



Extended Port Community System

Extended PCS

Fully integrated port community services exploiting also advanced technologies (IoT, Blockchain) and concepts (International Fast & Secure Trade Lanes).



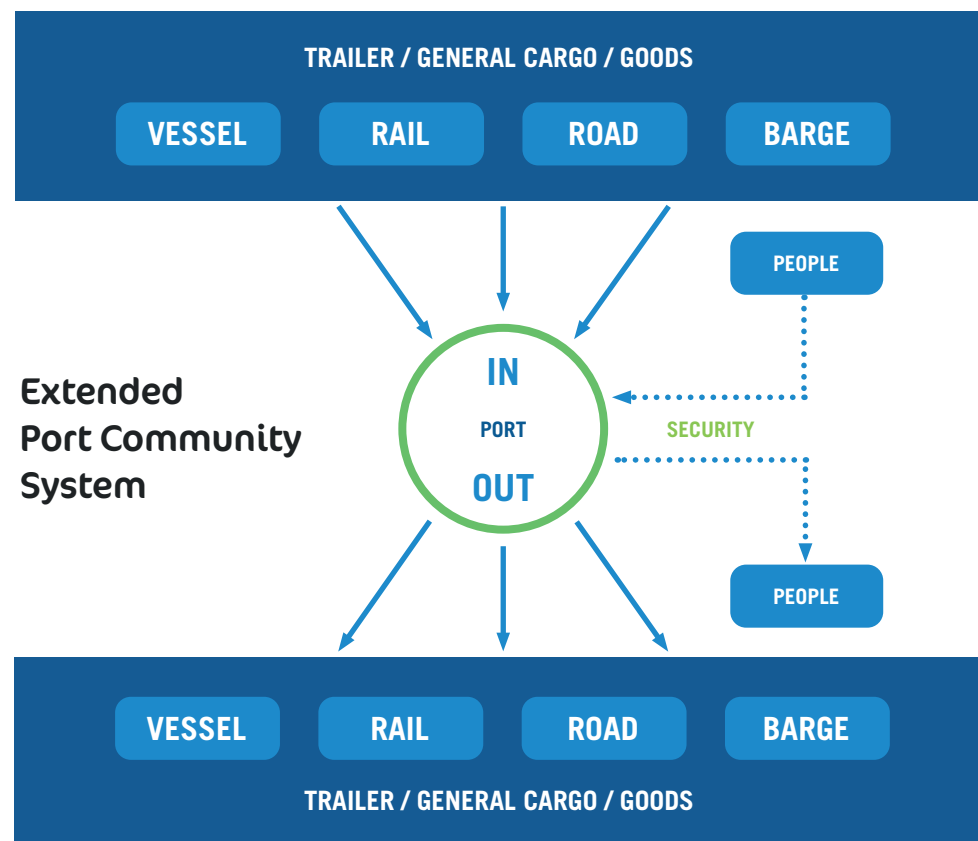
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Scenario

The urgency to manage all administrative, operative, tax and customs procedures related to port logistics in a streamlined and digital way through joint standards capable of optimizing flows of information between various stakeholders determines the need to adopt Port Community Systems (P.C.S.) as innovative technology platforms. Today indeed the digitization of the sector is an important lever to cut red tape and regain competitiveness for all relevant actors and organizations constituting a Port Community.

Thanks to new software solutions which guarantee the interoperability among different ICT systems the port management processes can be for the first time significantly improved with a tangible impact on those all along the chain and an enhancement of port in/out flows:



Port community



Extended Port Community System connects in one single technology platform all different actors and related processes constituting a Port Community: from Customs Authority to Coast Guard, from shippers to transport providers and MTOs, from last mile logistic operators to shunting companies, from railway undertakings to inland terminals.

This unique solution allows to improve efficiency and fluidity of traffics from/to the ports and at the same, represents an important control, monitoring and marketing tool.

Data sets are inserted in real time into Extended Port Community System by private operators and validated through verification procedures by competent public authorities such as Customs and financial police that certify their reliability. After being further elaborated by Extended Port Community System, this information is especially relevant not only for managing purposes but also for a strategic and statistical approach.

Extended Port Community System framework

Extended Port Community System is in constant evolution in order to cope with dynamic of change affecting different transport and port logistics, as well as with existing legislation and, in particular, with international rules and guidelines in the fields of customs, health and security.

Currently organized into 13 modules, the suite enables to:

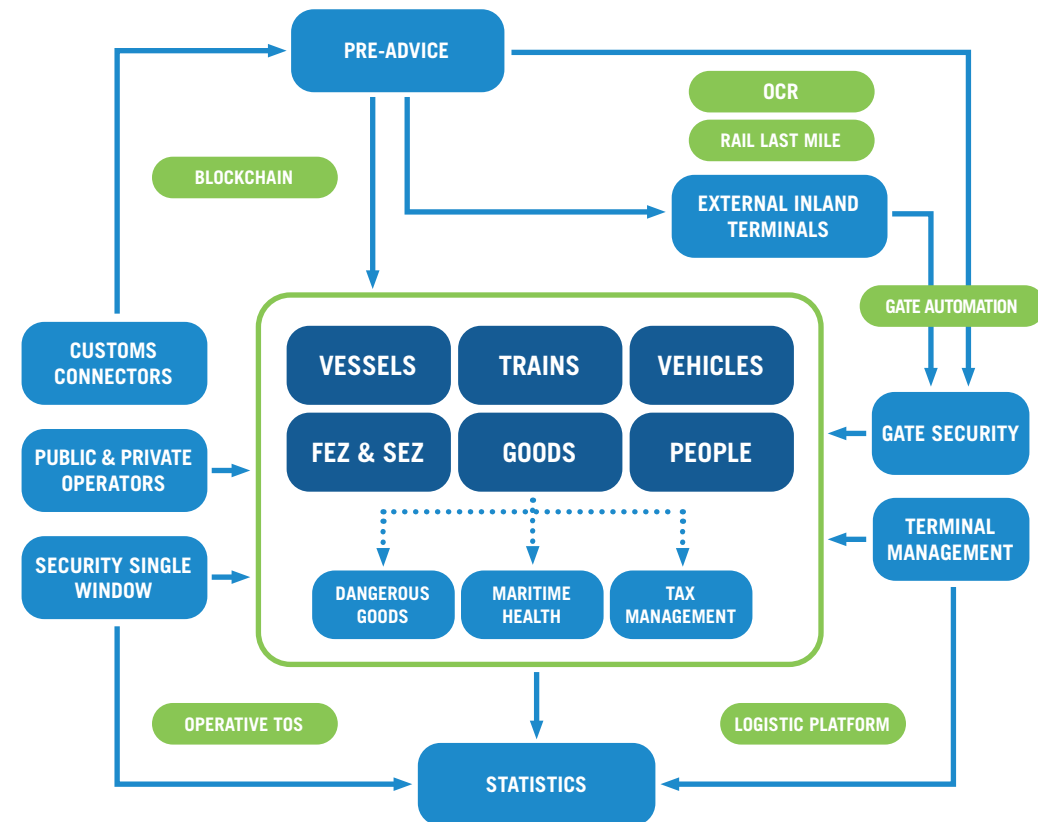
- ✓ manage digitally the handling of freight and vehicles both inbound and outbound for every kind of carrier (ship/train/truck) and ensure the total traceability of the process
- ✓ automate applications for access to the port through “single window” paradigm and speed up administrative and bureaucratic procedures on port traffic thanks to the possibility of automatic data entry
- ✓ generate digital statements addressed to different actors of Port Community
- ✓ provide comparative analysis and both aggregated and non-aggregated statistical data
- ✓ ensure interoperability with ICT platforms developed by different stakeholders, both public and private, for supply chain management and optimization
- ✓ manage data through different international standards (for instance, those provided for by ISO - International Organization for Standardization, TARIC - Integrated Tariff of the European Union, HS - Harmonized System, ILU - Intermodal Loading Units in Europe, BIC - Bureau International des Containers et du Transport Intermodal, UIC - Union Internationale Des Chemins De Fer) in order to standardize data and make them comparable each other.

Native connectors and additional modules

- ✓ National Maritime Single Window & PMIS
- ✓ Rail Last Mile, Rail Shunting & Infrastructure Companies (RFI PIC connector & PIL-SSH)
- ✓ Corridor Management Platform
- ✓ Gate Automation & OCR
- ✓ IOT & Blockchain
- ✓ Operative TOS
- ✓ Logistic Platform (in Italy Uirnet PLN and CCD)
- ✓ National Customs (in Italy AIDA and Trovatore)



Extended Port Community System





Successful case of Port of Trieste



Sinfomar is the Port Community System solution chosen by the Port of Trieste since 2014 to improve efficiency and fluidity of traffics from/to the port and also used as an important control, monitoring and marketing tool.

At the planning stage specific features and the legislative complexity of Trieste port area, which is composed of “Porto Vecchio”, “Porto Nuovo”, “Scalo Legnami” and “Zona Industriale” (characterized by total or partial areas of Free Zone, i.e “Punto Franco”) have been analyzed.

Trieste Port areas are divided into common areas (managed by local Authority “Autorità di Sistema Portuale del Mare Adriatico Orientale”) and areas under concession (managed by terminal and private operators). They include also Interport of Trieste in Ferneti.



The development of Extended Port Community System has affected the entire local and regional maritime community. More in particular, among private operators, shipping agencies, freight forwarders, customs agents and terminal operators (as well as some carriers and supervisory companies) have been involved. On the contrary, among public operators, Customs Authority, Coast Guard, Financial Police, DMV, Health Officials, inland terminals, regional MTO Alpe Adria, shunting company Adriafer and main rail undertakings operating in the region have been involved.

Integration of shunting and last mile with port processes

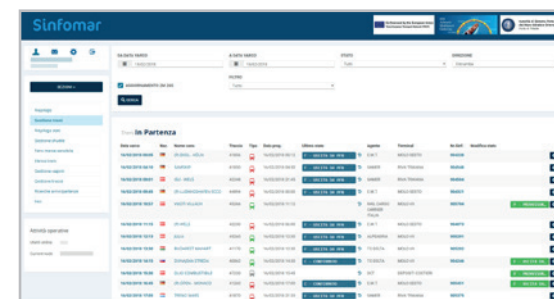
Thanks to the recent activation of new Extended Port Community System modules for digitalization of control operations and authorization to handling, shunting - operated by Adriafer - and last mile activities may be integrated with port processes.

This represents an important step towards the digital transformation defined by Port Authority “Autorità di Sistema Portuale del Mare Adriatico Orientale”.

Train movements, indeed, may be equated with vessels’ ones; customs, logistics and security administrative rules harmonized through standardization and automatic generation of documents for trains arrival/departure.

More specifically, thanks to the integration of Extended Port Community System platform with modules and connectors concerned by Rail & Last Mile logistics (especially Extended Port Community System Vessels) and to CH30 customs manifests output, it may be possible for the first time to manage trains arriving at/departing from the Port of Trieste with a significant simplification in information exchange between different operators, both public and private.

Major results concern the almost complete resetting to zero of mistakes and data subjective interpretation.

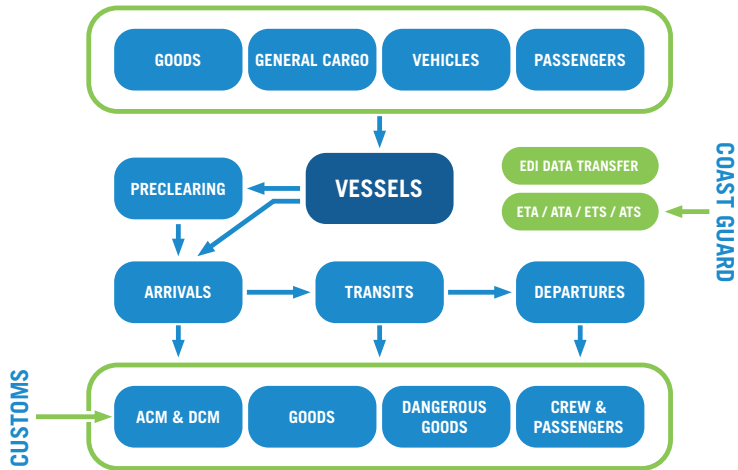


An aerial night photograph of a large port facility and an adjacent urban area. The port is filled with numerous stacks of shipping containers and several large gantry cranes. A curved road with light trails from moving vehicles separates the port from the city. In the background, a prominent cable-stayed bridge spans the water, and the city skyline with various high-rise buildings is visible under a cloudy night sky.

Extended Port Community System suites

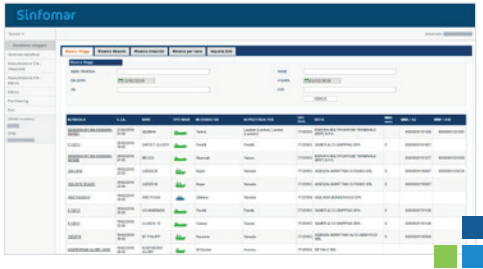
Vessels

Vessels is one of the cornerstones of Extended Port Community System platform. It enables operators to manage the vessel data and voyage documentation such as IMO, call sign, Inmarsat number, type, flags, port and date of registry, Official number, year of construction, GRT, NRT, DWT, Loa, Bext, the main administrative data and ship certificates.



SOLUTION

Extended Port Community System Vessels solution manages the paperwork of arrival, transit and departure of all maritime transport and related customs manifests (ACM for arrival, DCM for departure). This module is supplied with digital information provided by shipping agencies about the trip of the ship and goods carried, in order to obtain the permissions for boarding and deboarding from the authorities and to generate customs manifests.

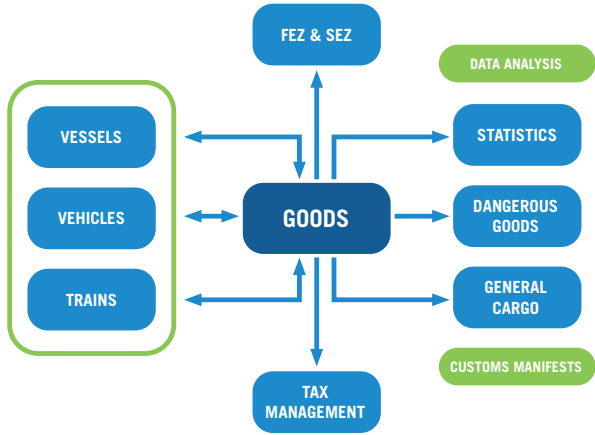


MAIN BENEFITS

- ✓ shipping agencies can benefit from a common repository with main data on shipping lines
- ✓ calculation of boarding and deboarding fees is fully digitalized
- ✓ integrated connectors for data interchange with public authorities

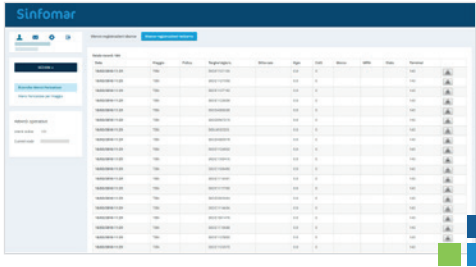
Goods

Extended Port Community System Goods has been developed to manage the exit and entry of goods by ship, train (thanks to automation of Train Goods manifest module) and truck (thanks to Pre-Advice module) in port areas. Through a specific dedicated module, it also applies to Dangerous Goods which are subject to radiometric surveillance.



SOLUTION

Extended Port Community System Goods solution runs all boarding and deboarding procedures ruled by entry (ENS) and exit (EXS) summary declarations. Each consignment is identified, in the case of deboarding, through A2 trip number - which identifies customs manifest - and through PF customs registration number, while, in the case of boarding, through A10 number - which identifies customs manifest - and through MRN number, in order to ensure the perfect match between logistic and customs data.

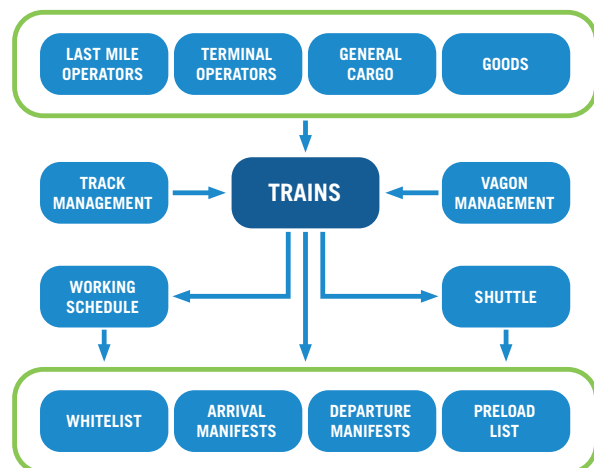


MAIN BENEFITS

- ✓ the completion of bureaucracy related to each phase of cargo handling is considerably leaner
- ✓ operators can save a lot of time and resources in terms of paper trail to be submitted to customs
- ✓ the process makes it possible to obtain reliable statistics

Trains

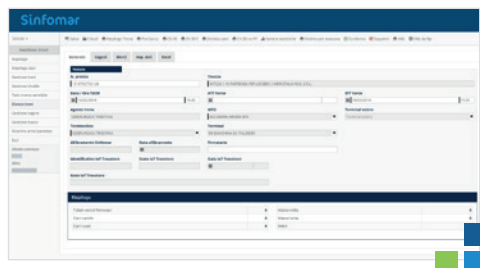
Trains module is dedicated to the management of trains involved in transportation of vehicles and containers to and from the port areas. It implements various functionalities that enable the freight forwarders and other operators to request and submit request the majority of the administrative and operative data.



SOLUTION

Extended Port Community System Trains solution allows the complete tracking of containers, goods and vehicles arrived by train and departed by ship or vice versa.

This module engages different players, such as railway undertakings, the train crew, shunting companies, MTOs, terminals, freight forwarders, Customs Authority and Financial Police.



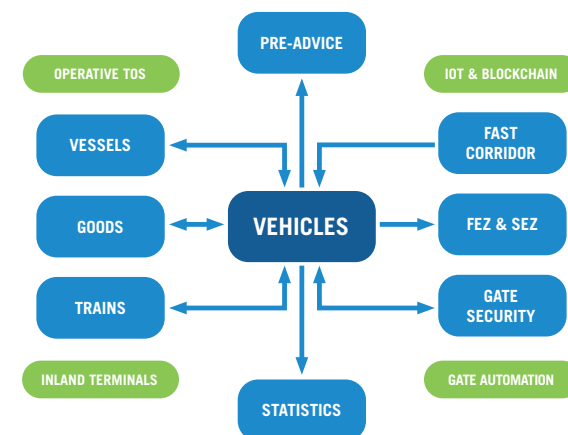
It is completely integrated with other modules affecting rail transport (in particular, Vessels thanks to port railway gates equipped with Optical Character Recognition - OCR technology).

MAIN BENEFITS

- ✓ manages the arrival and departure schedule
- ✓ produces the necessary documents for transported vehicles and containers
- ✓ books and organizes the main activities for loading and unloading

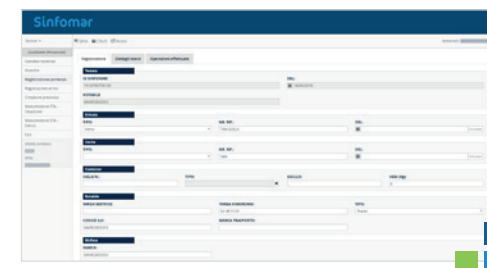
Vehicles

Extended Port Community System manages the main procedures for control and tracking of vehicles involved in intermodal transportation. The Vehicles module enables operators to produce arrival notices with specifications for carried goods and port area destinations, and to obtain entry confirmations from the public authorities.



SOLUTION

Highly integrated with Pre-Advice module, Extended Port Community System Vehicles detects and tracks each vehicle arrived/departed by ship, train or by itself. Extended Port Community System Vehicles solution allows also the tracking of containers and the identifying of transported commodity. Of particular importance is the automatic detection of license plates through cameras equipped by OCR technology which compares them to those present in arrival notices and vessel manifests.

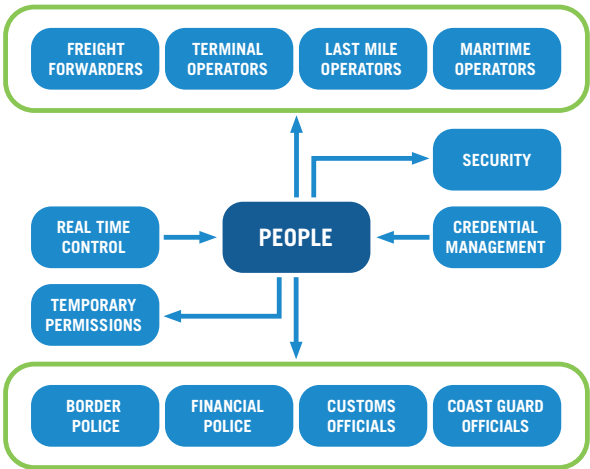


MAIN BENEFITS

- ✓ optimized management of entry and exit procedures of trucks and other vehicles
- ✓ real-time information on vehicle traffic situation within port areas
- ✓ specialized implementations for intermodal terminals

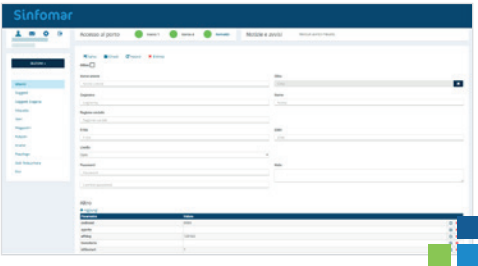
People

Extended Port Community System is equipped with a complex user management system which allows to classify different types of job and provide credentials, related permissions and functionalities according to the features of each operational profile.



SOLUTION

Accounts are grouped in different categories such as port operators, freight forwarders, employees of companies located within the port areas, external operators with temporary access, public officials (Border Police, Financial Police, Health Officials, Coast Guard, Customs and Port Authorities), carriers and maritime operators.

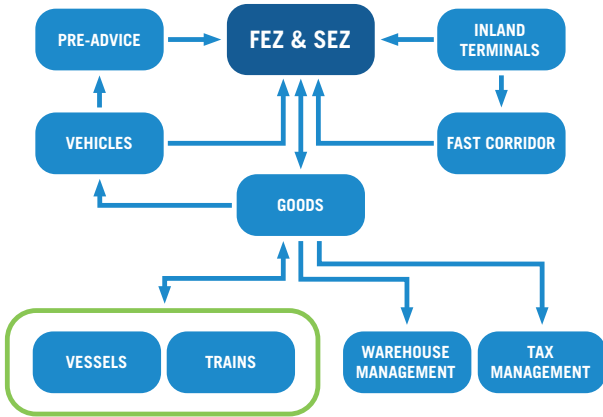


MAIN BENEFITS

- ✓ organized management of user credentials with specific permission levels
- ✓ integrated badge control systems and real-time traceability of people within port areas
- ✓ dedicated profiles for officials of different public institutions and control authorities

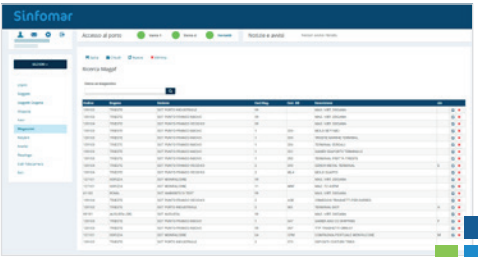
Free Zone & SEZ

Thanks to Free Zone & SEZ it is possible to manage in an integrated and unified manner practices involving processes and activities related to Free Zones and SEZ (Special Economic Zones).



SOLUTION

Extended Port Community System Free Zone & SEZ solution allows to manage interoperability between different Free Zones & SEZs belonging to the same hub in order to simplify and speed up significantly control procedures and data exchange between public authorities and subjects operating in these areas.



Free Zone & SEZ module affects horizontally all other components of the suite and implements their basic functions with solutions specifically dedicated to Free Zone specific features such as:

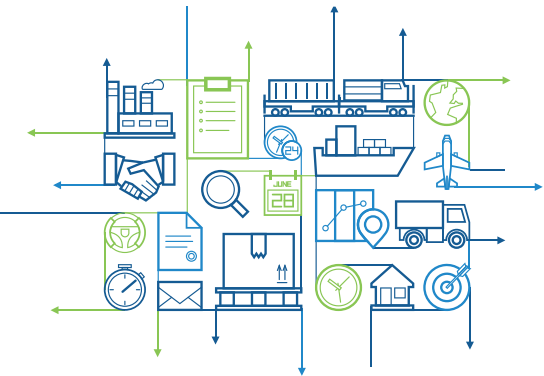
- ✓ customized cost and tax management
- ✓ warehouse management
- ✓ import and export of goods
- ✓ customs security
- ✓ vehicle management
- ✓ pre-advise
- ✓ fast corridor

Vision for the future

Extended Port Community System has a native integration with other Circle's innovative solution **Milos**, the modular suite for optimizing the transport of containers, trailers, cars and general cargo through the intermodal supply chain, in order to swiftly sort goods arriving at logistic hubs and rapidly handle and trace them in a door-to-door perspective.



Always evolving technological landscape shall make available to transport and logistics operators new instruments for the automation of procedures and the optimization of resources. Among all, it is important to mention IoT devices integrating tracking and cargo recognition systems, **Blockchain & Distributed Ledger Technologies** for usage of smart contracts data sharing with other ICT port platforms and **Artificial Intelligence** (A.I.) for process automation through modules “learning” from logistics and corridor operational history and “suggesting” solutions to professionals.



Extended Port Community System future developments include the development and supply of two **different focused solutions** dedicated to specific targets of **shipping agencies** and **freight forwarders**. These solutions will be able to exchange data with Extended Port Community System Port Community System (as well as with every other PCS solutions) and with Milos Terminal Operating System Multipurpose (as well as with every other TOS solutions).

Lastly, despite being available to be used separately, three services (connectors) will complete our offer in order to connect to **National Maritime Single Window**, **PMIS - Port Management Information System** and **EU eManifest (DG MOVE & DG TAXUD pilot project with EMSA, coherent with UCC - Union Customs Code)**.

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Circle S.p.A. is the Innovative SME at the head of CIRCLE Group, the Group that specializes in the analysis and development of products for the innovation and digitization of the port and intermodal logistics sectors and in international consulting on Green Deal and energy transition issues.

In addition to Circle, the software houses **Info.era**, **NEXT Freight** (formerly “Project Adele”) and **Cargo Start** are part of the Group, as well as the consultancy **Circle Connecting EU** and **Magellan Circle**.

The synergies between the individual components of CIRCLE Group have made it possible to expand the portfolio of solutions offered in the areas of IoT, Optimisation, Digital Twin, Big Data and Process Automation, and to strengthen the software products: Milos® - a suite aimed at all intermodal logistics players such as inland terminals, port terminals, ports, MTOs and shipping agencies -, the extended Port Community System, the Master SPED® and Milos® Global Supply Chain Visibility solutions, dedicated to shipping and logistics and trade and industry, respectively, as well as Star Tracking®, an airport-to-airport tracking solution.

Completing the offerings in the Supply Chain area are so-called “Federated Services” capable of making customers’ migration to a digital business model more efficient and offered in cloud mode.

Through **Magellan Circle** (with offices in Porto and Brussels) and **Magellan Circle Italy**, Circle operates in the field of advocacy at European institutions.

Circle leads the **Log@Sea business network**, which is functional in strengthening the offering of advanced Gate Automation solutions aimed at port and intermodal hubs.

Finally, Circle signed an agreement in December 2023 to acquire a 20% stake in **ACCUDIRE**.