



Smart ports: Transform your port into a future-proof hub

The maritime industry is navigating a sea of change. Ports need to adapt to remain competitive and attract shipping companies with efficiency, sustainability, resiliency and a future-proof approach.

Trends driving change include:

- **Digitization is mandatory:** The European Maritime Safety Agency (EMSA) hails digitization as the solution to future-proof ports, meaning data-driven decision-making, real-time security awareness and better collaboration
- **Balancing growth and sustainability:** Ports are looking for solutions to minimize their environmental footprints, and reducing idling times and optimizing operations are crucial for lowering emissions
- **Maintaining ethical standards:** Ports are implementing measures to fight corruption, including technology that promotes data transparency and fosters collaboration among stakeholders
- **Preparing for uncertainties:** Ports need to be adaptable to ensure they remain competitive in the long term, and this requires continuous investment in infrastructure and processes that can accommodate future growth and unforeseen challenges

Target solution

To stay ahead of these trends, ports need to be equipped with modern solutions that enable them to:

- **Foster transparency and optimize each stage of the cargo journey:** Tap into a real-time data flow between shipping lines, customs officials and port authorities to enable seamless collaboration and streamline communications
- **Enhance sustainability:** Optimize operations, reduce congestion and improve communications while contributing to a more sustainable future for the port and surrounding communities
- **Maintain high ethical standards:** Leverage data analytics and mitigate risks associated with noncompliance and unforeseen events, safeguarding port integrity and ensuring smooth operations
- **Ensure regulatory compliance:** Handle increasing regulations – even with limited resources – by implementing innovative solutions like cloud technologies to streamline compliance processes and free up resources
- **Make planning easier:** Create a digital twin – a virtual replica of the port itself – to enable data-driven simulations and planning, helping optimize resource allocation, ensure smooth cargo flow and prepare for potential disruptions

Hexagon's smart port technologies

Digitize and boost collaboration: Hexagon's Port Community System (PCS)

Hexagon's PCS is powered by HxGN Connect – a cloud-native, real-time incident center as a service. It is designed for easy integration with other systems. As a flexible component of a Maritime Single Window (MSW) solution, it allows small and medium ports to optimize operations.

With Hexagon's PCS, ports can:

- **Enhance situational awareness:** Real-time data insights enable informed decision-making, improved resource allocation, reduced congestion and overall operational efficiency
- **Streamline operations and synchronization:** Pre-assigned and on-demand communication channels between stakeholders streamline ship operations and synchronize activities, resulting in reduced delays and improved port call processes
- **Boost security and transparency:** Prioritized data security and robust protocols safeguard sensitive information; platform promotes transparency by facilitating the secure exchange of crucial data between authorized parties
- **Embrace sustainability:** Optimized operations, reduced congestion and improved communication contribute to a more sustainable port ecosystem

Revolutionize port design and development with digital twin technology: HxGN Smart Sites

HxGN Smart Sites allows you to blueprint your port's future with a 3D replica – a digital twin for simulating future layouts. Analyze potential changes, minimize trial and error and make data-driven decisions for a more efficient, adaptable and future-proof port infrastructure.

With HxGN Smart Sites, ports can:

- **Visualize and analyze potential scenarios:** Test and analyze various design iterations within the digital twin to see how new infrastructure, terminal layouts or cargo handling equipment would integrate with existing operations
- **Minimize trial and error:** Identify and address potential challenges before construction begins, minimizing costly mistakes and rework, in the digital twin environment
- **Make data-driven decisions:** Gain valuable insights into factors like traffic flow, equipment use and overall port efficiency

Optimize operations, uphold ethical practices and achieve sustainable growth: M.App Enterprise

M.App Enterprise powers the creation of intuitive dashboards that unlock real-time data insights. These customizable dashboards offer a clear, comprehensive picture of your entire port ecosystem, from traffic flow and resource allocation to vessel activity. With this level of visibility, ports can streamline processes, prioritize vessels for a fairer playing field and promote responsible practices.

With M.App Enterprise, ports can:

- **Gain real-time visibility:** Get real-time insights into your port operations through customizable dashboards that empower data-driven decision-making, optimizing efficiency and streamlining port processes
- **Improve traffic management:** Prioritize traffic flow for a more efficient port using real-time data to ensure quicker turnaround times and increased port throughput
- **Safeguard ethical practices:** Monitor key performance indicators and identify potential discrepancies early to uphold ethical standards and promote transparency

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Hexagon's Safety, Infrastructure & Geospatial division improves the resilience and sustainability of the world's critical services and infrastructure. Our solutions turn complex data about people, places and assets into meaningful information and capabilities for better, faster decision-making in public safety, utilities, defense, transportation and government. Learn more at hexagon.com and follow us [@HexagonAB](https://twitter.com/HexagonAB).

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