

D.T1.4.3 - KNOWLEDGE TOOL FOR PILOTS/ACTION PLANS IN THE FIELD OF MULTIMODAL SERVICES

Activation of multimodal services

Final version
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1. Executive summary

Within the TalkNET project, five knowledge tools have been developed in order to make available a review of best practices and relevant knowledge in the two macro fields of action of the project, that is to say Multimodality and Eco-innovation, and the related five identified sub-topics:

1	LAST MILE CONNECTIONS OF MULTIMODAL NODES	MULTIMODALITY
2	NODE MANAGEMENT OPTIMIZATION	
3	ASSESSMENT OF MULTIMODAL SERVICES	
4	ALTERNATIVE FUELS DEPLOYMENT	ECO-INNOVATION
5	ENERGY EFFICIENCY SOLUTIONS	

The objective of the TalkNET project is to improve the coordination among freight transport stakeholders for increasing multimodal environmentally-friendly freight solutions. Within the project framework, stakeholders have been included in defined project clusters (five project clusters) that correspond to the five identified sub-topics and that allow to gathered actors with common interest for cooperation.

Within this goal TalkNET partners are involved in a continuous transnational consultation process with the stakeholders in order to define how to deal with the above mentioned fields of action. The knowledge tools delivered are the results of this process: it deals with the collection of the relevant knowledge in these fields both from inside and outside the partnership. Therefore, the knowledge tools will include both the significant experiences of the project partners and those gathered outside at EU level from other actors and operators.

More in details, the use of the knowledge tool allows to focus on a specific issue considering the following logical steps:

1. needs identified as relevant for the partner or/and the stakeholders expressing an interest for the issue;
2. problems deriving from non-satisfaction of the needs preliminary identified, hampering the optimization of a specific process or/and situation;
3. identification (if any), of past attempts to remove, mitigate or solve the problems above-mentioned, offering suitable solutions;
4. identification of the weakness affecting the past attempts;
5. mapping of feasible good practices implemented in order to give answer to the same or similar needs in a comparable context. Good practices identified can refer not only to cases implemented within the Interreg CENTRAL EUROPE Programme area but in general,



- provided that the needs and the context can be brought back and then compared to the punctual situation under analysis;
6. systematization in order to achieve a clear overview of the elements characterizing the good practices identified and their analysis in order to find out key elements or/and processes that can be adapted to the specific situation in order to provide feasible solutions.

For needs, it is meant the necessities identified internally or externally, by the stakeholders, to which it is not possible to provide a credible answer without implementing a series of actions aiming at solving weakness or/and obstacles.

A good practice can be seen as an example of someone with the same needs that was able to satisfy them. Accordingly, it is a method, model or technique that has been accepted as superior to several alternatives because it produces results that are superior to those achieved by other means or because it has become a standard way of acting.

The points mentioned above correspond to the approached adopted by the TalkNET project when dealing with knowledge management and review of best practices. This is demonstrated within the “Summary report of the inputs collected from the stakeholders and tools development” (D.T 1.4.4-2.4.4), that is strictly linked to the best practices collection as the step before to the development of the knowledge tools. In fact, stakeholders were involved in the preparation of the knowledge tools as partners took part in and/or organized meetings with relevant stakeholders to collect their inputs that are functional to the elaboration of these outputs. They allowed to investigate those best practices that can be possible answer to the stakeholder’s needs.

Therefore a review of the current/up-to-date knowledge in the sub-topics identified by the project will be delivered and the knowledge available will help project partners in the implementation of the project activities. In particular, this benchmark will be useful and necessary to develop the project action plans (A.T1.5-2.5 - planning phase of the project activities) and the pilot actions (A.T 3.2 - testing phase of the project activities).

Anyway, TalkNET thematic knowledge tools will offer knowledge and best practices review that will be available not only to project partners but also to the operators acting in the fields of multimodality and eco-innovation. In particular, this knowledge tool is focused on the best practices gathered in the third field of multimodal services activation.

The structure of the document is the following: in chapter 2 it is given an overview of the TalkNET project; in chapter 3 it is given an introduction to the best practices that this documents propose, focusing on the EU and then the TalkNET approach about of multimodal services; chapter 4 is the most relevant part of this document giving the collection of best practices and knowledge both from inside and outside the partnership; chapter 5 gives main conclusions of this work.



2. About TalkNET project

The aim of TalkNET is to improve the coordination among freight transport stakeholders for efficient and environmentally- friendly multimodal transport solutions in central Europe.

TalkNET involves sea and river ports, inland terminals, rail operators, logistic service providers, regional authorities and development agencies:

8 CORE PORTS	3 CE REGIONS	OPERATORS/PRIVATE
Port of Venice (IT)	Veneto Region/Veneto Strade (IT) West Pomeranian Region (PL) Usti Region dev. Agency (CZ)	Lokomotion (GER)
Port of Trieste (IT)		Rail Cargo Hungaria (HU)
Port of Koper (SI)		Codognotto Poland (PL)
Port of Budapest (HU)		Italian-German Chamber of Commerce, Munich (GER)
Public ports of Slovakia (SLO)		
Port of Rijeka (HR)		
Szczecin & Swinouisce Seaports Authority (PL)		
Inland Port of Verona (IT)		

The project results will be achieved focusing on the following fields of action:

1: Last mile connections of multimodal nodes → INFRASTRUCTURES

It deals with the optimization of the links of the terminal/node with last mile connections. It is focused on the improvement of the links to the main transport networks node-to-node, in particular core and comprehensive TEN-T networks.

2: Improvement of multimodal terminals efficiency and optimization → MANAGEMENT EFFICIENCY

It deals with the optimization of the internal dimension of the terminal/node and it involves the improvement of its efficiency. It is focused on the improvement of the terminal operative and logistics management systems.

3: Market opportunities to reinforce or activate new multimodal services → SERVICES

It deals with market analyses to improve intermodal connections and existing/new logistics services and solutions. It is focused on the creation of new multimodal services to tackle bottlenecks affecting the several transport routes (rail, road, sea).

4: Alternative fuels deployment → ALTERNATIVE FUELS

It deals with the increasing use of transport means supplied by alternative fuels instead of fossil fuels. It is focused on the potential deployment of alternative fuels for ports/inland terminals and logistics operators (e.g. LNG demand analysis) to understand what is the real consumption of these type of fuels in the transport network.



5: Deployment of energy efficiency in transport operations → ENERGY EFFICIENCY

It deals with the research of the best tailor-made solutions to manage the partners' project logistics chains aiming to reduce the use of energy. It is focused on the creation of management solutions with a high level of efficiency to reduce the waste of energy during all transport/handling operations.

TalkNET project is developed in three macro Work Packages: WPT1 Multimodality, WPT2 Eco-Innovation and WPT3 Pilot Actions. Before implementing the pilot actions four main activities are implemented.

The first activity (AT1.2 - A.T2.2) includes the analysis phase focused at regional level. It aims to assess problems, needs and challenges of the identified project nodes' regions and measure the impacts of the stakeholders business activities on the five sub-topics previously defined. In this phase, the stakeholders are involved at a territorial level. The analysis will end with a further step that is the mapping of stakeholders.

The second activity (A.T1.3 - A.T 2.3) is about the identification of the clusters according to the results of the previous analysis. In this phase, the stakeholders are involved at cluster level.

The third activity (A.T1.4 - A.T2.4) develops the knowledge tools, which collect the knowledge from within and beyond the partnership on the five project sub-topics. The involvement of the stakeholders in this phase is at the transnational level. The thematic tools are developed and define the connection between the three work packages.

The fourth activity (A.T1.5 - A.T2.5) concerns the planning phase. Here the actions plans are implemented and they will be more suited to tackle problems and needs founded in the previous phases. Stakeholders are involved at node level.

The following step is to plan how to respond at problems/needs previously identified by the project: it is the testing phase, the core part of the TalkNET with the pilot actions (A.T3.2), with the cooperation of the stakeholders form the design to the evaluation of the final results of the pilot actions.

2.1 Overview of action plans and pilot actions

After the analysis phase, through the action plans project partners will implement the planning phase on the five project priorities: last mile connections, node management optimization, assessment of multimodal services, alternative fuels deployment and energy efficiency solutions. They are set up in cooperation with the relevant stakeholders.

The following partners focus their action plans on the field/cluster of multimodal services activation:

D.T 1.5.4 - Action plan to improve multimodal nodes efficiency and connections - LUKA KOPER (NAPA)	LUKA KOPER
D.T 1.5.5 - Action plan to improve multimodal nodes efficiency and connections - RIJEKA (NAPA)	PORT OF RIJEKA AUTHORITY



D.T 1.5.6 - Action plan to improve multimodal nodes efficiency and connections - VERONA FREIGHT VILLAGE	ZAILOG
D.T 1.5.7 - Action plan to improve multimodal nodes efficiency and connections - BRATISLAVA	PUBLIC PORTS
D.T 1.5.8 - Action plan to improve multimodal nodes efficiency and connections - BUDAPEST	FREEPOROT OF BUDAPEST
D.T 1.5.9 - Action plan to improve multimodal nodes efficiency and connections - SZCZECIN	SZCZECIN AND SWINOUJSCIE PORT AUTHORITY
D.T 1.5.11 - Action plan to improve multimodal nodes efficiency and connections - USTI NAD LABEM	REGIONAL DEVELOPMENT AGENCY OF USTI REGION

Eleven pilot actions will test:

- the links to the main transport networks node-to-node;
- terminals' operative and logistics management systems;
- the creation of new multimodal services to tackle bottlenecks affecting the several transport routes (rail, road, sea);
- the potential deployment of alternative fuels for ports/inland terminals and logistics operators;
- the creation of management solutions with a high level of efficiency to reduce the waste of energy during all transport/handling operations.

The following partners focus carry out pilot actions in the field/cluster of multimodal services activation:

PILOT ACTION FOR THE ACTIVATION/OPTIMIZATION OF MULTIMODAL SERVICES

D.T 3.2.6 - Development of logistics corridor connecting Adriatic ports and Verona freight village	VERONA FREIGHT VILLAGE
D.T 3.2.7 - Test of round-trip railway service connecting Poland and North Adriatic area	CODOGNOTTO POLAND



3. Introduction to best practices in the field of multimodal services

The third cluster aims to develop market opportunities to reinforce or activate new multimodal services. Since its scope, the needs are similar to the cluster 1. In fact, in the partners' analysis many physical works are foreseen to expand their multimodal market. This is due mainly to the inadequate and obsolete European railway network that was not designed to support these traffic volumes. However, in the last years many railway links were reinforced and new ones have already started. Despite this positive trend, many other works must be carried out to catch the growing flow of goods. The only way to keep up with the times is to strengthen the network that must be ready to manage the increased freight traffics produced by the globalization process.

The effects of the globalization are more visible in nodes like **ports** (Venice, Trieste, Koper, Rijeka, Bratislava, Szczecin and Swinoujscie) that are suffering the growth of the developing countries (especially of China and India). They have implemented new ICT solutions to handle quickly the huge ships docking at their piers but these tools are not enough. Strongest interventions on the nodes and on the network are mandatory to avoid the complete congestion of the ports.

For instance, the managers of the Port of Koper are making an analysis to understand the potential of the surrounding railway network to understand how many works are needed to enhance the railway connections of the port. Unfortunately, some links have a reduced capacity or are even missing so it is necessary to wait the intervention of the national railway infrastructure manager to strengthen the network. Nevertheless, the biggest problem is represented by the buffer areas. Despite the containers are stackable, their number is too high for the small stocking areas of the majority of the European ports. For this reason, Port of Koper is producing an exhaustive study to design properly the new expansion zones that are essential to satisfy the raising demand of space. The big advantage of the new buffer areas is to allow the reduction of the dwell time since it will be possible to organize better the stock of the containers, avoiding confusion and speeding up the research of the correct container when the pick-up procedure is taking place. In addition, the study has defined the ideal zone to expand the railway traffics. The result is that the connections to the Central Czech Republic are weak so it is essential to reinforce them, activating more railway links on this stretch. This action aims to reinforce both the domestic market and the exchanges with neighbour's countries to answer to the constant demand of goods raised in the last years.

Another point of view is given by the **dry ports** (Verona freight village, Freeport of Budapest and the Chamber of Commerce of Munich since it has described the activities of the two German freight villages Nuremberg and Hof) which needs are a sort of mixture of physical works and an improved management of the terminal area. The difference with the ports is that the majority of the freight villages can start immediately new railway connections while only few ports have the infrastructure ready to activate new ones. However, the inland terminals are progressively congesting so they must start now to plan accurately the investments in new infrastructures to avoid being unprepared when the traffic volume will be too high. The study performed by the Chamber of Commerce of Munich gives enough information to understand how the dry ports are facing the increased growth of traffic flows.



The Chamber of Commerce of Munich has analysed the infrastructure of two German freight villages. The relevant results are given by the inland terminal of Nuremberg that provides an interesting overview because its needs are focused both on the development of new multimodal connections and on the reduction of the environmental impact. In fact, the majority of the nodes are following the guidelines of the European community that has established to shift the 30% of the freight traffic from the road to the rail within 2030 (and 50% within 2050). This challenge makes necessary to increase the multimodal connections and other green solutions. The Nuremberg's node is investing a lot of money to electrify more railway lines and to digitalize its intermodal chain. In addition, it is purchasing hybrid locomotives to carry out shunting operations from the terminal to the railway station and it is starting many short routes (from the freight village to the midtown and vice versa called also milk runs) performed by electric mini-vans. In this way, the terminal manager is creating a sort of city logistics to offer more services to the customers, reducing the carbon footprint. Therefore, the combination of the electrification of the railway lines and the activation of city logistics services permits to create an innovative multimodal network, lowering the environmental impact and increasing the freight traffic volumes.

The solutions that will be adopted by the Nuremberg terminal represent a good example of how physical interventions and soft solutions can be merged to produce positive results for the entire multimodal chain.

Analysing the results of the **operators'** studies (Lokomotion, Rail Cargo Hungary, Codognotto Poland and Veneto Strade that analyzed the behaviour of the enterprises operating in the Central Europe area) the way to create new multimodal connections is more focused on "intangible" solutions. This predictable output is due to the different activity carried out by this category of players since they have not an own physical network to improve like the nodes.

The outputs of Codognotto's studies show how the world of transport is changing. Codognotto Group is born like a road player but throughout the years it is changing its core business. It is known that the road transport is more flexible, cheaper and faster of other transport modes in short stretches but many road operators are investing in rail and sea routes. The reasons of this trend are many. Firstly, the shortage of truck drivers (they are not willing to stay away from home for many days anymore). In fact, in the multimodal transport the bigger stretch of the route is performed by train (or vessel) and only the first and the last mile by truck. It means to drive only for few kilometres (max. 200-300 per trip) with the result of an employ of the trucker only for a daily activity. Then, a reduced use of the road transport produce less congestions and accidents. Another reason is the environmental aspect. The transport represents almost a quarter of Europe's greenhouse gas emissions and the share of the road haulage is 70%. Therefore, the behaviour of Codognotto Group and of other forwarders is moving towards the multimodality despite it can sound strange for road actors. The proof of their good choice is given by the positive results achieved like their revenues that are raised significantly in the last years. Nevertheless, this action is pushing the multimodal sector that now is steady growing. Many loading units shifted from the road to rail (or to sea) means new railway (or vessel) connections, producing positive results for the entire transport network.

The examples mentioned in the previous paragraphs show the different needs of each category of players. As said before, these macro needs are quite similar to the ones of the



cluster 1. The reason is that to reinforce the existing connections or to activate new ones is essential to carry out both physical work and to modify the way to make business. Nevertheless, it is possible to identify three categories of needs:

- **Infrastructural** because the current network is not adequate to absorb all the traffic volume produced by the market. Physical works are essential to increase the number of connections;
- **Technical** since only hard interventions are not enough to reduce the congestions and to improve the current and the future routes;
- **Operative** because without a strong mind-set change it is not possible to push the market toward the multimodality.

4. Best practices collected in the field of multimodal services activation

The best practices presented in this document would like to offer good solutions tested and experienced in the field of multimodal services activation.

These good practices have been collected following the criteria of the project field of action and, when possible, of the pilot action foreseen in the related field (2.1 Overview of pilot actions).

Specifically, it deals with solutions tested and proposed by TalkNET project partners and other selected from external operators and actors that partners have deemed to be significant for their activities and business.

Nevertheless, not only good solutions are proposed, but in some cases also the relevant up-to-date knowledge in the thematic field of multimodal services activation, as guidelines to support activities in this specific field.

The selection of the best practices has been strictly influenced by the needs of partners' stakeholders that have been detected from the project activities and the various contacts that the partners had working with them.

Moreover, the variety of the TalkNET project partners has represented an added value for the knowledge management of the project, allowing to gather in turn different stakeholders good solutions adopted.



Title
High Speed/High Capacity railway line - Verona-Pomezia
Contacts if available / Players included
<ul style="list-style-type: none"> ▪ ARCESE as forwarder ▪ ISC as railway undertaking ▪ NOI as MTO ▪ INTERPORTO DI LIVORNO as port authority ▪ NORTH ADRIATIC SEA PORT AUTHORITY as port authority
Location
The railway stretch connecting Verona and Pomezia, Italy https://www.isc.it/
Summary
<p>a. In the Central Europe area, the connection between Verona and Pomezia represents a good agreement to expand the multimodal market, enhancing the use of the sustainable transport</p> <p>b. From October 2019, a weekly capacity of 192 trailers per each direction allows a strong reduction of trucks in the Verona-Pomezia stretch</p>
Overview
<p>In October 2019, an innovative railway connection started between Pomezia inland terminal and Verona freight village. The innovation consist of the use of the High Speed/High Capacity railway line to overcome the bottlenecks affecting the network. In fact, there are many tunnels that do not allow the passage of trailers. This is due to their inadequate gabarit that allows only the passage of containers. RFI (the Italian Railway Infrastructure Manager) is working to widen these tunnels but this operation will take other few years. The use of trailers is raised in the last years so it is important that these works are finished as soon as possible. However, in the meanwhile there is a solution able to solve this problem, as mentioned above. It is the use of the High Speed/High Capacity railway line that currently is only used for passenger trains. This line has not gabarit constraints and in the night is free since passengers travel only during the day. For this reason, it was signed an agreement between the terminals of Verona and ISC railway undertaking to connect the south of Italy to the north of Europe. The goods coming from the sea connections of the southern ports will be able to travel along the Italian peninsula to reach the European northern countries (and vice versa). Nevertheless, there is an important technical aspect that cannot be underestimated. The common locomotives used to tow the freight trains cannot be used on the High Speed/High Capacity railway line. Therefore, if a railway undertaking needs to move trailers on this particular line, it must invest an important amount of money to buy these special locomotives because they are very expensive since there is scarcity on the market. ISC chose to rent these locomotives to avoid the huge purchase cost.</p>



Results and experience collected

- In the next months, six weekly connection among Pomezia and Verona will start. They will provide an overall capacity of 192 trailers in each direction since a freight train can carry up to 32 trailers
- Many other terminals can follow this practice to overcome the gabarit problems affecting the Italian railway network to exploit the huge potential traffic available from/to southern nodes
- ISC will connect other key nodes like Melzo and Novara to reach many European countries

Added value for the TalkNET project / Link to Pilot actions

In the last years, the use of the railway freight transport has been struggling to spread despite the several advantages that produces. The main reasons of this slow develop are the frequent delays and the constraints affecting the railway line. However, nowadays something is changing. The new management of RFI (the Italian Railway Infrastructure Manager) is pushing this type of transport, following the instruction of European Commission. This is the reason why companies like ISC are investing a lot of money in this sector, trying to grab the huge potential market available. Currently, a connection like Pomezia - Verona is performed only by truck despite the distance is bigger than 400 kilometres. In fact, the railway transport is convenient for distances bigger than 400 kilometres. The reason why a company like ISC started this project it to give the opportunity to several forwarders to choose a more sustainable route. This project is the spark to create other similar routes. One of these new routes is the railway service between Verona and Venice. The stretch is too short to be advantageous but the service will be inserted in a longer route starting from the Greek coasts and arriving to the Baltic sea. Other nodes can follow the example of Verona-Venice to improve their connections but to do that they must change their perspective. The activation of this Verona-Venice railway service will be included in the pilot action D.T3.2.6 (Pilot Action for the activation/optimization of multimodal services: new services port gateway/freight village).

Title

City logistics in Marseilles (France)

Players included and contacts (if available)

SOGARIS

<http://www.sogaris.fr/plateforme/marseille/>

Location

Municipality of Marseilles (Arenc), France

Summary

In order to achieve the goal of developing and promoting the Freeport as a logistics center in the city of Budapest, specific infrastructure, technical and service developments are needed, as well as the need repositioning the image of the Freeport from a 'traditional' port and a brownfield site to a modern city logistic centre.

Overview

The aim was to identify a good example where an already existing intermodal terminal



repositioned its services to focus its activities more towards city logistics services.

Among the international practices examined, the SOGARIS terminal at Arenc in Marseilles was identified as an example with relevant lessons learnt for the situation in the Freeport of Budapest.

Like several large urban agglomerations, Marseilles has real estate constraints leaving limited availability for land to be used for urban freight distribution. In such a context enterprise involved in freight distribution were electing for sites further away from the city center, exacerbating congestion. To mitigate this issue (logistics sprawl) SOGARIS, a major manager of distribution centres and logistics zones, in partnership with SNCF (the French national railway company), developed a logistic zone on a highly accessible site adjacent to the port, with good road (motorways A7, A50 and A55) and public transit accessibility (underground Bougainville or National stations, RTM bus line, tramway station 'ARENCE Le Silo') and with national rail connectivity.

The 9-hectare brownfield site is located about 2 km from Marseilles city centre and the Euroméditerranée business district. It was built on land owned by SNCF (part of a former rail yard, known as Arenc).

The Sogaris Arenc logistic platform is owned and managed by the company Sogaris which is a public-private corporation involved in designing, developing and managing logistics facilities.

The vision and operation of Sogaris is to make local government objectives and business needs meet according to the following model.

In order to meet these objectives, the strategy of Sogaris is to locate a network of purpose-built logistical facilities of three types, respectively servicing:

- Entire urban areas with logistical platforms as points of entry;
- The most densely-built areas with consolidation centres (logistics hotel);
- Neighbourhoods with final delivery points.

Despite not being an inland port, but a former railway yard, the Arenc logistic platform in Marseille represents a good example of transition from a traditional (brownfield) logistic function site to a state-of-the-art city logistic hub. It is geographically also very close to the city centre (2 km, while the Freeport is approximately 3 km from the edge of Budapest downtown). Being on level 1 the managing company's strategic approach, Sogaris Arenc serves exactly the same scale of geographical area (larger urban area) as the Freeport of Budapest which is also the same type of logistical point of entry to the city as Arenc. The Freeport can repeat the success of Arenc and even offer more in terms of multimodality due to its outstanding multimodal accessibility.

Results and experience collected

- better understanding of the needs of possible tenants,
- a complete set of infrastructural and service development needs which is in line with the potential tenants' expectations,
- a ready-to-use marketing concept focusing on the unique selling point of the Freeport of Budapest and on its other advantages based on location and accessibility, complemented with strong sustainability arguments,
- a complete list of necessary infrastructural developments (preliminary project list)



for the city logistics in Budapest in order to promote the need for ensuring the adequate accessibility on the various points of the city,

- detailed proposal for the required legal modifications accompanied by a detailed justification of the need for the change of the legal acts.
- a lobby plan for the better positioning, gaining support among decision-makers and enhancing the chance for the implementation needs.

Added value for TalkNET project / Link to Pilot actions (D.T 3.2.8)

By aligning the interests of those involved in the logistics chain the current urban freight transport practice shall be transformed into an organized city logistics system. Particular attention should be paid to the IT-based organization and supervision of urban (including freight) transport, and to the optimization of the use of concentrated loading areas in public spaces, primarily providing basic care. A comprehensive city logistics concept should be formulated to provide institutional, service background, urban service relationships, and territorial and temporal regulation of logistics.

The main stakeholders are:

- Ministry of Innovation and Technology
- Municipality of Budapest (Unit Responsible for Transport)
- Budapest Public Roads (Közút) Ltd.
- Clean Air Action Group (CAAG, Levegő Munkacsoport) and other NGOs
- Freight forwarders

Title
Kvarken Multimodal Link
Players included and contacts (if available)
<ul style="list-style-type: none"> • The City of Umeå https://www.umea.se/ • The City of Vaasa https://www.vaasa.fi/en • KoVaLogin (infrastructure development company owned by the city of Vasa and the municipality of Korsholm) • Port of Umeå http://www.kvarkenports.com/about/umea.html • Port of Vaasa http://www.kvarkenports.com/about/vaasa.html • The Kvarken Council https://www.kvarken.org/kvarken-council • NLC Ferry Ab Oy • Regional Council of Västerbotten • Regional Council of Ostrobothnia • The Swedish Maritime Administration • Wärtsilä



- SSAB
- Komatsu
- ABB
- Det Norske Veritas, DNV
- Merinova technology center
- Volvo Trucks, Umeå
- SCA Transforest

Project info: <https://www.keep.eu/project/15649/kvarken-multimodal-link>

Location

Gulf of Bothnia

Summary

The Kvarken Multimodal Link - also known as the Midway Alignment of the Bothnian Corridor, is a vital, year-round maritime transport connection between Sweden and Finland. The link connects to three major roads classified by the UNECE as European roads of strategic importance - the E12, the E4 and the E8 - and to the Bothnian Link main railway line. It also supports and complements the Priority Projects and the Core and Comprehensive Network of the European Union. The global Kvarken Multimodal Link project was upgrading the transport route in order to fulfil national and international requirements for an environmentally and economically sustainable transport system with increased multi-modality and higher transport security. The project included a complete transport system for both goods and passengers and was initiated by the city of Umeå in Sweden and the city of Vaasa in Finland.

Overview

The maritime link through Umeå-Vaasa provides an important connection within the EU from west to east. As a spin-off effect, it also facilitates trade with markets such as Norway, the Baltic countries, Eastern Europe and Russia.

The implemented action helped to shift the traffic from road to sea and rail by interconnecting two national rail networks and by bypassing more than 800 km of the existing road route. This also implies positive effects on service quality and safety. Operators, cargo owners and the general public all stand to gain. The time savings when using the Kvarken Link instead of the road around the Gulf of Bothnia increased the efficiency and the competitiveness in the transport sector. It also helped to save the environment. Fuel consumption and emissions was reduced considerably when the trucks took the maritime route instead. One of the purposes of the project was to effectively spread information about technical, operational, safety related, environmental solutions and financial aspects of the implementation of the Kvarken Multimodal Link. All things learned was a valuable common asset for decision-makers of the future.

The scope of activities included:

- placing a modern ferry into service;
- increasing efficiency of port operations and the regional logistics system;
- increasing competitiveness;



- securing the long-term stability of the task;
- implementing innovative technologies and solutions, and also contributing to their popularisation in the European Union.

The project is divided into two stages:

- Stage 1. (2012-2014) - preparatory actions, feasibility studies, drafting the modernisation concept for the transport link as well as road and port infrastructure, designing a modern and environmentally-friendly ferry (with a preferred LNG drive) featuring a reinforced hull frame allowing it to break the ice cover;
- Stage 2. (2015-2017) - the construction of the ferry, relevant inland infrastructure (including potential infrastructure for fuelling the ferry with LNG), the implementation of a logistics system, summing up the experience gained during project delivery.

To deliver the project objectives (especially stage 2), the city of Umeå and Vasa established a special company (Kvarken Link AB). Additionally, the managements of both ports established the Kvarken Ports Company. The selected cooperation formula is more flexible than the mechanism of a European Territorial Grouping and allows the achievement of the same goals.

The project is funded from various sources, including state (budgets of cities, regions and national funds of Finland and Sweden as well as within framework of funds assigned for TEN-T), as well as private funds.



Source: europeanstraits.eu/

Results and experience collected

- Supporting and connecting to the transport network corridors and connected transport hubs, with core status. Thus creating possibilities for peripheral regions to receive CEF financing.
- Creating possibilities for new transport patterns and strengthening the railway system.
- Connecting the two regions with Europe, creating and facilitating the regional



development.

- Increased industrial development and increased trade and cooperation.
- Increased social and cultural exchange and cooperation.

Added value for TalkNET project / Link to D.T1.5.9 "Action plan to improve multimodal nodes efficiency and connections - SZCZECIN" - NODE MANAGEMENT OPTIMALTIZATION

Finding sources of funding is an important challenge - for both making rivers navigable and building intermodal infrastructure in the TalkNET area. If Oder River is included in the TEN-T network, it will be possible to finance the river regulation from the CEF (Connecting Europe Facility), however the percentage of funds for such investments is low and most of the financing has to come from other sources. Complimentary investments will most likely be financed with national funds, and the availability and amount of financing will probably grow if they are directly feeding the TEN-T network. As an alternative source of financing, public-private partnership is considered, especially with Chinese investors, however, such investments have to be viable for the private investor and then bring profit, which lowers the possibility of their realisation and requires detailed efficiency analysis, which should be presented by the public investor. The Danube-Odra-Elbe canal/waterway corridor is important connection of nodes located in the TalkNET area. The completion of the this waterway corridor is of European significance from the point of view of inland water transport north-south from the Baltic Sea (Port of Szczecin) across Polish regions (the Odra river area) and the Moravian regions (the Morava river) and Slovak regions (Vah-Danube river area) to the Black Sea (Constanta). However, the implementation of the project is very difficult due to various conditions such as: the number of stakeholders and entities involved in the project implementation, lack of one source of financing.

The Kvarken Multimodal Link Project is a good example of the Public - Private Partnership with a large number of partners/organizations, what is important for TalkNET project partners who work in associations or plan to create one to support cross-border transport investments.

The public-private partnership - without significant public financing, e.g. from the EU - will involve with the need of the private investor to regain invested funds, which will significantly decrease the competitiveness of inland navigation compared to other modes of transport with publicly funded infrastructure. Thus, it should be used as a supplementary tool - in order to cover own contribution, to reduce the design risk, or construction of supplementary infrastructure (e.g. logistic parks), whereas in the last case, it doesn't have to be PPP in statutory meaning. Many investments in the TalkNET area require the involvement of private co-financing, that is why it is so important to learn about good practices in the area of public-private partnership.

The good practice is related to the main challenges and actions for the development of intermodal transport in the Westpomeranian Region, such as:

- undertaking actions aimed at a better integration of rail transport with other branches of transport,
- creating favourable conditions for the development of ferry shipping, including its participation in intermodal transport,
- promoting the development of short sea shipping as a preferred form of transport in the European Union,



- promotion and active participation of seaports in the development of intermodal transport and cooperation of entities managing ports with operators of intermodal terminals.

Title

Increasing intermodality - Scandria Alliance

Players included and contacts (if available)

- Region Örebro County
- Region Skåne
- Helsinki-Uusimaa Regional Council (HURC)
- Eastern Norway County Network (ENCN)
- City of Turku
- Capital Region Berlin-Brandenburg

Scandria Alliance - <https://www.scandria-corridor.eu/index.php/en/alliance>

Location

Scandinavian-Mediterranean Core Network Corridor

Summary

The Scandinavian-Adriatic Corridor is an initiative which promotes the shortest geographic link between Scandinavia and the Adriatic Sea. It is supported by more than 100 groups from policy, industry and educational institutions, that have organised different transnational projects and initiatives. The corridor's performance includes more than a dozen metropolitan regions with about 100 million inhabitants in the heart of Europe sufficient capacities and best available technologies to handle cargo and passengers smoothly. The joint vision is to work towards reduced carbon footprint transport by promoting intermodal logistic solutions, introducing eco-friendly technologies and infrastructures.

Overview

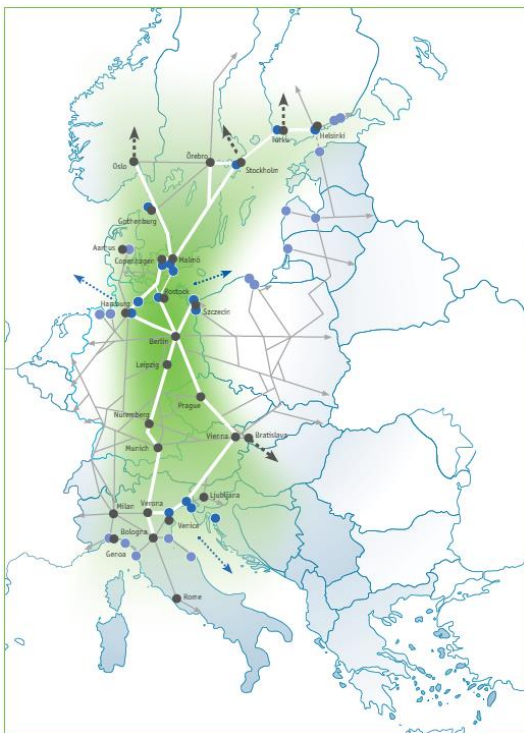
The Scandria Corridor, forming part of a corridor of the Scandinavian-Mediterranean TEN-T core network - links Scandinavia with the Adriatic Sea through the shortest route via Denmark, Germany, the Czech Republic, and Austria. It is supported by over 100 groupings gathering representatives of politics, business and scientific centres, such as Scandria in the Baltic Sea Region, the South-North-Axis (SoNorA) in Central Europe, the Transalpine Transport Architects (Transitects) in the Alps Region and the North-South Initiative of Chamber of Commerce and Industry of Berlin. Work towards the reduction of the carbon dioxide footprint in the transport sector by means of promoting intermodal logistics solutions and implementing environmentally-friendly technologies and infrastructure is the common vision of the Scandria Initiative. The funds from cross-border Baltic Sea Region Interreg Programme for years 2007-2013 were used, i.a., for works associated with the development of corridor as a result of which the action programme for the development of the Scandria Corridor with a perspective until 2030 was drafted.



The open platform of cooperation, named Scandria Alliance, used for the networking of partners from the fields of politics, administration, industry and science at the EU, national, regional and local levels was established to encourage partners to implement the action plan and to attract the new stakeholders to cooperate. Scandria Alliance encompasses:

- Scandria Political Forum - an annual event with a freely-chosen thematic scope used as a platform for meetings of representatives of politics at the EU, national and regional levels, as well as industry representatives;
- Scandria Alliance Coordination Board - responsible for the technical aspects of the platform's functioning, including coordination of its operation, communication, initiating thematic projects, developing organisational and financial structures, and organising the Scandria Political Forum;
- Scandria Alliance working groups - serving as a body dealing with the preparation and implementation of common actions focused around important topics, such as EU and national legal regulations concerning transport, the logistics sector, railway transport, and the green corridor.

The accepted model of operation assumes a preference for the flexible structures of cooperation, which allow the adjustment of actions to current needs without the necessity of establishing new structures duplicating the already existing top-down mechanisms (such as, e.g. the forum on TEN-T corridors).



Source: www.scandria-corridor.eu

Results and experience collected

- Maximising the social and economic benefits generated by the functioning of the transport corridor requires efficient cooperation among private entities, local



governments, and infrastructure managers.

- Commitment of policy and business actors to the implementation of transport policy is crucial for achieving a sustainable multimodal transport system in CE/TalkNET area.
- Experiences shows that several action plans, strategies or programmes developed by public authorities have not become successful because of several reason, such as unclear designation of roles and responsibilities, low involvement of the users of transport infrastructure and services.
- Several mechanisms have been created to harmonise transport policies at different governance tiers in order to archive seamless handling of freight flows in the networks and transnational corridors. One of them is cooperation based on a formal agreement with the fixed membership fees, formalised pattern of activity, work schedule. This mechanism ensures: funding security, greater involvement of partners and minimum involvement of human resources of the partners. However, it has a limited flexibility (e.g. additional tasks beyond the scope of the concluded agreement should be negotiated on a policy level) and requires concordance among partners.
- The effect of the actions taken by Scandria Alliance partners is: increased rail-based volumes on corridor, improved environmental and economic performance of transnational cargo transport, reduced fuel and energy consumption, greater business competitiveness in CE.

Added value for TalkNET project / Link to D.T1.5.9 "Action plan to improve multimodal nodes efficiency and connections - SZCZECIN"

- Implementation of the big transport investments in the TalkNET area requires a multilevel governance approach to ensure that the policy actions are embedded and pursued in the national and regional transport planning frameworks.
- To effectively manage stakeholders process in the transport corridors, the following actions must be taken:
 - develop methods to build trust and commitments among the various stakeholders interested in performing the given action,
 - analyse and assess implementation constraints and proposed solutions,
 - elaborate progress evaluation schemes,
 - discuss financing and funding principles,
 - design organisational procedures and steering mechanisms tp launch the solutions in the legal environment,
 - create platforms for policy agreements on solutions and implementation of joint decisions.
- The good practice is related to the main tasks of regions, cities and other stakeholders, in the context of the implementation of transport policy at the regional level, which are:
 - lobbying and assessing changes in legal regulations to improve the efficiency and competitiveness of the transnational multimodal nodes and
 - undertaking actions aimed at a better integration of rail transport with other



branches of transport.

The aim of the action related to the implementation of good practice is the optimization of nodes of the Baltic - Adriatic Corridor an increase their energy efficiency, which can be achieved through effective international cooperation in this area.

Title
“Sustainable Świnoujście-Trelleborg MoS based on upgrading port infrastructure, developing intermodal transport and integrating hinterland corridor”
Players included and contacts (if available)
<ul style="list-style-type: none"> • Szczecin and Swinoujscie Seaports Authority http://www.port.szczecin.pl/en • Trelleborgs Hamn AB http://www.trelleborgshamn.se/en/english/ • Trelleborgs Kommun https://www.trelleborg.se/ <p>Project info:</p> <p>https://www.onthemosway.eu/sweden-poland-sustainable-sea-hinterland-services-sustainable-swinoujscie-trelleborg-mos-based-on-upgrading-port-infrastructure-developing-intermodal-transport-and-integrating-hinterland-corridors/</p> <p>https://www.onthemosway.eu/mos-sweden-poland-sustainable-sea-hinterland-services-iii/</p>
Location
Poland, Sweden
Summary
<p>The investment is a part of the Global Project, which improved the integration and accessibility of European transport corridors through additional investments in the existing sea motorway between Świnoujście and Trelleborg. Both ports are important European trans-shipment hubs and their link connects European the Baltic Sea - Adriatic and the Scandinavian - Mediterranean Sea Core Network Corridors. The project will allow for better integration of European economic zones and international intermodal trade in goods between Scandinavia and the countries of Central and Eastern Europe via Poland.</p> <p>In the Świnoujście port the works will involve the modernization of the port infrastructure and expansion of the intermodal potential.</p>
Overview
<p>This investment is part of a Global Project, aiming at enhancing the integration and accessibility of European transport corridors through additional investments in the MoS link between the ports of Trelleborg and Świnoujście.</p> <p>The ports of Trelleborg and Świnoujście are both important European transfer nodes and their connection links the European Baltic-Adriatic corridor with the Scandinavian-Mediterranean corridor. The proposed development enables for a larger integration of</p>



European economic zones and of international (intermodal) freight between Scandinavia, through Poland with the Central-East European countries.

Investments will be made into developments and relocation within and towards the port of Trelleborg, alleviating the existing congestion through the city centre and into a new onshore power connection in berth 5.

In the port of Świnoujście works will be conducted to modernise the port infrastructure and to enable the development of intermodal operations. Works include the reconstruction of berths no. 5 and 6, the creation of three waiting and manoeuvre yards for freight trucks and the creation of new intermodal handling facilities for rail traffic.

The total value of the investment is EUR 29,812,872. The project covers the expenses incurred from 1st January 2014 to 31st December 2019.

The Polish part of the project focuses on adjusting infrastructure at the Ferry Terminal of Świnoujście to handle intermodal transport. The investment includes: purchasing of ferry berth no. 6 with its backup facility from the Military Property Agency, preparation of engineering documentation of ferry berth no. 5, expanding land at ferry berth no. 6 and connecting it with berth no. 5. The investment results in the construction of a new berth of 293 m in length and 13 m in depth. Additionally, three car parks will be developed and connected with an overpass which will become a part of the second inbound route to the terminal. The project will also develop new and rebuild existing railway tracks, new ramp, passenger gallery, and purchase new loading equipment, i.e. two reach stackers and four tractors.

Swedish partners carried out studies and designing for further extension of the Trelleborg Seaport, including its south-east part, entry to the port from the east, and building of a logistic centre, car parks, new backup facilities, and a road access to the port. The documentation helped rebuilding port infrastructure to handle 240 m ferries.

The investment at the Świnoujście Ferry Terminal will not only create conditions for developing intermodal transport, but also contribute to the implementation of Objective 2 of the 'Szczecin and Świnoujście Development Strategy until 2027', namely better integration of the Szczecin-Świnoujście Port Complex within the north-south sea and land transport corridor through modern port infrastructure and improved access to the ports from the sea and land, so much indispensable for further development of the ports.

The investment is a part of a global project focusing on improving and optimizing logistic chains between Scandinavia and Southern Europe, including among others the Baltic-Adriatic Transport Corridor. It is a follow up of the cooperation with the Port of Trelleborg regarding the establishing the motorway of the sea, a cooperation which started in 2014. The project reflects common interests in 'Ensuring sustainable services of the Trelleborg - Świnoujście Motorway of the Sea by modernizing port infrastructure, developing intermodal transport and integrating with inland corridors' while utilizing funding from the Trans-European Transport Networks (TEN-T).



Source www.onthemosway.eu/

Results and experience collected

- Adjusting ferry terminal/port/node to handle intermodal transport
- Increasing the interest of stakeholders in the intermodal transport
- Mutual support of ports in the performance of environmentally-friendly activities
- Extending and modernising road and railway connections improving access to ports from land

Added value for TalkNET project / Link to D.T1.5.9 "Action plan to improve multimodal nodes efficiency and connections - SZCZECIN"

Infrastructural investment in the ports will contribute to the improvement of the transport package of the Baltic-Adriatic Corridor through the increased use of intermodal transport. Development of intermodal transport in the TalkNET area will contribute to reduction in the global transportation cost, increase the number of modes of transport, improved the quality of services.

Obligations concerning the implementation of environmentally-friendly solutions in a specified time horizon contributing to the implementation of the green corridors in the TalkNET area, e.g. placing container tractors with alternative drives in operation.

Taking into account the recommendation of local stakeholders relevant to the TalkNET project (i.e. PKP Polskie Linie Kolejowe, General Directorate for National Roads and Highways, Wody Polskie, Inland Navigation Office, Szczecin and Świnoujście Seaports Authority, West Pomeranian University of Technology, Maritime University of Szczecin, users of the transport and logistic infrastructure of the Szczecin-Świnoujście node) it should be emphasized that the EU regions (public bodies) should encourage and support stakeholders to build the necessary knowledge and activate the cooperation network.

The good practice is related to one of the main challenge (identified during the TalkNET project implementation) regarding the implementation of ecological solutions in the process of freight transport and two tasks: increasing modal shift and modernization and development of access infrastructure (roads, railways, inland waterway transport) from land to ports in Szczecin and Świnoujście, helping to eliminate bottlenecks which slow down road, rail and inland transport, as well as to increase freight capacity.



The primary aim of the action related to the implementation of good practice is to boost energy efficiency in Szczecin and Świnoujście multimodal nodes.

Title

- Expanding the use of combined freight transport in the Czech Republic

Players included and contacts (if available)

- Czech Ministry of Transport
- Shippers with a particular interest on a sustainable supply chain
- Association of Road Carriers ČESMAD BOHEMIA
- Intermodal terminals in the Czech Republic

Location

Czech Republic

Summary

Transportation of goods in ISO shipping containers to and from the seaport operates in the Czech Republic well under market conditions. There are problems that mainly lie in the insufficient capacity of the railway infrastructure. On the other hand, continental transport in intermodal trailers, swap bodies, or not ISO shipping containers, is underused. Good practice consists of seminars for road hauliers where they are familiar with the problems and possibilities of continental transport on rails. The seminars were organized in several regions of the Czech Republic and were connected with a visit to the near combined transport terminal.

Overview

The road undertakers and their clients recognised that a rail transport service in block trains can be good and can offer a reliable quality. They know as well that container transport in block trains in the ISO maritime containers between the sea ports and hinterland is very well competitive, reliable and cheaper than transport on the road. The new challenge in the Czech Republic is to extend a comparable qualitative service for the continental transport, i.e. for tank containers, swap bodies and intermodal trailers. The goal is to create and expand the network of block trains with the unaccompanied combined transport among distant parts of the Europe, alternatively of the Asia.

For this purpose there is a need of some public support. The advantage of combined transport is possible under "Council Directive 92/106/EEC on the establishment of common rules for certain types of combined transport of goods between Member States".

One of the good practices in this field is the concentrated information of professionals about advantages of this kind of transportation through the series of seminars organized by the Czech Ministry of Transportation in cooperation with the Association of Road Carriers ČESMAD BOHEMIA.

The seminar participants acquire detail information on legislative framework and technology for combined transport, on subsidy program for road hauliers to acquire combined transport units, other practical information, including legislative changes in this area, etc. The seminars are organized in regions and include a visit to a nearby



intermodal transport terminal.



Results and experience collected

The seminars instructed road transporters and forwarding companies about possible shifting of goods transport from the road to the rail, about achieving an acceptable transport quality and optimization of their resources - drivers and trucks, about other advantages and difficulties of this kind of transportation.

Combined (intermodal) transport is an opportunity to develop a transport company in response to a lack of drivers or other restrictive legislative and economic or political measures. The use of combined transport can also be a condition for obtaining or maintaining a contract, or a way to address environmental constraints for direct road transport. Another motivating factor may be the rising cost of road transport not only in the form of wage costs, but also in the growth of tolls.

Added value for TalkNET project / Link to Knowledge tool for pilot/action plans (D.T 1.4.3)

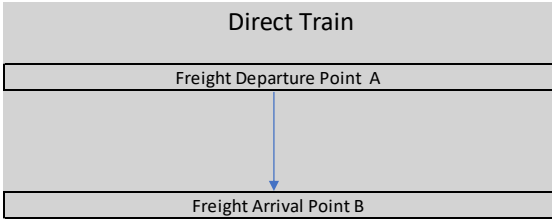
Promotional and demonstrative actions mainly among truck companies need to be implemented in order to show the reliability of the new technologies. Furthermore, public bodies need to be involved in order to understand how to react and deliver proper incentives and support. The positive experience can be repeated in the other regions of the programme area, where is a need to support the expansion of the continental intermodal transportation.

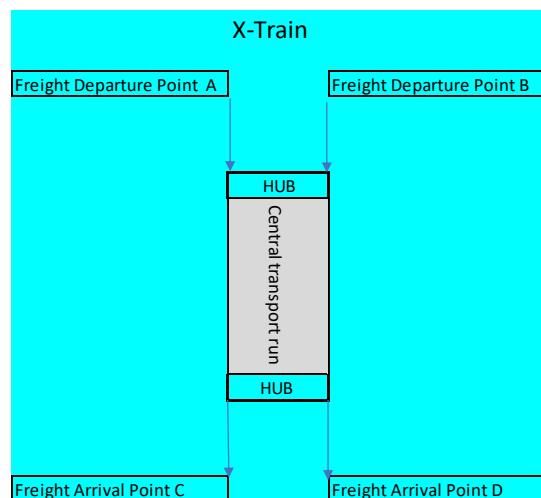
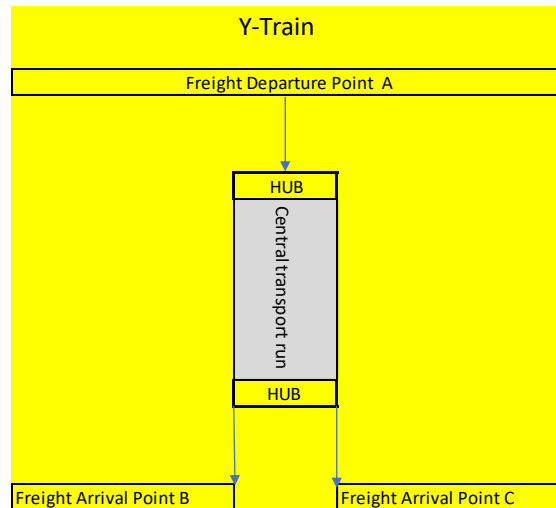
The TalkNET project is the opportunity to disseminate this best practice in other CE regions. There is a possibility to include the best practice among the TalkNET action plans.



Title
Support of combined cargo transportation in the Czech Republic
Players included and contacts (if available)
<ul style="list-style-type: none"> ▪ Czech Ministry of Transport ▪ Transport companies ▪ Terminals and logistics companies ▪ Shippers
Location
The Czech Republic
Summary
In the Czech Republic, under the Operational Programme Transport, 2 programs of combined transport development were realised.
Overview
<p>Advantage of combined transport is possible under "Council Directive 92/106 / EEC on the establishment of common rules for certain types of combined transport of goods between Member States".</p> <p>In the Czech Republic, under the OP Transport, 2 programs of combined transport development were announced:</p> <p>The "Support for the modernization and construction of intermodal transshipment points" and the "Acquisition of combined transport units".</p> <p>The support for the construction or modernization of public transport intermodal transshipment points includes support for investment in the modernization and construction of trimodal (road-rail-water) or bimodal (road-rail) terminals and the acquisition of handling facilities for intermodal transshipment points.</p> <p>Main supported activities of the programme of support for road operators "Acquisition of combined transport units" are investments in the acquisition of tangible assets, namely: initial investment / purchase of new transport units for continental combined transport</p> <ul style="list-style-type: none"> • vertically manipulated (intermodal) semi-trailers • inland containers • swap bodies • if necessary new innovative units / technologies
Results and experience collected
<ul style="list-style-type: none"> ▪ The proper identification of private interest from the public sector determine the correct incentive to be applied ▪ Number of initial investments into modernization of multimodal terminals and its equipments and into the new transport units
Added value for TalkNET project / Link to Knowledge tool for pilot/action plans (D.T 1.4.3)
The described system of incentives in the field of continental multimodal transportation in the Czech Republic is a proved action of supporting the development of the multimodal services. It is one of important actions how to meet the objectives of the White Paper in the freight sector. Furthermore, public bodies need to be always involved in order to understand how to react and delivered proper incentives. The TalkNET project is the opportunity to disseminate this best practice in other CE regions. There is a possibility to include the best practice among the TalkNET action plans.



Title
Modular train concept for flexible transport solutions - Lokomotion
Players included and contacts (if available)
<ul style="list-style-type: none"> ▪ Rail infrastructure of Germany/Austria/Italy/Slovenia ▪ Freight forwarders in Germany/Austria/Italy/Slovenia/Greece and Turkey ▪ Harbours in Germany/Austria/Italy/Slovenia
Location
NAPA- and Danube-Train Routes: Germany - Austria - Italy - Hungaria - Slovenia
Summary
<p>Lokomotion and its partners are very creative in developing and implementing tailor made transport solutions to meet customer’s needs. Lokomotion is driven to strengthen the rail system in interoperable logistic chains. The main bottleneck and growth limiting factor are the Staten companies, which provide the rail Infrastructure on Brenner/Tauern- and Danube-axis, due to insufficient multi-lateral coordination of e.g. maintenance works, or undercharged capacity. To handle this challenger with those rail infrastructure companies is often the most critical factor to meet customer’s needs.</p>
Overview
<p>Customer requirements for temporally and locally flexible transport solutions / using the example of modular train concepts (X-train/Y-train)</p> <p>Freight trains are usually taken from a starting point A to a destination point B.</p> <p>(Direct train).</p>

<p>Schematic diagrams X-train/Y-train</p>



From the customer's point of view, modular train concepts (X-trains/Y-trains) can be useful if volumes are transported from one delivery railway station to, for example, two receiving railway stations. Volumes are bundled on the long route and thus the maximum train parameters on the route are utilised, a targeted feed to the respective railway stations then being made on shorter sections. From the customer's point of view, these solutions are attractive because volume bundling as a rule allows the frequency to be increased. In addition, there are improved car circulation times. Often this is accompanied by a receiver situation in which possibly only one group of wagons but not a whole train and be delivered into the terminal or rail connection.

Lokomotion offered two modular train concepts, as this was an innovative approach to responding to customer requirements but also to be competitive in terms of transport time and price compared to trucks.



One of these products was the "Y-train" from Munich-Riem with a group of wagons for Ljubljana and a group of wagons for Trieste. The volumes ran bundled to Villach and there was a train division for the two destinations.

The product to Ljubljana is not only important for the exchange traffic between Germany and Slovenia but also allows the connection of other destinations in South-East Europe. In the past there was, for example, a continuing connection Ljubljana - Halkali/Turkey.

Results and experience collected

In order to stabilise the quality of the products and to strengthen customer confidence, it is essential not only to reconcile the classic standard operation with the service partners but also, to have solutions "in the drawer" in the context of disruptions of any kind.

Lokomotion had almost no "normal" operation during the entire year but on almost all days of the year there were special events, construction sites etc.. In order to be able to maintain a comparably good quality of service despite adverse conditions, all processes need to be re-examined.

On the one hand, this refers to the use of locomotive drivers (shift planning, which has comparatively few engine driver changes and is therefore less susceptible to disruption) and, on the other hand, to the trans-national use of inter-operable locomotives. # For quality assurance, additional resources in the areas of the locomotive and locomotive drivers must be provided or organised in situ. The deployment planning for the locomotive drivers must be made as flexible as possible in consultation with the workforce. Of course, this also includes the training for detour routes, the knowledge of all existing locomotive types and the training of border railway stations.

Furthermore, Lokomotion has gained the experience that preparatory site planning and on-going communication with the customer on this issue is important.

Lokomotion has significantly strengthened the "construction team" at the interface to the infra-structure operators.

Added value for TalkNET project

Growth in "Last mile connections of multimodal nodes"

Growth in the field of Improvement of multimodal terminal efficiency and optimisation"

Promotional and demonstrative actions need to be implemented in order to show the reliability of the new technologies.

Public bodies need to be involved in order to understand how to react and delivered proper incentives.



5. Conclusions

Best practices collected in the field of multimodal services activation can be different in relation to the different partners/actors involved. This shows the variety of interventions needed to cope with new multimodal services issues.

Also the best practices found in this field of action, demonstrate the complexity of the multimodal transport and that the involvement only of a part of the actors of the multimodal chain is not enough. In fact, the achievement of the third cluster's objective (assessment of multimodal services) can be reached through the merged implementation of physical works and a set of rules.

6. Index

6.1 Collection of best practices

- 1) High Speed/High Capacity railway line - Verona-Pomezia
- 2) City logistics in Marseilles (France)
- 3) Project Kvarken Multimodal Link
- 4) Increasing intermodality - Scandria Alliance
- 5) "Sustainable Świnoujście-Trelleborg MoS based on upgrading port infrastructure, developing intermodal transport and integrating hinterland corridor"
- 6) Expanding the use of combined freight transport in the Czech Republic
- 7) Support of combined cargo transportation in the Czech Republic
- 8) Modular train concept for flexible transport solutions - Lokomotion