innovation Port digital twin: what's it all about?
HAROPA PORT is developing a digital twin for ship calls and quayside operations. This tool aims to improve the safety and efficiency of port operations, as well as the use of associated resources. Read more.
Published on 15/12/2023 - Updated 20/12/2023


©HAROPA PORT / Vincent Rustuel

What is a digital twin?
A digital port twin is a virtual, **digital representation of a port in the real world**, including its infrastructure, equipment, processes and operations. This technology uses real-time data, sensors and 3D models to create an accurate digital copy of the port.
What is it used for?
The main purpose of a digital port twin is to simulate and monitor various aspects of port activity in real time:

- maritime traffic;
- the nature of the vessel;
- nautical and meteorological conditions;
- cargo management (volume, type of cargo, etc.);
- logistics;
- safety;
- available workforce;
- condition of structures and infrastructure.

By using the digital twin, **a port can anticipate and improve the operational efficiency of port calls and optimize the management of the associated resources required.**
It also helps to reduce the energy consumption associated with port activities and contributes to a reduction in environmental impact. Indeed, by facilitating the concept of "just-in-time" calls, the entire port chain reduces its energy consumption and greenhouse gas emissions.

Did you know?
HAROPA PORT has developed the digital twin "Passage plan" to manage ship calls and their stay at the quayside in Le Havre.

71, quai Colbert, 76600 Le Havre
+33(2) 79 18 05 00