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

Port of the Future (PoF) Input to the questionnaire 'Needs and Requirements'

Introduction to the COREALIS Project

Ports are essential for the European economy; 74% of goods exported or imported to the EU are transported via its seaports. At the same time, the challenges they face are only getting greater: Volumes of cargo increase while they also arrive in a shrinking number of vessels: Post-Panamax vessels have a capacity of more than 18k containers. Port operators need to comply with increasingly stricter environmental regulations and societal views for sustainability. A sustainable land use strategy in and around the port and a strategic transition to new, service-based, management models that improve capacity and efficiency are paramount. They are key enablers for ports that want to keep pace with the ocean carriers needs and establish themselves as trans-shipment hubs with a 'societal license to operate'; for ports whose land strategy, hinterland accessibility and operations are underpinned by circular economy principles. COREALIS proposes a strategic, innovative framework, supported by disruptive technologies, including IoT, data analytics, next generation traffic management and 5G, for modern ports to handle future capacity, traffic, efficiency and environmental challenges. It respects their limitations regarding the port land, intermodal infrastructure and terminal operation. It proposes beyond state of the art innovations to increase efficiency and optimise land-use, while being financially viable, respecting circular economy and being of service to the city. Through COREALIS, the port will minimise its environmental footprint to the city, it will decrease disturbance to local population through a reduction in the congestion around the port. It will be a pillar of business innovation, promoting local start-ups in disruptive technologies of mutual interest. COREALIS innovations are key both for the major deep sea European ports in view of the new mega-vessel era, but also relevant for medium sized ports with limited investment funds for infrastructure and automation.

Aim of the questionnaire:

Gather relevant information from stakeholders. This information should give insight on expectations and predictions that you have and on your interested impact areas of the COREALIS' innovations.

This data will be processed and used to produce a conclusive report that sets a 'priority' and defines an implementation roadmap for the PoF (Port of the Future) innovations, defined in the COREALIS project.

List of PoF (Port f the Future) Innovations

1. TAS: Truck appointing system

An innovative TAS for external trucks that are calling into the port to deliver or pick-up containers. The system intends to minimise waiting time at the port gates, providing to the drivers an optimal time-window to enter the port based on preference, vessel schedules, the traffic expected from other trucks and real-time data from the urban TMC.

2. The COREALIS PORTMOD

Process modelling of cargo and data flows in CTs can improve their competitiveness by more efficient operations and better compatibility with regulations. The focus of the PORTMOD

modelling tool will be operational efficiency, safety for personnel, emission analysis In practice, PORTMOD describes in detail the container placements in the container movement chain.

3. The COREALIS RTPORT

Model-Driven Real-Time Control module (RTPORT) will coordinate and support port operation, providing measurable feedback to the models of PORTMOD. It will perform real time control of operations collecting data via yard vehicles and implanted sensors (including cameras), taking operating decisions based on on-line analytical processing and PORTMOD models.

4. The COREALIS Predictor – Asset Management

An efficient asset management requires an optimal use of port assets, e.g. yard vehicles (forklifts, cranes, trucks), tyres and spare parts. Storing and managing bulky assets takes up significant space of the port. The Predictor tool goes beyond classic ERP static preventive maintenance tools by realising a powerful predictive analytics module; this enables monitoring and dynamic prediction of the total life-cycle cost of port assets that improves over time

5. The COREALIS Cargo Flow Optimiser

It is an innovative data-analytics based cargo flow optimisation component; AIS data for the vessel ETAs will be multiplexed with (big) data from the rail operators and barges ETAs so that cargo flows are streamlined; the aim is to minimise containers' waiting time at the port. This process will improve current land/infrastructure use and the overall supply chain connection to the port. Besides, through innovative machine learning, cargo flow prognoses for short-, mid- and long-term will be implemented so that the port managers and urban planners may be facilitated in their infrastructure investment planning.

6. Green Cookbook – Energy Assessment Framework

The Green cookbook helps ports to lower their environmental footprint and move to cleaner transport modes and cleaner energy sources.

7. Port of the Future Serious Game

The PoFSG is an innovative and interactive training and simulation tool that is used to assess the feasibility and sustainability of the socio-economic and environmental/physical development of a port within the surrounding coastal and urban area. The tool will visualise the anticipated impacts – positive and negative – related to social, economic, and environmental aspects

8. The Marketplace and chassis brokerage platform

A marketplace/cloud-based brokerage platform will facilitate swift and seamless interactions among the port and the leasing entity, allowing online booking of chassis and serving as a hub for operational data. The marketplace will compromise i) A catalogue of services for ports and their clients so that ports and their clients can book equipment or services for a given time, ii) Yard equipment pool management with emphasis on chassis or other relevant for the CT, iii) Spot booking, and iv) Rating/benchmarking of service providers from the port operators.

GDPR and Signature

Personal Data Protection

In the context of the European Union's Horizon 2020 Programme for Research and Innovation, the COREALIS project has received funding under Grant Agreement No. 768994, which was signed between INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS (ICCS) and the COREALIS Consortium, consisting of the following partners:

1. INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS (ICCS)
2. STATHMOS EMPOREVMATOKIVOTION PEIRAIA AE (PCT)
3. NAYTILIAKES METAFORIKES KAI EPIKOINONIAKES EPIXEIRISEIS SEABILITY EPE (SEAB)
4. EUROPEAN ROAD TRANSPORT TELEMATICSIMPLEMENTATION COORDINATION ORGANISATION - INTELLIGENT TRANSPORT SYSTEMS & SERVICES EUROPE (ERTICO)
5. FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT (VPF)
6. MOSAIC FACTOR SL (MOSAIC)
7. Teknologian tutkimuskeskus VTT Oy (VTT)
8. STICHTING DELTARES (Deltares)
9. NEC LABORATORIES EUROPE GMBH (NEC)
10. SGS SOCIETE GENERALE DE SURVEILLANCE SA (SGS)
11. DYNNIQ NEDERLAND BV (DYNNIQ)
12. HAVENBEDRIJF ANTWERPEN (POA)
13. CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI (CNIT)
14. AUTORITA DI SISTEMA PORTUALE DEL MAR TIRRENO SETTENTRIONALE (AdSPTS)
15. ERICSSON TELECOMUNICAZIONI (ERICSSON)
16. MARLO POLAND SPOLKA Z OGRANICZONA ODPOWIEDZIALNOSCIA (Marlo)
17. STEVECO OY (Steveco)

Purpose of data collection

This particular activity to which you are invited to participate today relates to data collection and analysis regarding the evaluation and adoption of the most appropriate practices for the Ports of the Future. Your personal details will be collected by the COREALIS consortium members via this questionnaire.

Types of data collected

The personal data that will be collected during this activity includes the name, email address and role/profession of participants. The consortium will pursue to minimise the amount of personal data collected through this activity.

Data storage and retention

Your personal data will be collected by the COREALIS consortium, stored at the COREALIS members storage systems and will be maintained until the end of the project.

Data processing and lawful basis for processing

The COREALIS consortium members will process your data, collected on the basis of consent, via the present questionnaire.

Voluntary Participation

The participation in this campaign is voluntary. You may choose not to take part or subsequently cease participation at any time.

Right to withdraw consent

You have the right to withdraw your consent at any time by emailing to John Kanellopoulos (John.kanellopoulos@pct.com.gr) or Monica Giannini (m.giannini@mail.ertico.com) your contact details (i.e. name, email address), using as subject "Request to withdraw consent from the project". The data provided, up to the moment of withdrawal (of consent), can be used in the project. In case you wish to withdraw your consent, the data processing will be terminated. However, you cannot withdraw consent to processing that has already taken place.

Right to lodge a complaint

You have the right to lodge a complaint with the Hellenic Supervisory Authority, without prejudice to any other administrative or judicial remedy, if you consider that the processing of your personal data infringes the provisions of GDPR regulation.

Right of access

You have the right to access your personal data and supplementary information (i.e. purposes of processing, the data types collected, etc.) at any time , by emailing to John Kanellopoulos (John.kanellopoulos@pct.com.gr) or Monica Giannini (m.giannini@mail.ertico.com) your relevant request and contact details (i.e. name, email address) and, using as subject "Request to data access from the project".

Right to rectification

You have the right to obtain from COREALIS Project Team and without undue delay the rectification of inaccurate personal data concerning yourself, by emailing to John Kanellopoulos (John.kanellopoulos@pct.com.gr) or Monica Giannini (m.giannini@mail.ertico.com) your relevant request and contact details (i.e. name, email address) and, using as subject "Request to data rectification from the project".

Right to erasure

You have the right to request the deletion or removal of your personal data without undue delay, by emailing to John Kanellopoulos (John.kanellopoulos@pct.com.gr) or Monica Giannini (m.giannini@mail.ertico.com) your relevant request and contact details (i.e. name, email address) and, using as subject "Request to data erasure from the project".

Right to restrict processing

You have the right to 'block' or suppress processing of your personal data, by emailing to John Kanellopoulos (John.kanellopoulos@pct.com.gr) or Monica Giannini (m.giannini@mail.ertico.com) your relevant request and contact details (i.e. name, email address) and, using as subject "Request to data restrict processing from the project".

Right to data portability

You have the right to obtain and reuse your personal data for your own purposes across different services. In case you need a copy of your personal data, you have to email John Kanellopoulos (John.kanellopoulos@pct.com.gr) or Monica Giannini (m.giannini@mail.ertico.com) your relevant request along with your contact details (i.e. name, email address), while using as subject "Request to data portability from the project". In such cases, we will provide you with your personal data in a structured, commonly used and machine-readable form, free of charge and within 1 month upon reception of your relevant request.

Project Informed consent form for workshops

You are being asked to participate in a research study for the COREALIS project. Participation is completely voluntary. Please read the information about the project, its aims, and the gathering of user requirements and needs in the project's Information Sheet and ask questions about anything that you do not understand.