COREALIS
THE PORT OF THE FUTURE

COREALIS: An Overview

COREALIS Facts

Scope aspects

- Optimisation of processes inside the terminal and in the wider port area
- Better capacity management, identification of KPIs
- Low environmental impact, climate change adaptation, circular economy, smart urban development of port cities
- Efficient links to hinterland transport

- ✓ Call identifier: **H2020-MG-7.3-2017**
- ✓ Topic: "**The Port of the future**"
- ✓ Duration: 01.05.2018 - 30.04.2021 (**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**

COREALIS Main Goal

COREALIS 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 to face current and future challenges regarding:

- Limited port capacity,
- Reduction of environmental footprint,
- Increase of efficiency, and
- Reduction of traffic within and around ports

✓ It respects the limitations that many European ports are facing concerning the port land, intermodal infrastructure and terminal operation

COREALIS Technologies

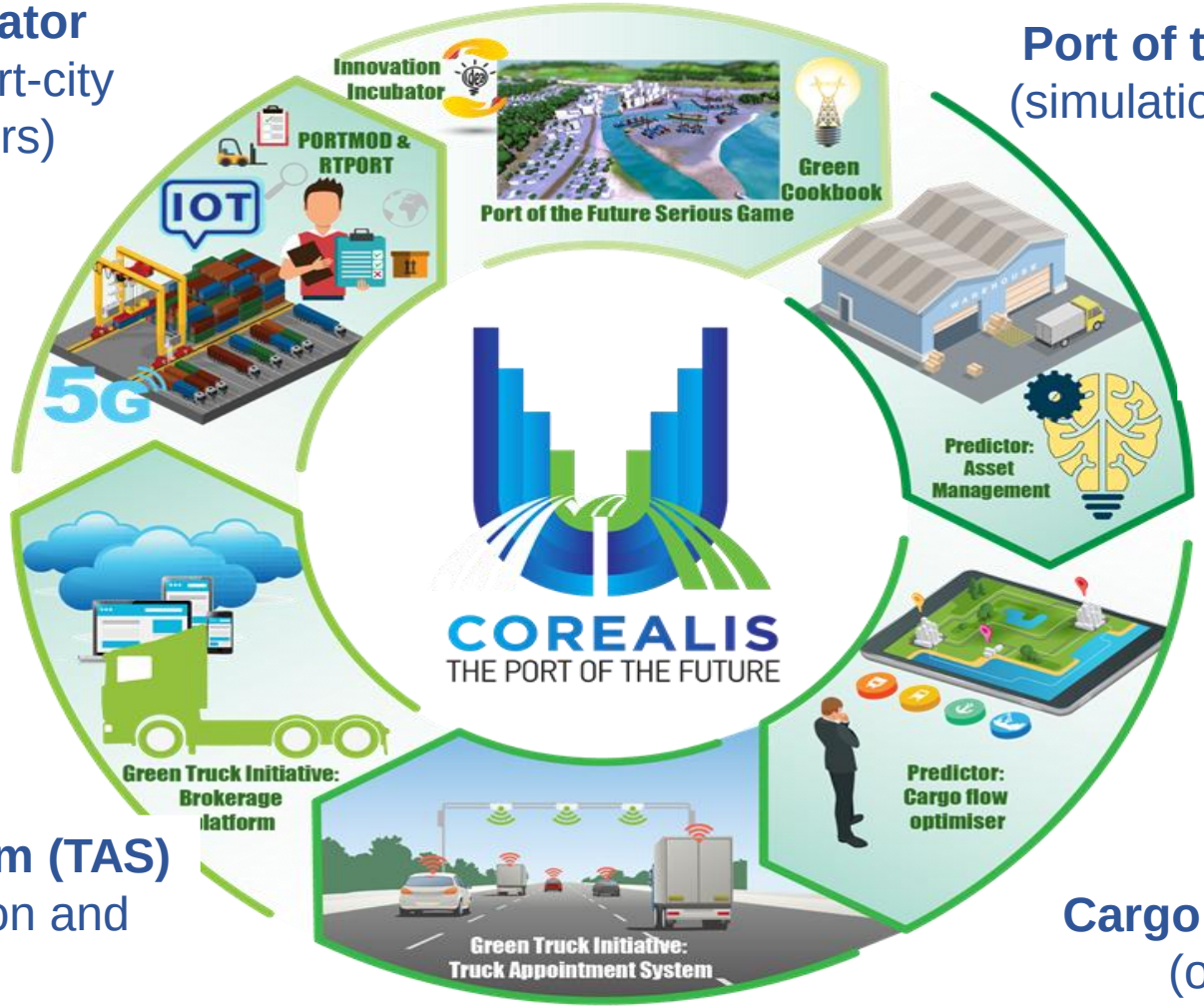
Innovation Incubator
(development of port-city innovation clusters)

RTPORT
(5G-enabled smart terminal operations, IoT)

PORTMOD
(optimization tool for CT operations)

Brokerage Platform
(cloud based marketplace)

Truck Appointment System (TAS)
(real time traffic information and positioning data)



Port of the Future Serious Game
(simulation tool for decision making)

Just-In-Time (JIT) Rail Shuttle Service
(feasibility study for key port-hinterland corridors)

Predictor/ Asset Management
(optimisation, machine learning)

Green Cookbook
(green energy solutions)

Cargo Flow Optimiser
(optimisation)

4 Pillars – Objective 1 (O1)

O1. Embrace circular economy models in its port strategy and operations.

How?

- Cloud Brokerage platform
- Predictor/Asset Management
- Green cookbook

4 Pillars – Objective 2 (O2)

O2. Reduce the port's total environmental footprint associated with intermodal connections and the surrounding urban environment for three major transport modes, road/truck, rail and inland waterways.

How?

- IoT-based TAS
- Cargo Flow Optimiser
- Rail-shuttle service feasibility study

4 Pillars – Objective 3 (O3)

O3. Improve operational efficiency, optimise yard capacity and streamline cargo flows without additional infrastructural investments.

How?

- RT-PORT
- PORTMOD
- Predictor

4 Pillars – Objective 4 (O4)

O4. Enable the port to take informed medium-term and long-term strategic decisions and become an innovation hub of the local urban space.

How?

- Port of the Future Serious Game (PoFSG)
- Innovation Incubator

COREALIS Methodology

Stakeholder driven approach

- **Phase 1**: Scenarios & Requirements Identification
- **Phase 2**: Technical Design and Development
- **Phase 3**: Living Lab Full-scale Implementation and Impact Assessment

COREALIS Living Labs

1. Piraeus Port, Greece

2. Valencia Port, Spain

3. Haminakotka Port, Finland

4. Livorno Port, Italy

5. Antwerp Port, Belgium

Matrix of COREALIS Demonstrations vs Innovations

	TAS	Brokerage platform	JIT Rail Shuttle Service	Cargo Flow Optimiser	Predictor / Asset Mgmt	PORTMOD	RTPORT	Energy assessment & Green cookbook	PoF Serious Game	Innovation Incubator
Valencia	X		X							X
Pireaus					X			X	X	
Livorno						X	X		X	
Antwerp		X		X						
HaminaKotka	X					X			X	

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 infrastructural investments

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

Contact us

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THANK YOU FOR YOUR ATTENTION

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This project has received funding from the European Union's horizon 2020 research and innovation programme under grant agreement No. 768994