

## D.3.3.2 Reduction of specific missing link or development of a service for MoS improvement

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# INTRODUCTION

Motorways of the Sea are maritime services integrated into the door-to-door logistics chain using sustainable, regular, frequent, high quality and reliable short sea shipping links. Motorways of the sea are a practical example of the definition of combined transport.

Due to the fact that the Motorway of the Sea system involves the use of multiple modes of transport with the obligatory use of maritime transport (short sea shipping), the ports as a point of connections are recognized as the most important and sensitive elements. That is the reason partners decide to resolve some of the bottlenecks in the ports.

This document follow the solutions adopted to face the 2 problems that have been detected in the Action Plan, one in Italy and one in Croatia, are described and solutions offered. Following the action plan development, partners worked on its implementation. Two pilots were chosen as a solution for identified problems that can be resolved in the scope of the CHARGE project. These 2 pilot actions are:

- Upgrading and connection of F4B and CIMIS (Port of Split Authority and Croatian Ministry of the Sea, transport and infrastructure)
- Improvement of maritime road traffic data exchange in the port navigation channels (North Adriatic Sea Port Authority)

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## ABSTRACT

The Reduction of a specific missing link or development of a service for MoS improvement follows the solution adopted to face the problems detected in the Action plan. Two pilots have been chosen as a solution for the identified problems that can be resolved in the scope of the CHARGE project.

## EXECUTIVE SUMMARY

The Reduction of a specific missing link or development of a service for Mos improvement follows the solution adopted to face the problems detected in the Action plan. The document offers solutions in the form of two pilot actions to be performed in the scope of the Charge project. The first steps for the development and promotion of the Motorways of the Sea were made with the resolving of the presented bottlenecks. Due to the fact that ports are recognized as points of connection that are the most important and sensitive elements, the partners choose 2 ports and their bottlenecks to resolve. By resolving bottlenecks in the ports, we are opening doors for the development of more services using this kind of system, since a reference is created.

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# Part 1 – Reduction of specific missing link or development of a service for MoS improvement in Croatia

The analysis of the physical and non-physical bottlenecks in Croatian ports shows that all analysed ports have mainly the same bottlenecks that are infrastructural in nature. That kinds of bottlenecks can be resolved only with large infrastructural investments. However, there is one more bottleneck that many Croatian ports share, and that is a lack of communication and exchange of information between all actors in the port and stakeholders. The offered solution for this bottleneck is to make a system that will enable all actors to exchange information in real time and access all important information through the system without the need to contact different institutions and/or actors.

Croatian Ministry of the sea, transport and infrastructure is installing a National Single Window (NSW) system. The idea is for Croatian NSW to be made available to all logistic actors with relevant, real time and accurate data. Croatian NSW will be upgraded in order to ensure:

- The exchange of information from NSW applications and announcements of maritime facilities
- The establishment of port area occupancy records and exchange of AIS data

This system is tested in the Port of Split with partner Port Authority of Split. Port of Split Authority connected their Port Operating Information system, part F4B (Framework for Business) database, with CIMIS (Croatian Integrated Maritime Information System).

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Port Authority of Split owns mentioned information system for managing ports, which is used to track vessel movement. Any changes in the systems are performed by the staff of the port's operational center.

There is an increasing necessity for gathering data from the state-operated information system CIMIS and using that data directly in the port's operational system for the purpose of synchronizing the system as well as various operational and statistical goals. The detailed design will enable the Port Authority to materialize all the advantages of synchronization. It was done in such a way that it doesn't burden the current infrastructure, but enables the staff to dedicate more time to control and management.

Considering the volume of business and the current standard business procedures, it was necessary to carefully implement the new system to avoid damaging the port's current operational performance by introducing new processes and obligations.

The following areas of applications are especially useful for the port:

- Passengers and vehicles (local ferry traffic, catamaran traffic, excursion boats, cruisers (under the flag of the Republic of Croatia), international ferry traffic, cruise Ships);
- Cargo traffic -according to different criteria (basins, shoreline users, types of cargo, grouping, cargo catalogue, ect. );
- Port operational;
- Environment Safety and Protection.

The connection is done in the form of a web service (application) with the content encrypted with an asymmetric key algorithm. The application has a simple interface and supports modern web browsers.

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The result of the pilot consists of the improved business model and the improvements in terms of synchronization with Croatian Integrated Maritime Information System –CIMIS that are related to:

- gaining paperless insight into reliable documents;
- introducing order in the system and removing unnecessary documentation;
- easier collection of relevant data for statistical purposes;
- increasing the productivity of the port and speeding up the process of tracking vessels;
- Increasing the throughput of the port.

This represents a significant step forward in the present paper-dominated business environment. The fact that various data will be used throughout the system and that it will be documented and ready for further use represents a great benefit for the port.

In addition, it provides to the partnership added value and knowledge in the specific field of data sharing on maritime level and port purposes.

It is a new system to share maritime data among all port users that brings innovation to the project and that can easily be replicated using more standardized information from the ports, making certain services more accessible for goods handling and traffic flows.

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## Part 2 – Reduction of specific missing link or development of a service for MoS improvement in Italy

The analysis of the physical and non-physical bottlenecks in Italian ports shows that they do not have such uniformed problems as Croatian ports. Italian ports have issues mostly with the limited depth of their port basins. This leads to the problems with large ships that want to enter their ports. Other problems concern the existing infrastructure as well since it is insufficient for current traffic flow. Ports are already working on the identified issues, using tools and processes like dredging to increase the draft and introducing of the “Special Economic Zone - to foster the development of the port activity and interventions aimed to improve the port infrastructure”. The research and analysis showed that the port of Venice is facing one specific problem that has not been resolved yet. This problem is a weather condition – fog – that is causing the lack of clear visibility in Venice lagoon. It hampers the navigation, in some occasions also for a few days in a row. In the recent years to overcome this problem, the North Adriatic Sea Port Authority has been investing in the Intelligent Transport Systems to increase the nautical accessibility.

For this reason, the System Port Authority started several projects with the scope of equipping the lagoon with series of sensors and cameras, gathering their information and elaborating them through its Port Community System in order to give real time information to the commercial ships and cruises on the weather condition in the lagoon (wind, temperature, visibility, special notices).

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In the scope of the CHARGE project, a free mobile application was developed, which shows the nautical cartography with dynamic reference based on the device position. This application can give its users the possibility to have easy access to real time data related to:

- Georeferencing;
- weather condition;
- port accessibility (port entry/exit conditions);
- maritime traffic data (presence of other vessels);
- special notice to navigators.

It visualizes the instant speed of the device/boat (nodes and km/h). Moreover, the position of other ships and the meteo sensors are visible. By clicking on the ship icon, the ship name and type, its destination and other data can be viewed. By clicking on the sensor icon, the user can visualize the weather condition in that point of the lagoon on real time basis. It is possible to select the position of the user, the current status of the port (open/close) for any of three port in-lets (Chioggia, Malamocco, Lido).

It is also possible to select the page showing in a table the updated weather condition data, tide data (current and forecast) and notice to skippers (in pdf).

The software allows sharing the user's position on the same map with AIS data coming from Coast Guard information system and in future maybe it will be extended to other users such as public transport companies or tour operators.

The cartography covers the entire Veneto coast with different levels of detail.

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## CONCLUSION

In the scope of the CHARGE project, the first steps for the development and promotion of the Motorways of the Sea were made with the resolving of the presented bottlenecks. Motorways of the Sea are maritime services integrated into the door-to-door logistics chain using sustainable, regular, frequent, high quality and reliable short sea shipping links.

Due to the fact that ports are recognized as points of connection that are the most important and sensitive elements, the partners choose 2 ports and their bottlenecks to resolve. By resolving bottlenecks in the ports, we are opening doors for the development of more services using this kind of system, since a reference is created.

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