of tax reduction for vehicles used in combined transport according to the conditions of §7 of the Act of the National Council of the Slovak Republic no. 361/2014 Z.z. on motor vehicle tax,
- In the framework of international cooperation, intergovernmental bilateral agreements on combined transport are signed with the Czech Republic, Hungary, Austria, Slovenia, Croatia, Bulgaria, Poland, Latvia, the Netherlands, Romania, Estonia, Ukraine, Macedonia and Serbia;
- On the initiative of combined transport operators, the Association of Forwarders of Slovakia and the Association of Employers of Transport, Posts and Telecommunications of the Slovak Republic, the Association of Combined Transport was established. The Combined Transport Council was established at the Association of Employers of Transport, Posts and Telecommunications of the Slovak Republic (today the Union of Transport, Posts and Telecommunications of the Slovak

Republic). The basic objective of the Council is to assist in the development of the CP. The Council is represented by selected central state administration bodies, University of Žilina, ZSSK Cargo, a.s., SPaP a.s., operators of KD, ČESMAD Slovakia, Union of Forwarders of Slovakia and others,

- Awareness of the importance of combined transport is carried out in professional journals as well as in electronic media. Since 1996, an international conference called EUROKOMBI has been organized, and has now been replaced by the international scientific conference Horizons of Railway Transport, organized by the University of Žilina,
- In cooperation with the Ministry of Finance of the Slovak Republic, Principles were issued for the provision of a special-purpose subsidy from the state budget for technical equipment of combined transport. The policy was approved by PVM on 2.10.2001. The subsidy was provided for the purchase of new large containers, swap bodies, road carriers, reloading mechanisms for working with NJ KD at combined transport terminals and their loading / unloading points. The amount of the subsidy was determined from their acquisition price by a share of 30 - 50%. The condition for granting the subsidy was to prove the price of procured funds, to block the agreed amount of money, to conclude an insurance contract for property, to use min. 5 years for KD and conclusion of Contract with MDPT SR. The program of special-purpose subsidies from the state budget began to be implemented as of 1 January 2003. The instrument was abolished by the combined transport development scheme on 23.3.2004,
- An update of the concept of combined transport development was adopted at the meeting of the Ministry's management on 15.7.2003,
- Resolution of the Government of the Slovak Republic No. 215/2004, the use of the Combined Transport Development Scheme in the Slovak Republic in the provision of state aid within the Program for the Support of Combined Transport Development in the Slovak Republic was approved. The scheme of combined transport development in the Slovak Republic was published in the Commercial Bulletin no. 57/2004 on 23.3.2004. The scheme was canceled on 15.6.2007,
- Ministry of Transport, Posts and Telecommunications of the Slovak Republic pursuant to § 8 par. 2 of Act no. 523/2004 Coll. on budgetary rules of public administration and on amendments to certain acts, as amended by Act No. 584/2005 Z.z. Decree no. 491 / M-2006 of the Ministry of Transport, Posts and Telecommunications of the Slovak Republic of 15 February 2006 on the provision of subsidies in the field of combined transport,
- Within the EU programming period 2007 - 2013, the Ministry of Transport, Posts and Telecommunications of the SR prepared the Operational Program Transport (OPT), which was approved by the Government Resolution no. 1007 of 6 December 2006. This Operational Program ensured the absorption of funds for transport projects in 2007-2013 from the Cohesion Fund and the European Regional Development Fund. The starting document of the Slovak Republic for the development of OPT was the “Transport Policy of the Slovak Republic until 2015”, which was approved by the Government Resolution no. 445/2005. Other documents and their strategies defining the priorities and objectives of the transport policy were also taken into account in the development of OPT. In fulfilling all priorities and objectives through OPT, the global objective of OPT was respected, which was to support sustainable mobility through the development of transport infrastructure and the development of public passenger

transport. The specific objectives of OPT were modernization and development of railway infrastructure, modernization and development of road infrastructure, modernization and development of intermodal transport infrastructure and development of public passenger transport. In the framework of priority axis 3 - Infrastructure of intermodal transport, the intermodal terminal Žilina - Teplička was built.

Pilot Interreg project ChemMultimodal of Duslo, a.s. Šaľa:

The scope of the project was to evaluate and establish pilot project for connection of the Duslo plant in Šaľa with the customers around the Europe, throught the logistic chain of multimodal transportation.

Duslo, a.s. is one of the most important chemical industry companies in Slovakia. Throughout its history, it has grown into a well-established producer of fertilizers with European significance and a global supplier of rubber chemicals. Duslo, a.s. is a part of the AGROFERT group, international holding of companies that operate in chemical, agricultural, food production, forestry, lumber, land and transport technology, renewable resources and media sectors.

Table 2 - The main lines considered in the project

From	Transshipment	Destination	Mods (km)	Mounthly quantitiy (t)
Duslo	-	Lyon - France	Rail – 1 327 km	5 000 t
Duslo	Dunajská Streda	Rotterdam – Holland	Rail – 1 284 km Road – 37 km	500 t
Duslo	-	Barcelon - Spain	Rail – 1 963 km	1 500 t
Duslo	Dunajská Streda Rotterdam Kingston	Yorkshire - England	Road – 152 km Rail – 1 284 km Sea – 338 km	2 400 t
Duslo	Dunajská Streda Rotterdam	Caldas de Reis – Spain	Road – 37 km Rail – 1 284 km Sea – 1 800 km	780 t
Duslo	Dunajská Streda Rotterdam	Gafanha da Nazare – Portugal	Road – 37 km Rail – 1 284 km Sea – 1 900 km	1 300 t

As shown on table above, two of the planned routes was carryed out as clasic freight railway transport in freight wagons. The four other routes will be executed by containers with on route transshipment in strategic points for optimaliztion of the route. The pilot project was in operation until the end of the year 2018, and there are no information about the continuation of this project. The final report can be found on the site https://www.interreg-central.eu/Content.Node/ChemMultimodal/D.T2.10.5-Final-Implementation-Report-Slovakia-1.pdf with analysis of all the routes and their evaluation for the future transportation.

6. COMMODITIES ELIGIBLE FOR INTERMODAL AND MULTIMODAL TRANSPORT

6.1. Fuel

As a rule, fuels are not commodities transported in combined transport; conventional rail transport is more cost effective for siding to siding. An exception to the rule is the transport of quality coke over long distances. In line with the increasing number of registrations of electric vehicles and declining registrations of vehicles using conventional fuels, the transfer potential for goods can be significantly reduced. Fuel to power plants and larger factories is already being transported by rail or intermodal transport today almost in its entirety. By encouraging the use of renewable sources in energy production, these transports are likely to decrease.

6.2. Building materials

The potential for the transport of building materials can be seen in INNOFREIGHT technology, which in particular enables unloading of intermodal units at the point of consumption by means of mechanisms that can be moved by road and there is no need to build new facilities when changing the unloading within the next construction and amortise them only for the purpose of one construction, where the material deliveries can take several days. The potential for transport of building materials can be seen in INNOFREIGHT technology, which in particular enables unloading of intermodal units at the point of consumption by means of the mechanisms that can be moved by road as standard. Constructions where material deliveries can be in days. With a well-set pricing policy, the potential of these transports is significant, but probably only since the implementation of the GREEN DEAL program, where it will be the task of transferring shorter distances from the road.

6.3. Long distance cargo

Due to the specific conditions on the Czech combined transport market, which are due to approximately double the prices required for transhipments at private combined transport terminals, continental combined transports are only effective over very long distances, ie only for international transports. National combined transport is generally inefficient in view of the high terminal costs. Long-distance cargo from other continents, whether by sea or rail, is currently transported, usually in 40-foot containers. There is potential in taking over road transport within Europe.

6.4. Mail and e-shop

Figure 29 – Growth of ecommerce in Europe

Source: https://ecommercenews.eu/ecommerce-in-europe/#market

Currently, intermodal transport is not used for mail and e-shops. In the future, however, it will be necessary to catch up as the warehousing is centralized when goods are sent over longer distances and this transport has to be transferred from the roads. Special containers similar to those for air transport, which will be used at night on trains on high-speed lines, may be the solution. The main role will be played by goods from e-shops, because the sending of classic mail, which was previously letters or postcards, is now replaced by electronic forms of communication.

6.5. Chemical products

Chemical products are among the commodities that use combined transport most often, even in the case of technology of individual wagon consignments. The dense railway network in the Czech Republic and the still high number of chemical plants equipped with railway siding on the one hand and many customers abroad who do not have such infrastructure on the other predestine these products to use combined transport and transport of products in tank containers.

6.6. Dangerous goods

The above statement in chapter 6.5 also applies to the transport of dangerous goods, especially when it is stated that the safety of rail transport is 20 times higher than that of road transport.

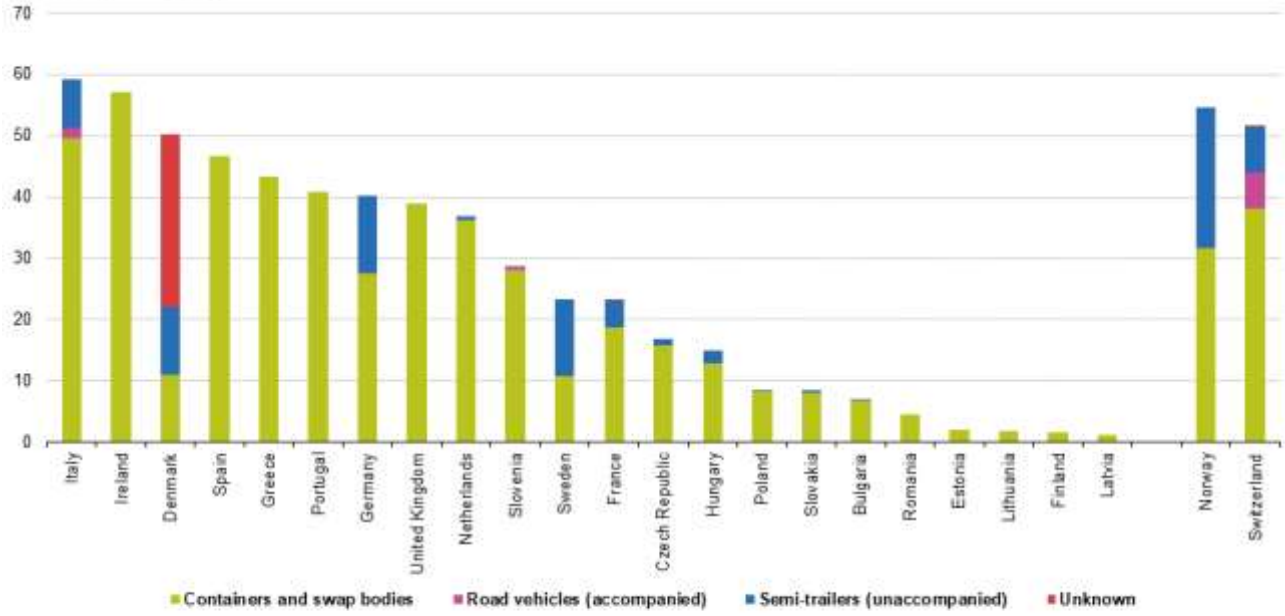
6.7. Refrigerated goods

The existence of transport units equipped with refrigeration equipment or, on the contrary, with resilient thermal insulation, enables the transport of refrigerated or hot goods in combined transport. The problem is to provide infrastructure for intermodal units that must still be connected to a power source. The transhipment is thus burdened with additional costs against the carriage of other goods and the transfer from road to rail or water will be more difficult and in the future it will probably have some relief for road transport.

7. MEANS OF INTERMODAL TRANSPORT

Road-rail CT requires adapted equipment, being intermodal units which can be shipped using several different transport modes and which are be specially equipped for vertical loading onto special wagons designed to run at speeds of 100 to 120kph.

Figure 30 – Share of intermodal transport units in rail goods transport in % of total tonne-kilometers, 2016



Note: Based on gross-gross weight, including both the weight of packaging and the tare weight of the containers; Belgium, Luxembourg and Austria: not available; Cyprus, Malta and Iceland have no railways, while Liechtenstein's railway line is negligible.
Source: Eurostat (online data code: tran_im_urail)

eurostat

7.1. ISO containers 20” a 40”

Figure 31 – Examples of 20“ and 40“ containers

The potential for 40” containers is especially in intercontinental and sea transports. These funds constitute and will constitute, in the long term, a significant part of intermodal transport, but it is not to be expected that additional transport will be transferred to them. The advantage of containers over other intermodal devices is the possibility of stacking, which reduces the demands on the vastness of handling areas.

7.2. Innofreight containers

Figure 32 – Examples of Inofreight containers

Innofreight containers are transport intermodal units of 13, 20, 30 and 40 feet length, which are adapted to be tipped by handling means. They have advantages in the transport of bulk materials - fuels and building materials. There are also modifications for liquids and in the form of conventional containers. Potential of innofreight containers is at short distances with good tax policy.

7.3. Swap bodies

Figure 33 – Examples of swap bodies

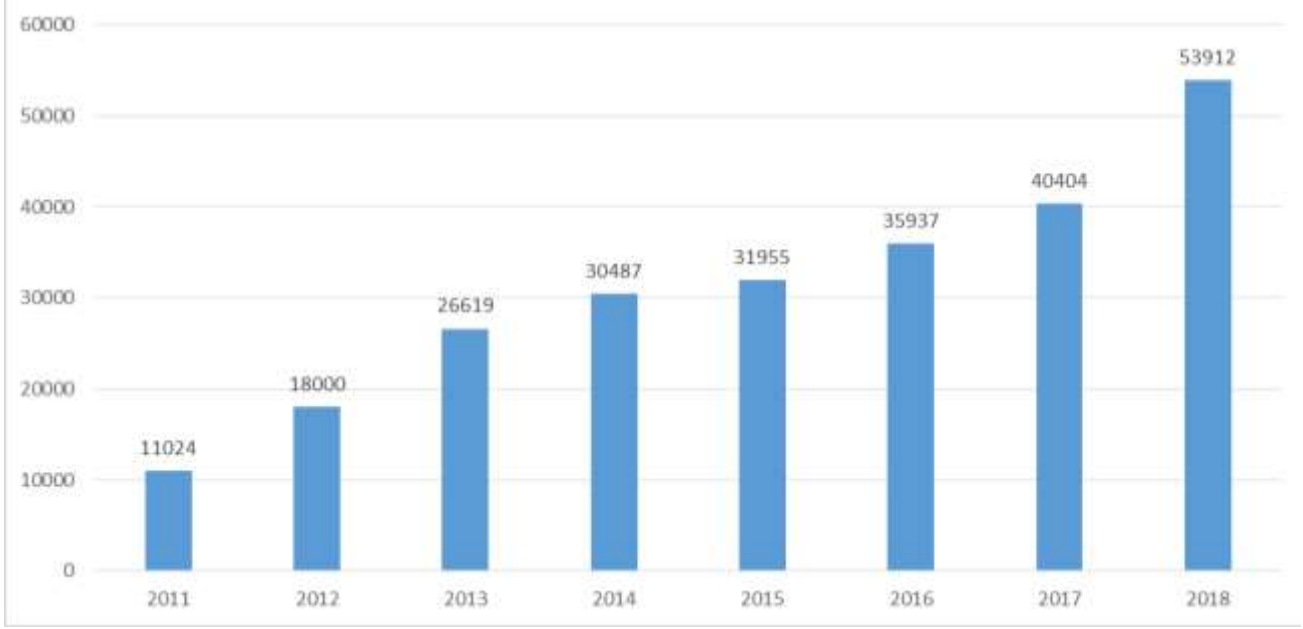
Swap bodies should be one with technology that will allow the transfer of traffic over shorter distances. The disadvantage is that they need a specially adapted road vehicle and are not as operational as intermodal trailers or classic containers.

7.4. Intermodal semi- trailers

Figure 34 – Example of semi-trailer

Regular transport of goods loaded in intermodal (ie crane-manipulated) trailers in Europe started to be used to a greater extent only at the turn of the 20th and 21st century, in the Czech Republic to a greater extent only after 2010. These intermodal transport units have a competitive advantage loading height of 3 meters (so called low deck = trailer with small wheels). Other advantages compared to ISO containers include better use of cargo space with Euro pallets and the possibility of loading goods into the semi-trailer from the side of the semi-trailer. For the transport of heavy goods, the lower tare of the semi-trailer is advantageous compared to the higher tare in the combination of semi-trailer chassi + swap body or container, which allows loading of more goods into countries where the maximum gross weight of the road vehicle is limited by 40 tonnes. Given recent growth, the potential for modal shift appears to be high. However, it is necessary to change the organization of work for transhipment, as it would be difficult to create floats for storing standing trailers.

Figure 35 – Road semi-trailers transported from and to the Czech Republic by rail



Source: Annual report of Czech republic transport 2018

8. TERMINAL TARGET PARAMETERS

8.1. Capacity

The parameters of the combined transport terminals change with time. For this reason, it is advantageous and expedient to increase the capacity of the terminal (and thus the fixed costs of the terminal) in stages and expand the terminal within individual modules. Even when deciding on the construction of the first module, the space requirements for the future construction of other modules must be taken into account. The parameters of terminals intended for continental combined transport differ significantly from those of terminals intended primarily for transhipment of ISO containers, which are stackable in several layers. The difference therefore lies mainly in the need for significantly larger paved areas for parking intermodal trailers and swap bodies. There is also a difference in handling technology, which must be equipped not only with spreaders for reloading containers, but also with collets for reloading swap bodies and intermodal semi-trailers.
The terminal capacity of the terminal should allow the formation of trains up to 740 m long, which is the limit on the length of trains on the rail freight corridors given by the European Directive. It does not mean useful track length, but the existence of technology that can handle such trains. No parameter other than public access to intermodal terminals is required, including the required number of units translated.

Moravian - Silesian Region
In the TRITIA region, only the terminal in Paskov will have 4 rails of 750 m in length. The terminal in Mošnov, which is still under construction, will have track lengths of about 700 m.

Opole and Slaskie Voivodeships
Currently, it has only a terminal in Swarzędz - Jasin (near Poznan) of CLIP - Centrum Łogistyczno Investycyjne Poznan II Sp. z.o.o. (near Poznan) track length over 800 m (2 x 871 m, 1x 829 m, 1x 836 m), Euroterminal in Sławkov located in the TRITIA region (7 tracks 700 m long), PCC terminal in Kutna by PCC Intermodal, S.A. (4 transport and 1 handling track 700 m long). Other terminals have rails shorter than 700 m including terminals in Gliwice and Dąbrowa Górnicza in the TRITIA region.

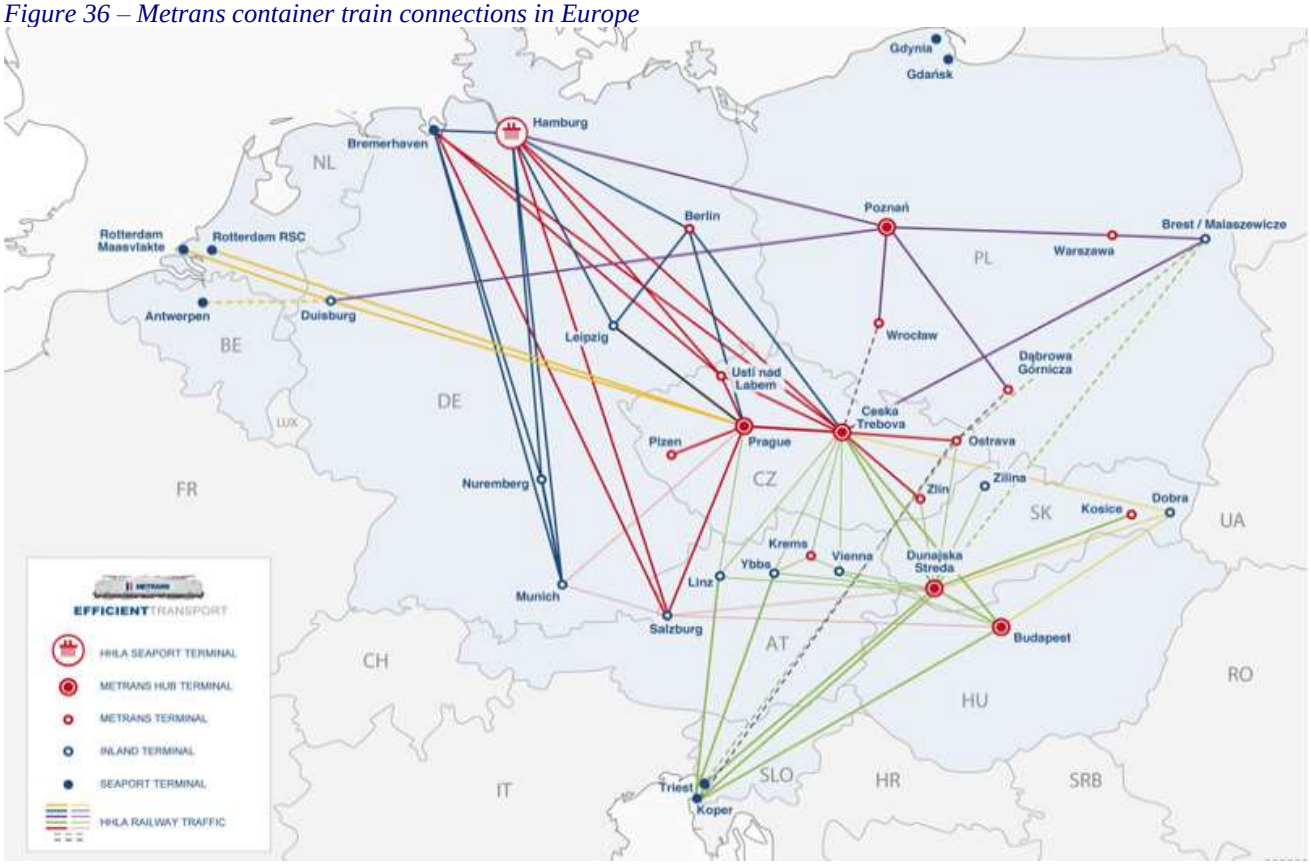
Žilinsky Selfgoverning Region
The newly built TIP terminal in Žilina - Teplička (operator Metrans) has a track length of 750 m. Next terminal in Žilina railway station (operator RCA) has no track length of 750 m.

8.2. Line routing

Investments in terminals must be subordinated to the nature of future lines through which the terminal will be connected to the network of other terminals. In particular, it is necessary to determine whether the terminal will be used for the transport of maritime lines connecting the terminal to seaports or whether it will serve as the starting and ending lines for intercontinental transport lines. The size of the reinforced transhipment and storage area as well as the type of transhipment mechanisms must be adapted to the nature of the lines. The terminal can also be designed as universal for both types of lines.

Combined transport lines on the territory of the Czech Republic began to be gradually established in the 1990s for the needs of fast-growing import and export needs of overseas transports, so that only ISO shipping containers were transported there. The density of lines to and from seaports and the frequency of trains on these lines have gradually increased according to market needs. Gradually, the share of shipments of shipping containers realized by rail increased at the expense of their share on the road. This positive trend was particularly successful with Hamburg flights. The share of containers transported from Hamburg to the Czech Republic or by transit to Slovakia by rail reached the value of about 80%, as the Representation of Hamburg Ports in Prague claims. Therefore, the status of lines of this type can be assessed as satisfying and fully covering market needs.
The accession of the Czech Republic to the EU created a prerequisite for the creation of continental KD lines operated between individual terrestrial terminals inside the continent and serving for the transport of consignments and the exchange of goods within the EU. Their developmental precursors were, before joining the EU, the accompanying combined transport lines, the so-called ROLA lines, with the transport of complete road trains, including road tractors and their drivers in couchettes. Their temporary operation was only possible thanks to the massive operating subsidies, which were significantly supported by the use of the system of allocation of remuneration allowances from abroad.
Higher level of development then became continental lines (driver) of unaccompanied combined transport. The number of continental KD lines operated in the form of regular integrated trains with the transport of semi-trailers, swap bodies and special containers gradually increased. However, the density of the network of lines and the frequency of trains running on them do not yet achieve the stated objectives of European transport policy. The market requirements for the reliability of train movements on continental lines are very high, the quality of transport along the entire road - rail - road chain must be fully comparable with the quality (speed and price) of direct road transport. The first important prerequisite for meeting this demanding market condition is, first of all, a high-quality infrastructure on the main railway lines, their electrification and sufficient throughput to allow the operation of at least 740 m long trains, even on detours. Market expectations and combined transport customers' demands for service quality are not yet in line with the operational possibilities of rail traffic, dealing with failures and restrictions on the throughput to the railway infrastructure, as well as personnel problems of key operating professions.
An important prerequisite for high-quality service of lines is a sufficient capacity transfer point of combined transport, including sufficiently large parking areas for storing transport units, which are usually not stackable.

Figure 36 – Metrans container train connections in Europe



Source: Metrans

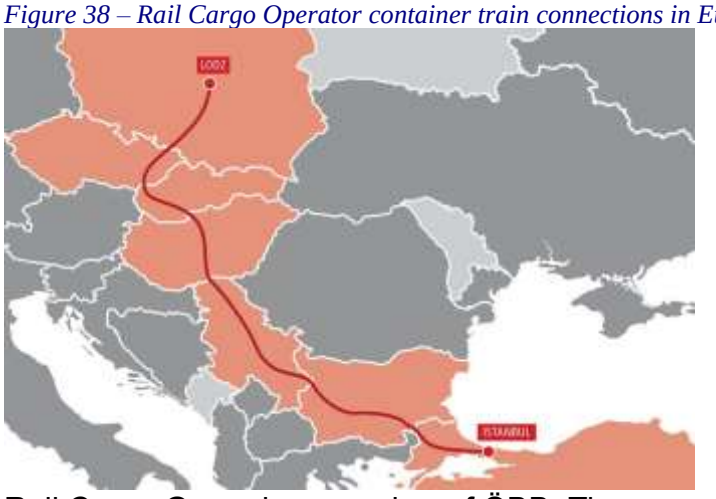
The company Metrans has container transport links between terminal Gadki (at Poznan) - across terminal Pruszków (in Warsaw to the terminal in Małaszewice (PPS), and from terminal Gadki across Wroclaw and Česká Třebová and from terminal Gadki to Dąmbrowa Górnicza and across cross-border station Petrovice u Karviné to terminal in Šenov.

Figure 37 – PCC intermodal container train connections in Europe

Source: www.pccintermodal.pl

In the north-south direction, PCC has Intermodal S-A. its terminals in Tczew, Kutno, Gliwice, Kolbuszowa and Brzeg Dołny connected by train connections to the sea ports of Gdańsk and Gdynia. From Gliwice there are connections trought cross-border station Petrovice u Karviné and Břeclav to Vienna and Halkali to Turkey. These terminals are also connected to each other by train links and further west - east trought the Frankfurt n. Oder terminal to the ports of Hamburg, Bremenhaven, Rotterdam, Antwerp and Duisburg terminal in Germany. Through PPS Małaszewice / Brest, the company operates train connections with KD to Minsk in Belarus, Moscow, Kazakhstan, Turkmenistan, Kirgisdtan, Mongolia, Japan, Korea.

Figure 38 – Rail Cargo Operator container train connections in Europe



Rail Cargo Group is a member of ÖBB. The map shows the TRANSFER system train route between Lodz and Instambul in Turkey. Within Europe, it operates other trains connected mainly to KD terminals in Austria, to terminals in Germany, Hungary, Romania, Bulgaria and

Italy.
Within the Czech Republic, this carrier also operates system trains from terminals in Přerov and Brno.

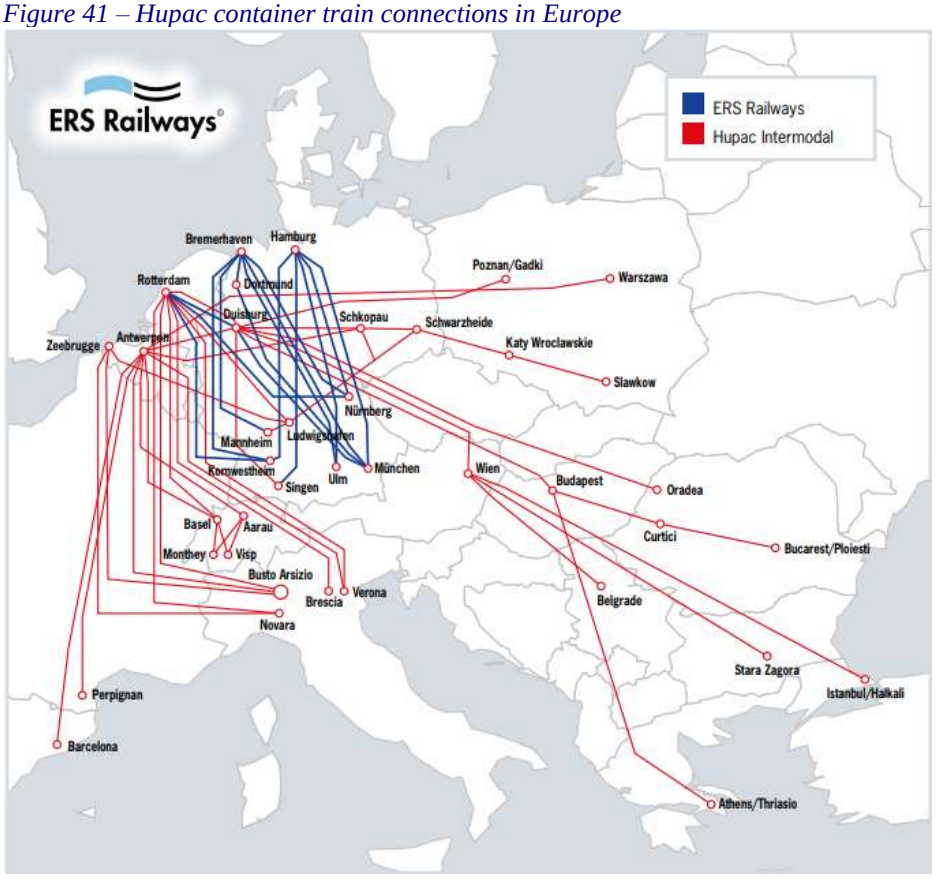
Figure 39 – Loconi intermodal container train connections in Poland

The services of this KD operator are between Gdańsk and Gdynia seaports and inland terminals in Warszawa, Gadki, Kąty Wrocławskie, Radomsko and Dąmbrowa Górnicza. At the Gadki and Dąmbrowa Górnicza terminals, they cooperate with Metrans to organize container transport.
They plan to build another terminal in Zbąszynek.
In 2018 they reloaded more than 180,000 containers and in 2019 they planned to reload over 200,000 containers. In 2015, they operated 150 intermodal connections, transporting more than 130,000 containers. In 2019, the company won several awards and one of the awards for the introduction and development of intermodal transport of a linear nature and another for its rapid response to the market situation.

Figure 40 – Baltic Rail container train connections in Europe

Their trains are connected to the ports of Gdańsk, Gdynia, terminals in Warsaw, Wrocław, Małaszewice, Katowice, Ostrava (Paskov), Vienna, Terst and Koper.

Figure 41 – Hupac container train connections in Europe



Zdroj: Hupac

It is headquartered in Switzerland and has a branch office in Poland and trains connected to terminals in Poland - Warszawa Pruzsków, Euroterminal Slawków, Katy Wrocławskie, Gadki (near Poznan) and also to cross-border station Malaszewice (and terminal in Brest). Furthermore, to terminals in Austria (Vienna), Hungary (terminal Bilk Budapest), Germany (Hamburg, Duisburg, Schwarzheide, Ludwigshafen, Kornwestheim, Mannheim, Cologne, Hannover, Karsruhe, Dresden), the main European ports of Rotterdam, Antwerp, Zeebruge, to the Netherlands, Belgium, to Spain (Barcelona), France (Perpignan-Roussillion), Italy (Bologna, Verona, Pomezia (near Rome), Novara, Busto Arisizio (near Milan), to Bulgaria (Stara Zagora), Romania (Ploiesti Intermodal serv.), Turkey (Halkali), Denmark (Taulov), ans Sweden.
After its construction, the Polish terminal in Brwinów also plans to include HUPAC in its international train connections.

Figure 42 – Intermodal express container train connections in Europe

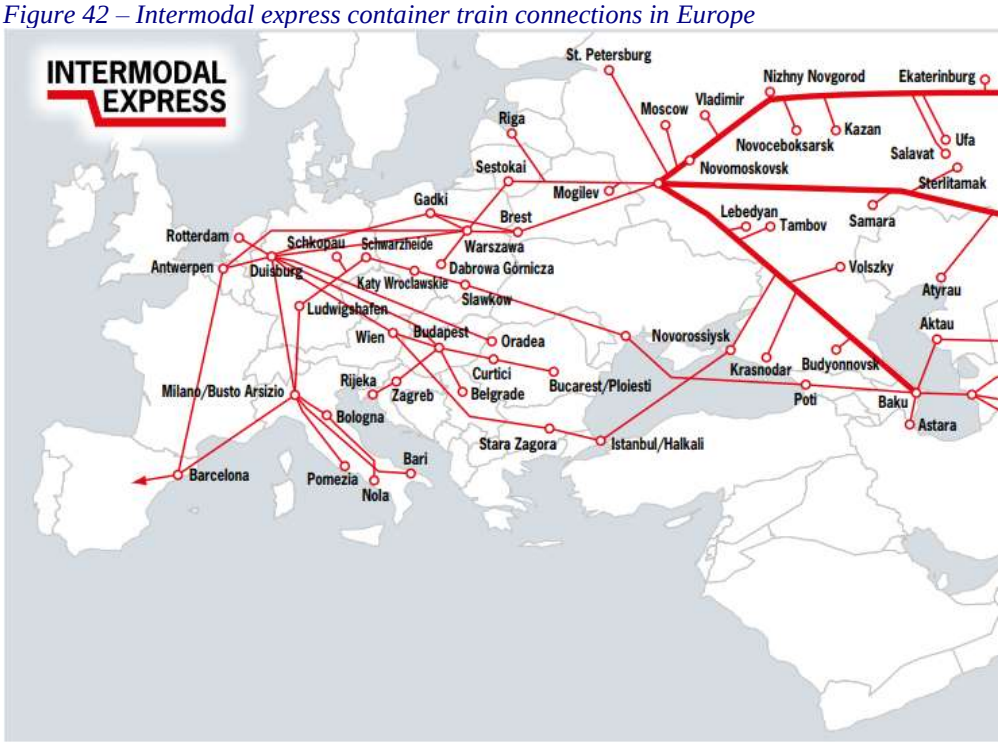
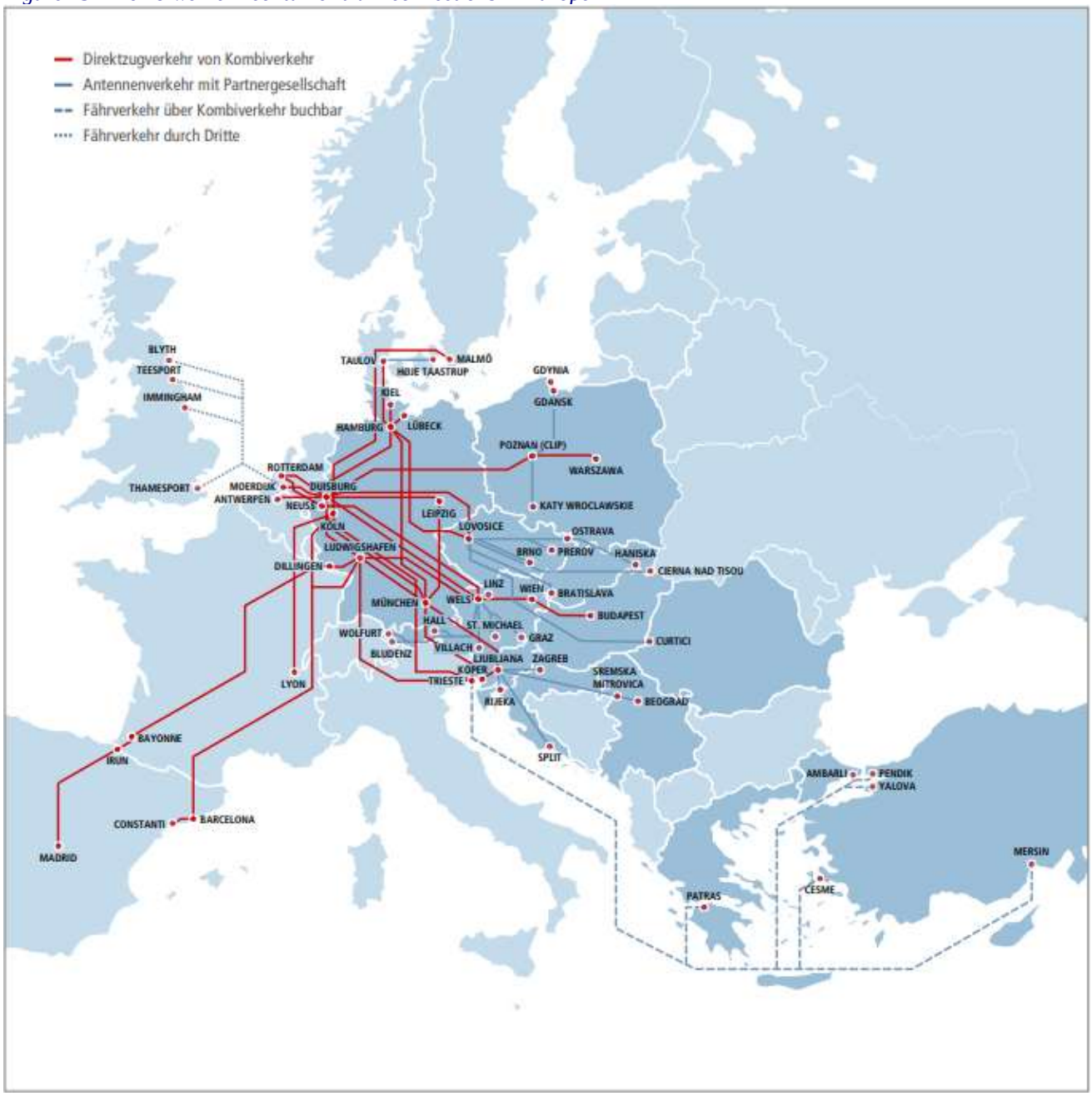


Figure 43 – Kombiwerkehr container train connections in Europe

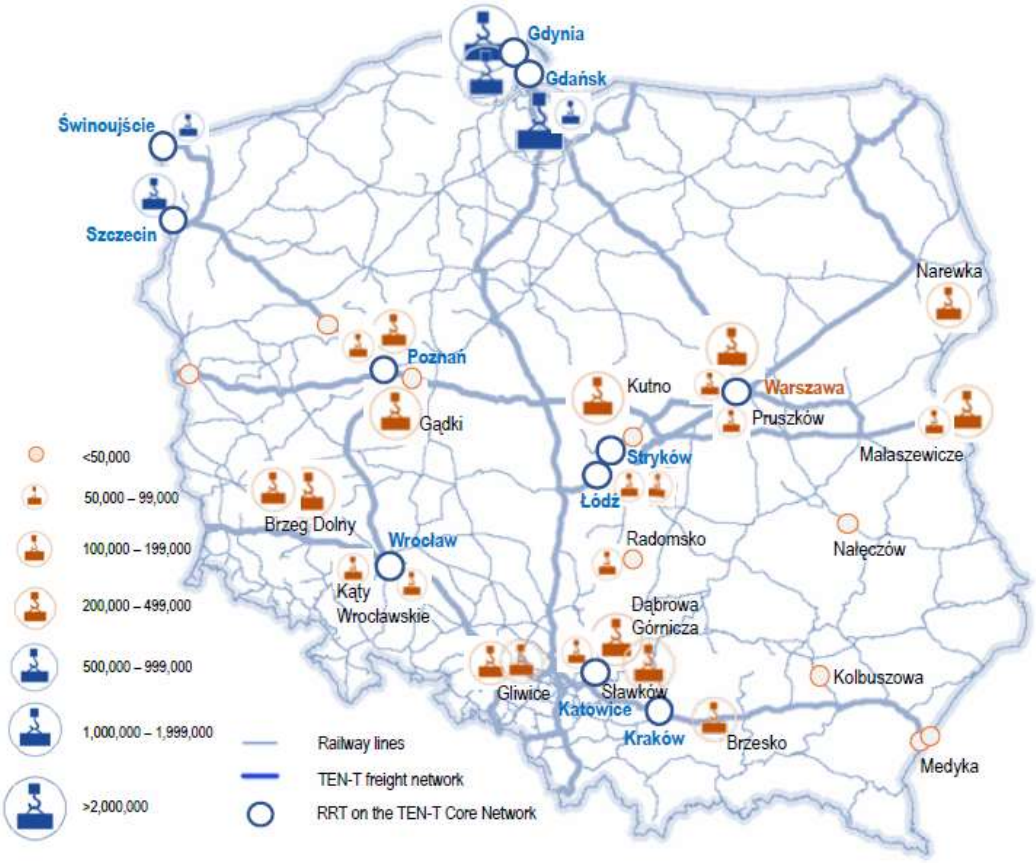


Development of traffic flows in relation to KD in Poland

In Poland there are 6 maritime terminals (2 in Gdańsk - DCT - Deepwater Container terminal, Gdańsk terminal containerowy SA), 2 in Gdynia (BCT - Baltic container terminal Sp.zoo, GCT - Gdynia Container Terminal SA), 1 in Szczecina (DB Port Szczecin Sp. Zoo), and 1 in Świnoujscie (OT Port - terminal container).
27 inland terminals (in TRITIA - Slawków, Gliwice, Dąmbrowa Górnicza), outside TRITIA Brzesko (near Krakow), Kutno (near Warsaw), Pruszków (near Warsaw), Warsaw, Poznan, Poznan Gadki, Katy Wrocławskie, Brzeg Dolny, Łódź Chojny, Stryków (near Łódź), Radomsko, Naleczów (near Lublin), Swarzędz - Jasin (near Poznan), Szamotuły (near

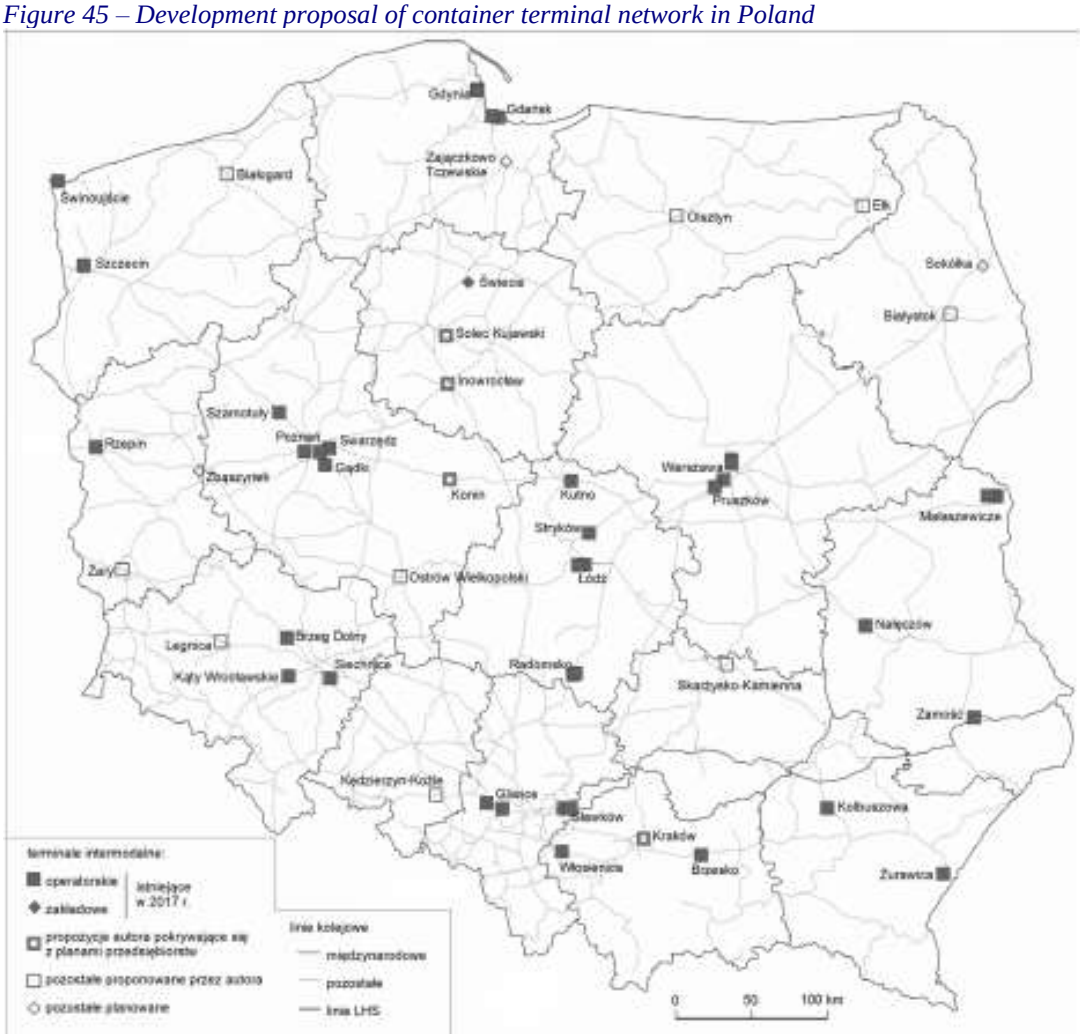
Poznan), Narewka (near Białystok), Kolbuszowa (near Rzeszow), Ślubienica (near Katowice).
The terminals are operated by Metrans (3 terminals), PKP Cargo S.A. (3 terminals) and PKP Cargo Connect Sp.z.o.o. (3 terminals), Loconi Intermodal, S.A. (4 terminals), PCC Intermodal S.A. (4 terminals), Baltic Rail a.s. (2 terminals), Schavemaker Invest sp.z.o.o. (, Rzepin (1 terminal), Eron Trans Agencja Celna Sp.z.o.o. (2 terminals), Europort Sp.z.o.o. (1 terminal), Centrum Logistyczno Inwestycyjne Poznan II Sp.zoo (1 terminal), LTK Intermodal Sp.z.o.o. (1 terminal), Andrex - Logistics Andrzej Konończuk (1 terminal), Ostped Intermodal Sp.z.o.o. Limited partnership.
In terms of the volume of reloaded containers, the Metrans terminal in the TRITIA region in Dąmbrowa Górniczi was ranked second among terminals across Poland and similar volume was ranked 3rd in PPS Małaszewice (PKP Cargo terminal).
There are 4 border terminals (2 in Małaszewice and 2 in Medyce Żurawici).

Figure 44 – Location map of existing KD terminals in Poland



Source: Analysis of the potencial of the development of rail container transport market in Poland (February 2019)

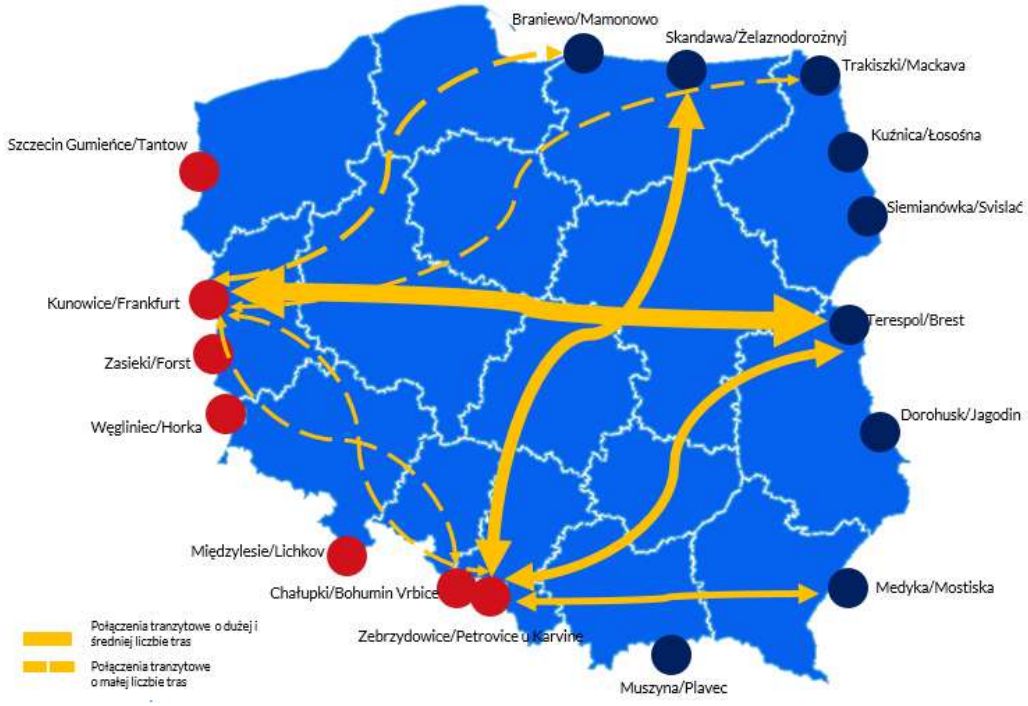
Figure 45 – Development proposal of container terminal network in Poland



Source: DISTRIBUTION AND CHARACTERISTICS OF THERMAL CONDITIONS IN POLAND ORAZ PROPOZYCJE LOCALIZATION OF NEW OBJECTS (2018) - Tadeusz Bocheński, Uniwersytet Szczeciński

Other terminals that will be implemented in the near future are multimodal terminal in Rybnik (initiated by PKP S.A.) on an area of 20 ha of land near Rybnik Towarowy station. The first step was to sign an agreement between Rybnik and PKP S.A. this terminal is located on the territory of the TRITIA region.

Figure 46 - Map of transit links on PKP PLK network in relation to PPS

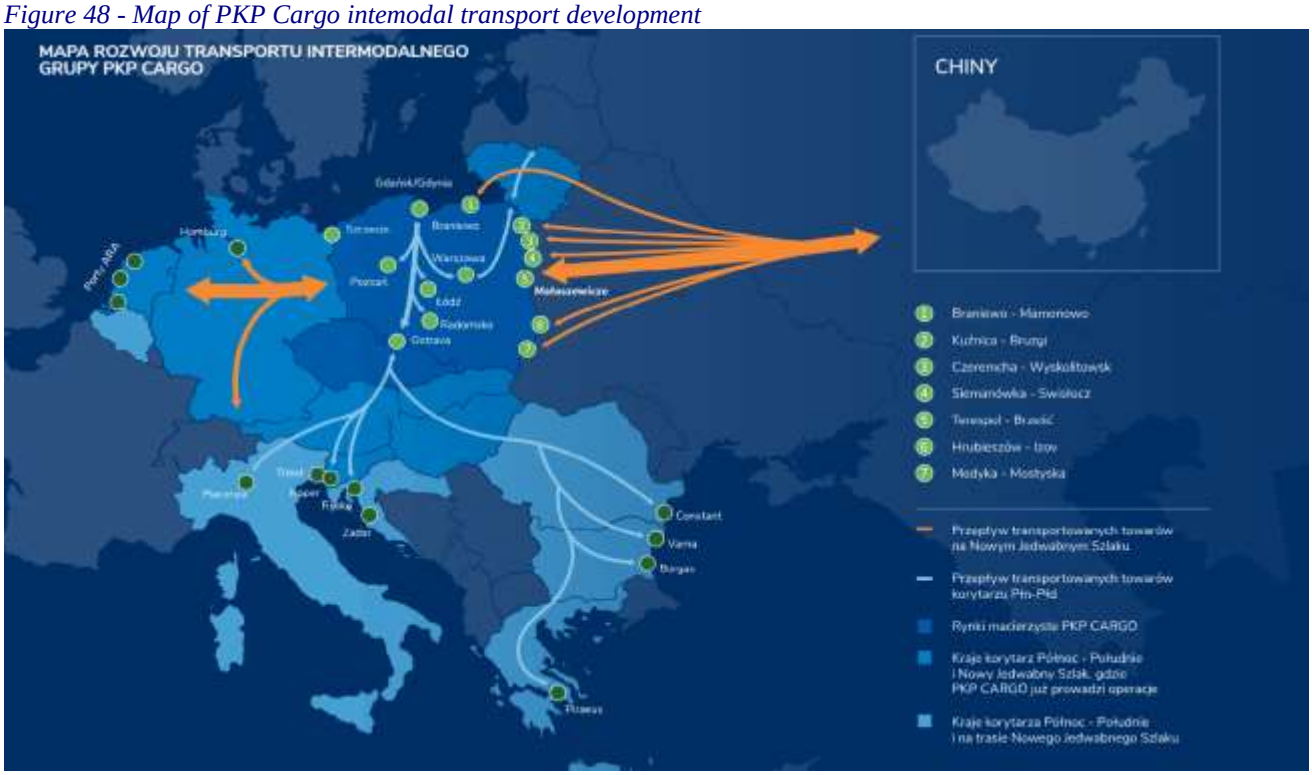


Source: UTK - Analysis of freight transport by rail in international communication

Figure 47 - Matrix of the number of realized international train routes through selected PPS with the Czech Republic and Germany (main routes in 2018, according to data from the e-SEPE Information System)

Source: UTK - Analysis of freight transport by rail in international communication

Figure 48 - Map of PKP Cargo intemodal transport development

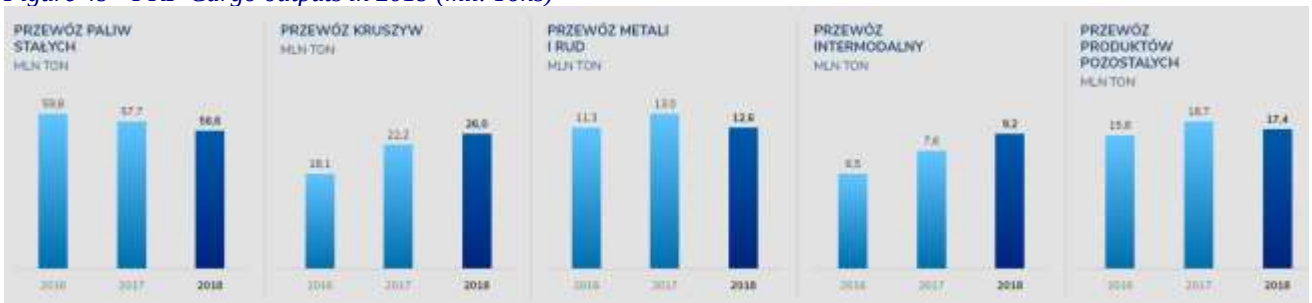


Source: PKP Cargo

NJS - Nowy Jedwabny Szlak (New Silk Road)
Korytarz płn-płn - North-South corridor

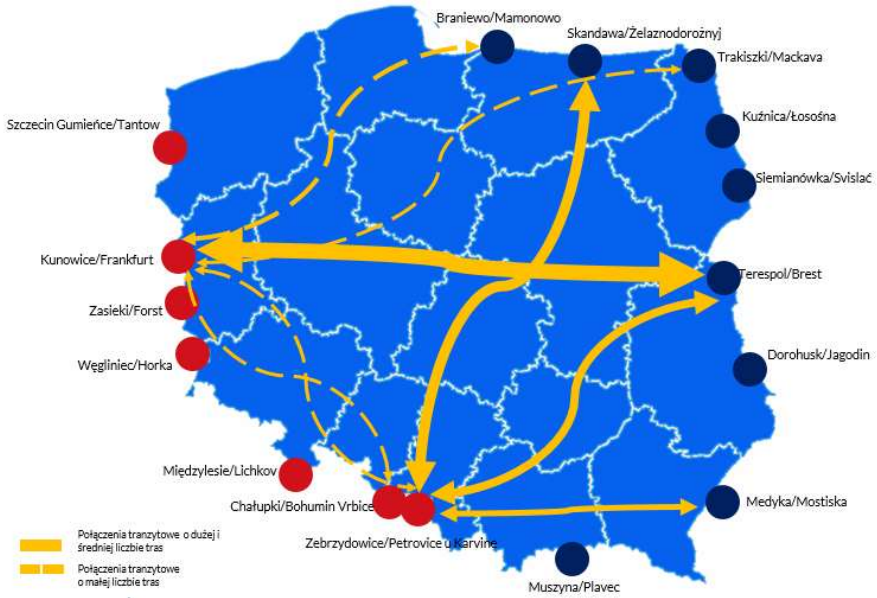
PKP Cargo has about 50% share in rail freight transport within Poland.
Strategic goals - to achieve a share of 65% on the Polish rail freight market by 2020 (in tkm). Develop intermodal transports on a new silk route. Create the best competitive offer prices and services on the NJS route and in the Tricity area (ports). 5% annual profit starting from 2019. Continuously improve its market position.

Figure 49 - PKP Cargo outputs in 2019 (mil. Tons)



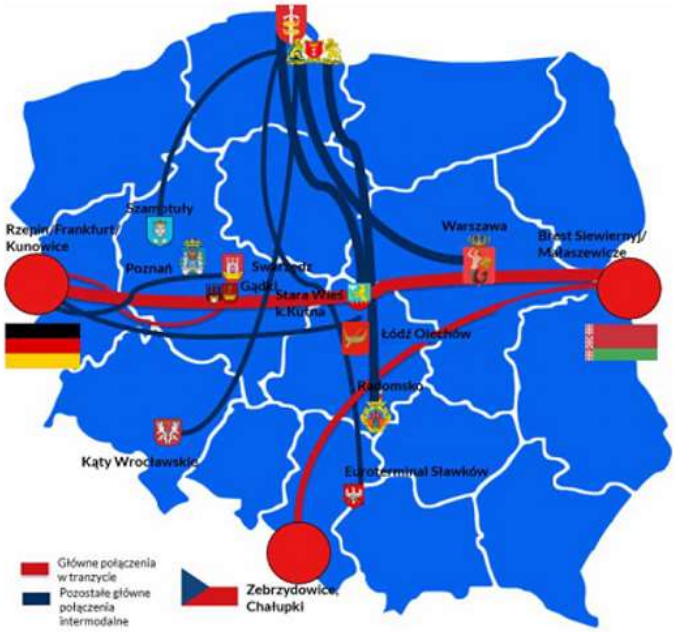
Intermodal transport contributed 9.2 million tons / year to PKP Cargo's performance in 2019.

Figure 50 - Guidelines for rail transport in Poland



Source: UTK - Analysis of freight transport by rail in international communication

Figure 51 - Guidelines for intermodal rail transport in Poland



Source: UTK

8.3. Location of terminals in the TRITIA countries

In order to assess the sufficient saturation of states in the TRITIA region by intermodal transport terminals, a table and subsequently graphs showing comparisons with other states were prepared. However, this section does not evaluate the total capacity of the terminals. It is evident from the processed reports that the number of intermodal terminals in relation to

the population and area of the territory in Slovakia and the Czech Republic is almost at the level of the target state, whereas in Poland the number of intermodal terminals is approximately half of the target state.

Table 3 - Assessing the number of intermodal terminals in Europe

Country	Number of inhabitants (milion)	Area	Number of terminals (intermodal-terminals)	Number of terminals (intermodal-map)	Terminal per inhabitants (1 terminal per milion inhabitants)	Terminal per area (1 terminal per thousand square km)
A	B	C	D	D+	E	F
					B/D or D+	C/D or D+
Austria	8,505	83,858	20	19	0,448	4,414
Croatia	4,258	56,538	7	8	0,532	7,067
Czech	10,519	78,866	17	18	0,584	4,381
France	66,616	551,500	13	76	0,877	7,257
Germany	80,640	357,022	37	160	0,504	2,231
Greece	10,758	131,957	1	3	3,586	43,986
Hungary	9,894	93,032	6	11	0,899	8,457
Italy	59,789	301,318	18	60	0,996	5,022
Macedonia	2,066	25,713	1	1	2,066	25,713
Nederland	16,795	41,528	21	50	0,336	0,831
Poland	38,548	312,685	28	38	1,014	8,229
Romania	19,858	238,391	17	20	0,993	11,920
Serbia	7,203	77,474		10	0,720	7,747
Slovakia	5,413	49,033	9	10	0,541	4,903
Slovenia	2,062	20,256	5	5	0,412	4,051
Switzerland	8,075	41,284	16	20	0,404	2,064
United Kingdom	64,231	242,900		63	1,020	3,856

Sources:
http://www.intermodal-terminals.eu/database
https://intermodallinks.com/Planner
http://www.uirr.com/index.php?option=com_terminal&view=terminals&tmpl=component&lang=en
https://cdn.networkrail.co.uk/wp-content/uploads/2016/12/Intermodal-rail-sites.pdf
https://www.utk.gov.pl/pl/dostep-do-infrastruktur/dostep-do-infrastruktur/mapa-obiektow-infrastru/terminale-intermodalne
https://www.intermodal-map.com/

Figure 52 – 1 terminal per milions inhabitants in Europe countries

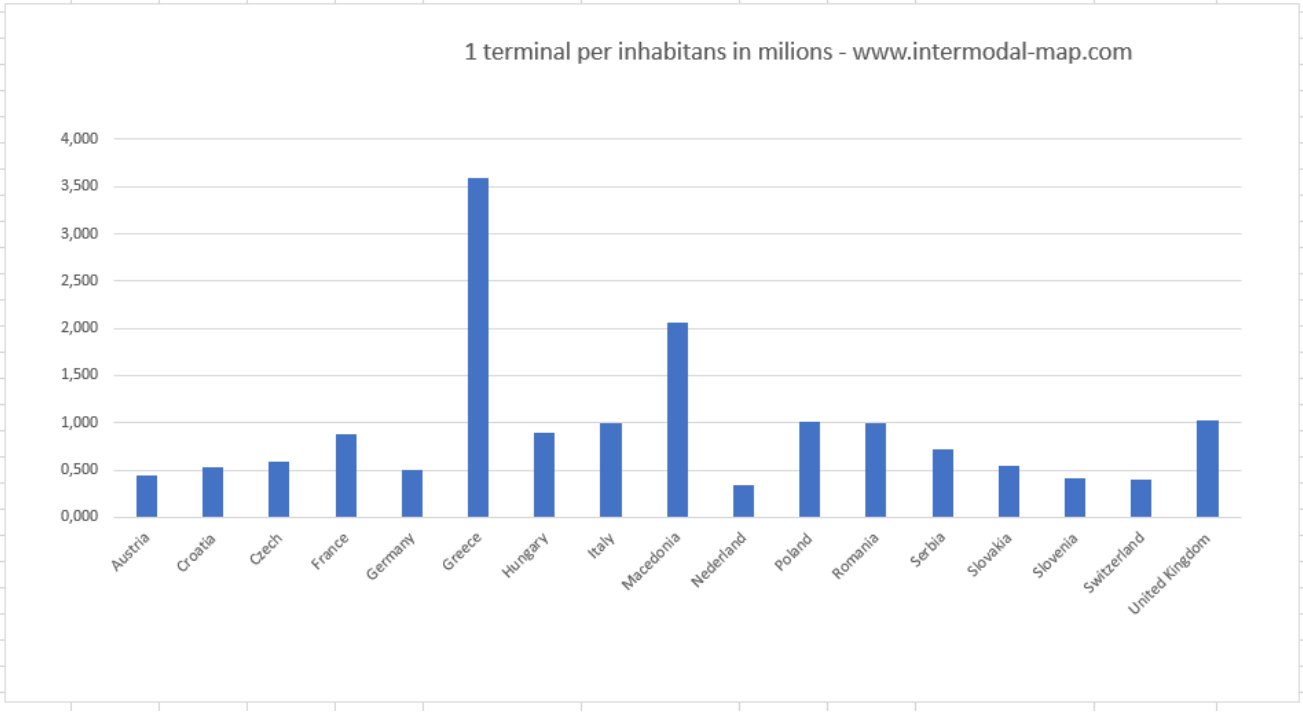


Figure 53 – 1 terminal per area in thousand square kilometers in Europe countries