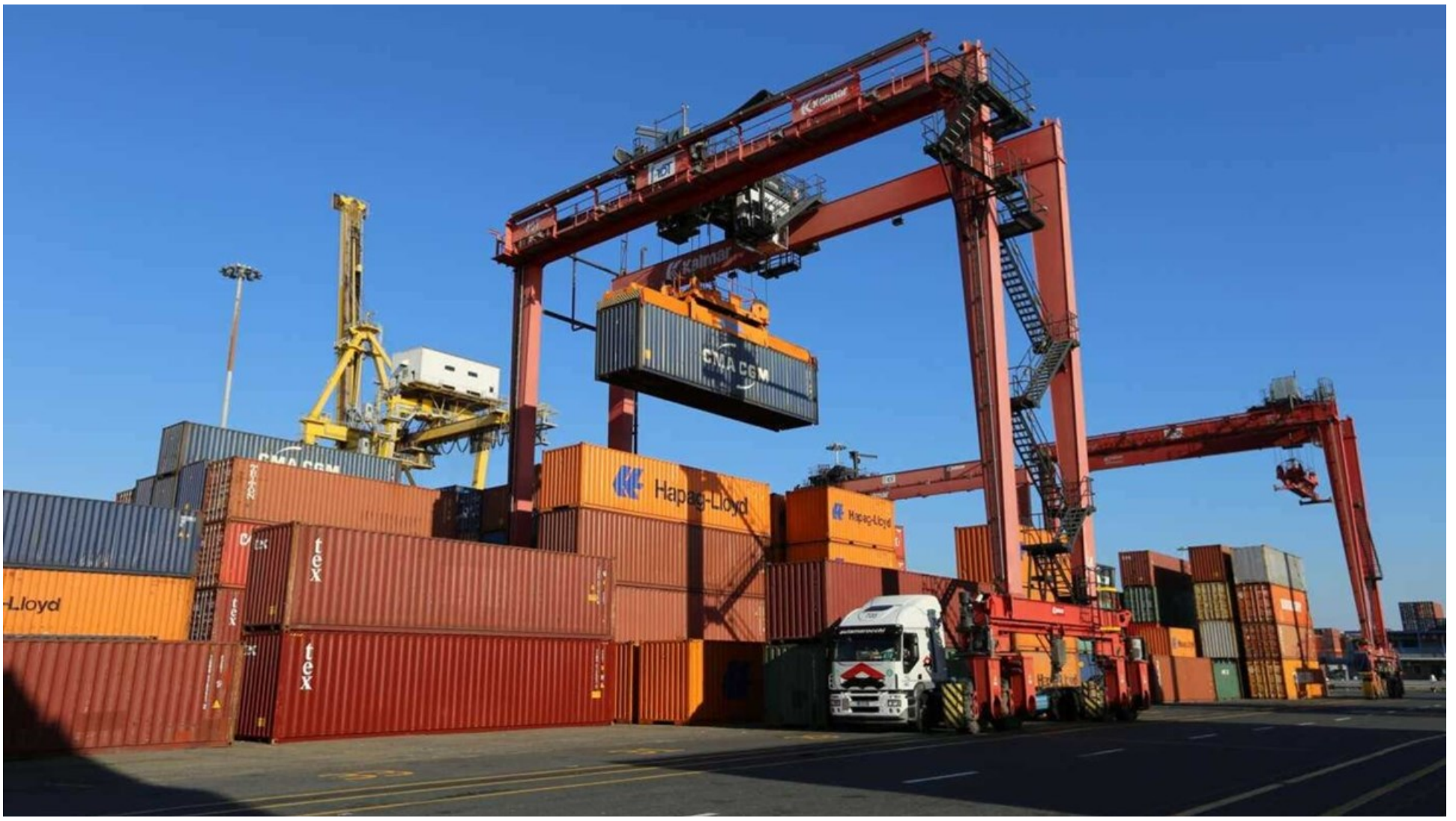
What's a smart port and what do they mean for the environment?

Ports are fundamental to the global economy, responsible for up to 90% of goods being transferred all over the world. With rising demands on logistics and an ever-increasing need for operations to be sustainable, how are 5G and digital transformation changing ports for the better and contributing to the goals of the 2030 Agenda for Sustainable Development outlined by the UN?



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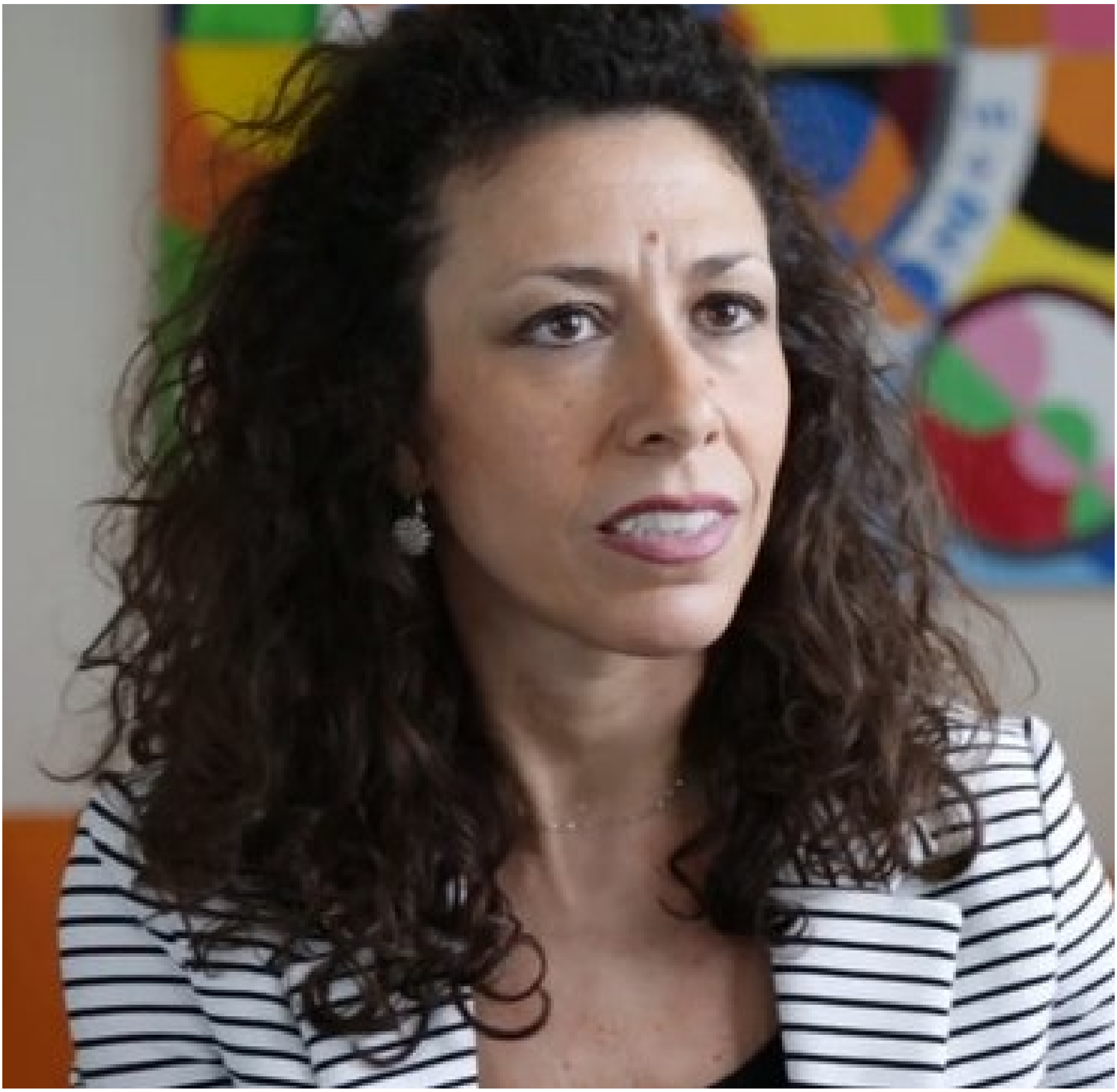

Rossella Cardone

Head of Sustainability & Corporate Responsibility for Market Area Europe and Latina America

Category

5G Digital transformation Sustainability

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5G is transforming logistics

With its low latency and high speeds, 5G is already transforming industries globally, from car manufacturing in Germany to this new smart factory now operational in Nanjing, China. The real time exchange of information allows manufacturers and workers to automate elements of production, utilize large-scale Internet of Things (IoT) ability and more.

When announcing our involvement in the digitalisation of the Port of Livorno in Italy, our goal was simple: to create a connected smart port, where devices, machines, and humans are able to share real-time information.

Keeping up with demand in ports

Today ports are being challenged to boost efficiency and productivity, while at the same time securing sustainable growth, a safer workplace and minimizing environmental footprint. The OECD (Organization for Economic Co-operation and Development) predicts that global container handling in ports could rise up to four times the current levels by 2030 and five to six times by 2050, which means that we must plan for growth in a responsible way.

For example, the Port of Qingdao in China is among the top ten busiest ports in the world, processing approximately 19.3 million containers every year. The 5G connection there supports control data for a programmable logic controller (PLC). These operations require millisecond-level latency control signals, as well as stable, remote and real-time control - requirements which only key 5G technologies can deliver.

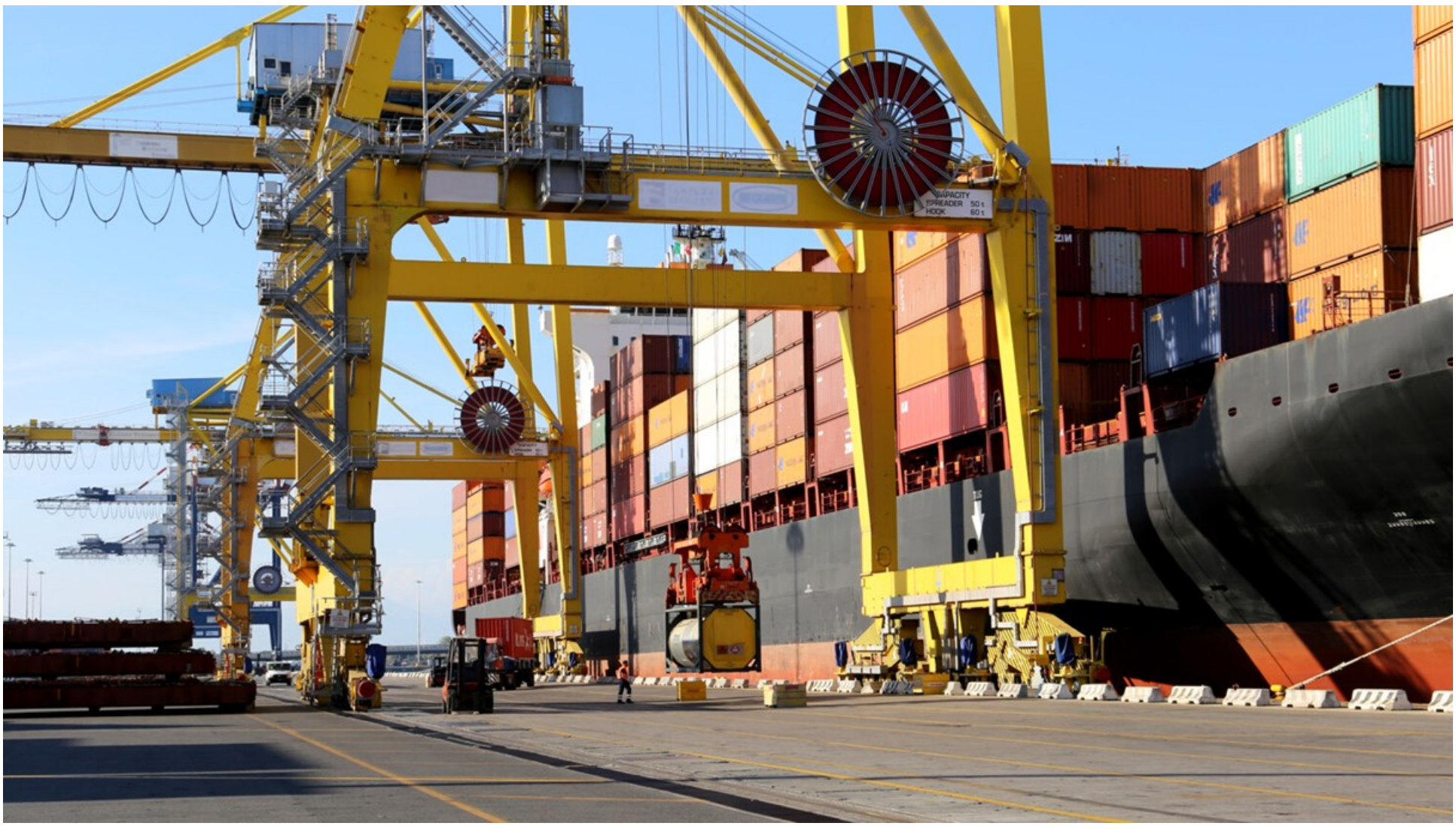
Reaching sustainable development goals

The United Nations have set out an Agenda for Sustainable Development for 2030 which includes 17 Sustainable Development Goals, or SDGs, number 13 of which is focused on climate change.

At the Livorno port, which handles 780,000 containers per year, 5G networks and IoT solutions are optimizing logistic loading/unloading operations. This means minimizing idle times for ships and the transit time of goods, which in turn helps to cut down on emissions. These changes will ultimately empower the Authority Port of Livorno to drive innovation and sustainability actions with 5G. In Europe alone around 74% of goods enter or leave by sea, and so a wider adoption of 5G smart ports would have huge environmental impact.

Partners on the Livorno project include the Italian Port Authority, Ericsson, CNIT, TIM (Telecom Italia) and the UN SDSN (United Nations Sustainable Development Solutions Network) Italy have worked together to use 5G to contribute to the achievement of these goals. The UN SDSN mobilizes global scientific and technological expertise to promote practical problem solving for sustainable development.

Both 5G and this collaborative approach have helped progress the initiative, resulting in an expected 8.2% CO_2e reduction. This also contributes to the goals outlined by the pan-European project Port of the Future: Corealis



AI means a safer working environment

This level of automation, which also involves using 5G to support Artificial Intelligence (AI)-driven solutions, can contribute greatly to creating a much safer work environment while strengthening productivity and efficiency. This helps to achieve SDG 8, a goal focused on creating decent work and economic growth.

The AI operation management at The Port of Livorno handles goings-on in the port area and provides input on the sequence of logistics tasks and activities, based on real-time correlated information and data from the are using connected cameras and logistic devices in the area. This includes forklifts' movements, where workers are, inventory of goods, order of loading/unloading to ships and so on. It also means flagging higher risk activity like using cranes and larger loads. Having such a detailed view of everything happening at the port allows the AI to feedback on process and give live updates to workers.

Bringing 5G to ports has so much value, and of course it opens up some brilliant consumer opportunities too, like in the Port of Talinn in Estonia which went live with 5G for passengers in 2017. The environmental benefits however are fundamental to the conversation around how we plan for growing demand and expansion in a way that it's responsible as well as sustainable. We must use new technology, like 5G, to find smart solutions.

Explore more

As a result of our work, our sustainable port case at Livorno has been selected by the UN SDSN as a good example of how Ericsson, together with our partners, are implementing local initiatives that are advancing the SDGs.

Read more about the other cases in our Technology for Good Impact Report 2019.

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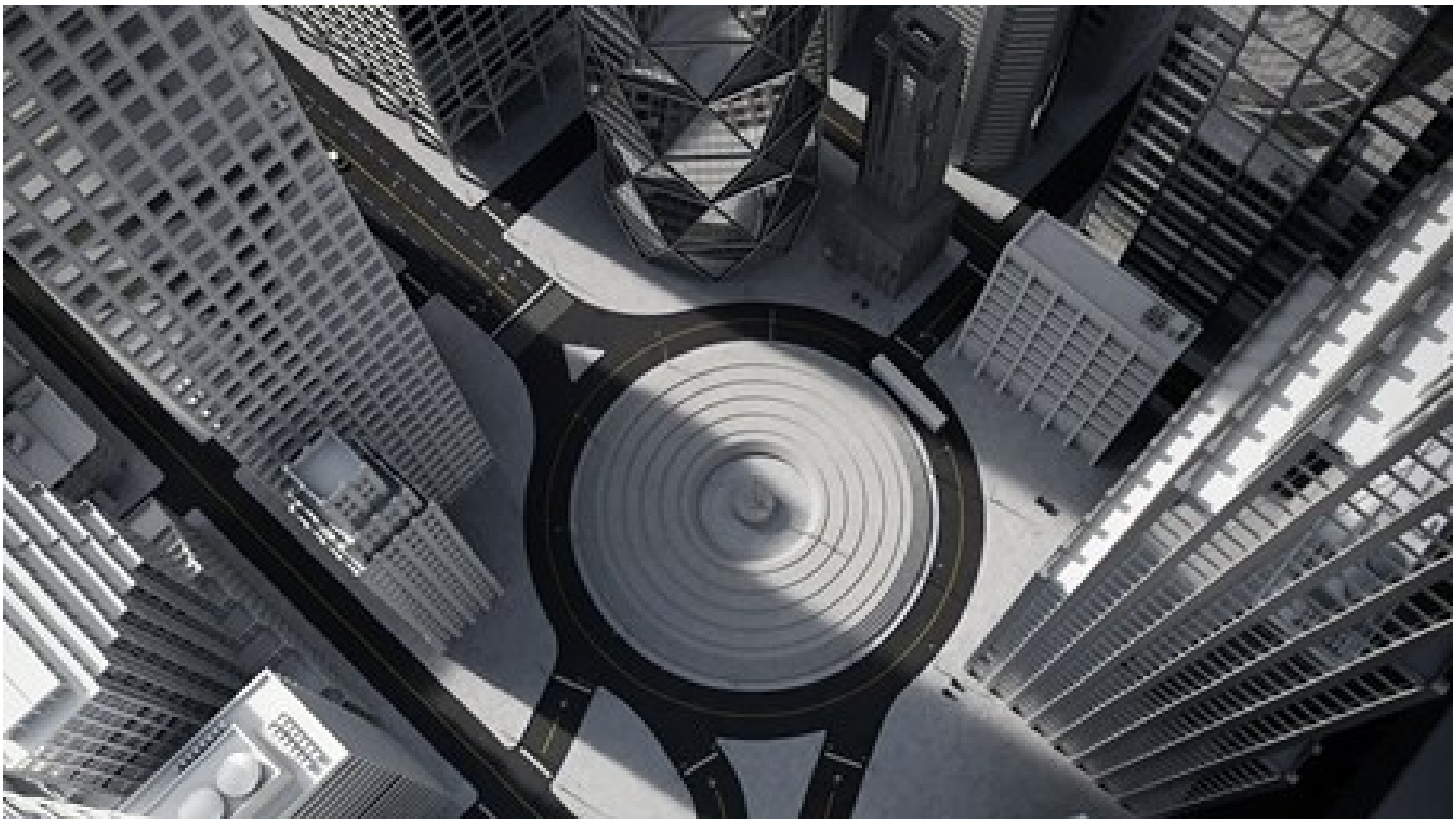

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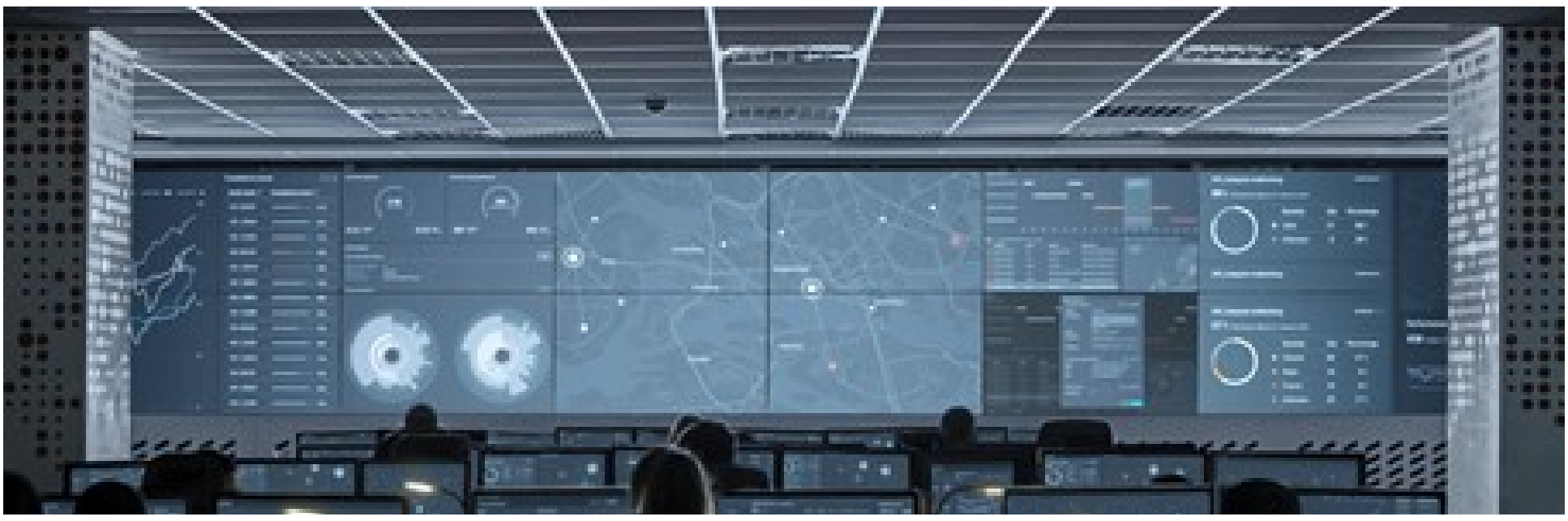

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