



Port of the Future

Brief presentation of CNIT

Laboratory @ Port of Livorno

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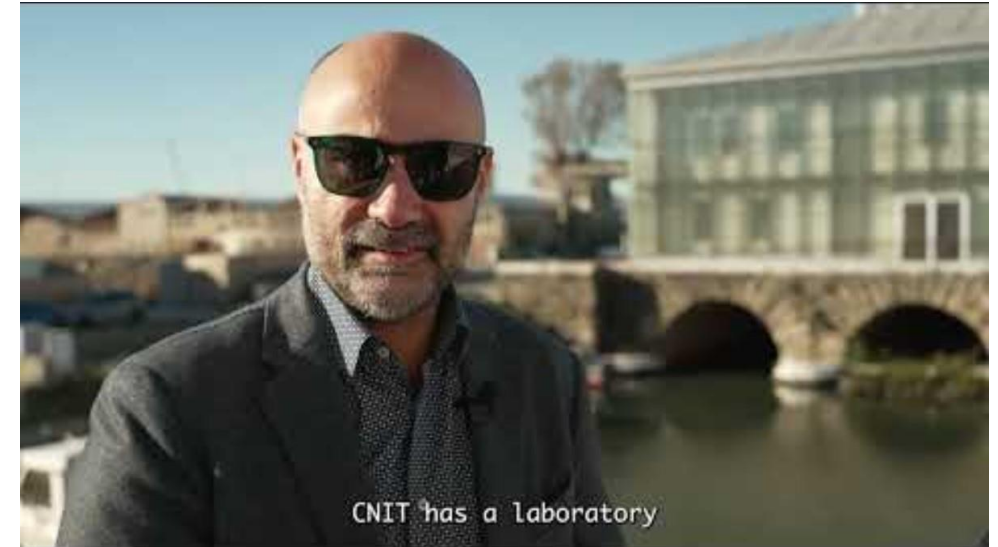
<http://jlab-ports.cnit.it>

cnit
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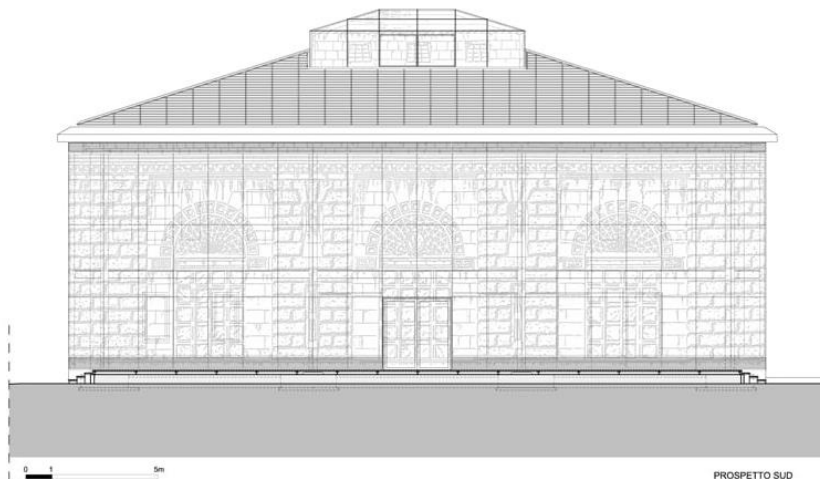
- Mid-size historical port:
 - door of Tuscany;
 - passengers and freight;
 - multipurpose (containers, Ro-Ro, break/dry/ liquid bulk);
 - freight village, car stocking (25,000 cars capacity);
 - along TEN-T SCANMED corridor (core node);
 - minor ports (Piombino, Elba) under the same port network authority.



- Laboratory at the Port of Livorno:
 - Founded in 2015, framework agreements w/ Port Authority (JLAB) and the National Coast Guard;
 - Part of the National Laboratory of Photonic Networks and Technologies (PNT) in Pisa;
 - Part of CITEM – Livorno Center of Innovation and Technology for the Blue Economy.



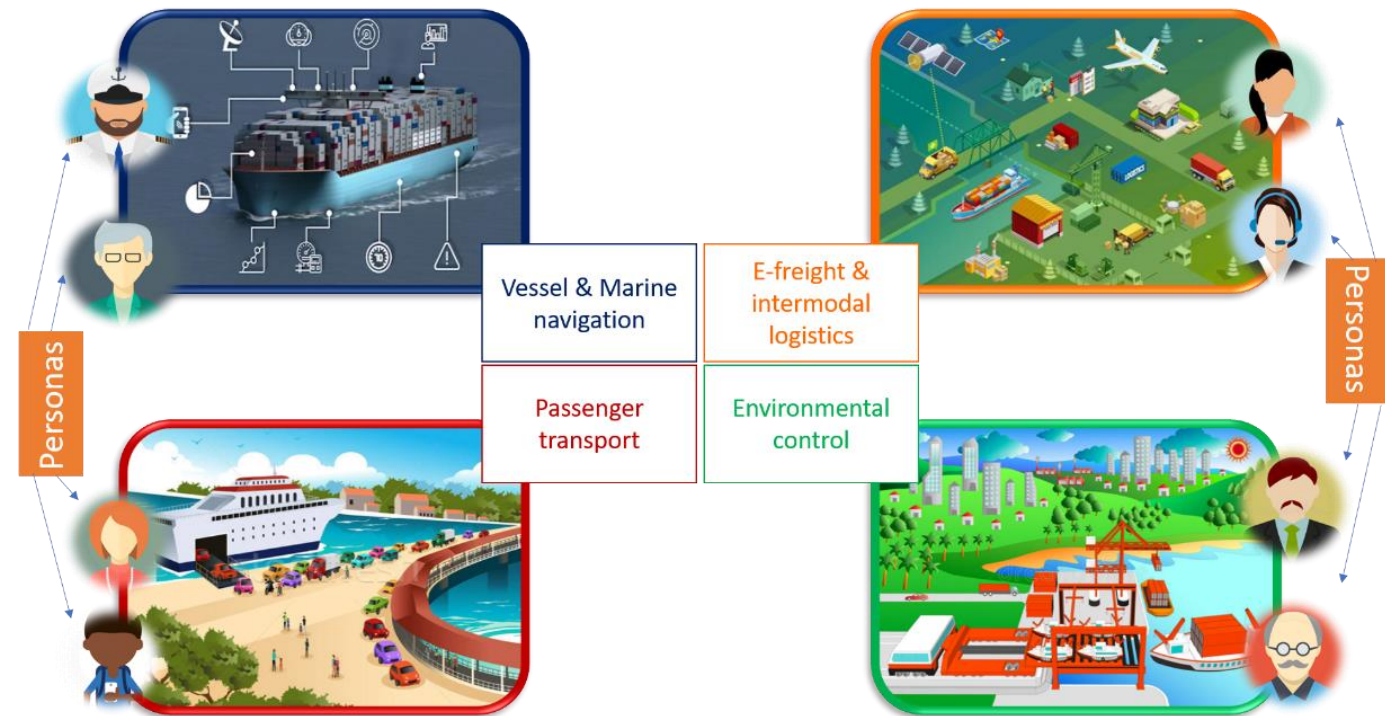
- Original building by Arch. Carlo Reishammer (1840), destroyed in II WW (1943)
- Philological Restauration completed in 2015 (German Design Award 2018)
- CNIT moved to the building accepting an invitation by the Mayor of Livorno in 2023



- Italian unique example of laboratory committed in the development of E2E ICT solutions at high TRL (> 6) tailored to Ports and Navigation
 - Digital Innovation through standardization in four verticals:

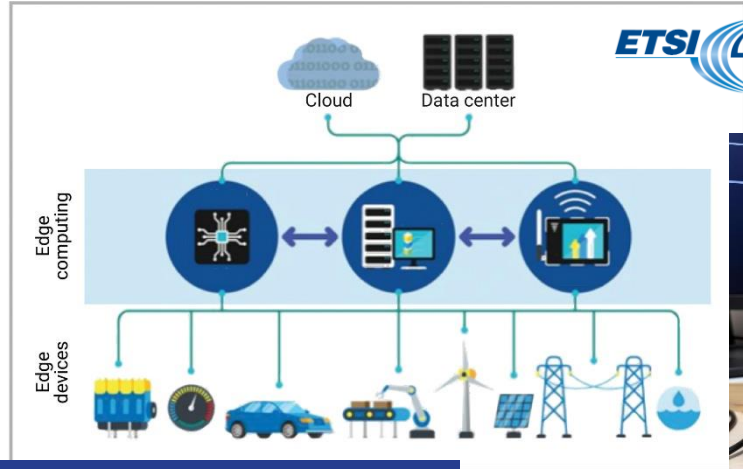


Illustration generated by AI tool





- Leonardo Electronics Division (LED) and CNIT started in 2026 (see [here](#)):
 - Advanced Center for the Development and Experimentation of Maritime Technologies (Maritime Technology PASS);
 - to develop state-of-the-art technologies and systems for the Safety and Control of Maritime Traffic for the domestic and international markets.



MEC and OneM2M



Coastal Surveillance



Autonomous Vessel



Freight tracking and monitoring



PCS and logistics

- CNIT Laboratory @ Port of Livorno:
 - is the main terrain of “Technology Transfer”;
 - has enabled a digital infrastructure capable of validating innovative services targeted to port communities;
 - has an unquestionable recognition in the international domain;
 - is considered as a national “best practice” for 5G deployments in ports;
 - has a solid background in the e-Navigation, e-Freight, Mobility and Sustainable Growth verticals;
 - is involved in high-valued R&D for Maritime Security, Freight Tracking, and Autonomous Vessels.



<https://www.youtube.com/watch?v=xkd94o6aR18>