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CORCAP

LOGISTICS CONCEPT FOR AN OEM CORRIDOR TRAIN ROSTOCK-SAXONY / CZECH REPUBLIC

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Table of contents

1. OBJECTIVES

Within the CORCAP project, logistics concepts for new intermodal transport and logistics services along the OEM corridor are to be developed and tested. The focus is on the line from the Rostock seaport via Saxony to Ustecký kraj in the Czech Republic. It is based on analyses of the flow of goods and market potentials for selected goods and types of goods, destinations and intermodal nodes. Potential customers and transport service providers should be identified. All activities are part of the work package T2 (Multimodal freight transport pilot actions complementing OEM) of the project.

The main goal of this train concept is to combine a wide variety of customers, goods and transport concepts in order to have a competitive offer for shipping by rail, which on the one hand contributes to the shift of goods traffic to the rails and on the other hand avoids weak points in the rail freight traffic system or compensated.

The basic idea pursued with this train concept essentially consists of the combination of and with existing services of wagonload traffic as well as intermodal traffic, based on the development of new potentials for rail freight traffic on the section Rostock-Berlin-Dresden-Ustí nad Labem of the OEM corridor East – Med. In addition, new opportunities are to be found to anchor the inland ports of the SBO Group and other logistics centers in the region better in the corridor.

2. WORKING GROUP CORRIDOR TRAIN

Immediately after the start of the project, a working group of railway operators and logistics centers was formed, which usually meets monthly and is coordinated by LUB Consulting GmbH. Members of this working group are:

- Rostock Port GmbH
- Stena Line GmbH & Co. KG Rostock
- Saxon Inland Ports Oberelbe GmbH (SBO)
- Česko-saské přístavy s.r.o. (ČSP)
- RETRACK Germany GmbH / VTG Rail Logistics Deutschland GmbH
- LINEAS Germany GmbH

The CT operator LKW WALTER and Rail Cargo Group Germany GmbH as a further railway company are also involved via the partners Rostock Port and Stena Line. In this way, it was possible to include the existing transport offers in combined transport (CT) and wagonload transport (WLT) that are relevant for processing.

The working group has jointly observed and evaluated the market, analysed the potential quantities, inquired about potential customers and made contact with other transport service providers.

3. MARKET POTENTIAL

With the help of the working group, the market potentials were examined especially in Saxony / Central Germany / Lausitz as well as in Ústecký kraj. The following sectors were selected as rail related industries that generally have significant and continuous transport volumes:

- Chemical industry
- paper industry
- steel industry
- wood processing
- Automotive and supplier industry

Among other things, the following locations in the respective industries and companies were identified and evaluated on the basis of the existing knowledge of the working group members with regard to potential rail transport volumes:

- Chemical industry
    - Solvay Bernburg Industrial Park,
    - Industrial Park Bayer Bitterfeld GmbH
    - ValuePark Dow Olefinverbund GmbH (Schkopau and Böhlen)
    - Schwarzheide Chemical Park
    - Chemical site Leuna / InfraLeuna GmbH,
    - Zeitz Chemical and Industrial Park,
    - Spolchemie Ustí nad Labem,
    - Setuza Ustí nad Labem,
    - Lovochemie Lovosice

- Paper industry
    - Hamburger Rieger GmbH (Spremberg),
    - Julius Schulte Trebsen GmbH & Co. KG,
    - LEIPA Georg Leinfelder GmbH - Schwedt North plant
    - Paper processing Golzern GmbH (Grimma)
    - Schoeller Technocell GmbH & Co. KG - Penig and Weißenborn plants
    - Schönfelder Papierfabrik GmbH (Annaberg-Buchholz)
    - Stora Enso Sachsen GmbH (Eilenburg)

- WEPA Leuna GmbH
- WEPA Papierfabrik Sachsen GmbH (Kriebstein)
- Zellstoff Stendal GmbH (Arneburg)
- Papírny Štětí (Mondi Štětí)

- Steel industry
  - Elbe-Stahlwerke Feralpi GmbH (Riesa)
  - ArcelorMittal Eisenhüttenstadt GmbH
  - Měď Povrly a.s.
  - Válcovny trub Chomutov a.s.

- Wood processing
  - KRONOSPAN GmbH Lampertswalde

- Automotive and supplier industry
  - Volkswagen Sachsen GmbH (Zwickau)
  - Porsche Leipzig
  - BMW Group Plant Leipzig
  - Škoda plant in Mladá Boleslav
  - Tesla Gigafactory Grünheide (planned)

Figure 1: Locations of relevant industries in the investigation area

The majority of the main areas of supply are to the west of the OEM corridor in central Germany. Against this background, the accesses via the ports of Torgau and Riesa as well as the Falkenberg node are relevant.

A total of around 250 companies were identified in the region under consideration. Companies from Saxony, Saxony-Anhalt, Brandenburg, Mecklenburg-Vorpommern and the Czech Ústecký kraj were included in the analysis. Companies that only operate regionally, that have no fixed transport routes, that send transport volumes that are too small, and companies from sectors that are not or only weakly rail related were filtered out. It was also checked that the distance to the access points of the corridor is not more than 150 km away.

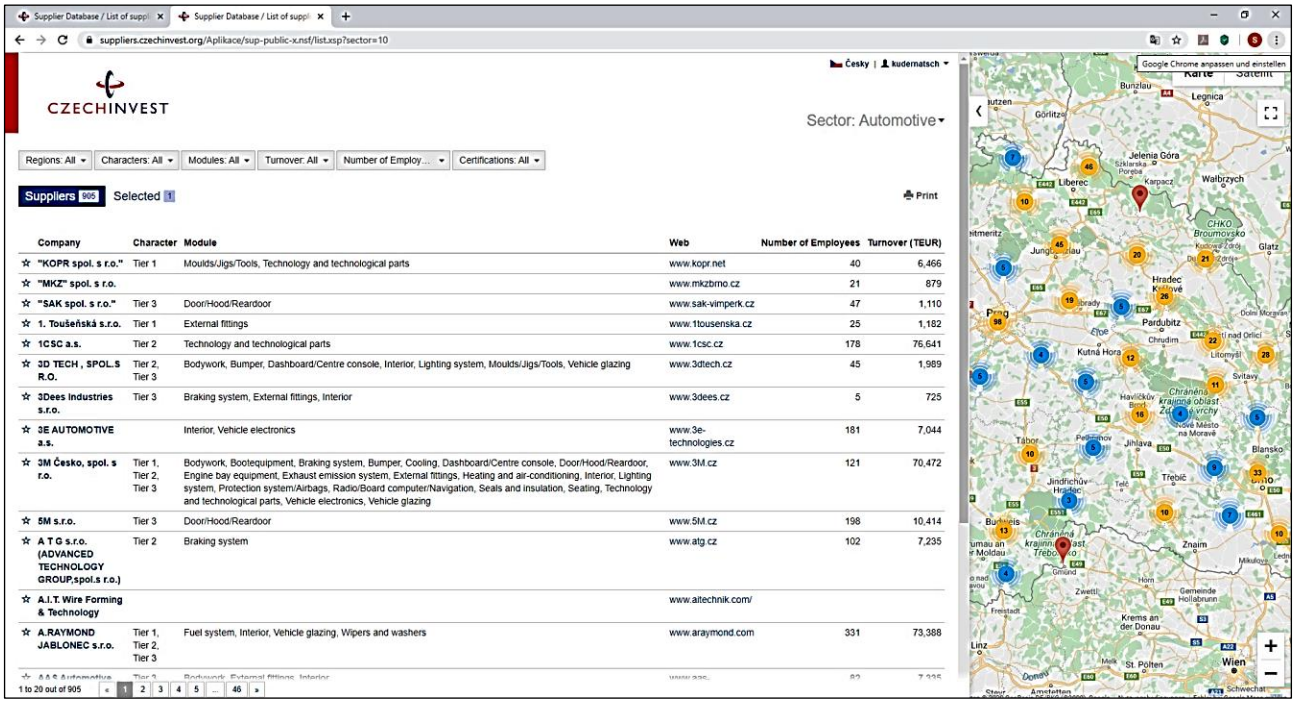


Figure 2: Market potential study via CzechInvest

The result was a shipper list with around 120 companies. The companies were assigned to individual members within the working group. The aim was to establish contact, check the information and inquire about a transport offer in the corridor. This checklist was worked through over a period of six months.

It was possible to determine quantities for the years 2021 to 2023, which have a fundamental potential for the corridor train. The greatest interest was in east-west connections, so that the OEM corridor would be used for this in sections. In this context, the consolidation points in the Riesa port and in the Falkenberg node are of greater importance than other OEM access points. The discussions and research which were carried out as part of the analysis also showed that after deducting the existing block train traffic, e.g. the Saxon automobile plants or production sites in the Central German Chemical Triangle, the transport volumes regularly used on a route are usually below block train-capable flows. Both findings confirm the approach pursued by the corridor train to supplement existing transport offers as far as possible and initially to offer new services in sections. In addition to the bundling of full truck loads on the Czech Republic-Rostock axis in combined transport, there are approaches in wagon load traffic for paper

transports in wagon groups or half-trains (sliding wall wagons) from Scandinavia to the south. One of the challenges here is to recycle the wagons to the north. There are also inquiries for spot transports, e.g. currently for round timber transports from central German forest areas to Southeast Europe, but due to their temporary nature they do not offer a plannable basis for the regular utilization of a corridor train.

As a result of the market analysis, the members of the working group have therefore agreed to further update the knowledge gained with regard to the quantity and type of goods potential, to use it in company-related capacity planning and to examine the possibility of joint service provision with the group's cooperation partners.

4. REQUIREMENTS FOR THE TRAIN CONCEPT

The main goal was to create a train concept that is competitive with continuous road freight transport. This means that not only the costs for the transport chain are decisive, but that - depending on the type of rail service - additional advantages and incentives for the modal shift should be created. These could be shorter or at least the same transit times or additional payload compared to road freight transport. In terms of transit time, costs and frequency, the cheapest concept will be the block train as a shuttle service between the departure and destination terminals with daily departures in each direction. However, this requires considerable volume flows. Particularly in combined transport for semi-trailers, swap bodies and containers, this consolidation can be achieved by getting ahead on the road to a conveniently located intermodal terminal. A similar concept applies to conventional wagonload trains when loading facilities in railway ports or inland ports are to be used as consolidation points.

In order to reach higher frequencies, mixed conventional / intermodal trains are also being considered. However, this usually leads to longer transit times and higher operating costs, e.g. by additional train dispatches or intermediate stops. Finally, for conventional wagonload traffic, the integration of wagon groups or even individual wagons into existing networks linked to the Rostock port can be used as a first step for the implementation of a new service, but usually with longer transit times (only feasible for less time-sensitive goods). The explained relationships and framework conditions for the train concept are shown in Figure 3.

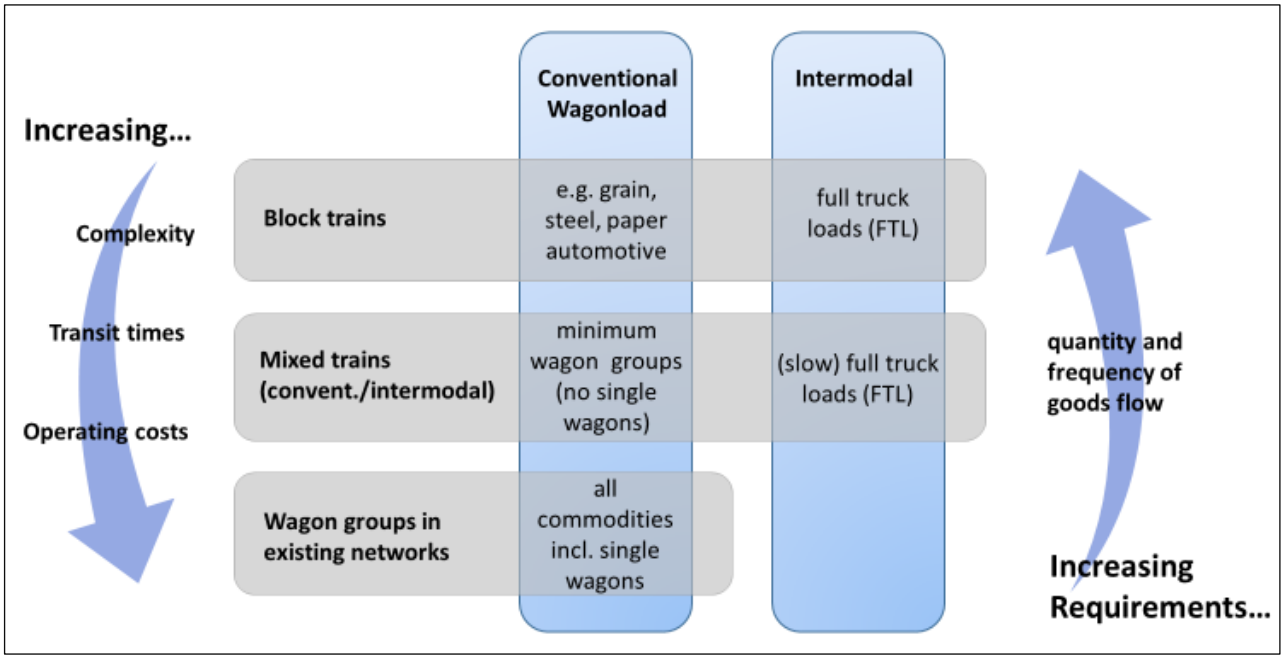


Figure 3: Framework conditions train concept

The train concept is aimed at customers in wagonload traffic with or without their own siding. In the case of your own siding, operation must be guaranteed in the immediate vicinity on the rail up to the next access or bundling point. For shippers without their own siding, the public loading lines of the German and Czech railway infrastructure companies DB Netze and Správa železnic are ideal. Since these systems usually do not have any stationary handling technology, this must be provided on an order-related basis. In contrast, the inland ports in the investigation area have both stationary handling technology for bulk and general cargo as well as the technical options for moisture-proof handling and covered storage.

On the other hand, as expected, the semitrailer is the dominant loading container in road transport along the corridor axis in the direction of Rostock. Combined transport transhipment terminals serve as access points for the rail transport of these loading units. The study area shows a favorable regional distribution of CT transhipment facilities. These are among others:

- Lovosice ČD-DUSS Terminál
- Freight village Dresden
- Port of Dresden
- Port of Riesa
- Port of Torgau
- CT terminal Kodersdorf (near Görlitz)
- CT terminal Schwarzheide
- Freight village Glauchau

In addition, there are plans for a new trailer port (handling of cranable semitrailers) in the port of Dresden and for a multifunctional handling facility (railport) in the industrial park Schwarze Pumpe.

A representation of important access points for rail freight transport (intermodal terminals, loading lanes, sidings) is contained in the following figure.

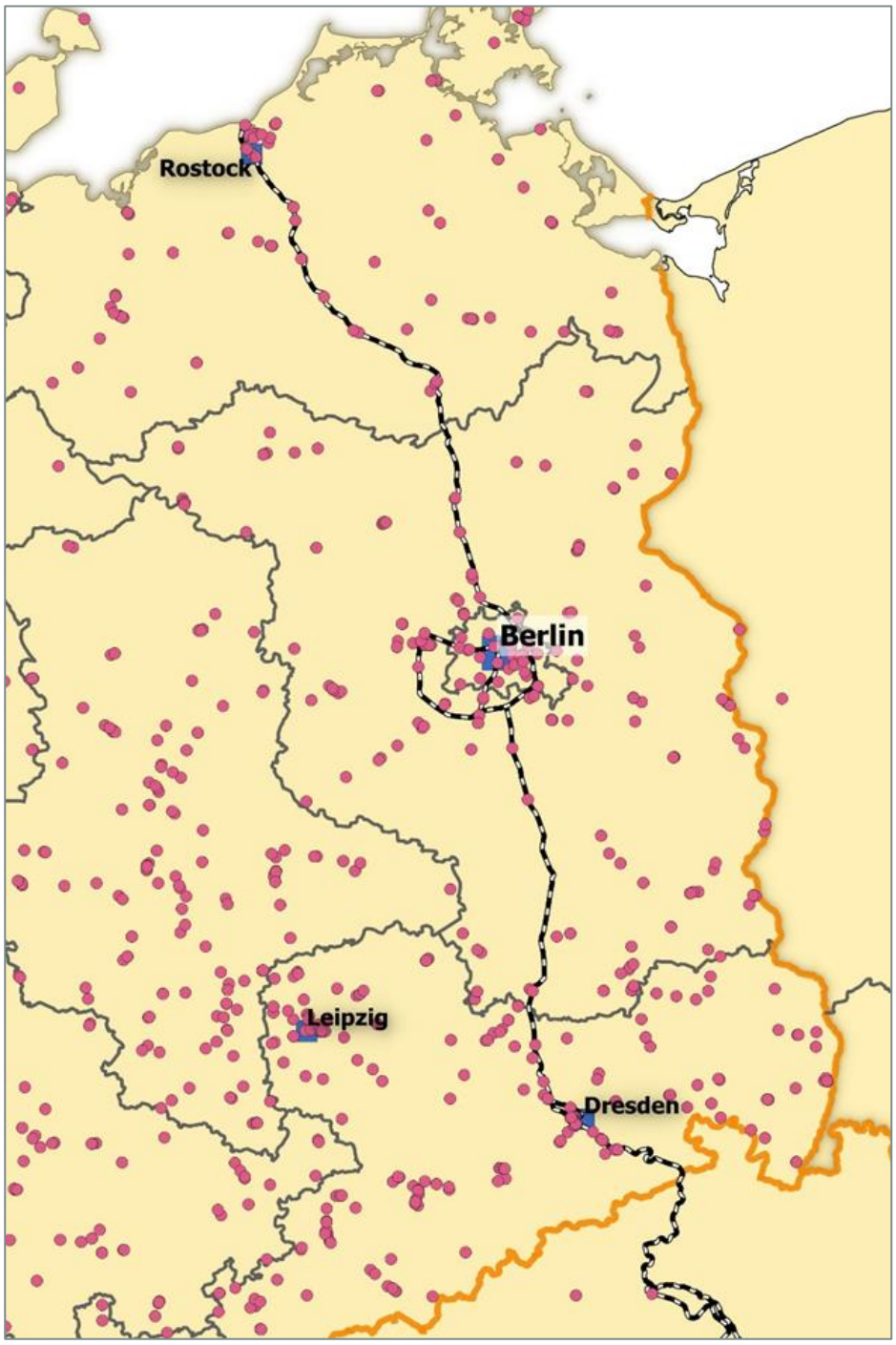


Figure 4: Access points to rail freight traffic in the investigation area

5. EXISTING TRANSPORT SERVICES

5.1. Combined Transport

With the start of the working group, the following three routes operated on behalf of the CT operator LKW WALTER, which have a direct geographic connection to the investigation area and therefore had to be taken into account for the planning of the offer:

- Rostock - Lovosice (3 roundtrips per week)
- Rostock - Brno (3 roundtrips per week)
- Rostock - Curtici (1 roundtrips per week)

At the turn of the year 2020/21, another destination with two weekly roundtrips was added with the connection between Rostock and Bratislava.

In order to relieve the terminal in Lovosice, which is reaching its capacity limits, and at the same time to develop traffic potential in Saxony, a new CT relation for cranable semitrailers between the Alberthafen Dresden and the seaport Rostock was initiated for the operator LKW WALTER as part of the CORCAP project. After intensive preparations in the 3rd and 4th quarters of 2020, trial operation was started in January 2021 with five round trips per week. The transhipment and parking of the trailers will take place temporarily on an area on the north bank of the port (see illustration). In the next step, a trailer port is to be built on the opposite bank that will meet current and future traffic requirements for both the existing and other CT routes.

Figure 5: Trailer handling in the port of Dresden [1]

[1] Source: SBO

5.2. Wagonload traffic

Since May 2019, Stena Line has been offering fixed slots on the rail ferries for direct trains between Vienna and Trelleborg in cooperation with Rail Cargo Austria (RCA) and Green Cargo. There are currently two roundtrips per week, with an increase in frequency being considered. RCA multi-system locomotives are used. The total travel time from Vienna to Trelleborg is approx. 30 hours, of which the railway line takes approx. 25 hours. Forwarding to / from Scandinavia is carried out by Green Cargo.

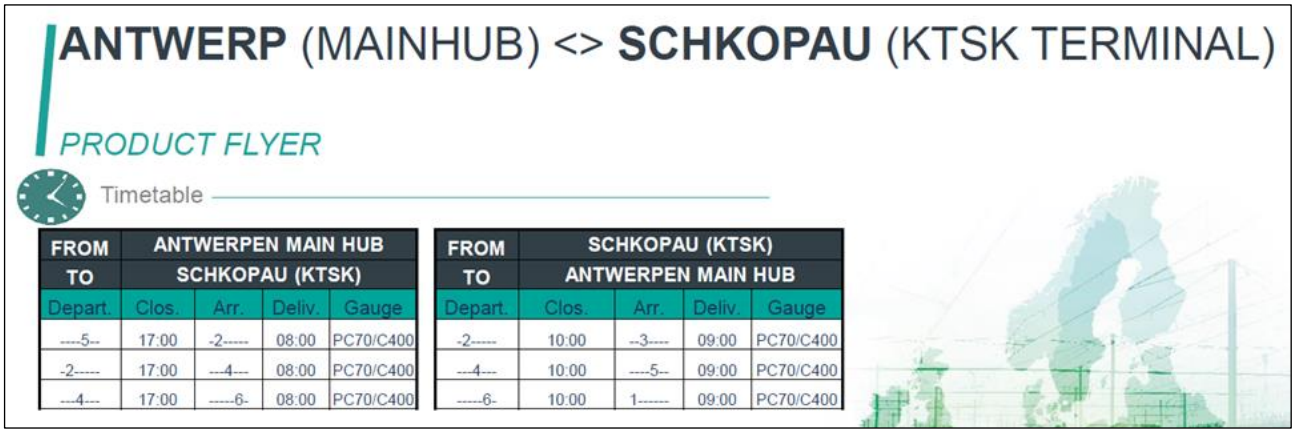
The train runs through the Bad Schandau border crossing and thus also through the Dresden-Friedrichstadt station. The provision of wagons, e.g. from the railport facilities in the neighbouring port, would be feasible in principle, since the possible train length is usually not exhausted and the necessary shunting capacities are available. Alternatively, the train frequency could be increased by a weekly departure.

Figure 6: Railway ferry of the Stena Line

LINEAS has rented tracks at Falkenberg station, which act as a hub. Several standard products are offered from / to Antwerp via this hub, such as the Saxony Express and the Czech Express.

The Saxony Express is a regular service between Antwerp and Schkopau (Buna). The Ruhr / Czech Express runs regularly between Antwerp, Recklinghausen and Lovosice and the Silesia Express has been added with regular services between Antwerp and Gliwice (PL).

The transports are carried out for customers as single wagon transports, wagon group transports and also as block trains. The provision of groups of wagons loaded with containers in Falkenberg from the port of Riesa was checked operationally between LINEAS and SBO and can be implemented at short notice.



FROM	ANTWERPEN MAIN HUB			
TO	SCHKOPAU (KTSK)			
Depart.	Clos.	Arr.	Deliv.	Gauge
----5--	17:00	-2-----	08:00	PC70/C400
-2-----	17:00	---4---	08:00	PC70/C400
---4---	17:00	-----6-	08:00	PC70/C400

FROM	SCHKOPAU (KTSK)			
TO	ANTWERPEN MAIN HUB			
Depart.	Clos.	Arr.	Deliv.	Gauge
-2-----	10:00	--3----	09:00	PC70/C400
---4---	10:00	----5--	09:00	PC70/C400
-----6-	10:00	1------	09:00	PC70/C400

Figure 7: Timetable Saxony-Express (LINEAS)

RETRACK offers regular services between the ARA ports, Cologne and destinations in Central Germany, regular traffic between Rheinhausen and Malaszewice and between Sopron and Cologne and the ARA ports. These transports are carried out with their own wagons. Customers have the option of sending or receiving with individual wagons, groups of wagons and block trains. Further transports run to and from Germany to the Czech Republic, Slovakia, Hungary and Romania. It is possible to participate in these routes if the stops can be organized along the main routes. RETRACK CZ and RETRACK SK provide comprehensive “last mile” services for block train, wagon group and single wagon services in Czech Republic, Slovakia and Hungary.

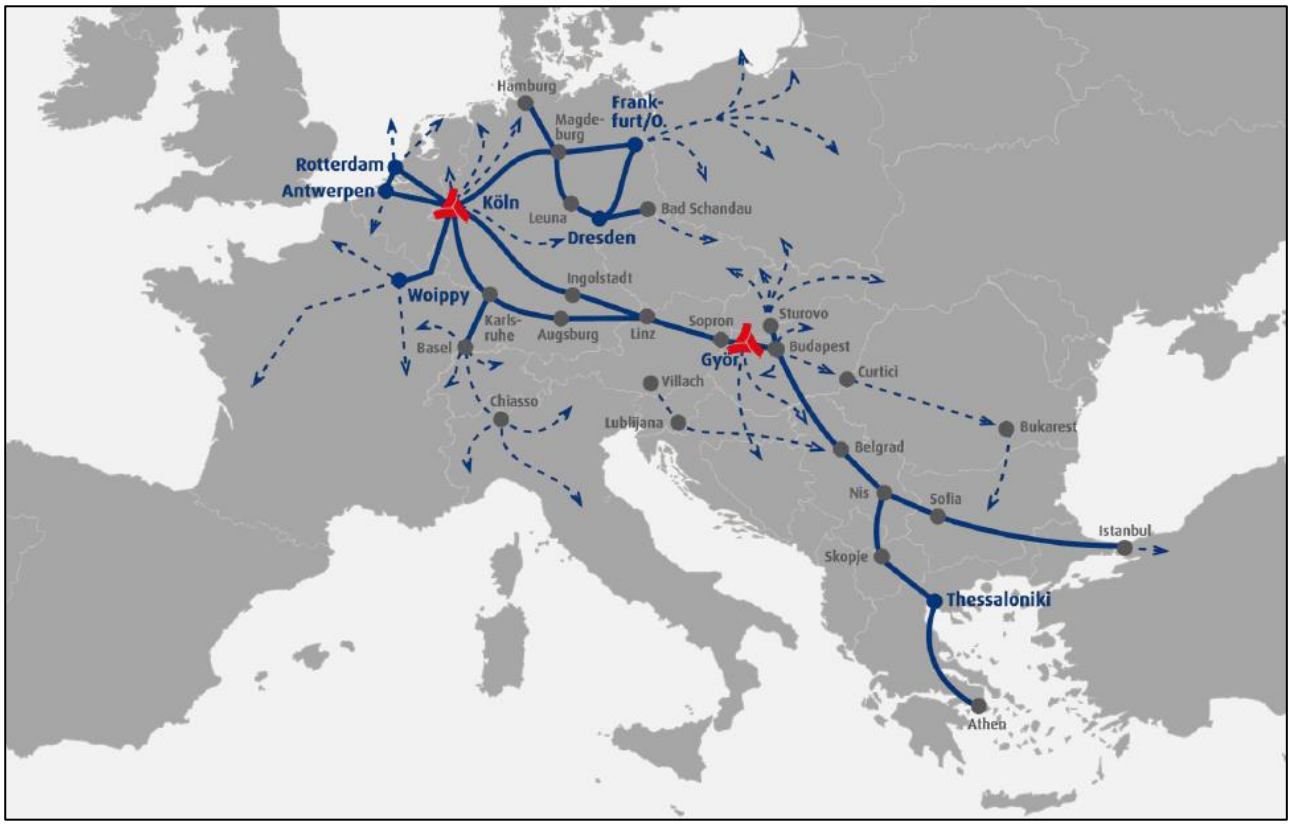


Figure 8: Network RETRACK

6. HANDLING TECHNOLOGIES COMBINED TRANSPORT

6.1. Cranable loading units

Cranable equipment are ISO containers, cranable swap bodies and cranable semitrailers. Standard terminal handling technologies with standard spreaders can be used for these loading units. A distinction is made between cranable loading units with corner castings (corner fittings on containers) and cranable loading units with gripping edges. For the upper corner castings, twist locks are required, which are located on the spreader (see also Figure 9 and Figure 10). These are inserted into the corner castings from above and locked. Then the transhipment takes place. After the loading unit has been set down, the twistlocks are unlocked again and the next transhipment can take place.

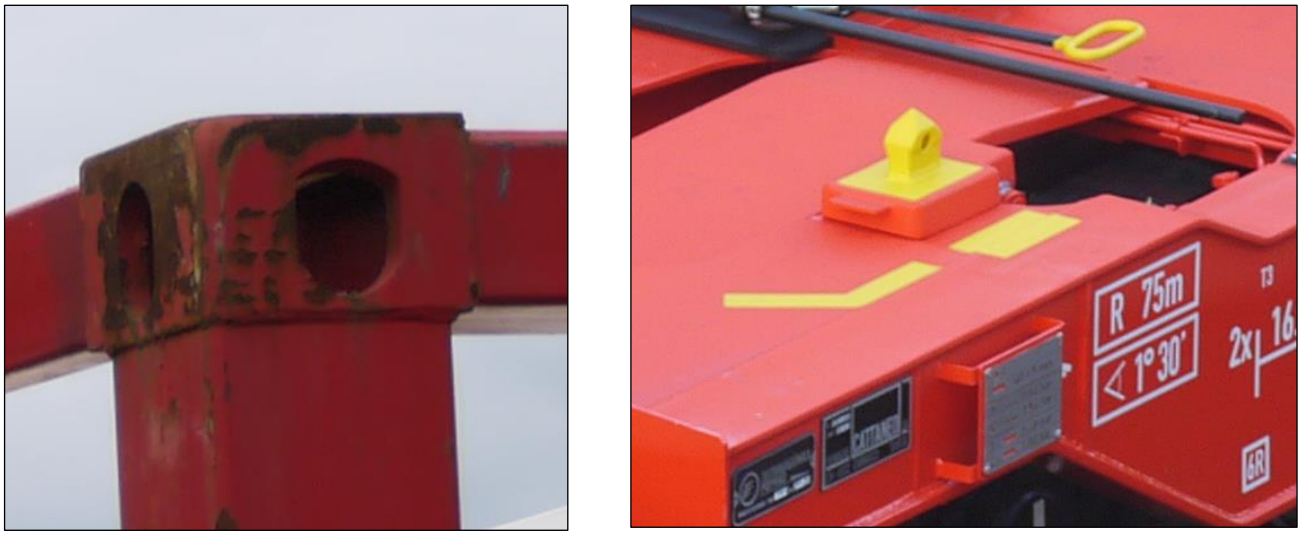


Figure 9: left side: upper corner castings, right side: twistlocks [2]

Special gripper arms are required for the gripping edges. The gripper arms are also located on the spreader and can be extended and retracted as required. The gripper arms grip the gripping edges from the side and can then lift the LE. After the lift, the gripper arms come apart again and are pulled upwards. A guide is required for loading with gripper arms. These two handling options are available in almost all terminals in the hinterland or can be implemented at short notice. This type of loading is one of the vertical transhipment options, as the loading unit is lifted, i.e. moved vertically. In addition to cranable semitrailers, swap bodies are also handled using gripping edges on the side (see Figure 12).

[2] Source: Eigene Darstellung

Figure 10: Container spreader [3]

Figure 11: Gripping pliers transhipment of a semi-trailer [4]

Figure 12: Gripping pliers transhipment of a swap body [5]

[3] Source: Eigene Darstellung

[4] Source: www.kombiverkehr.de

[5] Source: www.rhb.ch

Compared to a non-cranable semitrailer, the cranable version costs around € 2,000 more and has an additional weight of 200 to 500 kg. However, this is compensated for by the additional possible payload of 4 tons. However, the additional investment costs in the transport industry are to be seen as a corresponding obstacle which prevents transport companies from investing in cranable equipment.

Standard wagons can be used for loading onto the rails. The pocket wagons TWIN or T3000 can transport both semitrailers and swap bodies and are usually available on the market at short notice.

Figure 13: Pocket wagon T3000 [6]

Figure 14: Twin pocket wagons [7]

[6] Source: cargotrains.wordpress.com/intermodal-wagons

6.2. Non-cranable loading units

6.2.1. NiKRASA / VEGA

The aim of the NiKRASA and VEGA systems is to move non-cranable semitrailers onto the rails. A transport platform is used here, into which the trailer is driven. A stationary platform is required in the terminal to accommodate the transport platform and thus enable the semi-trailer to be loaded. The tractor is not carried with this solution. After loading onto the transport platform, it is handled at the gripping edges with the gripping arms in a standard pocket wagon TWIN or T3000. Standard gripper harnesses with gripper arms are used here, which have already been described for the handling of cranable equipment. The transport platform on which the trailer is standing is carried in the wagon and also handled again at the destination terminal. The NiKRASA system is referred to as vertical handling technology, as the loading units are lifted on the transport platform.

The loading of the trailer with the NiKRASA platform takes a little longer than with a cranable vehicle. However, every semi-trailer must be driven into the transport platform, which takes additional time and thus lengthens the loading of a block train. The transport platform carried along reduces the overall transport load of the train. However, the semitrailer weighs 300 to 500 kg less since no gripping edges have to be attached.

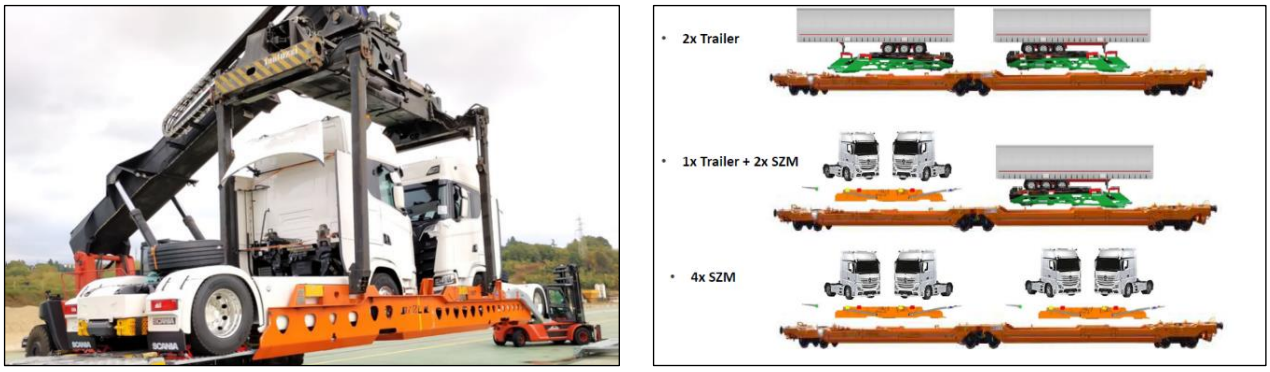


Figure 15: The system NiKRASA / VEGA

6.2.2. CargoBeamer

CargoBeamer is a CT system that uses special wagon and terminal technology. The system consists of a special pocket wagon with a so-called jet module (transport tub), which is pushed horizontally from the wagon in the terminal. The semitrailers can be driven into the transport tub, uncoupled and then loaded. During loading, the transport trays are pushed onto the side of the wagon. Simultaneous loading and unloading is the optimal condition: the train drives into the terminal and the shipping trays are already loaded. Then the trays received are pushed from the wagon and the shipping trays are pushed onto the wagon from the other side. According to the manufacturer, the transhipment of the train is completed after approx. 15 minutes. In order to use this effect, however, a corresponding terminal must be built /

[7] Source: Volker Stöckmann, karow900.startbilder.de

used. In addition, the semitrailers to be loaded must already be ready in the transport tubs when the train arrives, so that additional tubs are required.

The transport trays have gripping edges so that they can also be handled in a standard terminal. The wagons are heavier than normal pocket wagons and therefore cannot be used effectively everywhere. In the case of steep gradients, the transport load may be restricted or additional locomotives may have to support the transport.

Since the transport by rail is unaccompanied, pre- and post-carriage on the road must be carried out by third parties.

A test system was installed at the CargoBeamer AG headquarters in Leipzig to test the handling technology. Another transhipment facility for the temporary test of the transhipment process was already in operation on the VW factory premises in Wolfsburg. The first high-performance CT terminal is under construction in Calais. In contrast, CargoBeamer train sets have been in operation in transalpine traffic between Germany and Italy for several years. The transport trays are handled in conventional crane terminals.

Figure 16: The system CargoBeamer [8]

[8] Source: CargoBeamer AG

Figure 17: Entry of a truck onto the CargoBeamer system [8]

6.2.3. LOHR

The system developed by the French company LOHR Industrie is also based on horizontal handling. In contrast to the CargoBeamer system, the transport tray is not moved sideways, but rotated over the center. It remains connected to the wagon and cannot be handled vertically with a crane. A corresponding Modalohr transhipment facility is therefore essential for transhipment. Since this prerequisite for a new CT route with at least two new handling facilities to be built in the investigation corridor cannot be met by the end of 2021, this technology was not considered further.

On the other hand, an example outside the investigation area shows that LOHR railway technology can also be integrated into conventional CT systems: In 2020, several LOHR transhipment modules were put into operation in the Polish CLIP freight center in Swarzędz near Poznań. The Luxembourg CT operator CFL Multimodal S.A. now offers mixed trains for cranable and non-cranable loading units on a route to Bettembourg. The following figure shows the handling principle.

Figure 18: Lohr-Railway system

6.2.4. Megaswing

The Megaswing technology is based on a wagon whose pocket can be swiveled out hydraulically. The semitrailer can be moved backwards into the bag, then the tractor is uncoupled and the bag with the semitrailer swings back onto the wagon. This technology does not require a terminal or handling equipment, but a person who operates the hydraulics on the wagon for moving in and out. A paved area next to the track with sufficient maneuvering options is sufficient. Megaswing is a horizontal transhipment technology in the UCT area.

Megaswing technology was developed for double pocket wagons so that two semitrailers can be loaded at the same time (see Figure 19). The CT operator HELROM operates a regular block train connection between Düsseldorf and Vienna with this transport system.

Figure 19: System Megaswing [9]

7. COOPERATION MODELS AND OPERATING CONCEPTS

7.1. Corridor trains

The rail operators involved in the working group, VTG and LINEAS, already operate corridor trains in wagonload traffic on other traffic axes. In combined transport (usually maritime container transport) there are similar systems with the exchange of wagon groups, usually at a maximum of one station on the way. With both types of transport, each stopover extends the total transport time between the start and end point of the connection and thus influences competitiveness compared to continuous road transport.

[9] Source: HELROM Limited

The basic principle consists in a national or international connection between two large industrial centers with stopping points on the way. These stops on the way can be planned both regularly and as stops on demand. In both cases, appropriate shunting capacities (e.g. subcontracted) must be provided. If the drop-off stops are near the main line, the mainline locomotive (e.g. in dual-mode design) can also be used for the "last mile". It is important to consider whether the time lost is compatible with the train's circulation. The following figure shows the principle using the example of the VTG corridor train concept.

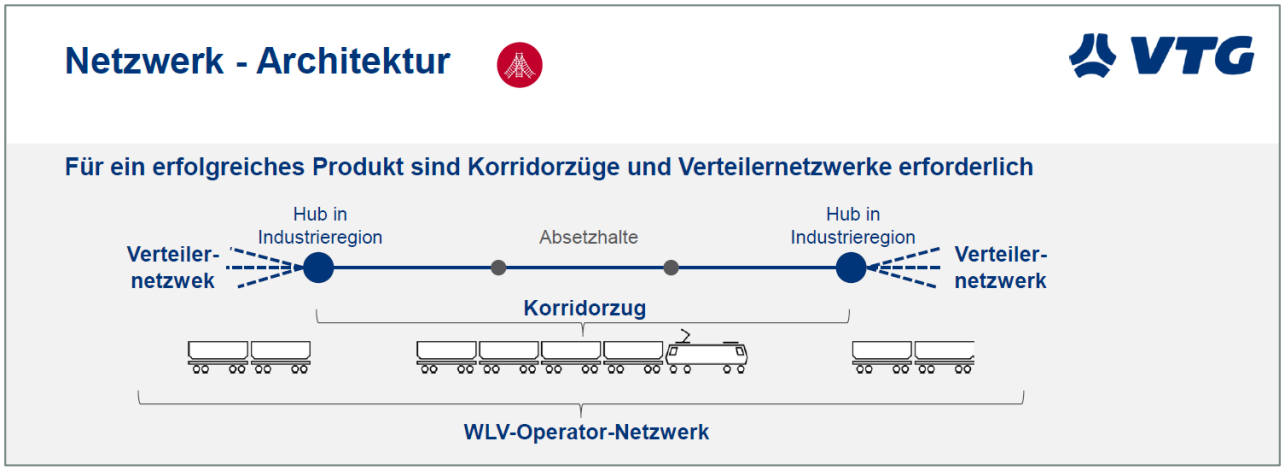


Figure 20: Schematic representation of a corridor train [10]

In the context of corridor trains, the question of mixed trains of combined and wagonload traffic is often discussed. According to the current state of knowledge, this is usually only possible if the time specifications that are customary in CT and therefore stricter can be met and there is no significant loss of time due to the provision of conventional wagons. This can be successful if, for example at Dresden-Friedrichstadt, the train station with train formation tracks, the intermodal transport systems (freight village, port) and the wagon load traffic systems (railport, inland port, loading street train station) are in close proximity to one another.

So far, the organization of a corridor train has usually been carried out by a rail operator (e.g. rail freight forwarder, rail transport company) who provides the services with its own or third-party traction as well as with its own wagon pool or the wagon fleet of its customers. In view of the partial geographic overlap of several corridor train offers as well as the pandemic-related thinning of the quantities, there are also approaches for cooperation between providers. Examples of cooperation in the local area, which may also be transferable to long-distance routes, are described in the following section.

7.2. Last mile cooperation

In addition to the organization of shunting capacities for those on the move, options for linking to connecting traffic or local distribution must be organized at the endpoints of corridor trains. Partnerships are used for this purpose, particularly in the case of international connections where the rail operator providing the service only has limited shunting and local service capacities in the destination or dispatch area. An example of this is the cooperation approach of the rail operators Chemoil (Switzerland),

[10] Source: VTG Rail Logistics

Forwardis (France), LINEAS (Belgium), VTG Rail Logistics (Germany), PCC Intermodal (Poland) and Rail Cargo Logistics (Austria) in the Rhine-Ruhr region. In addition to the shared use of train formation tracks and shunting capacities, there is also access to individual wagon networks in BENELUX, France, Switzerland and via the individual trains of the providers to Austria, Italy and Eastern Europe (see Figure 21).

In a further step, it is planned to better interlink the individual offers in order to increase capacity utilization or to improve offers for customers. Relevant topics therefore include the bundling of volumes, the cross-provider planning of traction and personnel as well as the joint marketing of the offers. Since three of the actors represented in the working group are involved in the above-mentioned activities with VTG, LINEAS and RCA, it is suggested that the Rostock-Saxony-Czech Republic axis be incorporated into the existing cooperation model.

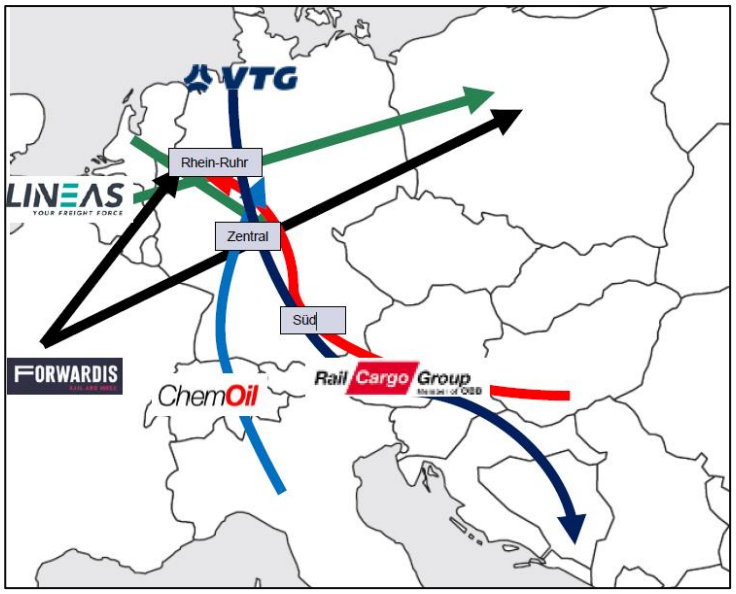


Figure 21: Cooperation of railway operators with bundling in the Rhine-Ruhr region [11]

7.3. Options for action OEM

As a result of the research carried out and the exchange of experience within the working group, a modular concept for the OEM corridor train is proposed. This consists of the following modules:

- Expansion of existing offers
- Block trains in corridor sections
- Additional liner train

In general, the existing offers should be supplemented. This applies in particular to the direct corridor train Vienna – Rostock – Scandinavia from Stena Line / RCA. Here it must be checked how many more stops are possible in the corridor in order to be able to maintain the total travel time.

[11] Source: ChemOil

In the medium term, after further intensive market observation, customers are to be won in order to be able to implement a block train in the OEM corridor. Further train projects of the partners involved as well as the market study for corridor traffic to and from Hungary / Turkey can be used here (pilot T2.3.3).

7.3.1. Expansion of existing offers

In the section (Austria) - Czech Republic - Saxony - Rostock port of the OEM corridor, various transport offers from various service providers already exist. The currently most important transport service is operated in cooperation between Rail Cargo Austria and Stena Line between Vienna and Rostock. The frequency of circulation from currently 2 circulations per week is to be increased to three circulations per week in 2021 if possible. In the course of the planned increase in frequency, the operational and economic framework conditions for a WLV drop-off stop in Dresden-Friedrichstadt are to be examined. In addition, it should be checked whether the train can be used for intermodal wagon loads. In this case, the drop-off stop can theoretically be used not only for wagons or groups of wagons in the WLV but also in the KV. However, since the CT block train between the ports of Dresden and Rostock already exists, this variant is not necessary.

The OEM corridor is crossed at several points by east-west connections that are important for rail freight traffic, and some are used by these traffic routes. It is thus possible to link the traffic offers. Consideration should be given to linking the transports to and from Poland via Horka with the OEM transports. The offers are to be developed, sold and implemented by the members of the LINEAS and RETRACK Germany GmbH working group. A regional focus is on train formation in the Falkenberg/Elster station, which is located in the immediate vicinity of the Dresden – Rostock railway line. The following figure shows these geographical dimensions of the link options described.

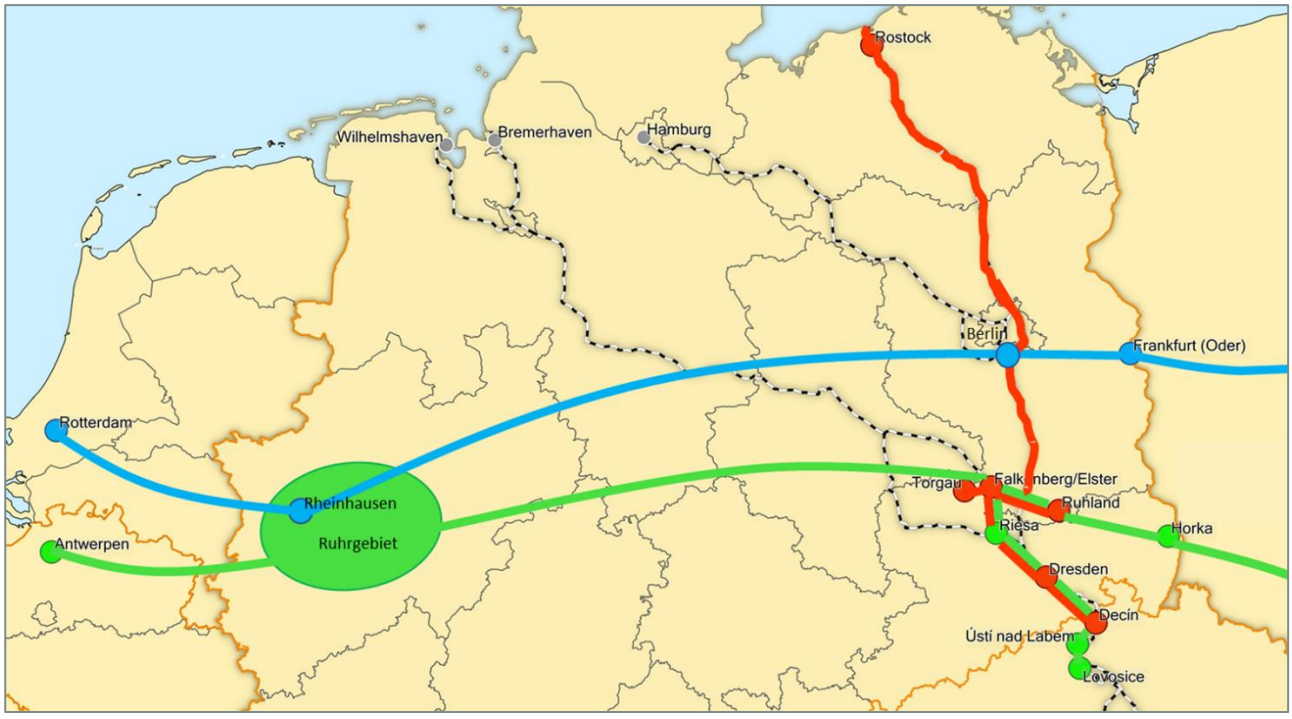


Figure 22: Options for linking traffic services in north-south and east-west directions

After the planned extension of the intermodal terminal in the port of Rostock, trains with a length of 740 m can be handled there. The approach route from Saxony is also part of the 740 m route network. In the future, this will open up opportunities to supplement existing trains by adding additional wagons. So far, the trains are usually approx. 100 m shorter, which corresponds, for example, to three double pocket wagons for the transport of 6 semi-trailers.

7.3.2. Block trains in corridor sections

Several block train offers exist in sections of the OEM corridor between Austria and the port of Rostock. There are combined transport connections between Lovosice and Rostock as well as the combined transport connection Dresden – Rostock, which is in the test stage. There are also connections between Rostock and the South Moravian region (Brno) and the Bratislava area, which adequately cover the demand.

These block train transports, however, are “company trains”, i.e. closed block trains for a single user. The demand for other combined transport volumes can currently be assessed as too low. The demand for CT with non-cranable trailers is still comparatively unspecific and therefore cannot be precisely estimated. Here, the further market penetration of the handling and wagon technologies described must first be awaited.

7.3.3. Additional liner train

In addition to the expansion of existing offers (see Chapter 7.3.1), the establishment of an additional liner train is seen feasible. The offer of an additional liner train should concentrate on the wagonload traffic, since the market segment of the combined transport is sufficiently covered.

The basic modalities between the partners of the working group have been coordinated for this purpose and the willingness to activate the corridor train concept under the prerequisite of sufficient initial capacity utilization has been expressed. This is to be seen as an important result of the work of the working group and as a success factor for the implementation. While the operational integration of the identified access points is technically and economically feasible (e.g. due to the existing capacities of the partners with regard to maneuvering or local area service), the challenge of regular basic utilization of the liner train in both directions remains. If the new service is concentrated on wagonload traffic, a train frequency with a weekly cycle is considered sufficient. The following overview shows the capacities and competencies of the partners for a corridor train service based on division of labour. The partners have declared their willingness to continue the work of the working group at least until the end of the term of the project or possibly beyond with the aim of implementing the train concept.

Partner	Services				
	Ferry	Handling	Long-distance transport	Shunting, last mile rail	Trucking, last mile road
Rostock Port GmbH		X			
Stena Line GmbH & Co. KG	X				
Sächsische Binnenhäfen Oberelbe GmbH		X		X	X
Česko-saské přístavy s.r.o.		X		X	X
RETRACK Germany GmbH			X	X	
LINEAS Deutschland GmbH			X		
Rail Cargo Group Germany GmbH			X		