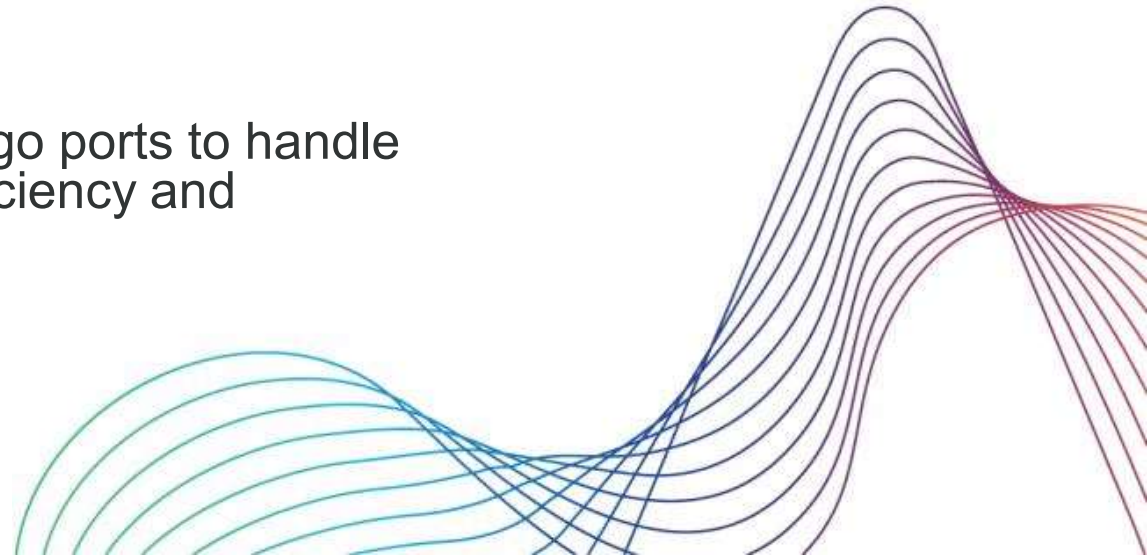




COREALIS - Sustainable Innovative Footprints for Future Ports

A strategic, innovative framework for cargo ports to handle upcoming and future capacity, traffic, efficiency and environmental challenges

Giannis Kanellopoulos



COREALIS Overview

- ❑ Call identifier: H2020-MG-7.3-2017: The Port of the Future
- ❑ Coordinator: ICCS
- ❑ EC funding requested: 5,150,540.00 €
- ❑ Duration: 01.05.2018 - 30.4.2021 (36 months)
- ❑ 17 partners from 9 European and associated countries
- ❑ 4 Research Institutes, 5 Port operators/ Port Institute/ Port Authority, 4 Industries, 3 SMEs, 1 ITS Association
- ❑ Demonstrations in Five European Port-Cities including 3 of the Top-10 in Europe



COREALIS Port-Cities

1. Antwerp Port, Belgium



2. Piraeus Port, Greece



3. Valencia Port, Spain



4. Livorno Port, Italy



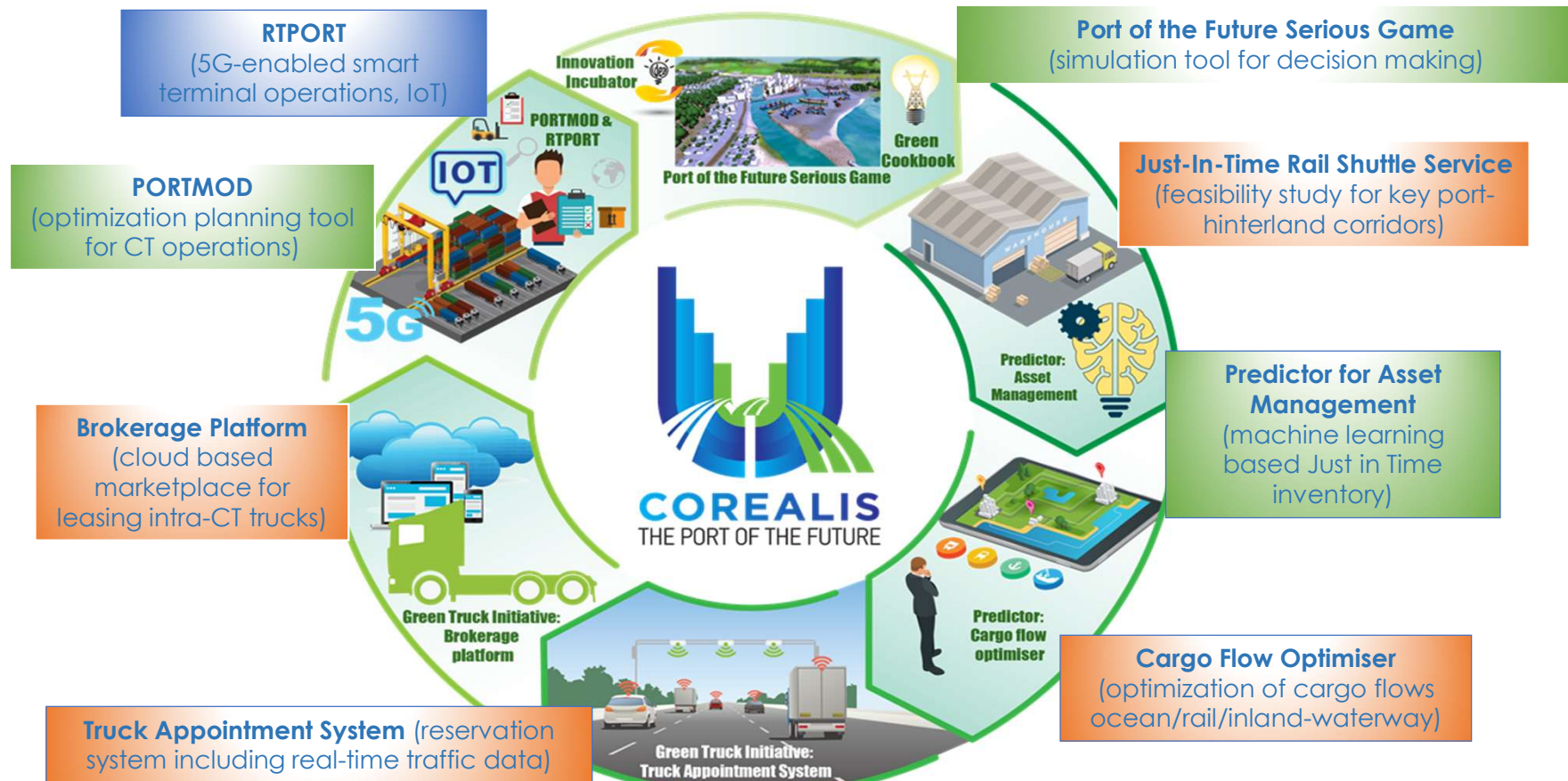
5. HaminaKotka Port, Finland



COREALIS Innovations



THE
CONVERSATION
CONTINUES



COREALIS Cargo Flow Optimiser

Antwerp Port, Belgium



Terminal input

- Terminal occupancy
- Containers arriving / leaving time stamp
- Inland mode of transport expected



Current transportation environment

- Current inland connections
- Capacity of transport connections



- Prediction availability of inland transport routes according to:
 - Transportation time
 - Cost of the route



Optimization model

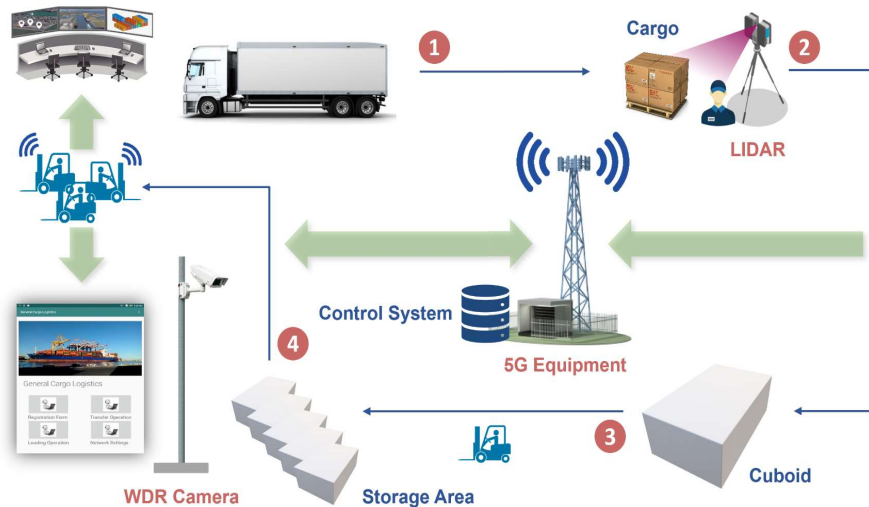


- Proposition of new transport shared services on-demand



- ✓ Data multiplexing for cargo flow optimization
- ✓ Multimodal delivery modes alternatives presented along with their total distance, time, cost and CO₂ emissions
- ✓ Container waiting times minimized, reducing cost and Turn-Around-Times

COREALIS RTPORT



Real time control of operations, collecting data from both yard vehicles and implanted sensors (including cameras).

On-Line analytical processing.

Taking operating decision.

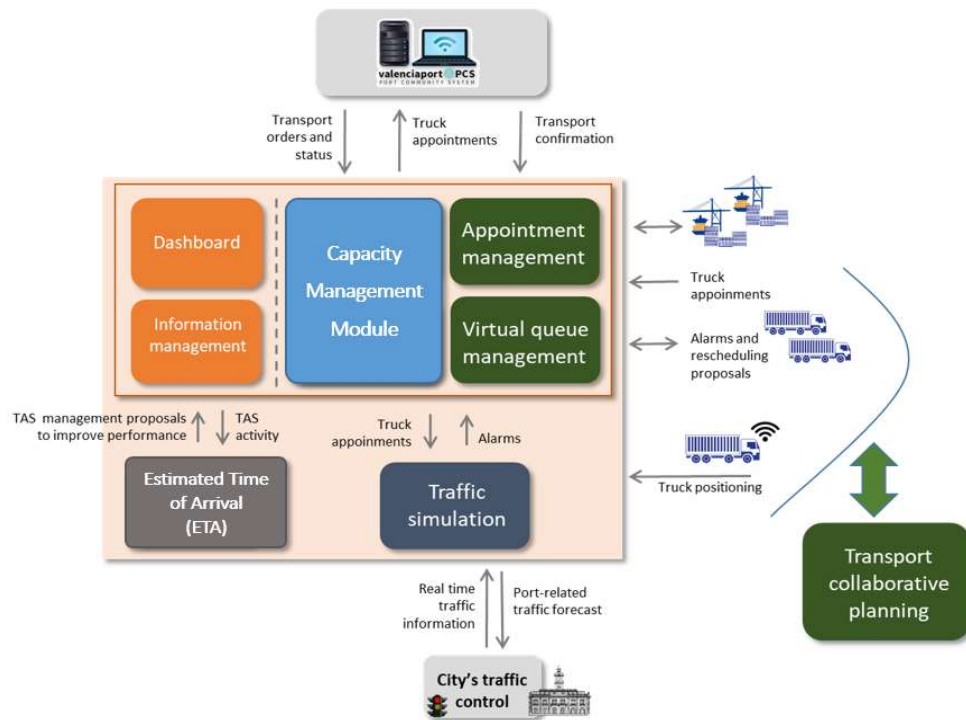
Snapshot Terminal Status

Livorno Port, Italy



- ✓ High level of automation for the general cargo management process
- ✓ Increase of visibility of the cargo in the intra-terminal operations
- ✓ Reduction in number of moves required and total milage of yard equipment
- ✓ Safety improvement through the reduction of human presence in the port yard

COREALIS Truck Appointment System

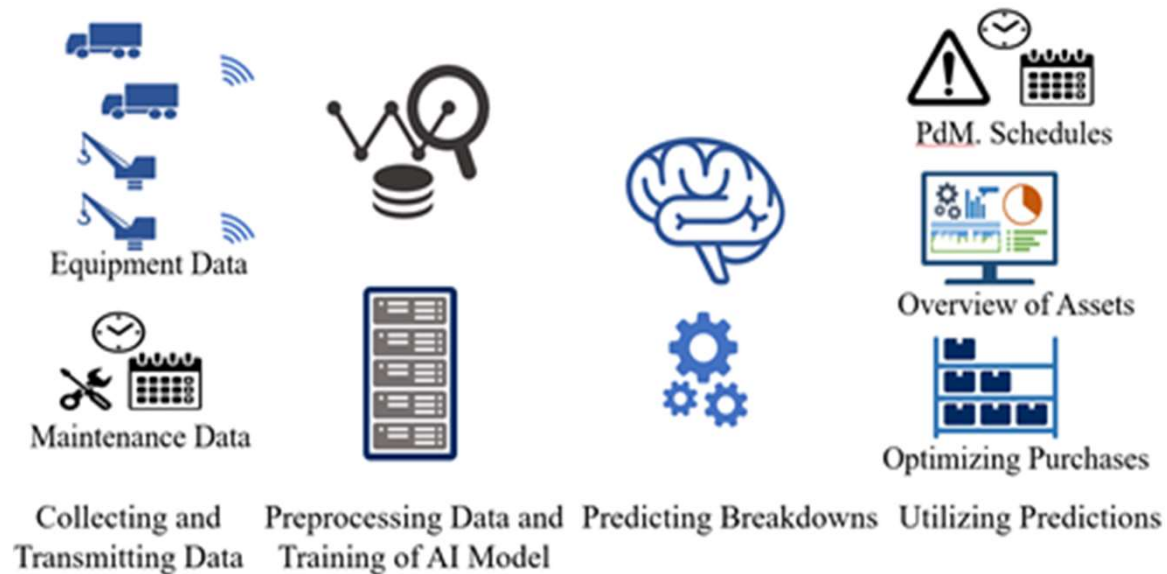


Valencia Port, Spain



- ✓ Dynamic ETA and Re-scheduling
- ✓ Port operational flow optimization
- ✓ Reduction of Gate queues, port-city traffic and total milage run

COREALIS PREDICTOR – Asset Management

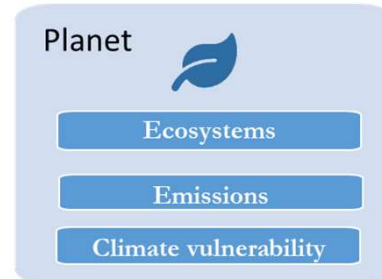


Piraeus Port, Greece



- ✓ Operational efficiency and elongated yard equipment life-cycle
- ✓ Reduced use of spare-parts, lubricants and tyres
- ✓ JIT spare parts inventory
- ✓ Current level of True Positive Predictions: 85%

COREALIS Port of the Future Serious Game



- ✓ Decision Support for medium and long-term strategic decisions for sustainable port-city development
- ✓ Awareness of potential consequences of climate change and adaptation measures
- ✓ Awareness of measures for energy transition and its potential consequences

COREALIS Expected Impact

**1. Embrace circular economy models
in the port strategy and operations**

**2. Improve operational efficiency,
optimise yard capacity and
streamline cargo flows without
additional infrastructure investments**

**3. Reduce the port's environmental
footprint associated with intermodal
connections and the surrounding
urban environment for three major
transport modes, road, rail and inland
waterways**

**4. Enable the port to take informed
medium-term and long-term
strategic decisions and become an
innovation hub of the local urban
space**





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THANK YOU FOR YOUR ATTENTION



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**THE
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9-10 November 2020

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