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 DIGITPORTS

The added value of DIGITPORTS project in the rationale of digitalization processes of NAS Port Authority

Antonella SCARDINO, Secretary General, North Adriatic Sea Port Authority

High Level Training on Digital Twin applications in Port ecosystems,
Venice 28th Jan 2025

www.italy-croatia.eu

DIGITal Twins applications for safer and greener Adriatic PORTS operations - the project in a nutshell

Priority no. 3 - Sustainable maritime and multimodal transport
SO no. 3.1 - Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility



Partnership: 7 port authorities
Port of VENICE (coordinator)

Port of TRIESTE
Port of RAVENNA
Port of RIJEKA
Port of PLOCE
Port of ZADAR
Port of SPLIT

Project duration: 30 months
April 2024 - September 2026

Total Project budget €
2.384.226,00

GOAL: boosting the ability of maritime transport to be fully integrated in global multimodal logistic chains, so to compete on more door-to-door corridors in Europe, providing a **suitable array of digitalization tools (Digital Twins - DT), to boost ports' data-led planning capacities, operational sustainability and performances**, as well as to set up a **scalable DT logistic network** in the Adriatic basin.

DIGITAL TWIN VISION FOR THE PORTS OF VENICE AND CHIOGGIA

- ❑ **The VISION:** to enable the Port Authority to drive a **digital transformation of the port ecosystem, and evolve into Web GIS**, interconnecting systems, reducing production times and becoming more efficient;
- ❑ **The TOOL:** to build an unique, integrated system able to handle all port data, on a geographical representation, to support strategic planning, port management, building permits and offer to all port users an easy interface for procecess (**SUA Sportello Unico Amministrativo - One-Stop-shop for administrative concessions and processes**)





VENICE AND CHIOGGIA PORT COMMUNITY SYSTEM «AS IS»

Italy – Croatia



SEA

SHIP MODULE

NAUTICAL ACCESSIBILITY (vePORTO)

OPTIMIZATION SCHEDULING FOR SHIP

AIS & METEO DATA

CARGO MODULE

SUA – ADMINISTRATIVE ONE STOP SHOP

ACCESS PERMITS (IOL + SaFEWEB)

CONCESSIONS (iSit Demanio)

INSPECTIONS

TEMPORARY WORKFORCE ADMISSIONS (ISTANZE ONLINE)

ROAD

AUTOMATED GATE SYSTEM

VIDEO SURVEILLANCE SYSTEM (SaFE)

RAIL

SHUNTING CONTROL SYSTEM (SIMA2)

OPERATIONS

DREDGING MODULE

MAINTANANCE: Lighting system; SCAME, Panels

WORKS: construction site accounting (STR Vision)

DOCUMENTS (DocWay)

ACCOUNTS (COELDA)

SUPPLIER LIST

TRANSPARENCE

STAFF APPLICATIONS

DATA ANALYSIS

STATISTICS



CORE ELEMENT: VALORIZATION OF THE ASSETS OF MARITIME PROPERTY



- ✓ Cartography repository
- ✓ GIS Services
- ✓ Front End
- ✓ Geodata analytics

CONCESSIONS AND AUTORIZATION SYSTEM

MAINTENANCE AND INVESTMENTS SYSTEM

UNIQUE ANAGRAPHIC FOR ASSETS AND USERS

(Administrative & financial data, projects data, data on the Whole lifecycle of the investments; documents, ...)



CORE ELEMENT: VALORIZATION OF THE ASSETS OF MARITIME PROPERTY

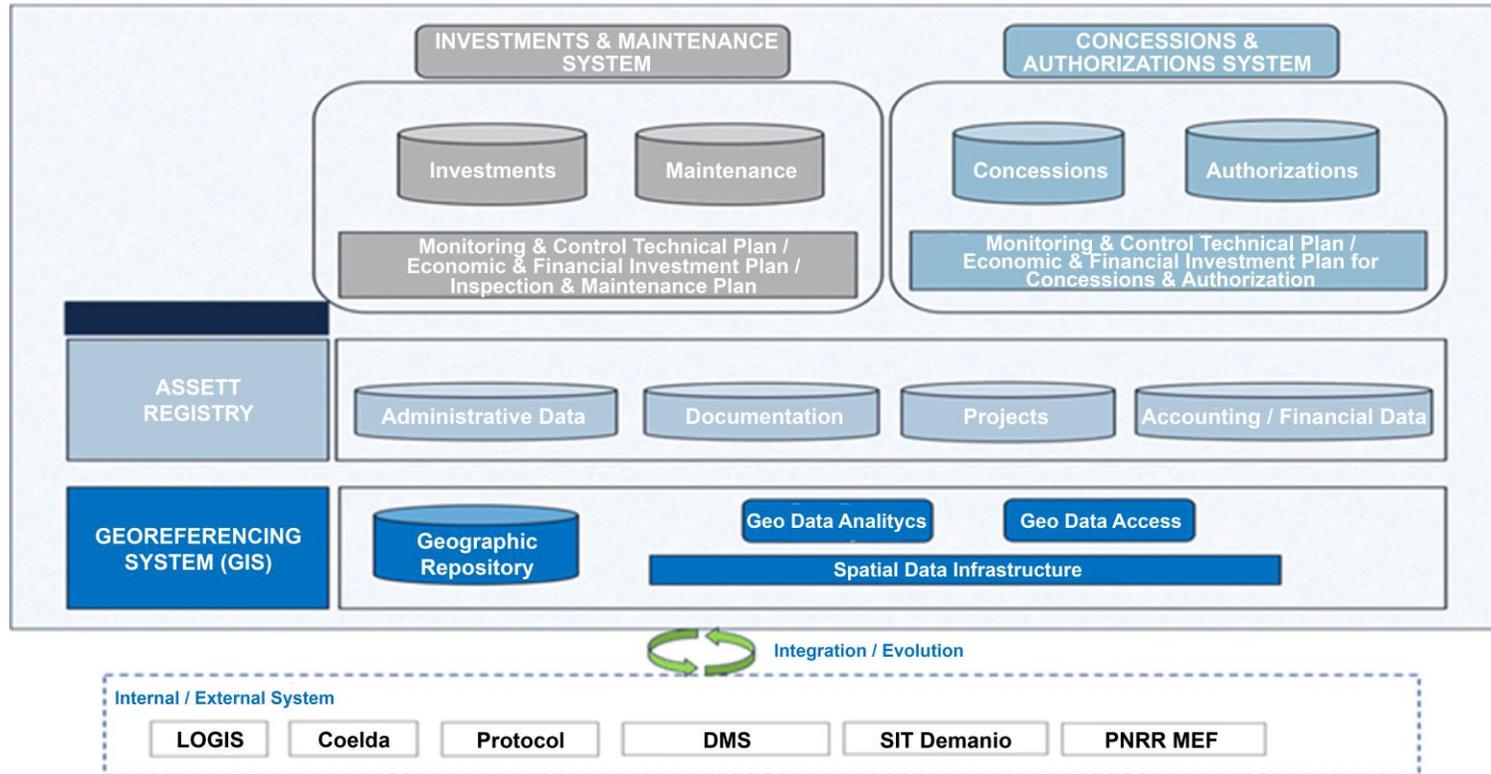
CONCESSIONS AND AUTORIZATION SYSTEM

- Scope:** Full digitalization of the processes of concessions and authorizations of assets & of the pricing list
- Interoperability with:** accounting legacy system (Coelda), document management system (DMS) and ministerial systems
- Objectives:** increasing of standardization, transparency, management controls (technical & financial) and efficiency in the operational activities
- BENEFICIARIES:** EXTERNAL & INTERNAL USERS
- CORE value: guarantee visualization and operational cartography :
 - ✓ Asset status –for land (free /occupied) and characteristics inherent concessions
 - ✓ Pricing values for assets to assign in concession

MAINTENANCE & INVESTMENT SYSTEM

- Scope:** Full digitalization of the maintenance & investment processes
- Interoperability with:** accounting legacy system (Coelda), document management system (DMS) and ministerial systems
- Objectives:** increasing of standardization of investment management, management controls (technical & financial) and efficiency in the operational activities
- BENEFICIARIES:** EXTERNAL & INTERNAL USERS
- CORE value: guarantee visualization and operational cartography :
 - ✓ Projects status
 - ✓ Project BIM Representation

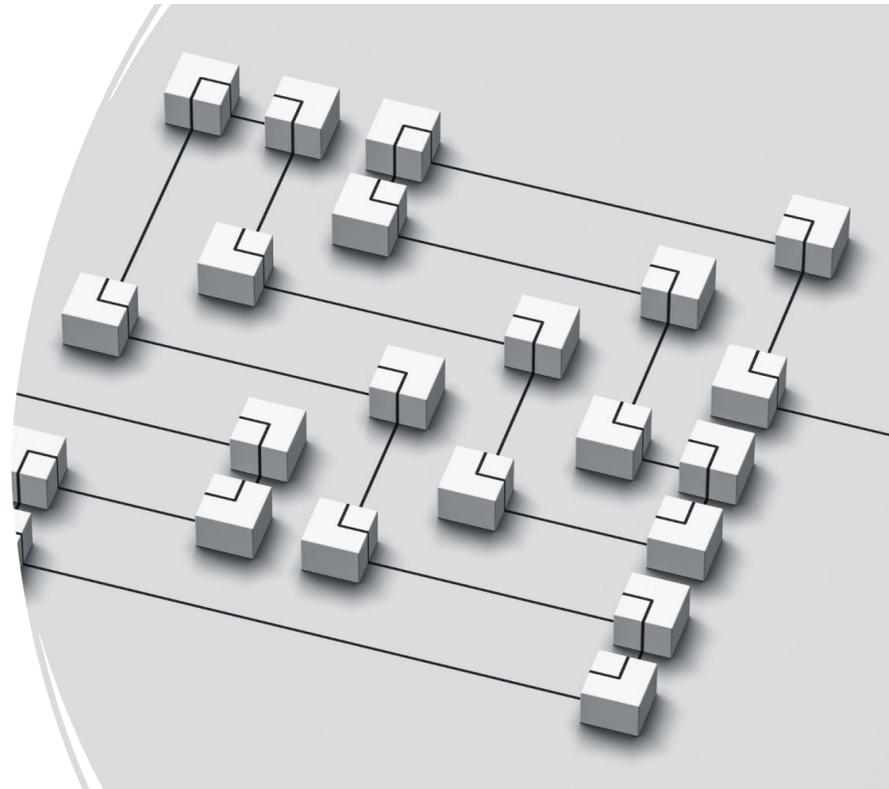
DT PILOT ACTION CASE OF VENICE AND CHIOGGIA ON UPGRADE OF «SUA DESK»: HOW THE SYSTEM WORKS



- ❑ based on **modules** dedicated to process control,
- ❑ a **single registry** (companies, assets, works)
- ❑ **integration** with existing internal and external information systems
- ❑ will ensure full integration of **georeferencing (GIS) and reporting**

All data sources will be connected avoiding duplication and simulate navigation conditions, to optimize processes, such as:

- Planning,
- Authorizations,
- Concessions,
- Bathymetries, Tide levels
- Cartographic maps,
- Weather conditions,
- Traffic management,
- Aids to navigation,
- M.o.S.E. barriers and lock operations;
- Navigation simulation systems;
- Etc..



DT PILOT ACTION CASE OF VENICE AND CHIOGGIA: UPGRADE OF «SUA DESK»

- ❑ **WHAT:** Engineering of **DT for leanest concessions' procedures and predictive maintenance of maritime real estate buildings (SUA Desk - *one-stop-shop concept*)**
- ❑ **HOW:** External expertise to achieve full digitization of the SUA DESK for **concession and authorization process for works and assets and computerization of the relevant fee schedule**; availability on a cartographic map of the state of the assets (free, occupied) and of the main characteristics under the concession profile and the tariff values of all state-owned assets that may be the subject of concessions
- ❑ **ADVANTAGES:** **full digitalization** of management and **investment planning** process for new works and **maintenance operations** (technical and economic-financial plans); **Appropriate preparation of management databases and unstructured archives to feed dashboards and analytical reporting systems, guaranteeing the quality and consistency of managed data**; consolidation and introduction of innovative technologies to contribute to the knowledge creation process and foster **analysis (traditional and predictive) on historical, statistical and process data.**



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