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# iTerminals 4.0

Application of Industry 4.0 Technologies  
towards Digital Port Container Terminals



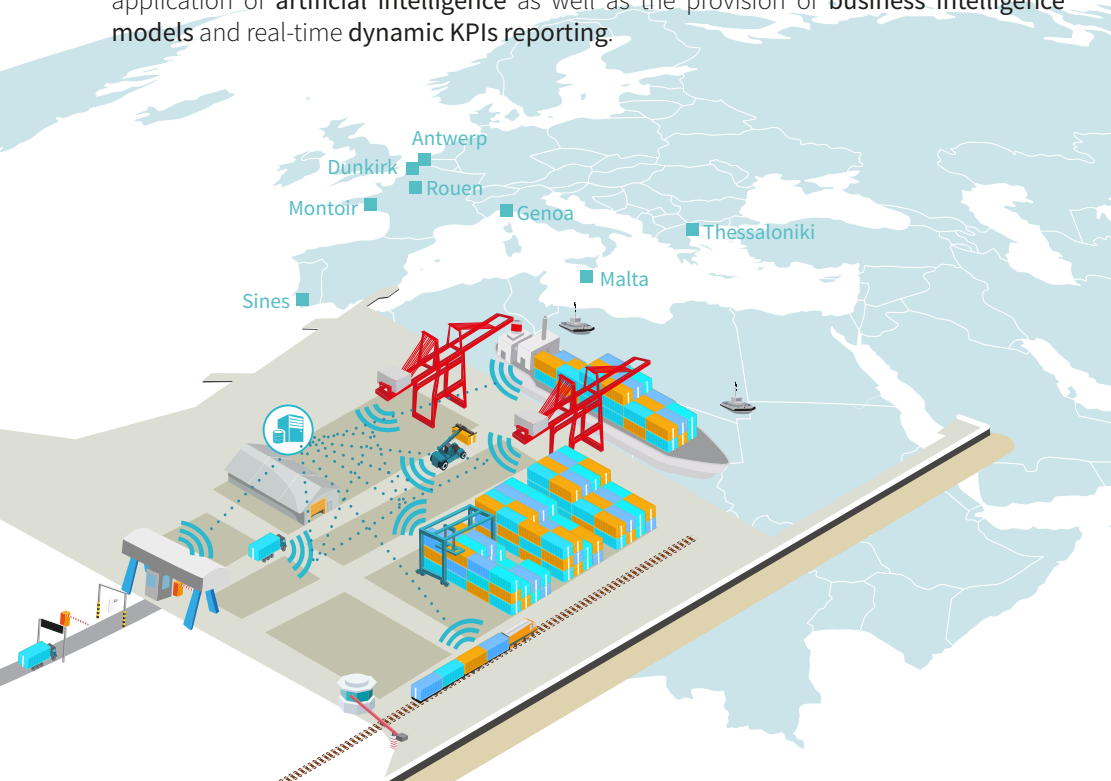
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# Advancing towards the Port Container Terminal 4.0

Terminals 4.0 will boost **digitalisation** of port operations and the adoption of Industry 4.0 technologies within the container-handling sector to advance towards the “Container Terminal 4.0”. New IoT solutions and operational pilots will be developed at strategic container terminals based on Core Network Ports of the Trans-European Transport Network.

The project will test and evaluate advanced Industry 4.0 pilots applied to the operational environment of port-container terminals including the upgrade of **port equipment's sensor networks**, the design of advanced **big data** and predictive analytics, the application of **artificial intelligence** as well as the provision of **business intelligence models** and real-time **dynamic KPIs reporting**.



## Benefits derived from digitalisation of port container operations:



**Operational Efficiency:** iTerminals 4.0 will enable real time machine-to-machine communication to detect operational bottlenecks and facilitate decision making to remove them at the right moment.



**Operational Safety:** iTerminals 4.0 will enhance situational awareness based on reliable positioning/detection of machines and persons. This concept is currently widely applied in other industrial sectors but never implemented on container terminals.



**Operational Sustainability:** iTerminals 4.0 will allow real-time calculation of the carbon footprint generated in container terminals, assigning to each manipulated container a unique carbon footprint value generated during its handling.



**Operational Maintenance:** iTerminals 4.0 will improve maintenance management by enabling digital transmission of failure codes to the maintenance areas, thus facilitating better predictive maintenance and increasing efficiency of operations.

