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ACTION PLAN FOR IMPROVING THE EFFICIENCY OF SZCZECIN AND ŚWINOUJŚCIE MULTIMODAL NODE AND TRANSPORT CONNECTIONS

Final Version
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Executive Summary

This study "Action plan for improving the efficiency of Szczecin and Świnoujście multimodal node and transport connections" has been prepared at the request of the Westpomeranian Region in cooperation/consultation with Szczecin and Świnoujście Seaports Authority. It constitutes a part of the CE10 44 TalkNET Project – Transport and Logistics Stakeholders NetWork, which in turn is a part of the European Territorial Cooperation Program – INTERREG CENTRAL EUROPE 2014-2020, with the participation of the European Regional Development Fund. The aim of this exercise is to consider a plan for improvement of the effectiveness and efficiency of the transport infrastructure of the multimodal node.

The TalkNET project was created as an answer to the need to develop harmonized cooperation mechanisms between freight transport stakeholders. The project is designed to contribute to the strengthening of a friendly environment for multimodal transport in Europe, as well as to improve the coordination of links in the multimodal transport chain, i.e. parties participating in it (ports, transport operators, terminals). The TalkNET project, as an EU project, aims at shaping the right strategies and policies concerning the development of sustainable multimodal freight transport in the light of the goals of the Europe 2020 strategy. This project is also expected to contribute to establish a long-term policy and a harmonized structure, enabling technological development and investments in the field of freight transport in Central Europe.

The transportation multimodal node consisting of the closely situated and aptly connected with their hinterland by road, rail and inland waterways means of transport towns of Szczecin and Świnoujście with their the two urban transport systems, two sea ports, one airport and a number of industry activities situated within the town area, port areas, and in their close vicinity require an apt development of its transportation system as a whole utilizing best solutions in terms of achieving its utmost efficiency in using all modes of transportation, namely: road, rail, airborne, inland waterways and sea.

The Szczecin and Świnoujście Seaports Authority SA (PP11) and the Westpomeranian Region (PP10) are committed to **improving/increasing the efficiency of the Szczecin-Świnoujście multimodal node**.

The following tables show the SWOT analysis identified for this domain by the Szczecin and Świnoujście Seaports Authority SA and the Westpomeranian Region.

STRENGHTS	WEAKNESSES
Szczecin-Świnoujście transportation node is accessible by four means of transport, i.e.: road, rail, inland waterways and air.	Road and rail connections to/from Szczecin-Świnoujście node require further modernisation
Long distances covered by freight transports to/from the Szczecin-Świnoujście multimodal node justify the use of rail and/or inland waterways transport	Limited possibilities to launch intermodal connections based on inland waterways

Railway transport is insusceptible to congestion which occurs on the roads, especially near and within cities	Necessity of further technical and organizational integration of sea, railway and road carriers
Operation of intermodal transport also on the days when heavy transport is prohibited on roads	Lesser flexibility of railway connections as compared to road transport
The sea ports of in Szczecin and Świnoujście can handle all types of cargo shifted in the sea-land trades with the use of all hinterland means of transport.	Limited number of railway wagons to transport semitrailers in Poland, which makes it necessary to obtain them from abroad
functional transformation of former industrial areas into transhipment and distribution terminals or industrial - transhipment and distribution complexes	Only part (approx. 10%) of semitrailers in operation are suitable for vertical handling
No identified conflicts between the ports and the cities.	
OPPORTUNITIES	**THREATS**
Constant increase in handling throughput of the Szczecin-Świnoujście port complex	Slowdown of the European (World) Economy due to the COVID-19 pandemic
Projected increase in cargo volumes susceptible to taking over by intermodal transport	Significant reduction in EU and/or national funds flowing into the region;
Increasing road congestions prompting the search for alternative solutions	Increased requirement for railway wagons to transport semitrailers in Europe not being compensated with their production/availability
Completing the investment consisting in the adaptation of the ferry terminal in Świnoujście for intermodal transport services	
Completion of ongoing modernization of the railway network infrastructure in Poland	

IT system integration - "single window" concept	
Plan to construct an intermodal terminal in Szczecin (Dunikowo)	
Program for modernization of the Odra Waterway reintroducing inland waterways transport	
The plan to construct the deep-water container terminal in Świnoujście	
The construction of the road tunnel under the Świna River connecting the two parts of Świnoujście.	
Construction of the overflow car park at the gates of the ferry terminal in Świnoujście	
Implementation of the project consisting in the deepening of the Swinoujście Szczecin fairway down to 12,5m	
Construction of the Szczecin Metropolitan Rail	
Construction of the Western Road Bypass of Szczecin	
The policy of the European Union for sustainable development of transportation networks, incl. dedicated funding schemes	

Cluster 2: Multimodal nodes optimization: overview of needs and good practices in cooperation with stakeholders

In line with the flagship initiative "A Resource Efficient Europe" established under the Europe 2020 Strategy, the overarching goal of European transport policy is to help create a system that offers high quality mobility services with sustainable use of resources. In practice, this means that transport must consume less energy, use green energy and make better use of modern infrastructure.

The key aspect of the development of the Szczecin-Świnoujście multimodal node is the fact that the Baltic Sea region is one of the fastest growing areas of the European Union. Its role is additionally strengthened by the location on the Polish-German border and within the TEN-T Baltic-Adriatic

Corridor with a powerful trans-shipment potential of the Oder's estuary ports, which place the region as the leader of Polish port complexes. Top Polish ship-owner companies operating on international markets have their headquarters in Szczecin, and the existing transport infrastructure provides facilities for the economies of Mecklenburg-Vorpommern, Brandenburg, Greater Poland, Upper and Lower Silesia, Czech Republic, Slovakia or Hungary. The analysis of investment intentions of enterprises conducting activities covered by the specialization, connected with programs for expanding the base of mass, container and specialist terminals in the ports of Szczecin and Świnoujście, including the establishment of the West Pomeranian Logistics Centre, as well as making a strong connection with the marine import and export of the Police-2 plant, point to the strongly pro-development character of the industry. The ever growing volumes of freight flowing to/from Szczecin-Świnoujście multimodal node require an apt transport infrastructure and organization of operations.
One of the key spheres in this respect is the modal shift from road to rail and inland waterways. This is important from the nodal point of view where road transport poses the biggest problems in terms of congestion and environmental/social burden.

The development of intermodal transport in the Szczecin-Świnoujście region is an important part of the region's development. West Pomerania has rich traditions in running business in this specialization and intermodal transport is counted among the Smart Specializations of the Region. It results from the significant level of development of transport and logistics in the Westpomeranian Region. This is to a large extent due to the region's favorable location, developed infrastructure providing road, water (marine and inland) and rail connections to the Western European transport system.

A number of good practices collected from the stakeholders involved in the operation of transportation chains in Europe is presented in the table below. The quoted examples concentrate on intermodal transport as currently that is the key issue in both optimization/increasing effectiveness of transportation chains and in decreasing their environmental/social burdens.

Good practice	Form of implementation
SCANDRIA ALLIANCE Working to reduce the carbon footprint of the transport sector by promoting intermodal logistic solutions and implementing environmentally friendly technologies and infrastructure is at the core of the Scandria initiative. The works related to the development of the corridor were financially aided by the funds from the cross-border programme Interreg of the Baltic Sea Region 2007-2013, as a result of which an action program for the development of the Corridor Scandria was prepared with the vision of the corridor in 2030. To encourage partners to implement the action plan and to attract further stakeholders to	Establishment of an open cooperation platform for the networking of partners in the area of politics, administration, industry and science at the EU, national, regional and local level.

cooperate, an open cooperation platform called the Scandria Alliance was established for the networking of partners in the area of politics, administration, industry and science at the EU, national, regional and local level. Scandria Alliance includes: Scandria Political Forum – an annual event of any chosen theme serving as a platform for meetings of policy representatives at the EU, national and regional level, and representatives of the industrial sector; Scandria Alliance Coordination Council – responsible for technical issues related to the functioning of the platform, including coordination of its activities, communication, initiation of thematic projects, development of organizational and financial structures, organization of the Scandria Political Forum; Scandria Alliance working groups – depending on the needs, aiming to prepare and implement joint activities focused on relevant topics such as European and national transport regulations, logistics sector, rail transport, green corridor. The adopted formula of action focuses on flexible cooperation structures that allow the activities to be adapted to current needs without having to create new structures which would duplicate already existing top-down mechanisms (such as the Forum for TEN-T corridors).	
KVARKEN MULTIMODAL LINK The aim of the project is to create a sustainable and environmentally friendly, secure multimodal transport system – both passenger and freight – by modernizing the regular ferry connection between Umeå and Vaasa. The modernization includes: • putting a modern ferry into operation; • increasing the efficiency of port operations and the regional logistic system;	Analysis of the possibility of establishing a special company for CETC-EGTC.

• improving competitiveness; • securing the long-term stability of the project; • implementing innovative technologies and solutions, as well as popularising them in the European Union. The project was divided into two stages: Stage 1. (2012-2014) – preparatory activities, feasibility studies, development of a concept for the modernization of the transport connection and land and port infrastructure, design of a modern and environmentally friendly ferry (preferably with LNG propulsion) with a reinforced hull structure for breaking the ice cover; Stage 2. (2015-2017) – construction of a ferry, adequate land infrastructure (including possible infrastructure for powering the ferry with LNG), implementation of a logistic system, summary of experience of implementing the project. In order to carry out the project (especially Stage 2.) the cities of Umeå and Vasa established a special company (Kvarken Link AB). Additionally, the administration boards of both ports established the Kvarken Ports company. The chosen form of cooperation is more flexible than the mechanism of the European grouping of territorial cooperation but allows them to achieve the same goals. The project is financed from many sources, including public funds (city and regional budgets and national resources of Finland and Sweden as well as the funds allocated to TEN-T) and private funds.	
Lower Silesian Service of Roads and Railways (DSDiK) Lower Silesian Service of Roads and Railways in Wrocław – local government budgetary authority appointed by the management of the Lower	Integration of management functions that manage not only road infrastructure, but also railway infrastructure of regional significance.

Silesian Region which is the equivalent of General Directorate for National Roads and Highways and PKP Polskie Linie Kolejowe at the regional level. It performs tasks related to the management of roads and railway infrastructure belonging to the local government of the Lower Silesian Region. The DSDiK headquarters is located in Wrocław.	

2.1. Action plan for improving the efficiency of Szczecin and Świnoujście multimodal node and transport connections

This Action Plan is elaborated in the continuation of a number of infrastructural projects that had already been realized during the last decade. Some of the most important ones consisted in:

- Modernization of railway lines leading to/from Szczecin and Swinoujście node and its satellite towns (completed in 2013),
- Reconstruction of rail and road infrastructure with the sea ports of Szczecin and Świnoujście (completed in 2014),
- Modernization of road access to the port in Szczecin (first stage completed in 2014, second stage ongoing)
- Construction of Szczecin Dąbie road interchange in connection with the reconstruction of A6 motorway (completed in 2014),
- Szczecin City Centre bypass (completed in 2014),

Further infrastructural investments are under way or planned.

Having the above in mind, Szczecin and Świnoujście Seaports Authority SA and the Westpomeranian Region have identified several actions to be taken as to tackle the weaknesses and utilize the strengths as described above with the result to improve the efficiency of the transportation multimodal node of Szczecin-Świnoujście and its hinterland connections.

It is important to strengthen the cooperation between transport stakeholders in this area with the view of all modes of transport. As mentioned before, such cooperation will allow to prepare a list of infrastructural and/or organizational tasks and to carry them out by entities responsible for constructing, modernizing and operating the infrastructure in order to increase the transport efficiency of the node.

During the performance of this exercise involving interviews with actors/stakeholders, it has been proven that the implementation/expansion of utilization of intermodal transport plays the dominant role in that respect.

2.2 The main challenges identified based on the analyses carried out so far

As concluded above, the implementation and/or expansion of utilization of intermodal transport plays the dominant role in effective organization of transport operation of the Szczecin and Świnoujście multimodal node.

On the basis of the performed analysis and surveys, the main challenges for the multimodal node of Szczecin-Świnoujście have been noted in this respect. They involve actions/tasks to be implemented/realized at the node as well as in its hinterland. They are presented below.

If we were to treat the development of intermodal transport in the Westpomeranian Region as one of the main drivers of the region's development , then the growth of this field is possible through the implementation of activities which meet the challenges for stakeholders in this industry. The main challenges are:

- the need for further investments removing bottlenecks and limitations, especially on rail and inland waterways,
- the need for technical and organizational integration of marine, railway and road carriers,
- the need to develop rolling stock, in particular railway trucks to transport semi-trailers,
- shortening the delivery time in multimodal transport, as compared to direct road transport,
- adjusting the railway lines to AGTC and ERTMS/ETCS standards,
- codification of railway lines in the BAC corridor in accordance with UIC 596-6,
- increasing the transshipment capacity of the ferry terminal in Świnoujście in servicing intermodal units,
- creating a comprehensive IT system for handling cargo units at the ferry terminal in Świnoujście,
- launching intermodal connections based on inland connections,
- boosting the image of rail transport in Poland,
- increasing the flexibility of rail connections,
- increasing the potential of groups of ports for container transshipment.

Achieving the above-mentioned goals is a complex task, requiring the commitment of many parties. The possibility to meet those challenges depends on coordinated actions both of entities connected with the Region and national authorities.

Coordinating actions is significant because intermodal transport has an enormous potential. It is predicted that the load weight treated as a whole will increase. This trend can be seen in Poland and in the entire EU. At least part of this cargo can be transported via intermodal connections. Moreover, increasing the trade will often force the use of intermodal loading units.

Increasing the volume of intermodal transport will happen as a result of consolidation of cargo in logistic centers, preparing it for transport via intermodal units (e.g. semi-trailers, containers).

The Scandinavian partners of Szczecin and Świnoujście ports show great interest in increasing the possibility of transporting goods through Polish ports with the use of intermodal transport. This results

from, amongst others, the long time it takes to transport cargo by road, rising fuel costs, fees, changes in regulations. It is also a matter of the increasingly visible growing shortage of truck drivers on the labor market.

The challenges and opportunities presented above point to the need to complete the investment of adapting the ferry terminal in Świnoujście to handle intermodal transport.

The investment, which is to be completed by 2021, aims at creating port infrastructure to handle large ferries, up to 265 m in length in the ferry terminal in Świnoujście and at providing a new type of transshipment services with the use of rail transport, with the capacity of 30 000 intermodal units.

This investment will be accompanied by a number of directly and/indirectly connected supplementary investments improving the overall transport situation of the multimodal node and its immediate hinterland, especially the ones consisting in modernization of rail and inland waterways lines and last mile connections with sea ports as well as organization/construction of multimodal centers (see the tasks enumerated in 2.4 and 2.5 below).

They are long-awaited investments in the Szczecin and Swinoujście multimodal node, as they are of double importance, since on the one hand they will contribute to increasing the transport volume handled in an ecological manner and on the other they will make the region more attractive, therefore they are also economically important.

2.3 Results to be achieved

In April/May 2019 a survey was conducted, whose aim was to establish what types of activities may have a positive effect on the efficiency of Szczecin-Świnoujście multimodal node and its transport connections. Unfortunately, the studied companies and institutions were not too keen on filling in the questionnaires, neither were they interested in face-to-face meetings. The survey was performed by the computer-assisted telephone interviewing (CATI) and, in some cases, supplemented with personal visits. The survey concentrated on the short term (2019-2021) and therefore such a perspective determines the focus on soft, organizational, marketing and legal activities, which may contribute to initiating actions connected with constructing and modernizing infrastructure or with infrastructural activities which had already been planned.

The following results are expected:

- Through a number of carefully planned infrastructural investments, achieving an effective layout of transportation network within the multimodal node and in its connections aptly integrating all possible means of transport – road, rail, inland waterways, air.
- Development and implementation of innovative technical, technological and organizational solutions.
- Strengthening and streamlining the cooperation process of private investors with state and local government administration entities in the field of monitoring, protection and integrated management of marine and coastal areas.

- Developing sustainable and effective mechanisms of integration and cooperation of entrepreneurs with the research sector in the field of maritime economy.
- Increasing the potential of the labor market in the area of maritime economy by creating attractive jobs for specialists and graduates with degrees in engineering, natural science and economy.
- Development and adjustment of competences (knowledge, skills and experience) of students, graduates and employees to the needs of entities operating in the region in the field of intermodal transport.

There is therefore a wide variety of activities, including, investment, organizational and promotional ones. As the investments needed to be implemented in and in close vicinity of the Szczecin and Świnoujście multimodal transport node have already been planned, started or will start shortly, in this paragraph tasks requiring cooperation/coordination of a number of actors are elaborated in detail. The infrastructure investments are, nevertheless, named and briefly described in 2.5 below.

Strengthening organizational activities.

The main requirement listed by stakeholders is to improve the quality of cooperation. An elementary action would be to improve the exchange of information. It is especially important in the relationships between regional authorities and private entities. The initiators of such activities are the West Pomeranian regional authorities, who create appropriate tools for exchanging information and may create good environment for business development in this way. Direct actions can include strengthening the policy of informing private partners about current and future actions and their purposes and effects. This can be done via traditional electronic periodical newsletter, knowledge exchange forums, workshops and other types of meetings strengthening the relationships between market participants.

This type of cooperation should in turn result in:

- formulating the final and shared vision of the network of intermodal terminals and logistic chains, as well as tools for its implementation in order to develop a network of intermodal terminals in Western Pomerania and to standardize procedures and technical conditions;
- supporting changes in legal regulations, such as, for example, harmonizing road transport regulations, simplifying regulations regarding information management and documentation in transport;
- selecting the necessary investments in railway and intermodal infrastructure in cooperation with the management of seaports and operators of transshipment terminals, using funds allocated for TEN-T corridors for research on the bottlenecks – collection and analysis of harmonized annual statistical data for the entire Baltic Sea area.

In the context of intermodal transport and using many transport branches, a key organizational action on the regional level, whose effect will be the coordination of activities in the field of infrastructure modernization and development, is to strengthen cooperation with railway and road infrastructure managers. In this place we can use good practices known from Lower Silesian Service of Roads and Railways (Dolnośląska Służba Dróg i Kolei) or Swedish local governments, who manage both road and

railway infrastructure on a regional level. An extremely important activity aimed at the modernization and development of infrastructure is:

- support for infrastructure investments increasing the parameters of railway lines (especially line 273) and increasing the density of unloading points and industrial spurs;
- support for investments in the reconstruction of neglected industrial spurs, sections of railway lines and access roads to inland ports along the Oder River, which will enable the creation of logistic centers within intermodal ports which connect water transport with road and rail transport.

Promotional activities

Proper planning of activities will allow to choose the ones that will be most effective in the communication between stakeholders. The aforementioned organizational activities should contribute to the proper planning of informational and promotional activities. The goal of promotional activities should undoubtedly be sharing information on projects planned and carried out by stakeholders. The creation of a knowledge exchange forum about regional activities would allow to coordinate the activities of regional stakeholders and to prepare specific institutions for changes brought about by those activities.

Promotional activities aim at exchanging information between current stakeholders and at coordination activities. The goal of these activities is:

- supporting the development of modes of transport other than road transport, with smaller negative impact on the environment, including railway and inland transport,
- continuing cooperation within the Central European Transport Corridor European Grouping of Territorial Cooperation with limited liability,
- continuation of cooperation within the TEN-T Baltic-Adriatic Corridor (BAC) and the Association of Polish Regions of Baltic-Adriatic Transport Corridor.
- another activity, which may potentially increase the importance of intermodal transport in the region, is to support innovation in logistics and transport, e.g. by stimulating cooperation with research centers and implementing pilot programs; this type of activities will be described further on in this text.

2.4 Tasks to be performed to achieve the expected results

Specific challenges and expected results set the directions for the actions/tasks of the transport multimodal node's stakeholders.

Those actions/tasks may only be achieved when a number of smaller and bigger activities are carried out, with the involvement of many entities.

Based on the collected materials from the conducted research, the actions/tasks planned to be undertaken in order to achieve the assumed results are described in detail below:

- organizational and legal activities/tasks,

- educational and promotional activities/tasks,
- infrastructural activities/tasks,
- R&D tasks

Detailed activities/tasks related to the above and the level of their respective involvement identified for each activity/task are presented in the chapter below.

2.5 Key actors

Based on the collected materials from the conducted research, the level of involvement of particular actors and their participation in actions planned to be undertaken in order to achieve the assumed results are described in detail below.

The tasks necessary to achieve the expected results have been grouped and enumerated in the following paragraph. The key actors responsible for their realization have also been named. Both the tasks and the responsible actors have been presented in tables divided into:

- organizational and legal tasks,
- educational and promotional tasks,
- infrastructural tasks
- R&D tasks

Based on the collected materials from the conducted research, the level of involvement of particular actors and their participation in actions/tasks planned to be undertaken in order to achieve the assumed results are described in detail below.

The table below presents detailed tasks related to organizational and legal activities, the implementation of which will directly and indirectly contribute to the implementation of ecological solutions in the transport of goods. The involved entity has also been identified for each task.

Organizational and legal tasks	
Task	**Entity involved**
Lobbying and assessing changes in legal regulations	- Marshal's Office of the Westpomeranian Region, relevant local government units, - General Directorate for National Roads and Highways (Szczecin branch), PKP Polish Railway Lines Operator, State Water Holding "Wody Polskie", Maritime Office in Szczecin, - users of the transport and logistic infrastructure of the Szczecin-Świnoujście node
undertaking actions aimed at a better integration of rail transport with other branches of transport	City halls, PKP Polish Railway Lines Operator, General Directorate for National Roads and Highways (Szczecin branch)
further implementation of up-to-date IT and telecommunications systems (transport telematics) – European Railway Traffic Management System (ERTMS)	PKP S.A.

The table below presents detailed tasks related to education and promotion, the implementation of which will directly and indirectly contribute to the implementation of ecological solutions in the transport of goods. The involved entity has also been identified for each task.

Educational and promotional tasks	
Task	**Entity involved**
promoting the development of short sea shipping as a preferred form of transport in the European Union	Szczecin and Świnoujście Seaports Authority, Świnoujście Ferry Terminal, Polish Chamber of

	Maritime Commerce, local government units, Shortsea Promotion Center Poland
participation in EU initiatives aimed at transferring cargoes from land to sea	Szczecin and Świnoujście Seaports Authority, Świnoujście Ferry Terminal, Polish Chamber of Maritime Commerce, local government units
promotion and active participation of seaports in the development of intermodal transport and cooperation of entities managing ports with operators of intermodal terminals	Szczecin and Świnoujście Seaports Authority, Świnoujście Ferry Terminal, Polish Chamber of Maritime Commerce, local government units
promotion of intermodal and combined transport, application of preferential fees for the use of railway infrastructure for intermodal transport	PKP Polish Railway Line Operator, intermodal transport operators
Promotion of innovative logistics solutions in Szczecin and Świnoujście	local government units, city transport operators, forwarders

The table below presents detailed tasks related to infrastructural activities, the implementation of which will directly and indirectly contribute to the implementation of ecological solutions in the transport of goods. The involved entity has also been identified for each task.

Infrastructural tasks	
Task	**Entity involved**
Modernization and expansion of port infrastructure in Szczecin and Świnoujście enabling the use of economies of scale and the development of intermodal transport (modal shift). **Modernization and development of last mile access infrastructure (roads, railways, inland waterway transport) from land to ports in Szczecin and Świnoujście, helping to eliminate bottlenecks which**	- Marshal's Office of the Westpomeranian Region, - PKP Polish Railway Lines Operator, - Szczecin and Świnoujście Seaports Authority, - Polish Chamber of Maritime Commerce,

slow down road, rail and inland transport, as well as to increase freight capacity.	- State Water Holding "Wody Polskie"
Adaptation of the infrastructure of the Ferry Terminal in Świnoujście to support intermodal transport service	- Szczecin and Świnoujście Seaports Authority,
Construction of an overflow parking lot for trucks at the Świnoujście Ferry Terminal - 278 parking spaces	- Szczecin and Świnoujście Seaports Authority,
construction of terminals adapted to handling railway intermodal units	- PKP - Polish Railway Lines Operator, - PKP S.A. - intermodal transport operators
transferring transit traffic from Szczecin and along the S3 route on the section leading to Świnoujście, by constructing bypasses of the busiest towns and villages, which will contribute to the improvement of environmental conditions in these places	- Marshal's Office of the Westpomeranian Region, - General Directorate for National Roads and Highways
implementation of a plan or program for the development of inland waterways on the Oder River as transport means of special importance, through removing bottlenecks limiting regular inland navigation along the Oder Waterway through maintenance, regulatory and modernization works, which will enable the revitalization and development of river transport and the takeover of transport from roads; the specific task in the area of the Szczecin-Świnoujście multimodal node consists in the replacement of the old single track railway drawbridge across the Regalica River (a section of the Odra River) with a new, higher, two track rail bridge. The existing old drawbridge constitutes a bottle neck both for inland waterway and rail transports.	- Maritime Office in Szczecin, - State Water Holding "Wody Polskie" - Inland Navigation Office in Szczecin - PKP - Polish Railway Lines Operator,
modernization of the existing infrastructure providing access to Polish seaports from the sea, e.g. creating approach fairways, enabling safe entry into the ports for vessels or construction of new infrastructure, enabling safe entry into ports of vessels with	- Maritime Office in Szczecin,

maximum parameters sailing on the Baltic Sea (economies of scale, reduction of economic, environmental and social costs per cargo unit)	
construction of the Szczecin Metropolitan Railway which will allow employees to get to workplaces by collective transport instead of passenger car transport; promoting such an alternative	- Marshal's Office of the Westpomeranian Region, - the City of Szczecin
Western Road Bypass of Szczecin	- the City of Szczecin - Ministry of Infrastructure and Construction - General Directorate for National Roads and Highways
construction of the tunnel under the Świna River to connect two parts of the town of Świnoujście	- the City of Świnoujście - General Directorate for National Roads and Highways
development of the potential of regional logistic centres – e.g. Dunikowo intermodal terminal – redirecting the freight streams through them	CSL Internationale Spedition, CCIC Intermodal Depo Dunikowo Sp. z o.o.
implementing innovative transport traffic management systems contributing to the elimination of bottlenecks, improving the fluidity/capacity of transport infrastructure and reducing the environmental pressure generated by transport	PKP Polish Railway Lines Operator , General Directorate for National Roads and Highways (Szczecin branch), Wody Polskie

The table below presents detailed R&D measures whose implementation will directly and indirectly contribute to the implementation of ecological solutions in the transport of goods. The involved entity has also been identified for each task.

R&D tasks	
Task	**Entity involved**
development of the concept of infrastructure and innovative technological solutions to optimize traffic management using ITS technologies	West Pomeranian University of Technology, Maritime University of Szczecin,

Due to the fact that private companies did not agree to use their names when indicating the implementation of individual activities (business secrets) some of the entities were defined in a general way.

All the actions/tasks presented above in the tables have an indirect or direct impact on the sustainable development of transport in the area of the Szczecin and Świnoujście multimodal node. The TalkNET Project Partners 10 and 11 have no direct influence on the majority of activities/tasks carried out by individual stakeholders. However, they can lobby and create individual behaviors, which indirectly affects the implementation of certain activities. An important issue is further raising public awareness regarding the need to implement efficiency solutions in transport. The TalkNET Project Partners have appropriate instruments and opportunities which they intend to use to further educate the public and promote the implementation of ecological and energy efficient solutions in transport.

2.6 The timeline and financial resources

The activities which are to be implemented within the next 3 years, although interconnected as far as the expected results for this Action Plan are concerned, are implemented independently from each other. Most of them, namely the organizational/legal, educational/promotional and R&D tasks, are continuous ones. The implementation of most of them is already taking place. Activities which have not yet begun should be initiated immediately.

Although a greater number of infrastructural actions/tasks had been named in this Action Plan, at the time of producing this document, not all them have been defined in terms of time schedules and financing needs. Either, because of being still in their preparatory stages or because the responsible actors were not in a position to disclose the detailed information yet.

Nevertheless, the available information describes the magnitude of this Action Plan. See below:

Construction of the Szczecin Metropolitan Railway

This investment project is planned for the period 2018-2022. Estimated investment costs: EUR 124 million.

Modernisation of the Świnoujście-Szczecin fairway to the depth of 12.5 m
Construction work started in the third quarter of 2019. Completion of the investment is planned in the third quarter of 2022 and its estimated cost amounts EUR 334,65 million.

Reconstruction/modernisation of the "last mile" access to Szczecin and Świnoujście ports by rail
Planned total project cost amounts EUR 371,08 million. Project implementation time: 2019-2022.

Reconstruction/modernisation of the "last mile" access to Szczecin and Świnoujście ports by road.
Planned total project cost amounts EUR 115 million. Project implementation time: 2019-2022.

Development of the potential of regional logistic centres – e.g. Dunikowo intermodal terminal
Project implementation time: 2020-2022. Estimated net investment costs: EUR 18,59 million.

Adaptation of the infrastructure of the Ferry Terminal in Świnoujście to support intermodal transport service.

Estimated net cost amounts EUR - 55.3 million. Project implementation time: 2019-2021

Construction of an overflow parking lot for trucks at the Świnoujście Ferry Terminal - 278 parking spaces
Estimated net cost amounts EUR 10 million. Project implementation time 2019-2021.

Construction of the tunnel under the Świna River to connect two parts of the town of Świnoujście
Estimated total project cost amounts EUR 184, 5 million. Project implementation time 2018-2022.

Construction of Western Road Bypass of Szczecin
The project is in its preparation stage (geological research, preparation of technical project), which is planned for 2018-2020. Estimated cost of the preparation stage amounts 5,7 million EUR. Estimated total project cost including amounts 900 million EUR.

2.7 Expected results

The realisation of the planned activities and tasks will lead to creation of the multimodal transport node which performs its function in the most effective and most efficient, energy wise and environment wise, way.

In many instances, the implementation of the objectives of the action plan for increasing the effectiveness of the Szczecin and Świnoujście multimodal node and its transport connections depends on entities other than the Marshal's Office of the Westpomeranian Region or the Szczecin and Świnoujście Sea Ports Authority. In connection with the above, it is assumed that the monitoring of the implementation of the activities should take place every year through the preparation of periodic reports and the main report (three-year report). Report preparation and plan monitoring are the responsibility of the Marshal's Office, which should appoint a special team for this purpose. Reports should include an overall assessment of the implementation of the measures included in the action plan and include identification of the problems encountered.

By systematically monitoring the plan and identifying the problems encountered, the Marshal's Office will have the opportunity to identify and propose solutions to individual stakeholders that should help in the implementation of the specific objectives set out in the plan.

Table of some of the examples of the proposed indicators to monitor the improvement of the effectiveness of the multimodal node of Szczecin and Świnoujście.

Indicator	Target value
Construction of a railway bridge over the Regalica river	Bridge height 6.2m.
Modernization of railway routes within the Szczecin Metropolitan Railway	118 km
Construction of a parking lot for trucks at the Świnoujście Ferry Terminal	278 parking spaces

Construction of new transhipment and manoeuvring rail tracks at the container terminal hinterland in Świnoujście	- 2 transhipment tracks, - 2 manoeuvring tracks
Construction of a wharf to service ferries transporting intermodal units in Świnoujście	Wharf length 265 m
Construction of one tunnel under the Świna River	Tunnel's length: 3200 m Internal diameter in cross-section- min. 12 m
Dunikowo intermodal terminal	Area - 60 000 sq/m Storage yard - 1600 TEU Handling capability - 130.000 TEU/year
Construction of the Western Road Bypass of Szczecin	The line's length 51 km including a 3,5 km long tunnel under the Odra River
Construction metropolitan railway line in Szczecin	Length 23.7 km, reconstructed 17 stations, constructed 10 stops

2.8 References

This exercise has been prepared based on the desk-top research, involved project partners' own data and the survey conducted within the group of actors who agreed to take part in it.