



Smart Port Infrastructure & Maritime Intelligence

Modern ports, shipyards and maritime infrastructure operators require accurate, real-time visibility across assets, environmental conditions and critical operations.

Integrated digital ecosystems are becoming essential for safer, smarter and more sustainable maritime operations.



Challenges

- Lack of unified visibility across terrestrial and underwater infrastructure
- Limited real-time awareness of environmental and operational conditions
- Fragmented and heterogeneous data sources across multiple systems
- Increasing demand for operational efficiency, safety and environmental compliance
- Need for scalable digital infrastructure supporting future smart port services

Our Solution: Unified Digital Twin Platform

- Real-time integration of infrastructure, environmental and operational data
- Centralised Digital Twin platform for port-wide operational awareness
- KPI-driven monitoring, alerts & predictive maintenance
- Modular and scalable architecture



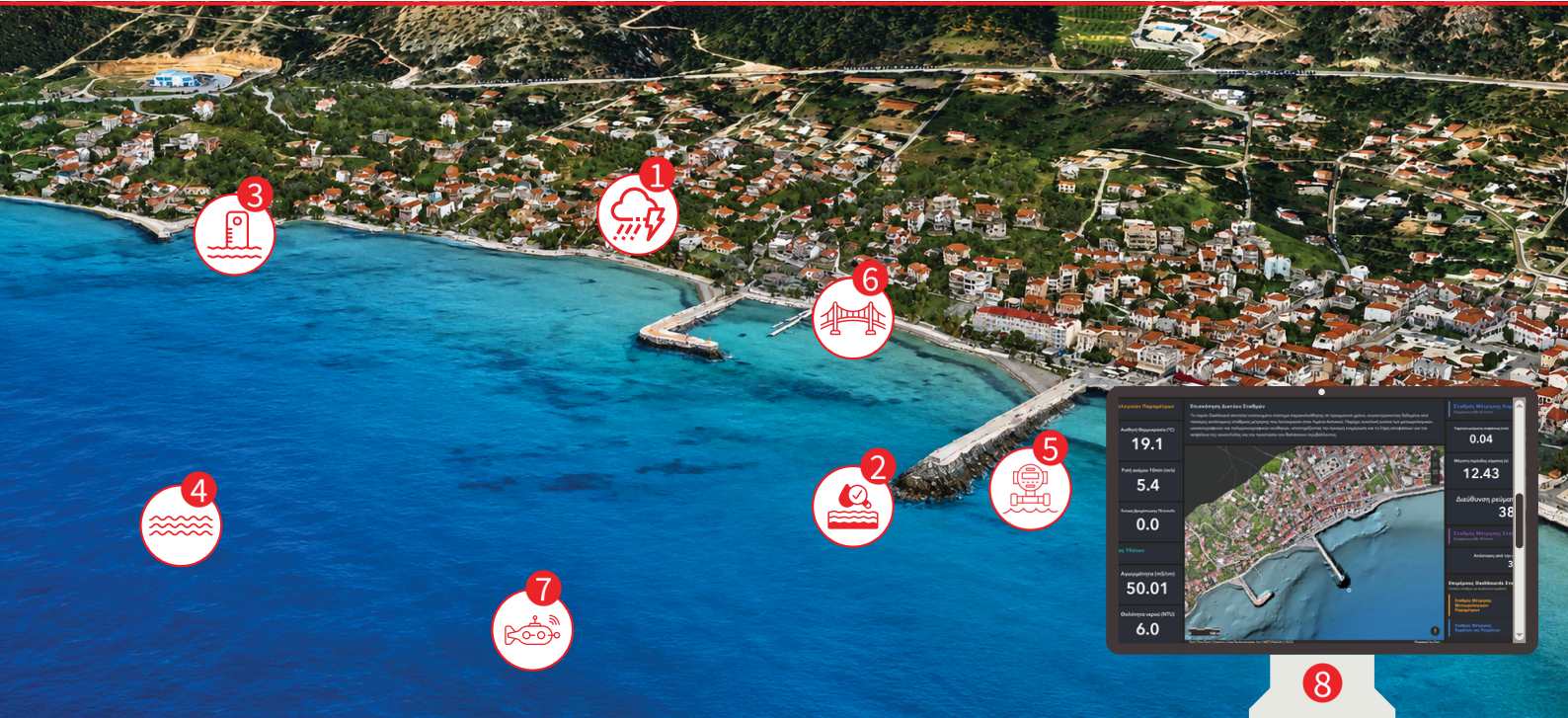
Operational Value

- Real-time operational intelligence
- Smarter infrastructure management
- Improved safety and environmental awareness
- Centralised visualisation of critical data
- Faster and more informed decision-making
- Scalable smart port digital ecosystem



Book a free consultation





Smart Maritime Infrastructure & Real-Time Environmental Intelligence

The case of **Astakos Marina**

METRICA designed and implemented an integrated Smart Port Digital Twin ecosystem for Astakos Marina, combining advanced geospatial technologies, environmental monitoring systems, smart sensing infrastructure, and real-time data visualization into a unified operational platform.

The project aimed to create a dynamic digital representation of the marina infrastructure and surrounding marine environment, enabling smarter decision-making, improved operational awareness, enhanced environmental monitoring, and long-term infrastructure management.

-  **1 Weather Monitoring Station**
-  **2 Water Quality Monitoring Station**
-  **3 Sea Level Monitoring Station**
-  **4 Wave & Current Monitoring Station**
-  **5 Smart Digital Flow Monitoring Station**
-  **6 Structural Health Monitoring Station**
-  **7 Autonomous & Remotely Operated Maritime Vehicles**
-  **8 Centralized Digital Twin Management Platform**



**SCAN TO EXPLORE OUR
DIGITAL TWIN SOLUTIONS**