

TESTING OF LOGISTICS CONCEPT FOR NEW INTERMODAL SERVICES ALONG THE OEM CORRIDOR

Deliverable T2.3.4

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1. INTRODUCTION

As part of the Interreg Central Europe project CORCAP, Rostock Port commissioned three market studies for the development of existing and new marketable train concepts for conventional wagonload and/or intermodal services. These studies analysed the potential for new train products and connection between the East-South-eastern European regions of Hungary, Romania and Turkey and Northern Europe via the Port of Rostock.

The Orient/East-Med Corridor is becoming increasingly important in terms of intermodal transport services. South East Europe is well connected to Rostock by rail and is potentially a convenient hub for traffic flows to and from Romania and the Black Sea region.

The port of Rostock is a multi-purpose port with a strong focus on ferry and RoRo traffic. A major reason for past and future growth in this business area is the expansion of intermodal hinterland transport. Around 120.000 loading units are currently handled each year. In addition, bulk, general and liquid goods are handled. Most berths and storage areas are equipped with rails.

Using the ferry link between Sweden particularly the high frequent services to Trelleborg Finland and the port of Rostock, RoRo units (in the meaning of trailer and other unaccompanied transport equipment) or conventional rail cars could be either directly carried on by train to an intermodal terminal or high-volume areas in South-Eastern Europe.



The subject of these studies was the analysis of the traffic potential and the development of implementation variants for rail transport in intermodal or conventional wagonload traffic between South-eastern Europe and Northern Europe via the port of Rostock, considering feeder trains to neighbouring countries. The processing was carried out using the following work packages (WP):

- WP 1 traffic analysis with evaluation of basic statistical data
- WP 2 market analysis with company survey
- WP 3 Development of a train concept



- WP 4 Market Penetration

The outcome were the three market studies for Hungary, Romania and Turkey (D.T2.3.1-3). Their central elements were the developed train concepts and recommendations for market penetration.

Building up on this knowledge in a next step the train concepts respectively logistics concepts for new intermodal services along the OEM corridor should be promoted and tested (D.T2.3.4). The instrument - an online platform for intermodal transport, its development process as well as first results are presented in this report.

2. DEVELOPED TRAIN CONCEPTS

As already mentioned, the elaborated train concepts in D.T2.3.1-3 were the basis for the development of the online platform. Against this background, once more they are shortly summarized in this chapter.

The aim was to develop train concepts that would be competitive with road transport. This means that not only the costs for the transport chain are decisive, but - depending on the type of rail transport - additional advantages and incentives for the modal shift should be generated. This can be a shorter or at least the same transit time or additional payload compared to road transport. In terms of transit time, costs and frequency, the block train as a shuttle service between the start and destination terminal with daily departures in each direction would be the most economical concept. On the other hand, this requires a considerable consolidated flow of goods in order to achieve an attractive frequency of departures with several rotations per week.

In order to achieve higher frequencies, mixed conventional/intermodal trains or even a combination with existing transport services were also considered. However, this can lead to longer running times and operating costs, e.g. due to additional train handling or stopovers.

Thus, for conventional wagonload traffic, the integration of wagon groups or even individual wagons into existing networks with a connection to the port of Rostock can be used as a first step for the implementation of new services, but usually with significantly longer transit times.

On the land corridors from Turkey, different routing options exist and are in use. Services to Hungary, Austria and Germany use the corridor via Bulgaria and Romania. Some players prefer the routing via Serbia, which has been reported as the cheapest option. One of the shortest reliable routes runs via Slovakia and the Czech Republic and enters Germany in Decin/Bad Schandau.

Considering an existing network of a leading combined transport operator (HUPAC) shows two routings from Turkey to Scandinavia via Rostock.



Discussion: train concept based on existing (HUPAC) network as direct train or via hub



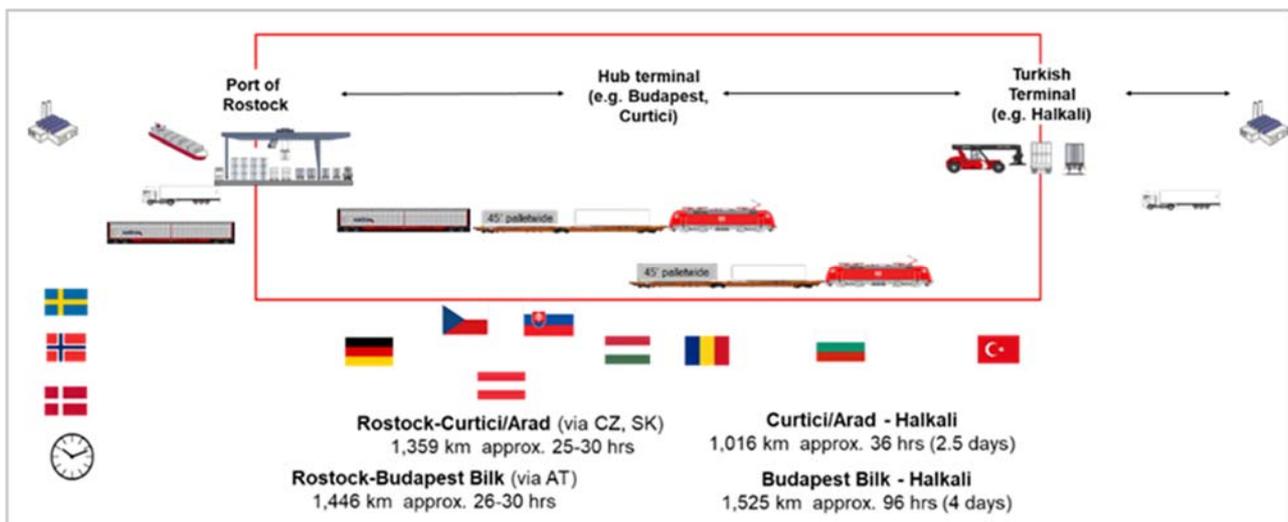
Targets parameters based on market requirements:

- One neutral train operator
- High frequency (depending on general concept direct train or hub) **at least 3 departures per week**
- Transit time **5-7 days** (Turkey-Rostock)

Operational parameter for train:

- **Max. train length** (incl. loco, TCDD): 600 m (560 m wagon set; adjustable to 600 m)
- Wagon types: Sdggmrss (pocket wagons), Sgmrs (90' platform wagons)
- Wagon mix and number per trainset: t.b.d.
- **Max. train weight** (TCDD): up to 1,600 t
- **Estimated transport time :**
 - Halkali-Curtici (Arad) 2.5 days
 - Halkali-Budapest / Sopron 4 / 5 days
 - Halkali-Rostock ? days

The following figure gives an overview about two hub concepts between Turkey (Halkali) and Scandinavia via Port of Rostock with corresponding transit times.



Market inquiries were carried out after the train concept drafts had been drawn up. The train concepts were presented to those companies that showed interest in a train connection to Rostock. Based on this, product sheets with the essential information were created. On this basis, Rostock Port can inform potential groups about the possibilities of the new transport services.



Product sheet: Turkey - Northern Europe, via Rostock:

Interreg  **CORCAP** 

**INTERMODAL SERVICE BETWEEN SCANDINAVIA AND TURKEY
VIA THE PORT OF ROSTOCK**



Your advantages:

-  Frequent connection with 3 weekly departures
-  Competitive transit time of 6-7 days
-  Capacity for all container sizes and trailers
-  Hop on/off option in Budapest

Interreg  **CORCAP** 

**INTERMODAL SERVICE BETWEEN SCANDINAVIA AND TURKEY
VIA THE PORT OF ROSTOCK**



Istanbul – Rostock/Trelleborg

Istanbul Halkalı	Budapest Bik	Port of Rostock/ Trelleborg	Transit Time
Mon	Fri	Sun/Mon	A-G/H
Wed	Sun	Tue/Wed	
Fri	Tue	Thu/Fri	

Trelleborg/Rostock – Istanbul

Port of Trelleborg/ Rostock	Budapest Bik	Istanbul Halkalı	Transit Time
Mon	Tue	Sun/Mon	
Wed	Thu	Tue/Wed	A-G/H
Fri	Sat	Thu/Fri	

From the possible connections, we select the schedule and route you need. You already have the right connection and need a price information? Please contact us.

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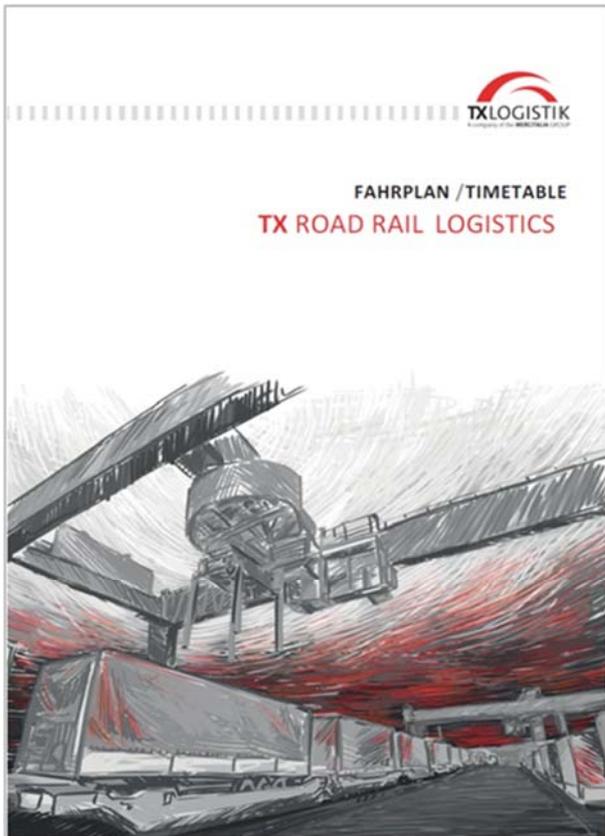
Timetables and further information on the Port of Rostock can be found at www.rostock-port.de and directly on your smartphone





Product sheet: Romania - Northern Europe, via Rostock:

The existing Curtici-Cologne train connection from the intermodal operator TX-Logistik crosses the border in Passau. Spatial overlaps were sought with regard to the link with the Verona-Rostock intermodal service. In the Nuremberg area could groups of wagons shunt (without handling) at Fürth station. The resulting train route to Rostock is shown in the follow figure (blue line) and marks in a detour of around 200 km compared to the direct connection.



2 // FAHRPLAN / TIMETABLE TX ROAD RAIL LOGISTICS

CURTICI – ROSTOCK // ROSTOCK – CURTICI

Von / From	Verladetag / Day of Loading	Annahmeschluss / Closing	Nach / To	Ankunftstag / Arrival day	Bereitstellung / Availability
Curtici	1	02:00 h	Rostock	3	20:00 h
Curtici	4	02:00 h	Rostock	6	17:00 h
Curtici	5	02:00 h	Rostock	7	17:00 h
Curtici	7	02:00 h	Rostock	2	20:00 h
Rostock	1	06:00 h	Curtici	4	23:00 h
Rostock	3	06:00 h	Curtici	5	23:00 h
Rostock	4	06:00 h	Curtici	6	23:00 h
Rostock	7	17:30 h	Curtici	3	23:00 h

Profil: PC70/400

Product sheet: Hungary - Northern Europe, via Rostock:







**INTERMODAL SERVICE BETWEEN SCANDINAVIA
AND HUNGARY
VIA THE PORT OF ROSTOCK**



Port of Rostock	Budapest Bilk	Transit Time
Mon	Wed	A-C
Wed	Fri	
Fri	Sun	







TAKING COOPERATION FORWARD



In principle, the train concept is elaborated as a separate shuttle train concept between Budapest and Rostock. On the other hand, the findings of the market analysis indicate, that the current demand may not be sufficient to start a new intermodal service at a minimum frequency of three weekly roundtrips. Therefore, combination and links with other services like the above mentioned are feasible when Budapest is considered as a gateway terminal. For example, the BILK terminal in Budapest is already linked to two relevant services.

First, the Rostock-Vienna services, now conventional wagonload only, could be opened also for intermodal volumes and frequency of two weekly departures can be increased if BILK would be linked with Vienna by an additional rail service. *Remark: The conventional service no longer exists since the end of 2021.*

Second, Scandinavia flows from Turkey can use the existing service between Halkali and BILK and therefore can link into a new service between BILK and Rostock.

Third, a combination of the two previously mentioned options, i.e. a harmonised connection Halkali-BILK-Vienna-Rostock.

These options can be helpful steps to start-up and stabilize intermodal flows between Hungary and Scandinavia via Rostock with the perspective of a separate shuttle train service.



3. PROMOTING AND TESTING OF TRAIN CONCEPTS

3.1. OBJECTIVE

After the development of the different train concepts, they should be promoted and ideally first test runs should be implemented during project lifetime.

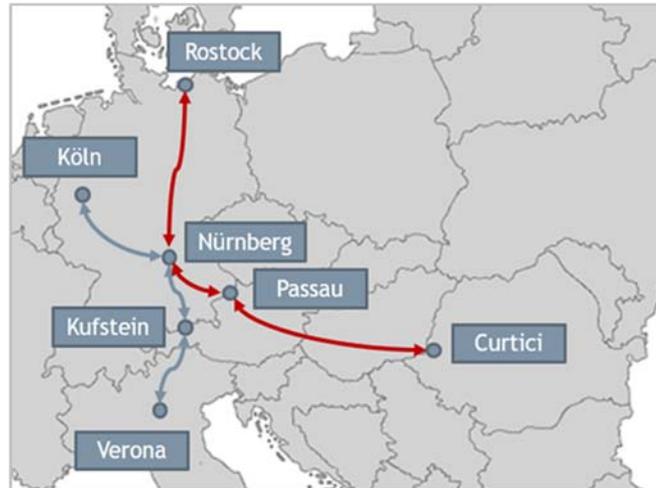
The market analyses have shown that the framework conditions were very challenging:

- The intermodal market on the Orient East-Med (OEM) corridor is dominated by a few intermodal operators.
- Many forwarders stated that there is a need for further intermodal services. Especially companies with less cargo volumes prefer open solutions because they are not able to fill 1 or 2 trains per week and book company trains. Big international forwarders also prefer a neutral intermodal operator. Some of those companies have policies that do not allow to use a service by a big competitor.
- In order to be marketable, a majority of the forwarders requires a frequency of at least three weekly train departures. Some even stated the necessity of a daily departure to meet quality requirements of automotive or retail clients.
- Time of departure and arrival of the intermodal train must correspond to the ferry schedule of the port.
- In terms of price expectations, the level on the OEM corridor is very low with benchmarks from Eastern European trucking firms. Thus, the potential overall cost for a new train service is considered as high. Alternative road service on the other hand is extremely competitive regarding pricing and transit time. Trucking companies can react to the imbalance in trade flows more flexible than rail operators.

Against this background, it was even more recommendable in a testing phase of the train concepts to start with an existing operator and extend their service via a hub terminal further to Rostock. Furthermore, it would be helpful to identify at least 1 or 2 anchor customers in the considered country markets.

Initial steps were taken by Rostock Port to organize first test runs for the developed train concepts. First customer discussions took place during the visit to the Railport Arad in Curtici in July 2021. The operator of the existing and offered intermodal connections conducted further customer discussions.

Concerning the route "Romania - Northern Europe, via Rostock" it was planned that the trains from Curtici and Verona will meet at Fürth station near Nuremberg. The trains from Curtici have a length of 680 m, while the transalpine train from Verona has a maximum length of only 600 m. A group of two double pocket wagons (e.g. T3000) with a capacity of four trailers can be transported between Cologne and Fürth and coupled to the Verona train with onward transfer to Rostock. In the opposite direction, the principle works in reverse. The offer represents an entry-level solution that allows interested parties to test intermodal transport between Romania and Scandinavia. The following figure shows a schematic representation of the train concept in the start-up-phase.



In respect to the route “Turkey - Northern Europe, via Rostock” various discussions with two major active operators with existing intermodal services in their own networks in Southeastern Europe took place.

Due to the ongoing Corvid pandemic, the related travel and contact restrictions as well as the following market uncertainties, it was extremely difficult to get in contact with important market players and to convince them about implementation of the new extended train concepts.

Instead, Rostock Port decided to promote and test the new intermodal train concepts via the Port of Rostock along the OEM corridor by launching a separate online platform to demonstrate the project results and the capabilities of the corridor.

Following target groups should be addressed with this tool:

- Train operation companies
- Freight forwarders
- Logistic service providers
- Shippers
- Ferry and ro-ro shipowner

The tool is planned to fulfil following functions:

It shall be a knowledge building/ information as well as marketing tool, which informs potential train operators as well as potential customers about:

- intermodal relevant aspects at the transport node Rostock (e.g. infrastructure and superstructure; existing range of services; service providers; image film; interviews etc.),
- existing combined transport lines, connecting options with ferries and forwarding options in Scandinavia, the Baltic States and China (Silk Road Initiative),
- new developed train concepts on the OEM-Corridor based on the CORCAP studies in order to attract attention and to match market supply and demand,
- port-related as well as combined transport relevant news, e.g. current developments, plans or combined transport relevant projects etc.



Finally, in the future the online platform should integrate a digital marketplace for combined transport to bring operators and interested parties together. This is planned beyond CORCAP project lifetime. Initial contacts have been made to a booking agent.

3.2. DEVELOPMENT OF THE INTERMODAL PLATFORM

In order to develop the platform a bid of three was conducted and the external service provider pxMedia was assigned. The implementation of the service was planned from August until December 2021.

It was divided in three tasks respectively work steps:

- Step 1: Development of the concept and the storyboard
- Step 2: Development of the online portal
- Step 3: Preparation and execution of the go-live

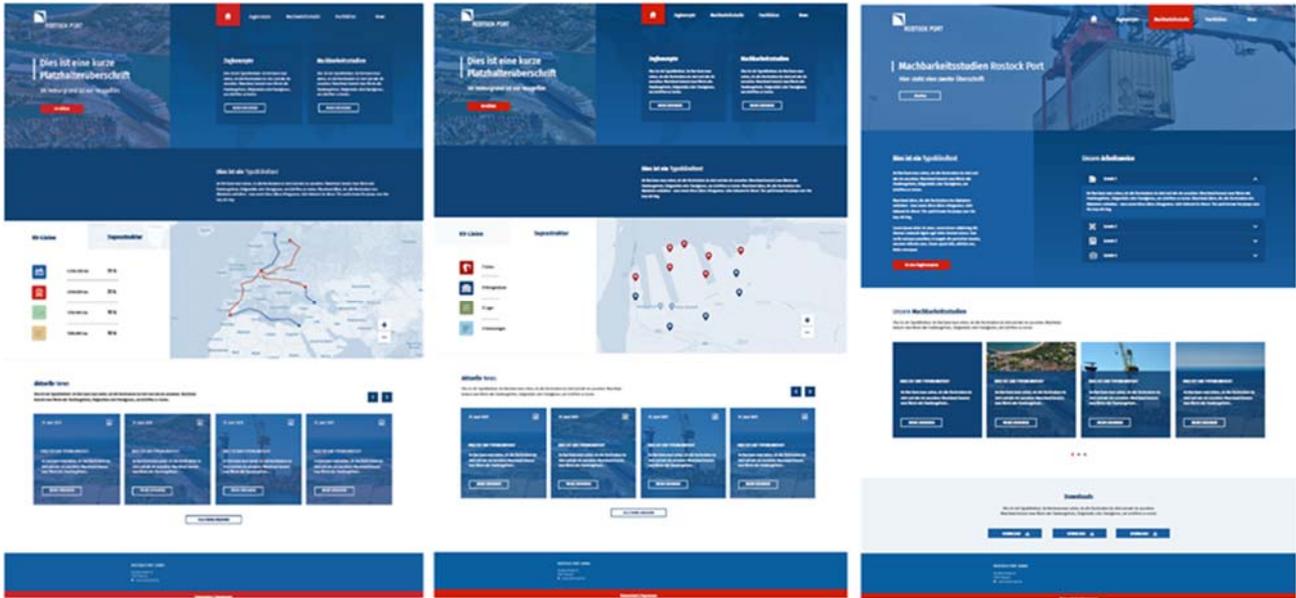
The work steps are described in more detail in the table below:

Step 1 - Development of the concept and the storyboard
<ul style="list-style-type: none"> - Based on the sketch of a storyboard presented in the bidder interview, the previous concept was further refined. - Joint workshops took place to discuss the feasibility of the concept idea and required interactions as well as technical possibilities and requirements. - Iterative elaboration of the storyboard resp. wireframe. - Finally, the wireframe as result of step 1 was presented in form of a click dummy.
Step 2 - Development of the online portal
<ul style="list-style-type: none"> - In this stage the jointly discussed and determined content and functionalities of the online platform were technically implemented. - This required the development of an optimal display for usage on different end devices (e.g. responsive design), the application of actual software technologies as well as the development of previously defined interfaces and the reservation of the Domain "intermodal-rostock.de". - It comprises also the graphic implementation according to the concept (Screen design), the integration of animation routines and links within the online platform. - In order to keep the online platform up-to-date over time, IT components must be integrated, which allow an independently editing and further development of the platform for the client. - Finally, the online portal was technically implemented on a content management system (CMS) of individual client's choice and presented in form of a test access.
Step 3 - Preparation and execution of the go-live
<ul style="list-style-type: none"> - In this step the developed online platform was presented to the client in a functional test and bugs were recorded in a test phase. (Functional Test) - Identified problems were eliminated and incomplete realized modules were finally integrated (Debugging) - The client was instructed into the content management system and the platform was launched.



The following figures give an visual impression about the elaboration process and the above mentioned work steps.

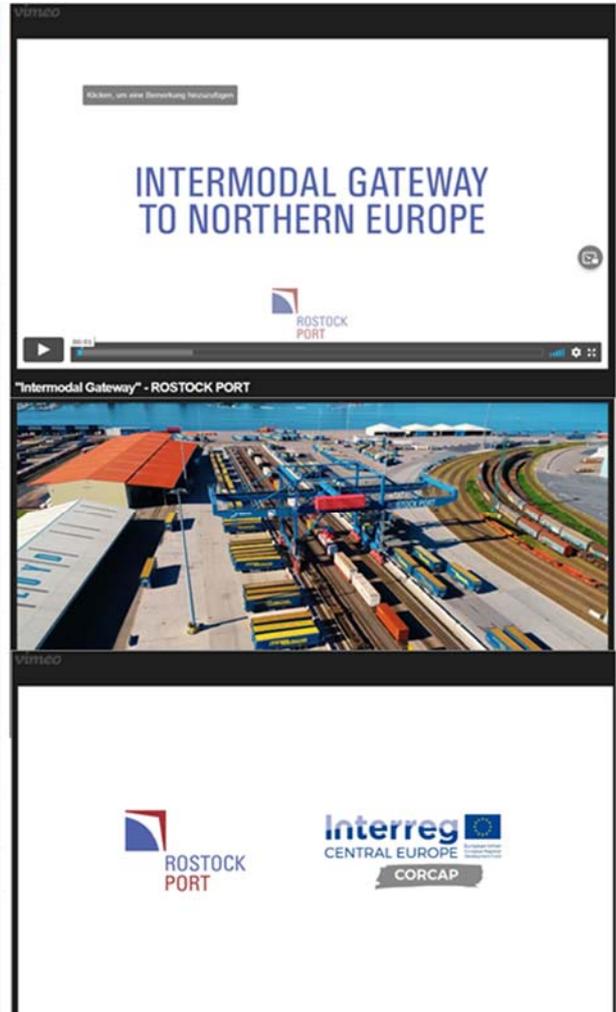
Screen design (16.09.2021)





Draw concept intermodal sequences (2021-09-28)

Pos.	Bildeinstellungen	Anzahl Bilder	Musik / Sprache	Timecode
1	Drohnenaufnahme Hafengebiet in Morgensonne	2	Aufsteigendes, kraftvolles Musikmotiv mit technischer Grundstimmung	0:00 – 0:05
2	Nahaufnahme: Räder rollen über die Schiene	2		0:05 – 0:10
3	Versch. Impressionen Zugankunft im Rangier-/Vorbahnhof; Transportvorgang am Rangierbahnhof	10		0:10 – 0:25
4	GoPro am Wagon zeigt in Zeitraffer den Streckenfortschritt	1		0:25 – 0:30
5	Großaufnahmen vom Triebfahrzeug (?)	4		0:30 – 0:38
6	Rangierfahrt ins KV-Terminal; Wechsel zwischen verschiedenen Ansichten (Nah; Totale; Luftansicht)	7		0:38 – 0:57
7	Schnelle Einstellungswechsel: Umschlag Zug-Terminal per Portalkran (ggf. Slow-Motion Sequenzen)	10		0:57 – 1:10
8	Luftaufnahme Schwenk zu Folgelocation; Zoom-In	1		1:10 – 1:15
9	GoPro Zeitraffer vom Bewegungsfortschritt	1		1:15 – 1:20
10	Impressionen Umfuhr Terminal-Schiff durch Dienstleister	8		1:20 – 1:35
11	Drohnenflug über Umfuhr	2		1:35 – 1:42
12	Prozessfortschritt in Zeitraffer vom Boden aus	1		1:42 – 1:46
13	Stark Verkürzte Rückblende einzelner Stationen bis Ende	8		1:46 – 1:50
14	Abschluss Schiffsbeladung; Verlässt den Hafen (evtl.)	4		1:50 – 1:55
15	Drohne fokussiert auf Situation; steigt auf & schwenkt in den Himmel	1		1:55 – 2:00
16	Übergang zu Logo-Animation & Abschlusstafel Rostock Port	1		





filming intermodal sequences (2021-10-07)





3.3. FINAL LAYOUT OF THE INTERMODAL PLATFORM

The online platform can be visited under the following address: www.intermodal-rostock.de

For a first impression of the starting page is presented below:

https://intermodal-rostock.de

ROSTOCK PORT

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Interreg
CENTRAL EUROPE
CORCAP

Der Seehafen Rostock bietet exzellente Bedingungen für Intermodale Verkehre zwischen Nord- und Zentraleuropa!

ROSTOCK PORT - Verkehrsdrehscheibe und Eisenbahnhafen

JETZT IMAGEFILM ANSEHEN!

Umweltschonend und Zukunftsorientiert!

Die Verlagerung zusätzlicher Gütermengen von der Straße auf die Schiene ist essentiell für das Gelingen der Energie- und Verkehrswende in Deutschland. ROSTOCK PORT forciert zudem den Ausbau der KV Verbindungen ab dem Standort Rostock. Obwohl selbst nicht als Eisenverkehrsunternehmen (EVI) oder Operateur tätig initiiert ROSTOCK PORT Verkehre, führt vorbereitende Marktkundungsstudien durch und bringt vorgenante Akteure durch Identifizierung und Bündelung potentieller Mengen „an einen Tisch“. Die Erhöhung des Bahnanteils im Hinterlandverkehr des Rostocker Hafens reduziert die Klimagasemissionen der über den Standort laufenden Verkehrsketten und festigt die Rolle Rostocks als Eisenbahnhafen. Der Kombinierte Verkehr (KV) auf der Schiene wächst seit Jahren stetig. Im Jahr 2021 lag die Umschlagsleistung im KV auf der Schiene im Hafen Rostock bei 120.000 Einheiten und beträgt damit einen Anteil von knapp 20 % am Fahr- und RoRo-Güterverkehr.

Infopoint

-  bis zu 125 Fahr-/RoRo-Abfahrten pro Woche erreichen DK, SE, NO per Bahn, sowie FI und LT
-  über 40 Abfahrten pro Woche (24/7)
-  max. Kapazität 130.000 Einheiten
-  Anbindung an BAB A19 und A20

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ROSTOCK PORT GmbH beteiligt sich an verschiedenen internationalen Kooperationsprojekten im Ostseeraum, um zusammen mit verschiedenen Partnern den Hafenstandort Rostock als solches und die leistungsfähigen Verkehrskorridore über Rostock und Mecklenburg-Vorpommern zu stärken, weiter zu entwickeln und bei verschiedensten Interessensgruppen zu positionieren.

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4. CONCLUSION AND OUTLOOK

The web-based platform recently went online. The test phase is not yet fully completed, but has run well so far. There were initial results and positive feedback for the new appearance of ROSTOCK PORT intermodal services. The platform will be further developed beyond CORCAP project lifetime.

For example, ROSTOCK PORT has been in active discussions with a provider, who is placing transport and freight spaces on intermodal services, regarding the integration of his booking platform via a link on the online platform. Thus, operators and interested parties could be brought together in a smart way.

Another idea of an additional function of the platform is the identification and bundling of currently by truck transported cargo volumes in the region in order to shift them to rail and consequently strengthen the demand for the train concepts to make the relations more interesting for rail operators. This would be one aspect of a new Interreg project approach so called ACCESSMILE currently under the assessment of the corresponding Programme Secretariat.