

# 2015



## FutureMed

Freight and passengers supporting  
infomobility systems for a  
sustainable improvement of the  
competitiveness of port-hinterland  
systems of the MED area.



FUTUREMED is dedicated to enhancing the competitiveness of port-hinterland systems of the Med-Area by addressing three strategic sectors: freight, passenger and touristic traffics.



Projet cofinancé par le Fonds Européen  
de Développement Régional (FEDER)  
Project cofinanced by the European Regional  
Development Fund (ERDF)



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# FutureMed

FUTUREMED is a project under the MED Programme that aims to improve the competitiveness of port systems in the MED area by improving accessibility through technology and procedural innovations, and guaranteeing sustainability of transport. The idea focuses on the realization of interoperable management information systems and on the reduction of externalities.

The project intends to define and implement, by means of concerted territorial actions and pilot projects, sustainable mid- and long-term development strategies.

These are focused on:

- the removal of the current barriers concerning accessibility of ports (seaside and landside);
- the integration of ports with the hinterland;
- the development of logistic activities and intermodal transport connected with ports;
- the development of infomobility aiming at fostering attractiveness and making the port system more efficient;
- the specialization of port systems.

Specifically, the project addresses three currently strategic sectors for the MED area: freight, passenger and touristic traffic. The project intends to make freight and passenger flows seamless by means of experimental activities and pilot projects concerning interoperable information systems which integrate port systems with inland logistic infrastructures and with transport and service operators.

## **Specific applications have been developed:**

- a dynamic system for real-time management of freight and passenger flows, aiming at identifying actions to remove congestion and bottlenecks in the interface between ports and related territories;
- solutions to digitalize intra-EU port-to-port and port-to-operators communication related to bureaucratic duties (e.g. Customs);
- solutions to enable visibility along the transport chain for operators;
- solutions for specific supply chains (e.g. agro-food).

Such information systems benefit from the existing national ICT platforms and will be finalized to define the blueprint of an integrated one-stop-shop system transferable to all the MED area, composed of a specialized freight transport management system and a specialized passenger and tourist management system. Such a system involves the harmonization of data, in terms of structure, gathering and interpretation, across the whole of the MED area.

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## Observatory



During the project activities, a permanent Observatory is set up with the mission of gathering already existing initiatives and solutions, coupling them with the technical developments of the project and creating governance procedures and sustainability following the project life cycle. Specific and thematic stakeholder platforms have been supported the project team in developing valuable and sustainable solutions to be tested in pilots. These have been followed the FUTUREMED results, measure their impact, update the output, taking into account the changes in the political, regulatory and economic environment and in technology.

## Pilots

The project team proposes pilot actions between port systems and related hinterland, concerning interoperable information systems, in order to innovate freight and passenger logistics. Some of the main industries have been considered; specifically the agri-food industry is represented by a business case. UIRnet enabled the project team to define a system model transferable to the port systems of the MED area that can be considered as a blueprint of an integrated one-stop-shop system specialized for freight traffic and for passengers-tourist traffic.

# SPHIIS - Spanish Port Hinterland Intermodal Information System



PILOT 1

## Objectives

The Spanish demonstrator (SPHIIS), coordinated by Zaragoza Logistics Center and Valencia Port Foundation, improves the efficiency and visibility of intermodal seaport-hinterland containerized transport corridors on transnational maritime door-to-door transport chains, through the development of interoperable solutions and standards to integrate port systems with inland logistic infrastructures.

This improvement in integration involves not only terminal operators at seaport and inland facilities but also all related stakeholders in intermodal corridors such as railway operators, shippers, railway undertakings, maritime agents, freight forwarders, truck companies and customs.

The demonstrator has been developed in the Valencia-Zaragoza corridor, which connects the Port of Valencia, main container port in the Mediterranean, with the Logistics Platform of Zaragoza - PLAZA, the largest logistics premises in Europe.

The results will be transferable to other corridors in the Mediterranean area involving different ports and inland nodes.



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# Benefits

Extension of the port hinterland areas for operators and customers, providing accurate and up-to-date information in these intermodal corridors and their inland hub networks.

Improved visibility and traceability via better quality information to allow access to maritime transport services by land-locked regions.

Increased efficiency of operations has been achieved by means of a superior planning system and management of resources. This has resulted in reduced waiting times for trains and trucks, improving transport service levels and customer perception.

Reduction of costs and increase of economic benefits in intermodal transport chains.

# Results

Valencia Port Foundation has developed new services for maritime-railway operations inside the Port Community System (PCS) of Port of Valencia, aimed at integrating hinterland actors. Some processes related to Port operations have been redesigned in order to achieve the aforementioned benefits.

Zaragoza Logistics Center has developed a Web platform using the existing standards and specifications, enabling every supply chain actor to interact possessing all the information across the entire business process. Specific tools have also been developed in order to allow information exchange between SMEs and between them and other public and private companies.

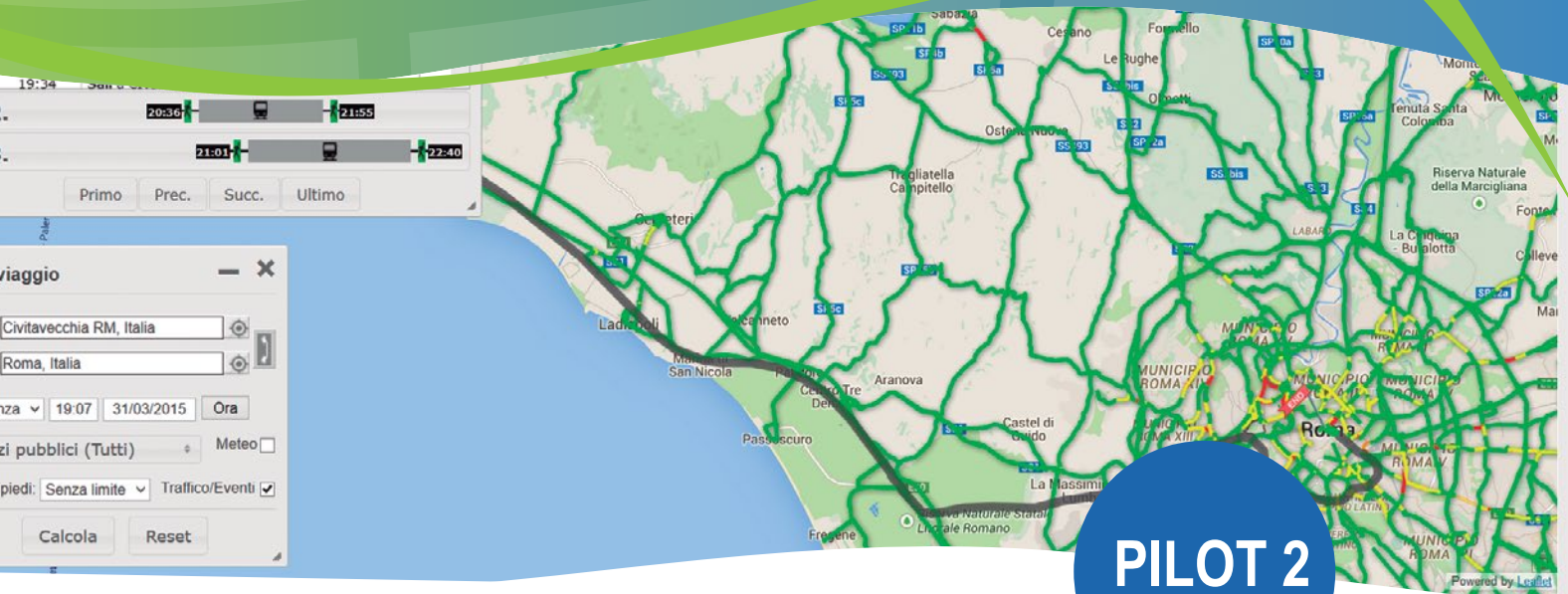
## Transferability

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The initial transferable aspects are those related to the problems addressed by the pilot. Results linked to the improvement of port processes, new services, better information exchange, use of existing open standards and solutions, etc. bring other people the possibility of assessing these outcomes in order to transfer these solutions to their own similar needs.

On the other hand, specific ICT solutions have been produced by the pilot that allow Port of Valencia users the exchange of information for new processes and services. In this sense, ZLC is already studying the option of using its Desktop Tools and Information Exchange Web Platform in other environments, as is the case of logistic clusters.

# Passenger and Freight Infomobility



## Objectives

This pilot puts forward the basis of an integrated info-mobility system related to sea side -port- land side able to monitor passenger and freight flows. The system is able to integrate the information coming from the current port management systems and other sources dynamically in real time and to provide them to users with the aim of making information more accessible and consequently improve the attractiveness of the port.

Specifically, the pilot project consists of:

- (FREIGHT) Development of a customs corridor between the port of Civitavecchia and Intreporto di Orte logistic facility, by the involvement of transport operators, freight forwarders and UIRnet, the Italian Telematics Logistics Platform.
- (CRUISE) Development of an info-mobility environment for the port of Civitavecchia, based on Luceverde Lazio platform, aimed at providing information on mobility services for tourists, mainly cruise passengers, passing through Civitavecchia.

The pilot also includes a third component not related to a specific traffic, but to the port management system, consisting of the prototyping of a PCS – Port Community System in Olbia.



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North Sardinia Port Authority

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Port Authority of  
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## Benefits

Project activities bring benefits to the involved areas, contributing to the development of both freight and passenger maritime transport, and promoting the ports of Civitavecchia, Olbia, and the Interporto di Orte facility, with their respective hinterlands, traffic, and all related economic sectors.

As for the freight info-mobility application, the monitored customs corridor, reinforced by the pre-clearing procedure, will enable visibility along the Civitavecchia Orte connection. Containers will be monitored when leaving the port terminal as far as the Orte Interport, avoiding the T1 document, saving time, paperwork and money. This will speed up the transit time in the port and will add to its attractiveness.

## Results

As for passenger flows, an info-mobility engine has been produced and released, that powers the web portal of the port company PortMobility, providing information in the port of Civitavecchia.

The portal is available at <http://civitavecchia.portmobility.it/en/servizi-online/infomobility>.

The infomobility engine is available at <http://futuremed.duelcloud.com/itinerario.jsp?language=en>.

A PCS – Port Community System prototype is being designed and implemented in the port of Olbia, having the following components: Vessel information (based on AIS data); Check-in; Port Information and Security Master; Statistics. The first release is available at <http://www.futureport.it/>.

## Transferability

The infomobility engine relies on the Luceverde system, which has been a large investment of the Lazio Region administration in the past over recent years, in order to implement the Regional Infomobility Plan. The system as it is cannot be transferred, since it is a legacy system. However, Luceverde can be replicated, as it is based on standard technology. In addition the capability of integrating information from different sources is based on webservice.

The controlled Customs Corridor is a solution definitely based on secure and standard information gathering and exchange, requiring compliance with specific procedures established by the Customs Authority. For this reason, the technological solution is fundamental to guarantee such requirements. In the present pilot the solution is achieved by means of the UIRNet telematics platform. UIRNet guarantees interoperability by means of specific connectors/interfaces to external/legacy systems, and is consequently able to integrate different sources of information concerning transport means or logistic nodes.

# Integrated Port Rail Dryport Visibility



**PILOT 3**

## Objectives

The main objective of the Greek Pilot is to contribute to the improvement and efficiency of intermodal transport chains that include seaports seaways and hinterland.

The solution and the implementation of the pilot was based on end users' and players' needs and feedback in order to support a viable and efficient transport chain.

The concept involved the Port Authority, the Terminal Operator, the rail transport operator, the dry port operator and also all related stakeholders in intermodal corridors (e.g. shippers, shipping agents, freight forwarders, transport operators, customs, etc).

The current status regarding Information exchange among the different actors has not yet been deployed or exploited in full scale. Specifically, the various actors coming from different corridors (container against bulk cargo transportation) adopt different kinds of ICT solutions. This fact leads to incompatibility and differentiation regarding operational procedures and, eventually, to inefficient results.

The technical solution aims to promote interoperability by developing new processes for rail-maritime integration and intermodal chain visibility.



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# Benefits

The pilot project that will be deployed in Greece aims to define and activate procedures that focus on:

- the removal of the current barriers concerning accessibility of ports (seaside and landside);
- the integration of ports and hinterland;
- the enhancement of logistics via the promotion of intermodal transport that include ports;
- the development of info-mobility aiming at fostering attractiveness thus making port system more efficient;
- the specialization of port systems.

This approach will address the main problems of the current situation, which is the limited (container cargo) or non-existent (bulk cargo) visibility along the intermodal chain.

# Results

The main ICT application of relevance to the pilot project is an integrated system that is able to manage door-to-door orders for container and bulk transportation. The solution has been applied to the intermodal corridor A (Thessaloniki – Sofia) regarding containers and the intermodal corridor B (Thessaloniki – Skopje) regarding bulk cargo. Furthermore, the creation of a local, intermodal supply chain cluster has already been planned, which will further contribute to the area's economic growth while reducing transport-related externalities and improving effectiveness.

## Transferability

The solution will involve different deployments including TRAINOSE and the Port of Thessaloniki premises. However, a part of the results will be transferable to other ports of the Mediterranean, especially those connected to rail. The aim is to transfer the know-how to other ports which may face similar problems considering the hinterland they serve. The processes that will be addressed by the respective solution involve:

- Imports/exports from/to non-EU countries
- intra-European/intra-Med cargo flows

However, the proposed solution can cover the needs of any freight terminal (other than rail) while the best fit algorithms on rail wagons planning/booking could also be used for planning/booking purposes on other transportation means.

# Adria Westmed - East West Connection

A MOS PROJECT BASED ON RAILWAY INTERMODALITY IN  
THE FRIULI VENEZIA GIULIA PORTS SYSTEM



PILOT 4

## Objectives

The ADRIA WestMed Pilot Project has been carried out by Friuli Venezia Giulia (FVG) Region, with the support of TLS EUROPE the Consultant to implement the Pilot. The aims of the Pilot Project are:

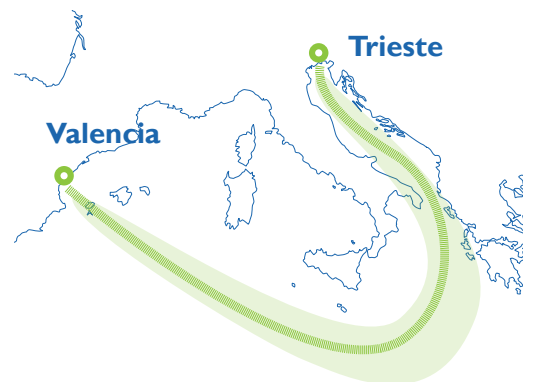
Connect the Eastern Mediterranean Region with Northern Adriatic ports.

Create an efficient "Door to Door" (D2D) intermodal chain, based on maritime and railway freight transport, linking two wide areas: the southern-western Mediterranean area, particularly Spain, and the area including Northern-East Italy, Center – Northern – Eastern Europe, Balkans and some countries, at the Eastern side of Europe, as Russia, Belarus and Ukraine, through the FVG Ports.

Exploit the excellence of the rail-maritime intermodality of the Port of Trieste which exceeds 50% share globally and more than 66% in a RORO terminal.

Demonstrate the transferability of the organizational and business model of the D2D intermodal services, based on RORO ships and on railway transport, consolidated over the years in the Port of Trieste in the traffic with Turkey, to other destinations and new players.

Offer an alternative to "all road transport", and to the maritime connections in the Tyrrhenian Sea between Italy and Spain, for cargo flows with destination in the north east of Italy and Europe, thus reducing the negative externalities, of road transport through Italy, from the Tyrrhenian Ports to final destinations, along routes which are already critical.



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# Benefits

Better use of existing infrastructures with a maximum increase of 30% of the number of FEU x Ha x Year in the selected RORO terminal.

Reduction of the external costs due to pollution, congestion, accidents, noise, climate, shifting cargo from road to maritime – railways freight along the routes.

For example, considering the D2D services ADRIA WestMed, carried out by maritime transport from Valencia to Trieste and rail for the route to the final destination (the other way round), compared with “all road”, it would produce an environmental saving of about 23.7 million € per year, equal to 57% of the external costs related to the same service by road transport.

# Results

The conditions for the viability of the ADRIA WestMed Pilot Project have been identified as well as the structure of the partnership that might develop the service.

Features of the service D2D: (i) A weekly round trip Valencia - Trieste, departures at fixed days; (ii) One modern RORO ship 5.000 ML (optimal solution), speed of 18.4 knots; (iii) Rail Intermodality to about 80%; 9 trains per week (maximum), round trip balanced, mixed load, maritime and land cargo, the latter not prevalent.

A complementary pre-feasibility study has also identified the feasibility conditions of a CON - RO ship service, linking Valencia and Trieste with intermediate calls in Algiers, Rades and Augusta.

## Transferability

ADRIA WestMed Pilot Project has a reference model able to create a strong competitive edge for new intermodal D2D services, maritime based, which are integrated into an efficient and competitive network of railway cargo services, in the port area or in a surrounding intermodal terminal, to reach destinations at a minimum distance of 500 km.

The model is based on: (i) the use of common systems and technology, including those for ship to shore interaction, to speed up cargo handling operations in the Ports; (ii) the integration along the intermodal chain of operations and services.

The integration of the services and of the service providers (including those which have cargo), from the origin to the destination of the D2D service, is the key success factor.

# Agro-Food Supply Chain



PILOT 5

## Objectives

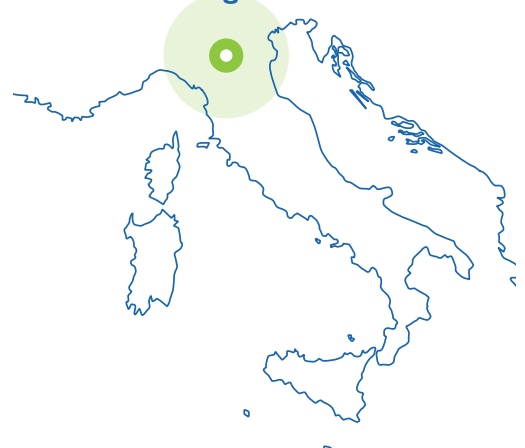
This business pilot, lead by the Institute for Transport and Logistics Foundation (ITL), focuses on the optimisation of the agro-food perishable goods supply chain with particular attention to high quality products.

First pilot activity is the reconstruction of a realistic agro-food flow analysis of inbound and outbound perishable goods, in terms of suppliers, distributors, importers, across the Med area, with particular focus on Italy and Emilia- Romagna region.

The flow analysis is then used as the basis of two strands of investigation:

- the improvement of the logistics and distribution of perishable goods to Central-East Europe countries; this sub-pilot has involved a regional company, Ciao S.r.l. Intermediazione Prodotti Ortofrutticoli, to assess new opportunities and goal markets for regional fresh perishables agro-food products (Market presence);
- the discovery of innovative logistics optimal solutions, by increasing the efficiency of the logistic chain and stimulating optimal transport solutions (Optimisation); this sub-pilot has involved a large scale retailer to assess new strategies and procedures to manage the inbound regional supply chain of perishable products

Emilia - Romagna



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**Ciao S.r.l.**  
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## Benefits

Determine potential opportunities to increase market share and achieve goal markets, providing a set of solutions and business development strategies to agro-food actors.

Identification of criticalities and potential improvements in the logistic supply chain of fresh-fruit and vegetables.

The proposed business solutions assessed the reduction of environmental and cost externalities along the agro-food supply chains, which may be of value for different actors of the Med area agro-food chains.

## Results

Measurement of the relevance of inbound and outbound flow across the principle MED logistic infrastructures by quantitative metrics and KPIs, collected in a database.

Better understanding of CIAO s.r.l business scenarios, in terms of objectives, commercial barriers, regulations, related to the existing food supply chain and the identification of potential goal markets (e.g. Germany and United Arab Emirates).

Optimization of the distribution network from farm to fork of perishable products for the large scale retailer company by analyzing and reducing the logistic nodes, actors and processes involved in the existing supply chain.

## Transferability

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Overview of the current and potential flows of perishable fruit and vegetable products across the MED area.

Quantitative analysis of existing infrastructures and logistic corridors toward new markets (i.e. CEU and UAE) and the identification of the most effective channels and distribution operations to access them.

Case studies and best practice to head investments, partnerships and collaboration across the Italian and Mediterranean private and public actors.

The assessment and calculation of costs and environmental externalities associated with transport activities enabled the proposal of optimization strategies to reduce distribution and supply costs and also environmental externalities.

# Strengthening Global Competitiveness Of Mediterranean Cruise Tourism



PILOT 6

## Objectives

Cruise tourism is an economic activity showing worldwide expansion. The Mediterranean is globally recognised as very attractive destination for maritime cruise tourism with high expectations for growth and economic benefit from commerce, tourist services and operators.

Growing attractiveness will quickly require adaptation of the Mediterranean ports and destinations to accommodate larger ships and provide adequate land services. Capacity constraints are already evident, causing negative external effects like congestion and increased emissions. To overcome these problems higher efficiency of port services, especially in the field of info-mobility, infrastructure capacities, accessibility and hinterland connectivity is needed.

Main objective of the pilot project was to address aforementioned issues by designing innovative information solutions, which would provide cruise passengers with all relevant (location based) information and services (tourist offer and transportation options) available at the destination.

Proposed concept is transferable to all interested cruise destinations in the Mediterranean area.



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Support Centre, Kranj**

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## Benefits

Use of advanced ICT and mobile devices enables gathering of passenger interests before and during the cruise trip (before arrival at the destination).

Knowledge of passenger needs allows for dynamic alignment of local tourist offer with demand (observed preferences), better management of passenger flows and decreasing negative external effects.

Built-in function of turn-by-turn navigation would allow dynamic optimisation and provide logistically optimised tours based on the points of interest, time availability and dynamic changing conditions. Proposed information database enables compiling of local supply in a unified and coordinated way.

## Results

Detailed analysis of cruise passenger flows and activities was performed to identify main problems and to understand logistic needs at the selected cruise destination.

Architecture of innovative cruise passenger information system was developed with the main aim of enabling ports and cruise destinations to better manage and ease arrival and stay of tourists as well as providing a wide array of new services.

Establishment of information database (open data) to serve as a basis for info mobility, planning, supply development and all other optimisations was proposed.

## Transferability

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Many cruise providers and cruise destinations in the Mediterranean are sharing the same problems of differentiated means and ways of gathering, managing and providing cruise passengers with local tourist and logistic information.

Proposed solution, although tailored specifically to Koper's needs, is transversal and can be used by all relevant stakeholders in the Mediterranean to provide a unified cruise passenger information system for the area.

Better access to destination specific information improves visibility of services provided, can increase the satisfaction rate of cruise tourists, allow for the alignment of local tourist offer with demand and can further improve the level of service and strengthen the competitiveness of the Mediterranean cruise industry.

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