GoA 3.2 Assessing offers and preconditions for multimodal freight transport in the Scandria®2Act partner regions

Work Package	Work Package 3 Multimodal Transport				
Activity	3.2-1 Existing multimodal freight offers in the Scandria®2Act partner regions				
Responsible Partner	PP 11 Region Örebro county				
Author	Lovisa Uhlin				
Version	#1	Date	03.04.2017	Status	Finalized

Output Description (Application Form)

The output of A3.2 is a report summarising actions taken and results achieved. It will consist of four main chapters, one for each of the A3.2 activities titled:

1. Existing multimodal freight offers in the Scandria®2Act partner regions

2. The role of RoRo

shipping in a stricter regulatory environment

3. Shipper needs in relation to multimodal freight transport services

4. Business models for multimodal services.

The report will provide a comprehensive overview of relevant multimodal services provided in the Scandria®Corridor. It shall be used mainly by project partners as common ground to define / refine the scope of activities in A3.3. However the results can also be presented to i.e. regional, national and European transport planning authorities, multimodal service providers, forwarders and shippers, knowledge institutions and industry organisations. The target group of the chapter on RoRo Shipping is mainly multimodal freight service providers who are considering including a sea leg in their chain.

The results of the investigation of shipper needs will complement the supplyside multimodal offers with the demandside requirements. As such, they are of interest to all stakeholders involved in transport logistics, including those participating in the multilevel governance dialogue of WP4.

In terms of multimodal business models, the report will be accompanied by a software tool for evaluating multimodal collaborations the ‘Multimodal Collaboration Framework’ tool. The tool will provide a scale of engagement from arm’s length collaboration to close strategic partnership. Cost/benefits will be estimated for different scales/models of collaboration. In Phase II relational transactions costs will be added presenting more detailed information of the ‘cost of engagement’ and thereby guiding the decision making process. The Multimodal Collaboration Framework is targeting transportation providers and B2B customers, including municipalities, regions and others.

Additional Quality Criteria
(for all outputs)

Questions to be answered:

- The current services and connections offered to/from the partner regions
- Private actors should recognize opportunities

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1 Executive Summary

This output presents multimodal freight solutions offered between Scandinavia and central Europe.

A benchmarking among several companies along the Scandria Corridor was carried out to identify which existing intermodal connections from Scandinavia to Central Europe the market is offering. The benchmarking included following companies: Kombiverkehr, Green Cargo, Hupac, TX Logistik, Samskip van Dieren, ScandFibre Logistics and CargoNet. Within the regions of the Scandria2Act partners active in Group of Activity 3.3 a survey was carried out to illustrate which services the terminals in Rostock, Hallsberg, Örebro, Frövi and Alnabru offer. Hallsberg, Örebro, Alnabru and Rostock all offer intermodal services.

The study contains of an Ara-diagram, network charts illustrating connections via Denmark and connections via ferry to Germany and time tables for already existing solutions.

Four alternatives are presented:

- Direct Intermodal Road – Rail link from Scandinavia to Central Europe - via Denmark
- Direct Multimodal Rail – Road link from Scandinavia to Central Europe - via Denmark
- Intermodal Road/Rail – Ferry – Road/Rail link from Scandinavia to Central Europe via the Baltic Sea
- Multimodal Sea – Rail – Road Link from Scandinavia to Central Europe via the Baltic Sea

Intermodal and multimodal are two central concepts of this output and to exclude any confusion they are clarified.

The analysis concludes there is intermodal links to/from central Europe offered via Malmö from Alnabru as well as to/from Gothenburg, Stockholm, Eskilstuna, Katrineholm etc. thus it is remarkable that no intermodal link is offered to/from the Örebro region.

2 Intermodal and multimodal

It is important to distinguish the concepts of multimodal and intermodal transport. The concept of multimodal transport includes transport chains were the goods are unit loaded (e.g on a pallet in a Laais-wagon), but not necessarily in a unit load carrier, and the cargo carrier (e.g. pallet) switching modes at least once. The concept of intermodality can be seen as a subset of the broader concept multimodality.

What separates the concepts is that the intermodal transport is characterized by freight loaded in a unit load carrier that is transported between sender and receiver and the cargo carrier switching modes at least once, in accordance with the definition above.

Intermodal is one of the central concepts in this output. By definition, we consider an intermodal transport a combined transport with physical movement where unbroken unit loads (e.g. container, semitrailer) are used in transport chains involving at least two modes.

The following requirements are needed to qualify as intermodal (Woxenius, 1998):

- The freight is transported in an unbroken unit load carrier
- ISO-containers, swap bodies, semi-trailers and special designed cargo containers of similar size are included in the concept of unit load carriers
- The cargo carrier has to shift modes at least once between sender and receiver

The freight is loaded in unit loads at the dispatcher. From there it is transported on a truck to a terminal where it is transferred to rail, often transported in block- or full train. Then it is transported by rail to a terminal near the receiver, to again get reloaded onto trucks to get transported to the recipient. The unit load is broken only after the goods have arrived at the receiver. (Lumsden,1998).

3 The Actor-Resources-Activity Model (ARA-diagram)

Intermodal transports are structural, organizational and technical complex system, which means that we have decided to focus the analysis of this report to what Woxenius and Bärthel (2008) refer to as the Core-of-Intermodal-Transportation. The core includes handling at the terminal and train routing, i e a subset of the activities included in the intermodal transport chain from the point where the unit load carrier is loaded until it is unloaded at the receiver.

The ARA-diagram below identifies which activities the actors offer and if these activities are performed exclusively within Scandinavia, exclusively international (border crossing to/from Scandinavia) or if they offer both. The diagram also shows what resources are needed to make the activities possible.

Activities/Actors	Cargo Net	Real Rail (former Cargo Net Sweden)	Green Cargo Intermodal	Van Dieren	Kombiverkehr	HUPAC	DB Schenker Rail	Hector Rail	CFL Cargo	TX Logistik	Terminal operators	Rental	Actors/Resources
Pre/End haulage		D		I									Lorries
Terminal/Transhipment	D	D	D		I	I					DI		Handling equipment
Terminal Logistics Service		D	D		I	I					DI		Equipm. For terminal logistics services
Terminal Operational Services	D	D	D		I	I					DI		Equipm. For terminal op. Services
Rail haulage							I	DI	D	I			Time slots
Market to Shippers		D	DI	I									Marketing systems
Market to Proxy Costumers	D	D	DI	I	I	I	I			I			Marketing systems
Coordinate/Arrange IFT		D	DI	I									Information systems
Coordinate/Arrange core of IFT	D	D	DI	I	I	I	I			I			Information systems
Supply ILU:s		D	D	I			I					DI	Intermodal loading units
Supply Rail waggon	D	D	D				I	DI	D	I		DI	Rail waggons
Supply Rail engines	D		D				I	DI	D	I		DI	Rail engines

D = Domestic = within Sweden/Norway

I = International = between Central Europe and Sweden/Norway

4 Networks

The network charts below will demonstrate connections to/from Sweden/Norway. The networks presented show that several of the transport companies offer cross border and/or domestic activities (see the ARA-model for more information).

4.1 Kombiverkehr

Kombiverkehr offers activities with two possible alternatives to cross the border to/from Scandinavia. The two different options are:

- To reach Rostock, Swinoujscie and Travemünde by ferry (TT-line) from Trelleborg
- Connection by train via Malmö to Köln Eifeltor, Bad Bentheim and Coevorden (see the red lines below).

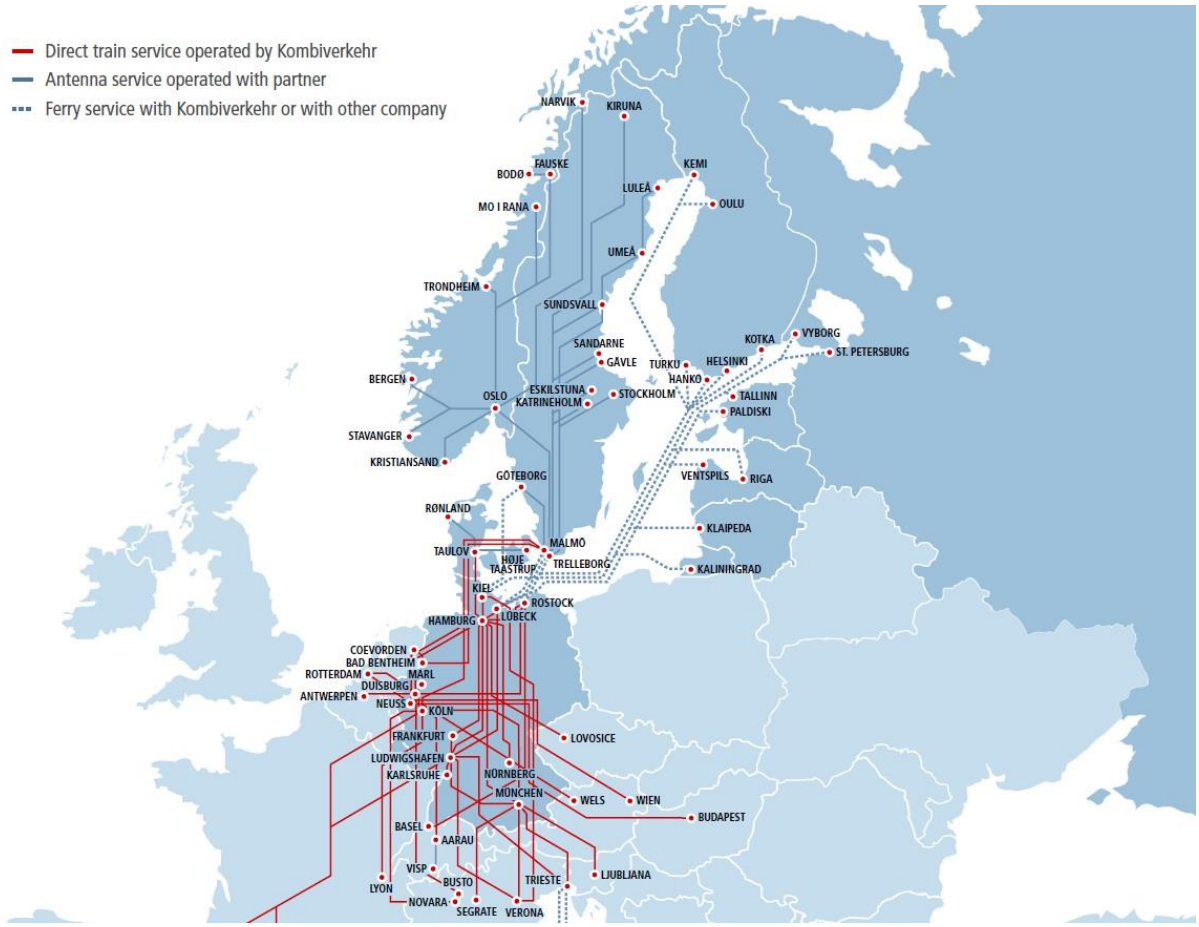

Figure 1 Network Kombiverkehr

Source: https://www.kombiverkehr.de/en/transport/#netzwerk

4.2 HUPAC

Hupac offers a network for intermodal transport from Malmö (Sweden) to Germany, Switzerland and Italy via Köln Eifeltor.

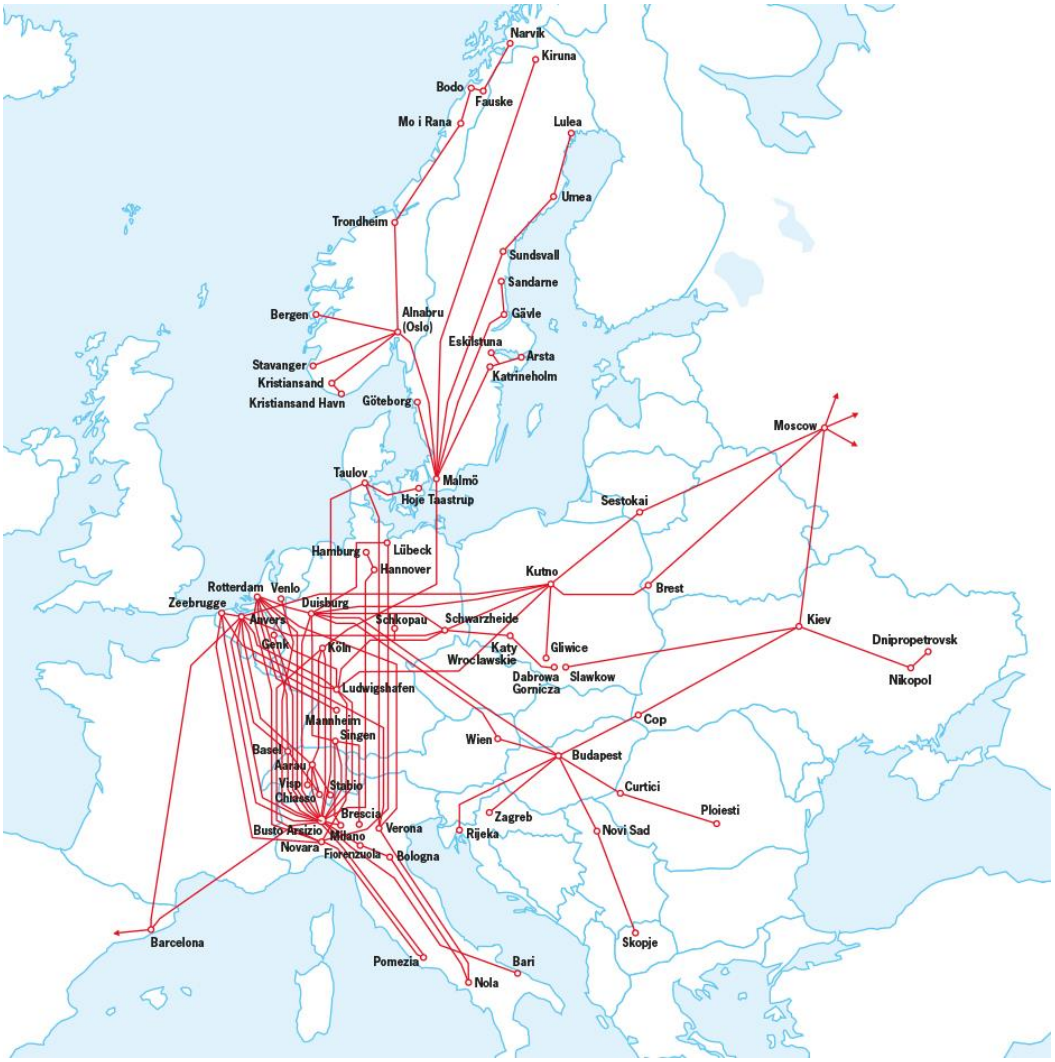

Figure 2 Network HUPAC

Source:http://www.hupac.ch/index.php?node=290&lng=2&rif=85f6ac53eb

4.3 TX Logistik

The TX Logistik network chart shows three different connections making it possible to get from/to Scandinavia by train.

- From Malmö (Sweden) to Herne (Germany)
- From Falköping (Sweden, on map marked as Gothenburg) to Verona (Italy)
- From Padborg (Denmark) to Hall (Austria) and Verona (Italy)

The routes above can be combined with domestic routes. It is e.g. possible to send goods from Eskilstuna via Malmö and Herne to Milan Busto.

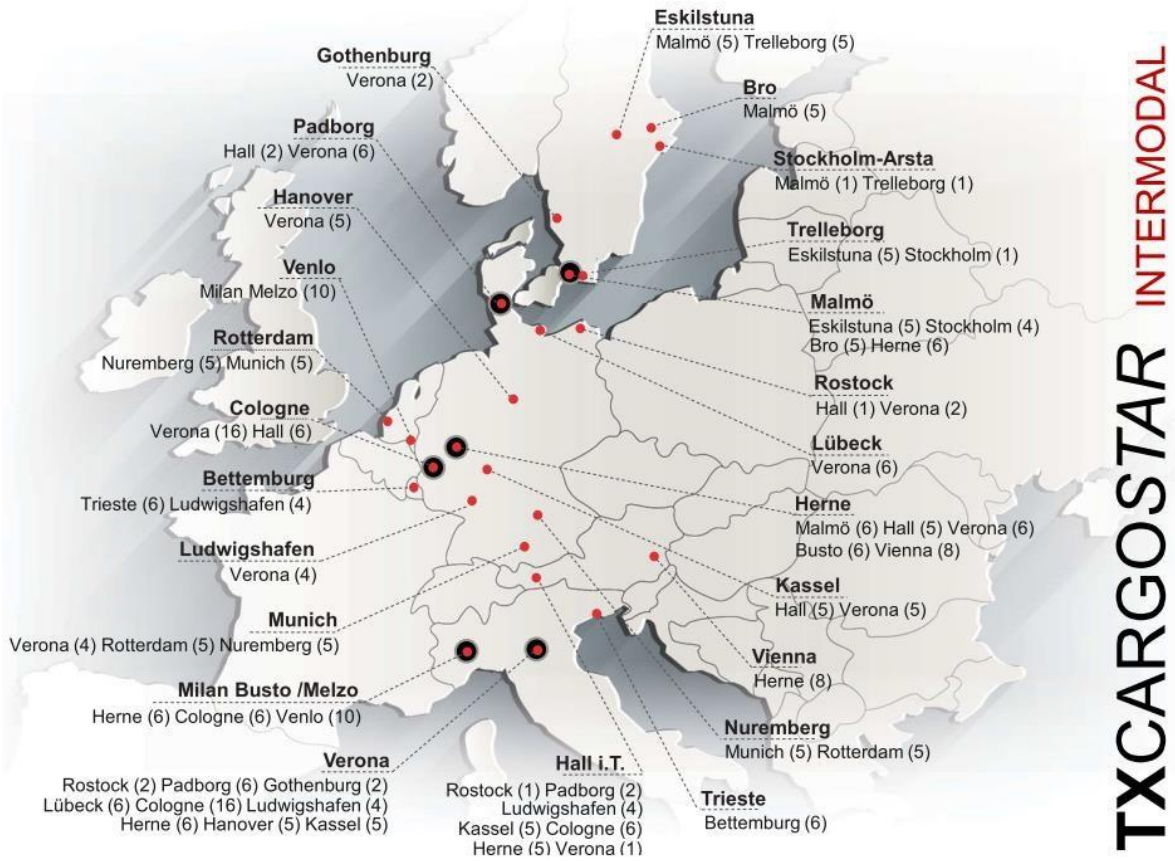

Figure 3 Network TX Logistik

Source: http://www.txlogistik.eu/networks/

4.4 Samskip Van Dieren

Samskip offers shortsea services between Sweden, Norway and Denmark as well as rail services via their daughter company Samskip Van Dieren Multimodal. Samskip shortsea services include departures from Varberg, Åarhus, Sundsvall, Umeå, Helsingborg, Oxelösund, Oslo, Moss, Larvik, Bergen, Ålesund etc to Rotterdam. Samskip Van Dieren offers intermodal rail services from Katrineholm, Älmhult, Göteborg, Malmö, Helsingborg and Copenhagen to Germany, Italy and Luxemburg via Duisburg. Via Bettembourg in Luxemburg Le Boulou and Lyon in France can be reached.

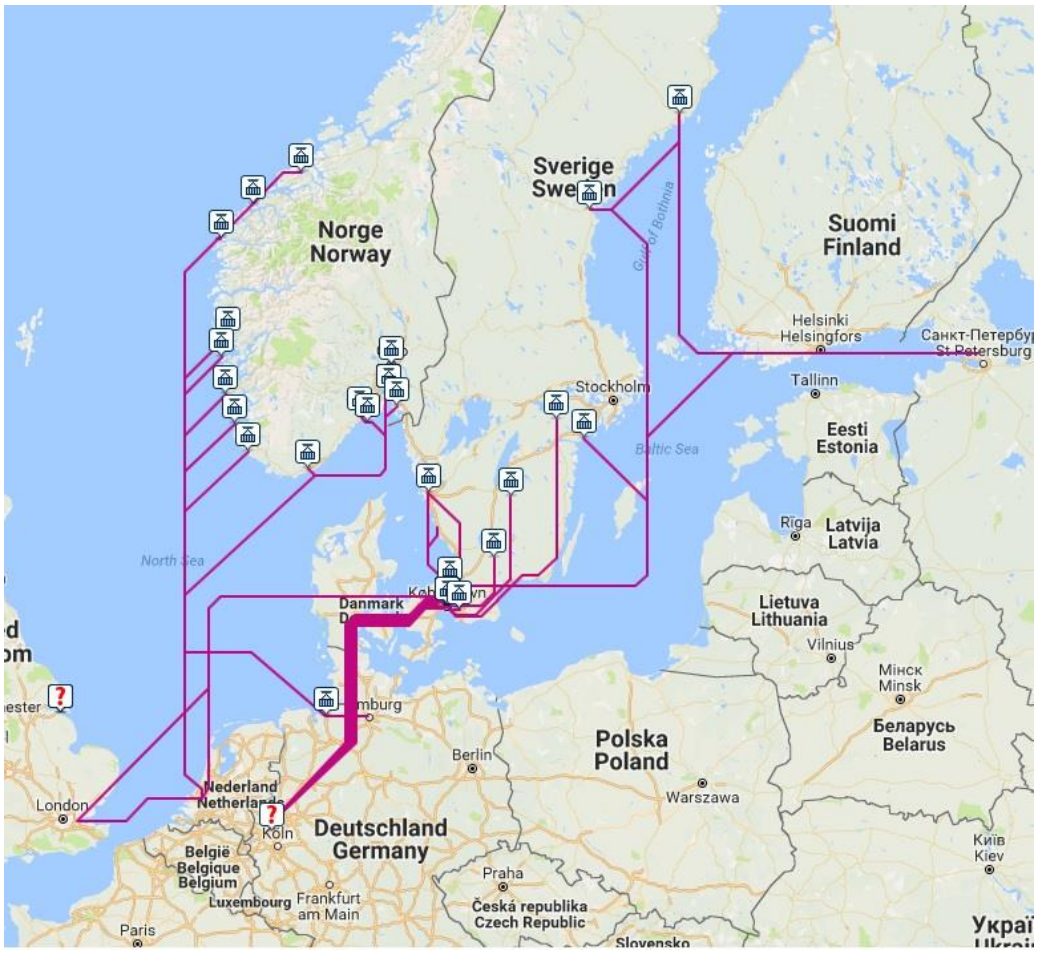

Figure 4 Network Samskip Van Dieren

Source: http://www.samskipmultimodal.com/whatwedo/multimodal-network/

4.5 ScandFibre Logistics

ScandFibre Logistic has a rail-based logistics system called Rail 17. Rail 17 includes:

- A closed wagon supply; the wagons go both north and south without leaving the system.
- ScandFibre buys services of GreenCargo, Rail Cargo Logistics, Hector Rail, DB Cargo and Transwaggon.

Figure 5 Network ScandFibre Logistics

Source: http://scandfibre.se/?page_id=208

4.6 CargoNet

Cargonet offers only domestic transports but collaborates with Hupac and Kombiverkehr from Trelleborg (Sweden) to Travemünde, Rostock and Swinoujscie and from Malmö (Sweden) to Köln Eifeltor. See 4.1 and 4.2 for further information.

Figure 6 Network CargoNet

Source: http://cargonet.no/en/startpage/tjenester/terminals_and_network/

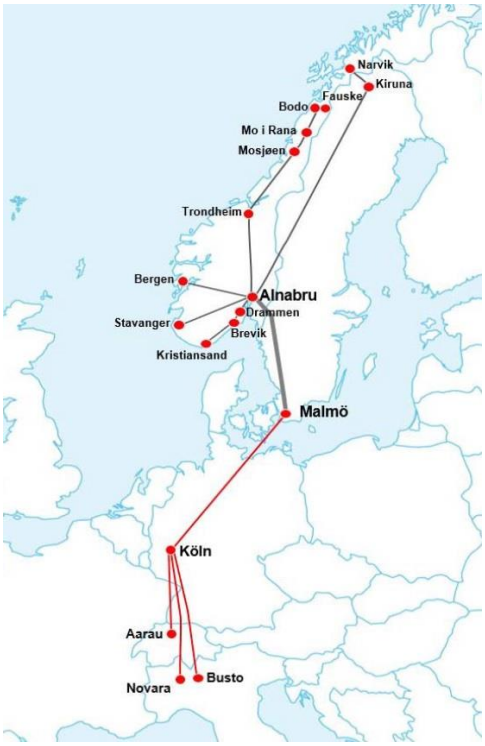

Figure 7 Network CargoNet

Source: http://customerinformation.hupac.ch/FLYER_WEB/17025_Flyer_Norway_2017.pdf

4.7 Green Cargo

Green Cargo has a co-production with B-logistics and they offer three departures per week from Malmö (Sweden) to Antwerp (Belgium). This is both for wagon loads and intermodal units.

Figure 6 Network Green Cargo

Source:http://www.greencargo.com/globalassets/documents/produktmaterial/belgium_direct_produktblad.pdf

5 Time tables

This part will present practical solutions with time tables.

5.1 Kombiverkehr

Port/Terminal	Destination	Frequency	Departure	Time	Delivery	Time 2
Malmö	Malmö-Coevarden	2/week	W,Sa	18:00	Th/M	14:30/07:30
Malmö	Coevarden-Malmö	2/week	Tu/F	17:20/17:50	W,Sa	12:00/15:00
Malmö	Malmö-Bad Bentheim	2/week	W,Sa	18:00	Th/M	13:00/06:00
Malmö	Bad Bentheim-Malmö	2/week	Tu/F	19:00/20:00	W/Sa	12:00/15:00
Malmö	Malmö-Köln Eifeltor*	3/week	Tu,Th/Sa	18:30/11.00	W,F/Su	21:00/23:00
Malmö	Köln Eifeltor-Malmö*	3/week	Tu/Th,Sa	00:00/05:30	W,F/Su	06:00/10:00

Table 1 Timetable Kombiverkeh

Source: https://www.kombiverkehr.de/en/transport/#fahrplan

*Transport collaboration with Hupac, see below

5.2 HUPAC

Port/Terminal	Destination	Frequency	Departure	Time	Delivery	Time 2
Malmö	Malmö-Köln Eifeltor	3/week	Tu, Th/Sa	20:00/11:00	TW,F/Su	21:00/23:00
Malmö	Köln Eifeltor-Malmö	3/week	Tu/Th, Sa	00:05/05:30	W,F/Su	06:00/10:00

Table 2 Timetable HUPAC

Source: http://www.hupac.ch/index.php?node=291&lng=2&rif=79a1bdb48a

5.3 TX Logistik

Port/terminal	Destination	Frequency	Departure	Closing time	Delivery	Time 2
Malmö	Malmö-Herne	6/week	M-Th/F/Sa	20:30/17:00/17:45	Tu-F/Sa/Su	16:00/12:30/23:45
Malmö	Herne-Malmö	6/week	M-F/Sa	20:00/13:00	Tu-Sa/Su	15:30/12:00
Trelleborg	(Trelleborg)*-Rostock-Verona	2/week	Th, Su	18:00	Sa, Tu	05:00
Trelleborg	Verona-Rostock-(Trelleborg)*	2/week	W/Sa	8:30/7:30	Th, Su	15:00
Trelleborg	(Trelleborg)*-Rostock-Hall	1/week	Su	18:00	M	19:30
Trelleborg	Hall-Rostock-(Trelleborg)*	1/week	Sa	11:00	Su	15:00
Trelleborg	(Trelleborg)*-Travemunde-Verona	6/week	M/Tu-Sa	11:30/20:00	Tu/Th-F/Sa/M	12:00/4:30/6:00/22:00
Trelleborg	(Verona)*-Travelmunde-Trelleborg	6/week	M-F/Sa	22:30/11:30	W-Su/M	07:00/08:00
Göteborg	Göteborg Logent AB-Verona	2/week	F/W	19:30/7:00	M/F	12:00/6:30
Göteborg	Verona-Göteborg Logent AB	2/week	Sa/Tu	1:30/21:00	M/Th	04:00/23:00
Eskilstuna	Eskilstuna-Malmö-(Herne)**	5/week	M-F	19:45	Tu-Sa	07:00
Eskilstuna	(Herne)**-Malmö-Eskilstuna	5/week	M-Th, Su	21:00	Tu-F,M	06:00
Eskilstuna	Eskilstuna-Trelleborg KT	5/week	M-F	19:45	Tu-Sa	08:00
Eskilstuna	Trelleborg KT-Eskilstuna	5/week	M-Th,Su	19:00	Tu-F,M	06:00
Årsta	Årsta-Trelleborg KT	1/week	F	19:45	M	17:00
Årsta	Trelleborg KT-Årsta	1/week	Su	11:00	M	05:00
Årsta	Årsta-Malmö-(Herne)**	1/week	F	19:45	M	16:00
Årsta	(Herne)**-Malmö-Årsta	1/week	Su	12:00	M	05:00
Falköping	Falköping-Verona	2/week	Tu/F	21/19	F/M	06:30/12:00
Falköping	Verona-Falköping	2/week	Tu/Sa	21:00/01:30	Th/M	20:00/03:00

Table 3 Timetable TX Logistik

Source: http://www.txlogistik.eu/networks/

* Time for Trelleborg is not available

** Arrival/Departure Malmö-Herne, see Malmö-Herne

5.4 Samskip Van Dieren

Port/Terminal	Destination	Frequency	Departure	Time	Delivery	Time 2
Helsingborg	Helsingborg-Duisburg	5/week	M-F	15:30	Tu-Sa	11:30
Helsingborg	Duisburg-Helsingborg	5/week	M-F	14:30	Tu-Sa	09:30
Helsingborg	Helsingborg-(Duisburg)-Bettembourg	3/week	M-F	15:30	Th, Sa, Tu	14:30
Helsingborg	Bettembourg-(Duisburg)-Helsingborg	3/week	Tu,Th,Sa	10:30	Th,Sa,Tu	09:30
Helsingborg	Helsingborg-Le Boulou	5/week	M-F	15:30	F/F/Su/M/W/W	16:00/22:00/16:00/8:00/16:00/22:00
Helsingborg	Le Boulou-Helsingborg	3/week	M-Tu/W/W-F/Sa/Su	23:00/5:00/23:00/18:00/5:00	Sa,Tu,Th	09:30
Helsingborg	Helsingborg-(Duisburg)-Lyon	5/week	M-F	15:30	F*2/M*2/W	10:30/8:00/10:30
Helsingborg	Lyon-(Duisburg)-Helsingborg	5/week	M-F/Sa	17:30/13:00	Th,Sa*2,Tu*2,Th	09:30
Helsingborg	Helsingborg-(Duisburg)-Trieste	5/week	M-F	15:30	Fre*2/M*2/W	8:00/6:00/8:00
Helsingborg	Trieste-(Duisburg)-Helsingborg	5/week	Su/W,F	20:00/17:00	W,Sa,Tu	09:30
Malmö	Malmö-Duisburg	6/week	M-F/F	11:00/19:00	Tu-Sa/M	6:00/5:00
Malmö	Duisburg-Malmö	6/week	M-F/Sa	23:30/11:30	W-Sa,M-Tu	06:00
Malmö	Malmö-(Duisburg)-Bettembourg	3/week	M-F/F	11:00/19:00	Th*2,Sa*2,Tu*2	14:30
Malmö	Bettembourg-(Duisburg)-Malmö	3/week	Tu,Th,Su	10:30	F,M,W	06:00
Malmö	Malmö-(Duisburg-Bettembourg)-Le Boulou	6/week	M-F/Sa	11:00/19:00	F/F/Su/M/W/W	16:00/22:00/16:00/8:0016:00/22:00
Malmö	Le Boulou-(Bettembourg-Duisburg)-Malmö	3/week	M-Tu/W-F/Sa/Su	23:00/5:00/23:00/18:00/5:00	M,W,F	06:00
Malmö	Malmö-(Duisburg-Bettembourg)-Lyon	6/week	M-F/F	11:00/19:00	F*2/M*2/W*2	10:30/8:00/10:30
Malmö	Lyon-(Bettembourg-Duisburg)-Malmö	6/week	M-F/Sa	17:30/13:00	F,Tu*2,W*2,F	06:00
Malmö	Malmö-(Duisburg)-Trieste	6/week	M-F,F	08:00	F*2,M*2,W*2	08:00
Malmö	Trieste-(Duisburg)-Malmö	6/week	Su/W,F	20:00/17:00	Th,M,W	06:00
Göteborg	Göteborg-Duisburg	6/week	M-F/Sa	19:30/16:30	W-Sa/M/Tu	6:00/5:00/6:00
Göteborg	Duisburg-Göteborg	6/week	M-F/Sa	23:30/11:30	W-F/L/M-Tu	6:00/14:00/6:00
Katrineholm	Katrineholm-Duisburg	6/week	M-F/Sa	19:30/10:00	Tu-F/M/M	20:30/5:30/17:00
Katrineholm	Duisburg-Katrineholm	6/week	M-Th/F/Sa	20:30/11:00/13:00	W-F/Sa/Sa/M	6:00/8:00/11:00/19:00
Älmhult	Älmhult-Duisburg	5/week	M-F	14:45	Tu-Sa	10:30
Älmhult	Duisburg-Älmhult	5/week	M-Th/F	11:00/22:0	Tu-F/M	7:30/6:00
Nässjö	Nässjö-Duisburg	5/week	M-F	13:00	Tu-Sa	10:30
Nässjö	Duisburg-Nässjö	5/week	M-Th/F	11:00/22:00	Tu-F/M	8:30/6:00

Table 4 Timetable Samskip Van Dieren

Source: http://www.samskipmultimodal.com/whatwedo/multimodal-network/

The time table does not show the full list of destinations Samskip Van Dieren offers via Duisburg.

5.5 CargoNet

Port/Terminal	Destination	Frequency	Departure	Time	Delivery	Time 2
Alnabru	Alnabru-Trelleborg	3/week	M,W/Sa	16:25/11:00	Tu,Th/Su	5:30/5:30
Alnabru	Trelleborg-Alnabru	3/week	Tu,Th,Su	18:00	W,F,M	05:15
Alnabru	Alnabru-Malmö	3/week	M,W/Sa	16:25/11:00	Tu,Th/Su	5:30/5:30
Alnabru	Malmö-Alnabru	3/week	Tu,Th,Su	16:00	W,F,M	05:15

Table 5 Timetable CargoNet

Source:http://www.cargonet.no/contentassets/b7d4e7493f964475a076ddb642499d91/170118-timetable-2017.pdf

This timetable shows CargoNet's connections from Alnabru to Malmö and Trelleborg. The train has a stopover in Malmö before heading to Trelleborg. From the terminal in Trelleborg and Malmö, CargoNet collaborates with Kombiverkehr and Hupac (see chapters 5.1 and 5.2 for further information). Kombiverkehr has departures from Trelleborg (with TT-Line) to Travemünde 23/week, to Swinoujscie 10/week and to Rostock 34/week.

5.6 Green Cargo

Port/Terminal	Destination	Frequency	Departure	Time	Delivery	Time 2
Malmö	Malmö-Antwerp	3/week	Tu,Th,Sa	02:39	Tu, Th,Sa	22:18
Malmö	Antwerp-Malmö	3/week	Tu/Th/Sa	07:40/00:23/00:24	Tu, Th,Sa	21:05

Table 6 Timetable Green Cargo

Source:http://www.greencargo.com/globalassets/documents/produktmaterial/belgium_direct_produktblad.pdf

This is a timetable of Green Cargo's transport services to Belgium. They also offer a connection to Treviso in Italy from Trelleborg via Rostock and Green Cargo/NTR has a block train from Ystad via Swinoujscie to Vienna. [1]

[1] http://www.greencargo.com/sv/vara-tjanster/transporttjanster/direktlinjer/

6 Terminal services

This table shows which services the terminals in Alnabru, Hallsberg, Frövi, Örebro and Rostock offer. For Hamburg the report assumes that due to the size of Hamburg all services are offered at several terminals.

Terminal services/terminal	Alnabru[2]	Hallsberg[3]	Rostock[4]	Frövi[5]	Örebro[6]
Storage:					
Sea and tank containers	x	x	x		x
Swap body/demountable	x	x	x		
Semitrailers	x	x	x		
Thermo-monitoring of containers in depot:					
Electricity incl. Plugging, extra hoist and temperature control	x	x	x		x
Readout of the temperature	x	x	x		x
Diesel filling	x	x	x		x
Other services					
Label units with dangerous goods (incl. Labels)	x	x	x		x
Removal of dangerous goods label (after ordering)	x	x	x		x
Raising and lowering of underride guard	x	x	x		
Repair of freight containers	x	x	x		
Transportation	x	x	x	x	x
Stuffing	x	x	x	x	x
Crossdocking	x	x	x	x	x
Intermodal handling of trailer	x	x	x		
Intermodal handling of container	x	x	x		x
Customs					
Export:					
Start/Closing of T-Doc	x	x	x	x	
Export customs clearance incl. 3 item categories	x	x	x	x	
More than 3 item categories	x	x	x		

[2] Information provided from Schenker, CargoNet and Bane Nor

[3] Information provided from Logent

[4] Information provided from Port of Rostock

[5] Information provided from Essinge Rail

[6] Information provided from TMR Logistics AB

Terminal services/terminal	Alnabru	Hallsberg	Rostock	Frövi	Örebro
Import:					
Start/closing of T-Doc	x	x	x	x	
Specified Arrival notifications	x	x	x	x	
Import customs clearance Incl. 3 Item categories	x	x	x	x	
Import customs clearance Incl. 3 Item categories	x	x	x		
More than 3 Item categories	x	x	x		
Commercial samples (Check)	x	x	x		
Other services:					
Application for Recalculation	x	x	x	x	
Closing of T-Documents	x	x	x	x	
Request Closure of T-Doc In Foreign Country	x	x	x	x	
Request Landing Certificate	x	x	x		
Request Toll-ID (Transit/EU Customs Clearance)	x	x	x	x	
Closing of Accompanying Documents	x	x	x	x	

7 Analysis

According to the objective an overview including data of existing intermodal transport solutions between Scandinavia and Central Europe was presented. The basis for this perspective is a benchmarking made with relevant transport companies operating in Scandinavia and in Central Europe.

The market offers intermodal transport solutions from Scandinavia (mainly Malmö, Helsingborg and Trelleborg) to central Europe. Malmö terminal is the main terminal for goods towards central Europe due to its connection via Öresundsbron. Collaboration between transport companies is common. Norwegian and Swedish train operators with mostly domestic services work with other transport companies outside of Sweden and Norway to reach central Europe. The most common connections besides using the railway, on the bridge between Sweden and Denmark, are with the ferry from Trelleborg and Helsingborg.

Cargonet and GreenCargo, both with mostly domestic transports, collaborate with companies outside of Scandinavia to reach Germany and Poland. CargoNet has connections from Alnabru to Trelleborg and from Trelleborg they cooperate with TT-Line to Germany and Poland. From Germany and Poland they uses Hupac and Kombiverkher for transportation further south. TX Logistik transports GreenCargo's freight to and from Germany.

Van Dieren is the transport company with the largest number of departures. They offer multiple transport solution from Scandinavia to Central Europe. They offer departures from several different terminal and ports within Sweden.

The terminals of Hallsberg, Alnabru and Rostock offer a lot of the services the survey asked for while Örebro and Frövi offer fewer services. Also, there might be additional services not included in this survey which the terminals provide.

Remarkable is that the intermodal terminals of Hallsberg and Alnabru do not offer any direct intermodal shuttles to and from central Europe. The terminal of Hallsberg is located just next to the biggest marshalling yard in Scandinavia and Alnabru is located just next to the largest marshalling yard of Norway and is one of the biggest rail-road terminals in Europe.

While there are intermodal links to/from central Europe offered via Malmö from Alnabru as well as to/from Gothenburg, Stockholm, Eskilstuna, Katrineholm, Gävle, etc, it is surprising that no intermodal direct link is offered to/from the Örebro region.

8 Conclusion

The analysis is showing the following, in particular:

- The ARA diagram shows which activities and which resources the different actors offer;
  - Kombiverkehr, HUPAC and TX Logistik exclusively operate international (border crossing to/from Sweden/Norway).
  - Green Cargo Intermodal and Hector Rail offer both border crossing services and domestic services as well.
  - Cargo Net, Real Rail and CFL Cargo exclusively offer domestic services
- Network charts demonstrating maps with existing connections
- Timetables; Vad Dieren offer the widest range of departure times and terminals/ports.
- The terminals in Hallsberg, Rostock, Hamburg and Alnabru offer a wide range of services.
- Analysis shows the importance of collaborations of transport companies, to be able to offer services the market demand.
- A deeper analysis of why the terminal in Hallsberg does not offer any intermodal connection towards central Europe was not carried out but will be done as part of Group of Activities 3.3.