COREALIS
THE PORT OF THE FUTURE

COREALIS: An Overview

FUNDACIÓN VALENCIAPORT

COREALIS Facts

- ✓ 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 vision-main goals

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:

- ***Optimization of port operations*** (towards embracing circular economy models)
- ***Reduction of environmental footprint*** (associated with intermodal connections for three major transport modes, road/truck, rail and inland waterways)
- ***Increase of efficiency & reduction of traffic within and around ports*** (by optimising yard capacity and streamline cargo flows without additional infrastructural investments)
- ***Sustainability of the socioeconomic development of the port and its surrounding area*** (by Enabling the port to become an innovation hub of the local urban space)

COREALIS Technologies

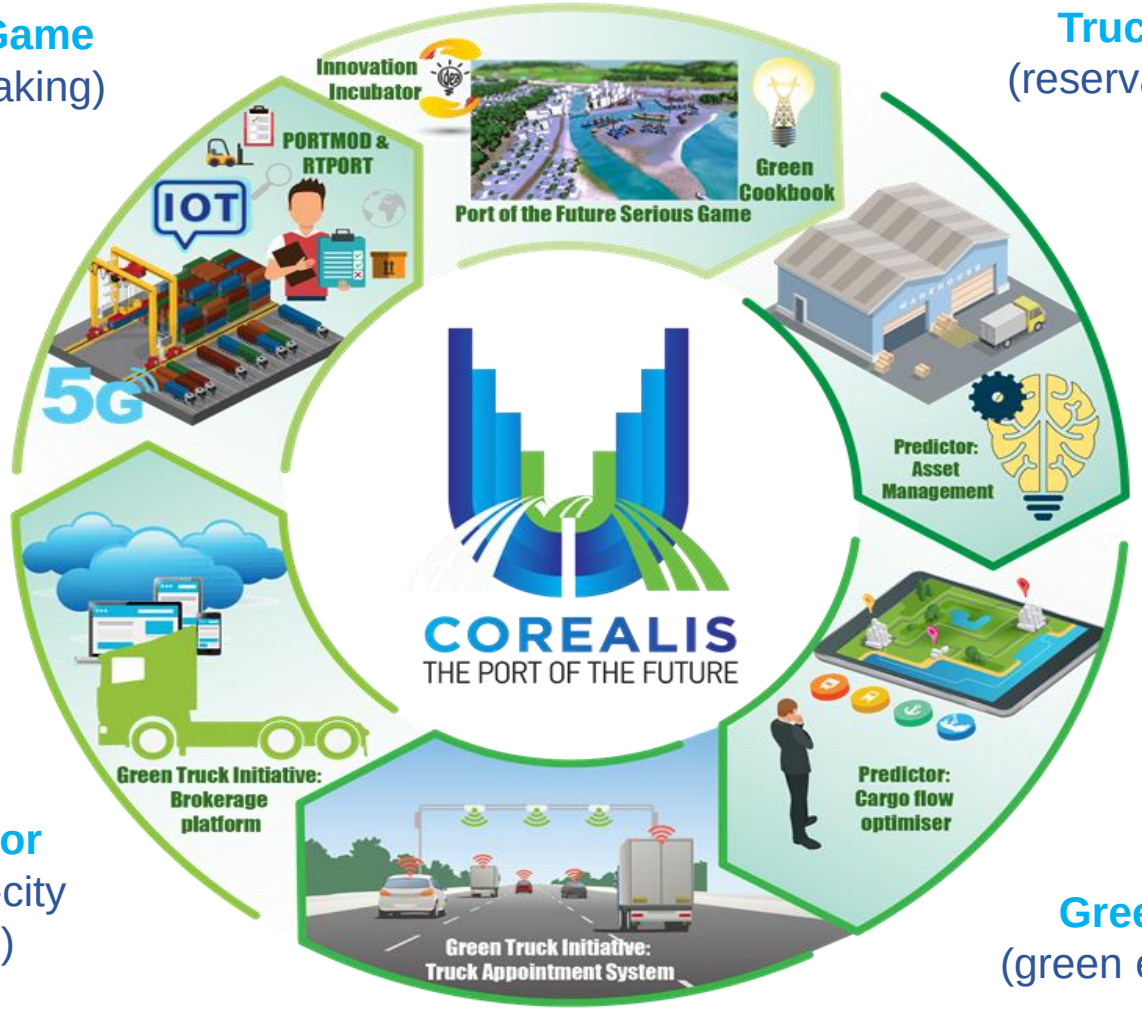
Port of the Future Serious Game
(simulation tool for decision making)

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

Brokerage Platform
(cloud based marketplace for leasing intra-CT trucks)

PORTMOD
(optimization planning tool for CT operations)

Innovation Incubator
(development of port-city innovation clusters)



Truck Appointment System
(reservation system including real-time traffic data)

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

Cargo Flow Optimiser
(optimization of cargo flows ocean/rail/inland-waterway)

Predictor for Asset Management
(machine learning based Just in Time inventory)

Green Cookbook
(green energy solutions)

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

	Hinterland connectivity			Intra-Terminal operations				Decision making/ Innovation		
	TAS	Brokerage platform	JIT Rail Shuttle Service	Cargo Flow Optimiser	Predictor / Asset Mgmt	PORTMOD	RTPORT	Energy assessment & Green cookbook	PoF Serious Game	Innovation Incubator
	X		X							X
					X			X	X	
						X	X		X	
		X		X						
	X					X			X	

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