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Digital Twin applications for ports' accessibility, pilot's training, simulations and 3D modelling

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

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Founded in 1962

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DIGITAL SOLUTIONS

DIGITAL TWIN APPLICATIONS

- 3D MODELLING
- PORT ASSESSMENT
- TRAINING
- TEST BED R&D

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Technological advancements have enabled a transition over the past 40 years from electromechanical solutions to fully digital ones.

In recent years, the qualitative performance improvement has been exponential.

Looking ahead, we anticipate a further surge driven by the adoption of emerging technologies.

CETENA DT EVOLUTION

1984
CETENA developed his 1st simulator

1998

2004

2012

2022

2025

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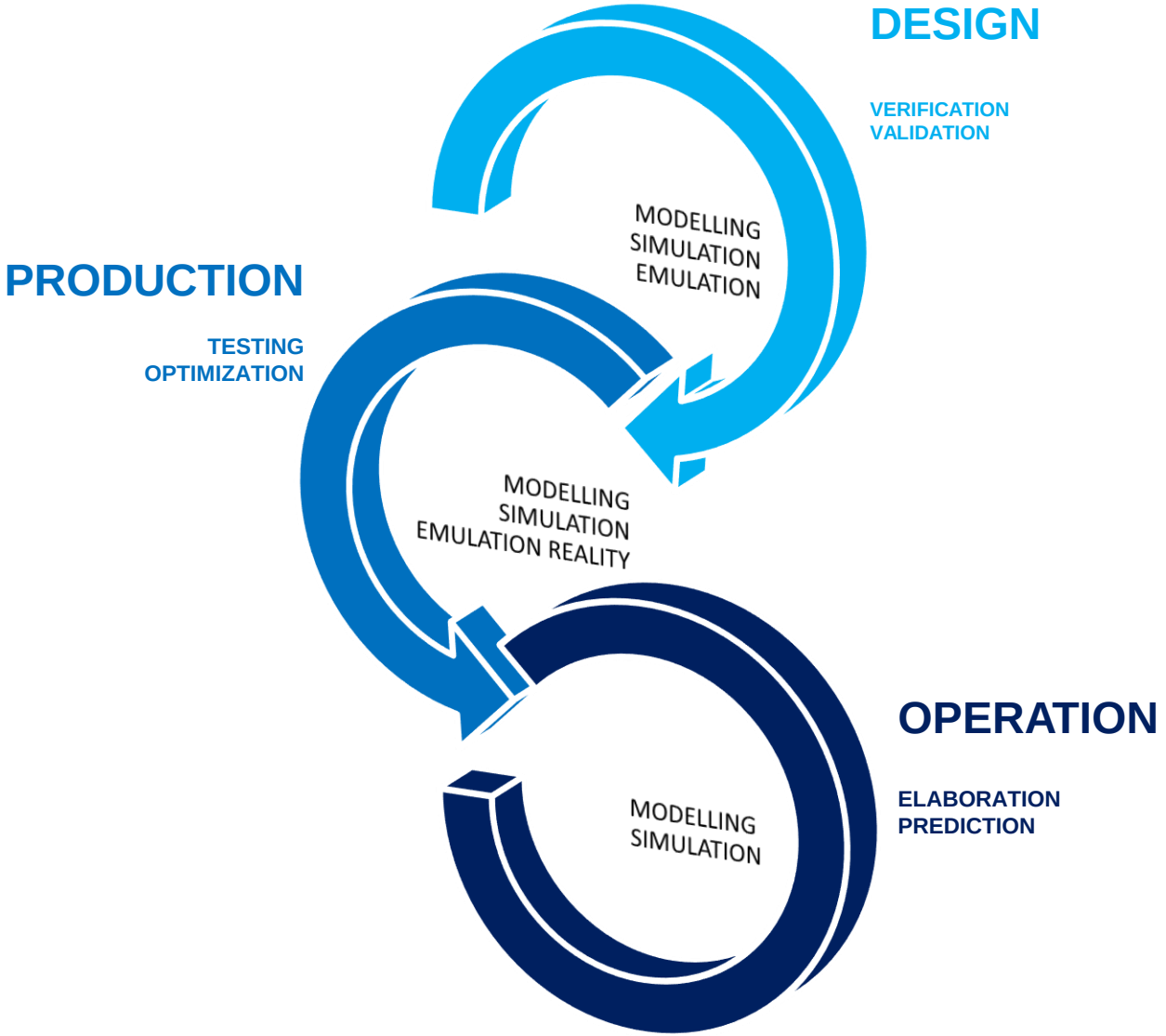
DIGITAL TWIN

Digital Twin (DT) is a virtual replica of a physical system, integrated with real-time data, enabling simulations, predictive analysis, and process optimization for improved decision-making.



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3D MODELLING

3D modelling provides realistic and immersive scenarios, optimising the efficiency and quality of the Digital Twin and its applications.

GIS softwares enable the creation of realistic 3D models by integrating geospatial data and real-world coordinates.

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PORT ASSESSMENT

Port assessment is the set of analysis and simulation techniques aimed at analysing the operational context of the port ecosystem.

DT enable the simulation, monitoring, and optimization of port operations in real-time, with human-in-the-loop integration to enhance efficiency, safety and sustainability.

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TRAINING

DT enable immersive and interactive training for port operators, incorporating real-time scenarios to enhance skills, safety, and decision-making.

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TEST BED R&D

DT provide a virtual test bed for port-related research projects, enabling the simulation, validation, and optimization of innovative solutions in a controlled and realistic environment.

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IN CONCLUSION

Digital Twins allow real-time simulation based on the human in the loop paradigm.

This requires enabling tools such as GIS software, which generate artifacts using high-precision data.

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