

Interreg - IPA CBC

Italy - Albania - Montenegro



EFINTIS

Enhancing eEfficiency of the INTermodal transport flows by Improved ict Systems



EFINTIS PROJECT, A PROJECT FUNDED BY THE INTERREG IPA CBC ITALY-ALBANIA-MONTENEGRO PROGRAMME.

The development of the EFINTIS project comes as a result of the growing need for better connections of transport entities in the region, the need for development in parallel with current ICT requirements and the need to harmonize ICT actions in the region with EU requirements and standards agency. The five project partners located in the logistics hubs of Albania, Italy and Montenegro will further develop ICT operations enabling the establishment of a regional cooperation network. The project leader, Port of Bar and Southern Adriatic Sea Port Authority will update and optimize their existing ICT platforms. Durres Port Authority and the Autonomous Agency for Hospitality and Tourism of Termoli will develop for the first time their ICT systems thus marking concrete actions which will last beyond the EFINTIS project and will help regional multimodality. The fifth partner, Albanian Institute of Transport, will produce an action plan for the development of ICT connection, aiming an improvement of connections among partners.

PORT OF BAR, LP PILOT ACTION

Bar is the central port of the Montenegrin port system and Port of Bar, being the only multimodal hub, which connects three transport modes – maritime, rail and road transport – holds a crucial place in Montenegrin transport system. Port Community System (PCS) in Bar was developed in 2014. PCS has improved port operations and increased competitiveness of the Port of Bar and PCS will be a part of the future Maritime Single Window in Montenegro. The PCS in Bar is still developing. Pilot action of the Port of Bar is related to the upgrade of the Port Community System (PCS). The main results in the pilot will be connection of the PCS with the IT system of Customs (exchange messages with status of MRN number), integration with National Maritime Single Window (preparation of the PCS for receiving and sending messages with National Maritime Single Window), development of the Dangerous goods basic module (pre-notification for all dangerous goods arriving by sea or land, alert management system for IMDG cargo, IMDG History tool, etc.), development of functionality in the PCS to connect the truck in the parking lot with the forwarder, corrections related to reports in the PCS, GUI upgrades, etc. In addition, the pilot project includes new server for the Port Community System. Main stakeholders of the port who use PCS are: public authorities (Customs Administration of Montenegro, Harbor Master's Office) forwarders, agents, harbor towing companies, etc. The PCS is used in more than 80 companies and institutions with more than 220 users. It is important to point out that the PCS is developed through the different Interreg programmes (SEE, ADRIATIC, ADRION and Italy-Albania-Montenegro). The effect of COVID-19 pandemic is raising many important questions regarding logistic and transport, and developed PCS allows interchange data between all subjects in the logistic chain by avoiding physical communication and paperwork and can be used as a smart working tool.

ALBANIAN INSTITUTE OF TRANSPORT, PP2 PILOT ACTION

The aim is to create the conditions for a sustainable growth and eliminate the shortcomings of the current development of intermodal transport at more levels (in this case we can talk about the system of Maritime Highways) within the region.

The study had three main tasks:

» Development of intermodal logistics centers in Albania.

This task is focused on increasing the current assets of the transport network and selecting the most feasible projects to invest in, creating a priority order.

» Proposing advanced ICT tools to improve logistics performance links through logistics centers.

This assignment focuses on the nine basic categories of IT tools that support intermodal transportation. Within each category, detailed inventories of ICT tools available in the market have been carried out according to the structure as: (Load Calculator; Intermodal Route Planner; Freight Exchange; Logistics Platform / Electronic Transaction Platform; Multi Warehouse Management System; Transportation Management Systems; Terminal Operating System; Supply Chain Management; Port Community Systems).

ICT solutions that support the communication and management process in the industry cover a wide area of management support - from location tracking, internal and external communication to handling management, mode selection and spare capacity.

» Drafting of the Pilot Action for the development of the ICT communication platform between users and logistics centers in Albania.

According to the assessment of the Logistics Sector in Albania, the Pilot Action will be better to focus on the Tirana-Durres Corridor, as the main flow of goods traffic. A cooperation platform can be a helpful tool to increase the competitiveness of the Albanian industry, creating a series of opportunities for all actors. Analysis of key indicators will be carried out during the Pilot Action to identify further growth opportunities. These indicators will be monitored and analyzed through the data analytics module and the pilot project assistance task force.

SOUTHERN ADRIATIC SEA PORT AUTHORITY, PP3 PILOT ACTION

As part of the project, the Southern Adriatic Ports Authority - AdSPMAM has started the procedures to increase the potential of the Port Community System (PSC) Gaia, as well as the simulation and data exchange activities relating to freight and passenger traffic between the ports, in order to lay the foundations for a future interregional planning activity between the territories involved.

Recent and future developments of GAIA include:

» Interoperability with AIDA Customs IT service

The project was designed by Port Authority with the aim to develop interoperability services between AIDA Customs system and GAIA Port Community System, in order to speed up the transit of goods in port logistic nodes, digitize customs procedures linked to the transit of goods, manage in real time the goods flow in port facilities, working on actual critical moments, automate the ports procedures of goods gate-in/out and get information about customs payment and tracking of goods status.

» Testing of 5G

Bari will be the first 4.0 port in Italy able to improve security, access control and logistics by using IoT solutions coupled with digital automation, which are important steps specifically for cloud robotics and intelligent transportation systems.

» Installation of eGates

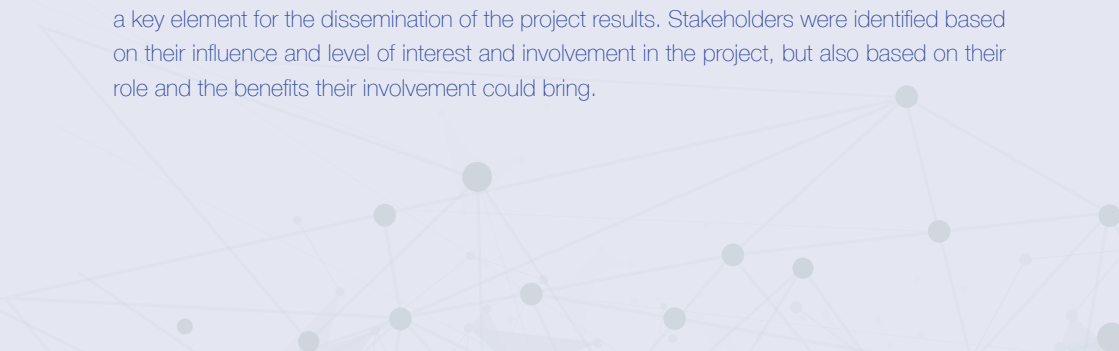
In order to improve security at the border (European entry exit system EU EES 2017-2226) a EES border control solution will be experienced in the port of Bari able to verify and collect departing passenger's identity with the cooperation of Border Police, enable fast and convenient border clearance process for any type of travelers as traveler pre-check, give real-time information to Italian Authorities and VIS system (Visa Information System) and cooperate with PCS GAIA.

» GAIA 2.0 evolution

The PCS GAIA 2.0 project is composed by 5 actions which will allow the Port Authority to upgrade the application/system infrastructure through the PCS software and hardware technology upgrade, the front office system development in order to simplify the administrative procedures between port and business users, the gate expansion with automated access control barriers, plate recognition and container tracking, the public (passengers) and business (port operators) WiFi network expansion to all ports of Authority network and the security and operational video surveillance extension in ports of Bari, Manfredonia, Barletta and Monopoli.

The Pcs Gaia is already a tool that can be used by most port stakeholders, but the goal of further and more concrete implementation of ICT connections will continue, through vanguard, to help optimize existing processes, create new business opportunities and transform supply chains and the geography of trade.

Furthermore, a mapping of the stakeholders present in the Programme area was carried out as a key element for the dissemination of the project results. Stakeholders were identified based on their influence and level of interest and involvement in the project, but also based on their role and the benefits their involvement could bring.



DURRES PORT AUTHORITY,

PP4 PILOT ACTION

Durres Port Authority, through the pilot action, will create two modules which will be administered by DPA and will also serve other public or private entities operating in the port. These modules will serve for real-time planning, integrated management of port operations and business processes.

» The PC CORE APPLICATION MODULE

It was installed on the test environment platform at the end of October and its parameterization continued throughout November 2022. The PCS Core Application must store all information passed through the Message Broker/Controller and entered through the PCIS web tier to the database system (RDBMS). Display information related to PCIS and implement all the required business logic, supporting the processes covered by PCIS. The data source for the PCIS core application is the messages exchanged between members of the port community via the Message Controller (PCS Integration Platform), which are recorded in the database (RDBMS). The PCS Core application should be designed as a 3-tier WEB application, separating the Presentation, Business and Data layers into components that perform their dedicated functions.

» SHIPS AND CARGO MODULE.

Application module for ships and cargo in PCS.

The solution required by PCS software should provide users with various vessel tracking options to view and examine vessels in waiting, vessels in port and vessels that have departed. After the registration of the ship, the system must have an integrated procedure (flow work) for the management of the ship that will serve to guide the ship's agent, port dispatcher, port operations or other entities related to the management of the stay process of the ship in port to fulfill all formalities and requirements for the ship's stay.

The agent must initiate the vessel visit/arrival record by submitting the notification letter electronically, including the following information regarding the arriving vessel: (Vessel Name, Arrival Date, Arrival Time, Vessel Flag, Number of the IMO etc). In addition to the standard reports, the bidder must develop two new reports specific to the port community for demonstration and adaptation purposes.

The Vessel & Cargo module began installation in early January 2023 and became operational at the end of this month.

A preliminary work flow for ships and goods in the Port of Durres has been defined and part of its operation is being verified in the field.

AUTONOMOUS AGENCY FOR HOSPITALITY AND TOURISM OF TERMOLI, PP5 PILOT ACTION

This pilot represents the design and development of an IT platform for Environmental Monitoring System (EMS) integrated in the port context. The environmental monitoring system design include several functions like estimates of GHG and pollutant emissions from ships and port installations.

The software is based on a micro services architecture, able to manage IOT protocols, support analyzes on big-data and create the digital twin of the port environment through the representation of the port in a 3D and 2D maps, highlighting the ships, their routes and the interested systems inside the port.

The platform collects all the vessel info in a database thanks to AIS (Automatic Identification System) data provided by Marine Traffic service in order to show the vessels positions, routes in a near real time modality and evaluate their CO2 emissions inside the port (the so called carbon footprint). This platform is a convergence for the data collection and analysis that may evolve over time thanks to the addition of new information sources, whatever sensors or databases.

The pilot system has been designed to collect and analyze, useful information for assessing the impact of port activities, to support sea cleaning activities and analyze carbon footprint emissions. It is also open to exchange data with other platforms presented in the ports when required.

Project EFINTIS will have a positive influence in terms of sustainability by promoting the adoption of ICT tool and by increasing the competitiveness of the multimodal transport. With the EMS pilot action, will not only increase general operability of Termoli's port but it will reduce environmental impact as an addition.

The tool realized could be shared with regional stakeholders acting in the environmental field and so it could be very useful to automatize the collection of environmental data, make analyses, defining alerts with positive impact on environmental protection.

The result of the pilot action is the implementation of an Environmental Monitoring System able to support sustainability goals of the Termoli's port trough an IT system able to collect, memorize, analyze environmental data (air, water, ground). Such system allows to evaluate impact of port activities in terms of carbon footprint due to the maritime traffic.

A preliminary evaluation on Termoli's EFINTIS pilot action suggest possible links among the IT platform for Environmental Monitoring System (EMS) and the others ICT solutions which was deployed for Termoli port system, by the past SUMO, ALMONIT projects and the ongoing FRAMESPORT project.

PARTNERSHIP



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