

# Ericsson and China Unicom announce 5G smart harbor at the Port of Qingdao

- Smart harbor development builds on accomplishments of successful six-month technical solution verification
- Lays the groundwork for deployments in other ports around the world, also highlights enormous business potential in adjacent industry applications
- One key finding of the trial is up to 70 percent of labor costs can be saved with this 5G automation upgrade compared to a traditional harbor

Ericsson (NASDAQ: ERIC) and China Unicom, the world's fourth-largest mobile service provider by subscriber base, are developing a 5G smart harbor at the Port of Qingdao in China. The news follows a successful technical solution verification at the port of Qingdao and was jointly announced by the partners during a media event from Ericsson's booth at Mobile World Congress 2019 in Barcelona, Spain.

One of the key findings of the field trial is up to 70 percent of labor costs can be saved when a harbor uses the 5G automation upgrade, compared to traditional harbors with a fully automated harbor. The labor cost savings are estimated based on the project of automation at the Qingdao Port automation.

Mr. Zhang Yong, General Manager of the China Unicom Research Institute, says: "China Unicom is proactively exploring industrial 5G business opportunities. We would like to cooperate with major 5G equipment suppliers and leading industrial equipment suppliers to create differentiated value to enterprise customers. The Qingdao 5G smart harbor project is a pilot of 5G industrial cooperation and we expect fruitful outcomes both in 5G network solutions and business aspects."

Chris Houghton, Senior Vice President and Head of Market Area North East Asia at Ericsson, says: "Delivering revenue for the industry is important for 5G business success. Ericsson is glad to partner with China Unicom in developing industrial service opportunities. In the Qingdao 5G smart harbor project, we successfully showcased various 5G network capabilities, such as milli-second level end-to-end latency at Gbps level speed. This 5G smart harbor solution is not only applicable to the Port of Qingdao but can also be replicated with many other harbors and industries."

The Port of Qingdao is among the top ten busiest ports in the world, processing approximately 19.3 million containers every year. The port has been operating Asia's first fully-automated harbor since 2017 and will continue to be at the forefront of port innovation by using 5G.

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The partners, in collaboration with the leading global port machinery manufacturer Shanghai Zhenhua Heavy Industries Co., Ltd. (ZPMC), achieved several ground-breaking accomplishments as part of their six-month 5G smart harbor technical solution verification in late 2018. This includes an automated ship-to-shore (STS) crane that lifted a container over a 5G connection operated from the control center.

The 5G connection included data traffic from more than 30 high-definition cameras as well as control data for a programmable logic controller (PLC). These operations required millisecond-level latency control signals, as well as stable, remote and real-time control, requirements which only key 5G technologies can deliver.

The field trial confirmed the feasibility and potential of 5G applications for the development of smart harbors, and as a result, Ericsson, China Unicom and other partners have agreed to jointly explore commercial 5G networks and solutions for smart harbors that include both automated harbors and the modernization of traditional harbors.

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