LOGISTICS & MARITIME FORUM

The sustainable, connected and resilient road to 2030

16-17 October 2019, La Spezia Expo

COREALIS
Capacity with a pOsitive enviRonmEntal and societAL footprInt: portS in the future era

Domenico Lattuca

cnit consorzio nazionale interuniversitario per le telecomunicazioni

Concept

COREALIS is a H2020 project, started on May 2018, that proposes a strategic, innovative framework, supported by disruptive technologies, including Internet of Things (IoT), data analytics, next generation traffic management and emerging 5G networks for cargo ports, in order to handle upcoming and future capacity, traffic, efficiency and environmental challenges.

Consortium Partners

ΕΠΙΣΕΥ ICCS · PCT · SEAbility · ERTICO · mosaicfactor
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Embrace circular economy models in the port strategy.

Reduce the port's total environmental footprint.

Encourage ports to become innovation hubs of the local industrial & urban space.

Optmise yard capacity and improve safety without major infrastructural investments.

Streamline cargo flows in favour of green transport modes.

Improve port-city stakeholder collaboration for medium/long-term decision making.

Innovation Incubator

It supports the implementation of new business models and tools for economic development in the port environment.

RTPORT

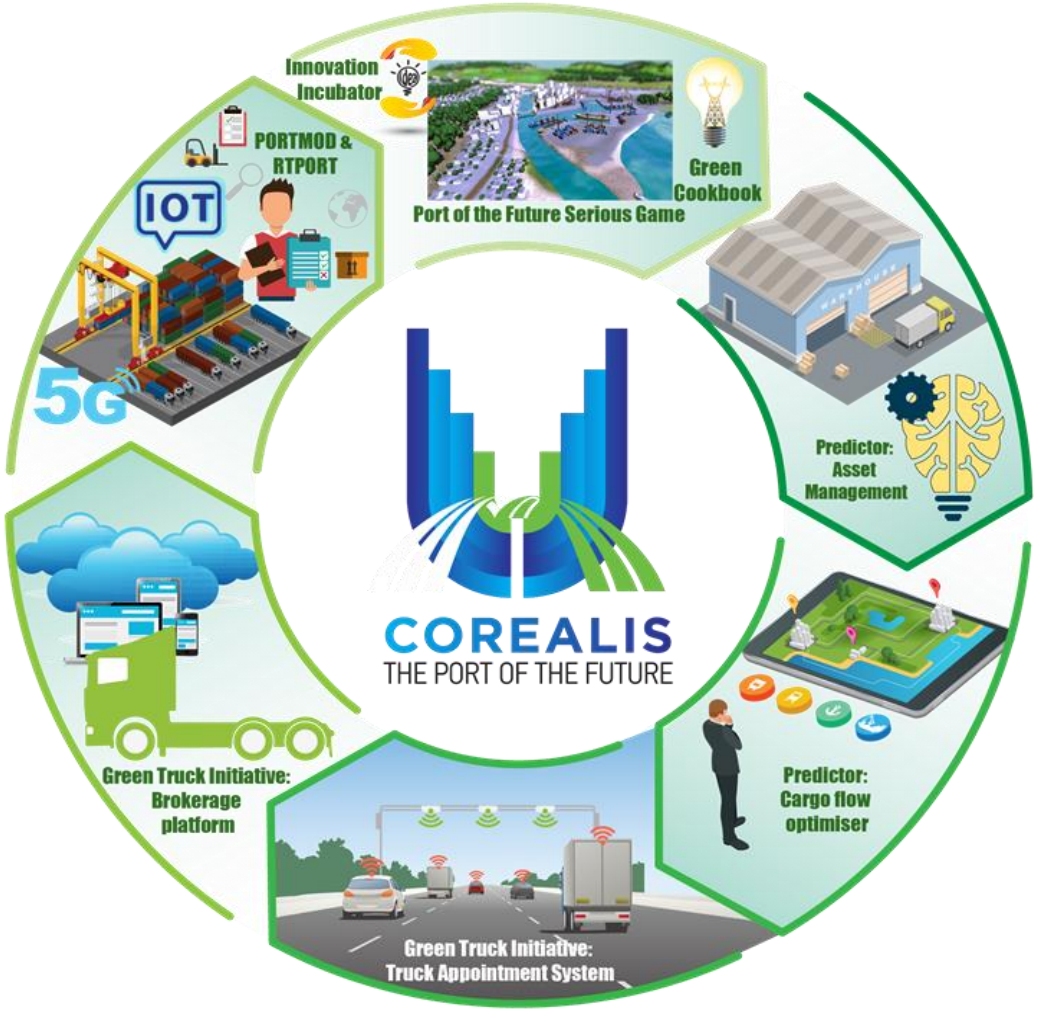
RTPORT module will optimize the load/unload operation schedule integrating a 5G prototype network.

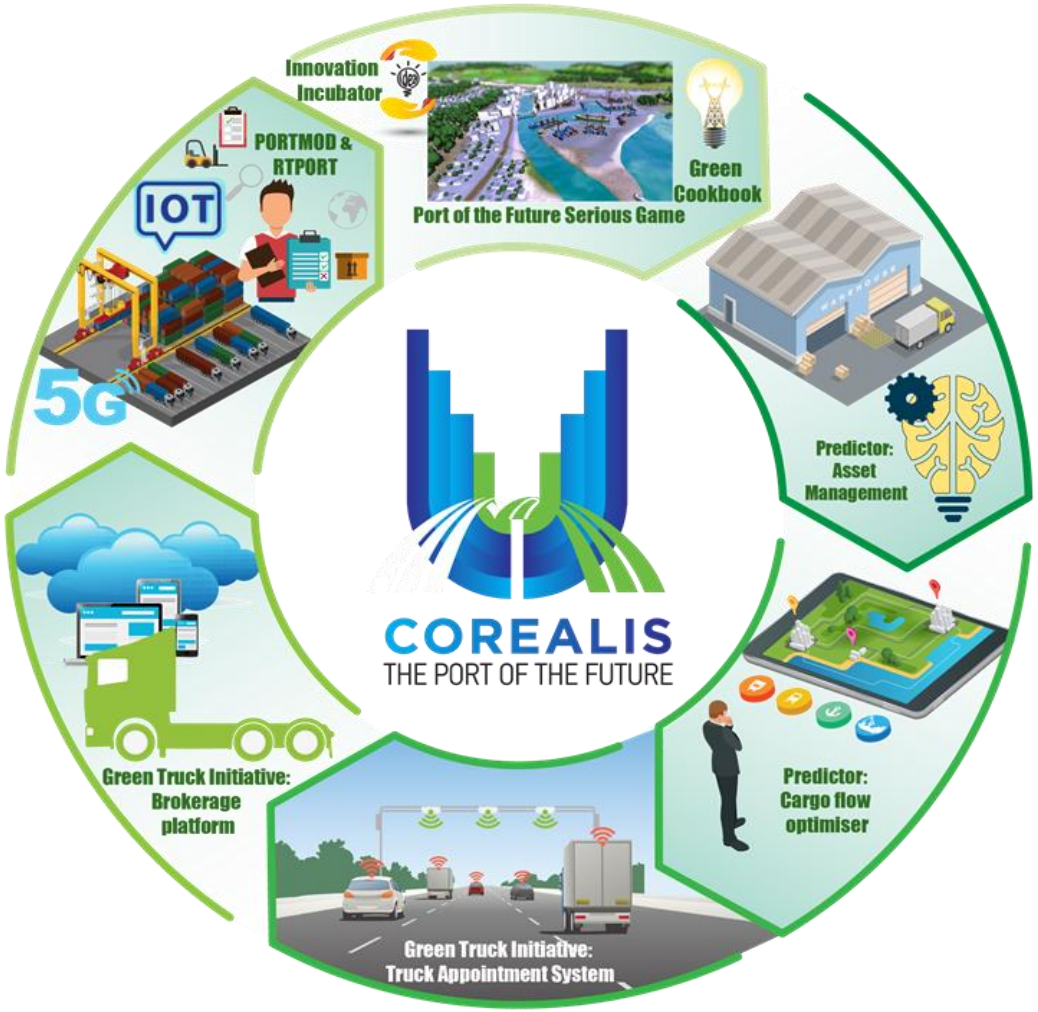
PORTMOD

A software capable to plan container movement chains based on effectiveness and efficiency and decreased operational costs.

Port of the Future Serious Game

PoFSG is a tool used to assess the feasibility and sustainability of the socio-economic and environmental development of a port.





Green Cookbook

It helps ports to lower their environmental footprint and move to cleaner transport modes and cleaner energy sources.

Predictor Tool – Asset Management

A tool that dynamically predict anomalies in port operations and reduce the total life-cycle cost of port assets.

Predictor Tool – Cargo Flow Optimiser

Through machine learning, cargo flow prognoses will be implemented so that the port managers may be facilitated in their investment planning.

Truck Appointment System

The TAS system intends to minimise waiting time at the port gates, providing to the drivers an optimal time-window to enter the port

Brokerage Platform

A platform with possibility of real-time online booking of trucks/chassis and drivers.

Port of Livorno Living Lab

Existing Infrastructure relevant to COREALIS

MONI.C.A is the real-time 3D monitoring and control platform of the Port of Livorno. It enables to measure variables and events of interest for the whole Port System. The network infrastructure used for R&D covers the maritime terminal by a set of wireless network access points centered on the cruise terminal and linked to the CNIT laboratory.

COREALIS Benefits

COREALIS will offer a possible way for a sustainable growth to improve on efficiency without the need of upgrading the existing physical infrastructure.

COREALIS Innovations to be implemented

RT-PORT module consists of: a pervasive instantiation of a 5G network prototype in a container terminal, the human-device interconnection (via M2M, IoT) and the integration with the MONI.C.A PMS.

Port of Piraeus Living Lab

Existing Infrastructure relevant to COREALIS

Piraeus PCT needs to plan in advance on how to coordinate, maintain and improve operational efficiency in a feasible and sustainable way. A Truck Management System has been installed and collects location data based on GPS for all trucks operating in the yard and visualises it on a map.

COREALIS Benefits

COREALIS will offer a possible way for reduction in the yard truck runs, a better yard use due to improved stacking and the reduction of operational and maintenance costs of the port spare parts, including tyres.

COREALIS Innovations to be implemented

Predictor Tool consists of: a data-driven preventive maintenance schedule, a data-driven schedule of purchases of new spare parts and a data-driven schedule yard equipment for just-in-time inventory.

Port of Valencia Living Lab

Existing Infrastructure relevant to COREALIS

Valencia PCS covering inland transport services and managing the land transport orders between different stakeholders of the port community (port terminals, maritime agencies, transport operators). Implemented closing time procedure for transport orders with an exemption procedure for trucks without the transport order managed by the PCS.

COREALIS Benefits

The port will benefit greatly from the development of railway traffic for port-hinterland connection, key to minimise the impact of road transport to the city.

COREALIS Innovations to be implemented

The Valencia LL will be focused on demonstrating advantages of an innovative TAS able to coordinate and optimise the arrival of trucks according to city traffic, terminal and other operations in the port area.

Port of HaminaKotka Living Lab

Existing Infrastructure relevant to COREALIS

The port area of 1,100 hectares hosts almost 200 companies, is one of busiest CTs in the Baltic Sea, and a liquid terminal specialised in the storage and handling of liquid goods.

COREALIS Benefits

Port operators like Steveco in Kotka need rather simple tools to evaluate and redesign their processes, as well as control assets: objective achievable through the implementation of PORTMOD.

COREALIS Innovations to be implemented

PORTMOD task will be to investigate the different levels of automation in conjunction with current processes in the port, evaluate the performance savings and cost-benefit tradeoffs for investments corresponding to different automation levels.

Port of Antwerp Living Lab

Existing Infrastructure relevant to COREALIS

Antwerp PCS covering vessel reporting services, customs manifest declarations, inland transportation services, connection with all terminal operators.

COREALIS Benefits

Test the Cargo flow optimiser based on real-time data from the PCS and other data sources available and improve the modal split towards rail and barge by optimising the planning of pickup and delivery in function of the arrival and departure of the ocean vessel.

COREALIS Innovations to be implemented

Port's subsidiaries will have enabled module for managing transport orders that will be a central point to collect information on the loads to be discharged, handled and delivered for the subsequent legs of the cargo route. A catalogue of services (Market Place) will enable to book not only services but also spots for handling cargo.

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COREALIS
THE PORT OF THE FUTURE

www.corealis.eu
corealis_eu
COREALIS EU Project
Corealis_eu
info@lists.corealis.eu

THANK YOU FOR YOUR ATTENTION

cnit consorzio nazionale interuniversitario per le telecomunicazioni

Domenico Lattuca

domenico.lattuca@cnit.it

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