Interreg

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Italy – Croatia

DIGITPORTS

DIGITal Twins applications for safer and greener Adriatic PORTS operations

DIGITALIZATION KNOWLEDGE TRANSFER

(O.1.2)

The project's overarching goal is to lead the digital transformation of Adriatic ports through the development and application of digital twin technologies, thus , first and foremost, to review the processes, optimizing the public assets valorization and efficacy of port operations. These tools facilitate a vast array of operations such as dynamic scheduling of vessels calling at port, predictive maintenance of assets, real-time decision-making concerning safety of navigation ruling, and integration of administrative and operational processes into geographically based databases.

By aligning with international best practices, the DIGITPORTS initiative seeks to reduce operational costs, minimize carbon footprints, and improve resource allocation while fostering a sustainable and competitive Adriatic port ecosystem.

DIGITPORTS partnership is composed by main Core and Comprehensive European sea ports in the Adriatic area of Italy and Croatia, such as:

1. North Adriatic Sea Port Authority (ports of Venice and Chioggia) - Lead Partner
2. Port Network Authority of the Eastern Adriatic Sea (ports of Trieste and Monfalcone)
3. Port of Ravenna Authority
4. Port of Rijeka Authority
5. Port of Ploče Authority
6. Port of Zadar Authority
7. Port of Split Authority

In addition, Central Adriatic Sea Port Authority (representing the Ports of Ancona, Falconara, Pesaro, San Benedetto del Tronto, Pescara, Ortona and Vasto, hereafter ADSPMAC) si also taking part to the activities as Oberving Partner, to gain a more in-depth comprehension of the digitalization processes and the scalability of the investments that could benefit also their ports' network.

The training has been built starting to address the gaps shown in the preliminary assessment and analysis in digitalization processes across Adriatic ports, performed in 2024. Many ports face fragmented adoption of digital tools, with limited integration of systems such as Port Community Systems, Digital Twins (DT) and IoT technologies. Cybersecurity measures and data governance frameworks remain underdeveloped, exposing ports to risks in an increasingly digital ecosystem. Furthermore, alignment with sustainability goals, including carbon footprint reduction and energy efficiency, is inconsistent across the region. Against this background situation, it is worth noticing that the governance models of Adriatic Italian and Croatian Ports compared to the Northern range ports (such as Rotterdam) and other mentioned international hubs (Singapore and Shanghai) must be carefully taken into consideration.The formers have a landlord port structure while the latters have

a public service port structure (public companies with shareholders), and the differences do impact on the range of digitalization processes that can be put in place (for more detailed analyses please refer to D. 1.1.1 Cross border benchmarking report on digitalization level of the Adriatic ports, downloadble at https://www.italy-croatia.eu/web/digitports).

The first three sessions of training were delivered in Venice, on January 28, 2025, focusing on:
Session 1: SETTING THE SCENE OF DIGITAL TWIN APPLICATIONS
Session 2: FROM THEORY TO PRACTICE
Session 3: DT AS TOOL FOR EFFECTIVE STAKEHOLDERS' ENGAGEMENT
The format of the event was hybrid, with attendance in person and in streaming. All the proceedings

were made available in simultaneous translations in English, Italian and Croatian languages, so to overcome any language barrier and have meaningful impact on all level of practitioners.
The training was targeted for a broader audience, not only port authorities' professionals and civil servants, so to mainstream the potentialities of DT as a core value that must be conceived in all lines of work, from technical to more legal, administrative, financial and commercial departments.
On the first, second and third training sessions, 57 (fifty-seven) people attended in person, while 57 (fifty-seven) participated remotely for a total of 114 (one hundred and fourteen) attendees.
The event was endorsed by the Venice Order of Engineers, which provide their members with training credits recognized at National level for the standards of the Engineering profession and certificates, and featured several notable speakers, including opinion leaders and representatives from

- Port of Rotterdam DT, GIS/BIM consultants,
- Port of Sines and Algarve Authority,
- ESRI inc. industry practice leads from USA, Holland and Italy

- CETENA S.p.A, a research and consultancy center in the naval and maritime field - which was established in 1962, is a Fincantieri company with its headquarters in Genoa. CETENA provides support worldwide in the maritime field in both civil and naval sectors.

The moderation of the event was led by the technical subcontractor of DIGITPORTS Lead Partner, ESRI Italia Spa and the conclusions have been summarized by the Croatian Member of the DIGITPORTS Scientific Committee, subcontracted by the Rijeka Port Authority , namely EEring.

ESRI Inc is the global market leader in geographic information system (GIS) software, location intelligence, and mapping. Since 1969, they have supported customers with geographic science and geospatial analytics (The Science of Where). ESRI team is composed by more than 6,000 employees from 73 countries and serves over 680,000 customer organizations, including 90% of Fortune 100 companies, most national governments, 30,000 cities and local governments and 12,000 universities. Training sessions explored crucial topics for the future of port terminals and logistics in general, alongside a panel of internationally renowned experts, using both theoretical and practical examples of best practices implemented around the world, spanning from Europe (Ports of Rotterdam and Sines) to United States (Boston and others) and Australia.