

PORT OF AVEIRO REVOLUTIONISES CARGO HANDLING WITH 5G SOLUTIONS FROM VODAFONE AND ERICSSON

- **Proof of concept in the port sector brings together Augmented Reality, Virtual Reality and Artificial Intelligence with 5G**
- **Solution contributes to minimising environmental impact and reducing operational costs**
- **Aveiport and PTM Ibérica terminal operators will have access to innovative functionalities for operation monitoring, digital simulation and logistics management**

The use of Vodafone's 5G network will allow the Port of Aveiro to monitor and manage its cargo in real time, through digital replication solutions and virtual reality and augmented reality applications and devices. These technological innovations, which are being implemented in partnership with Ericsson and used by port operators, will contribute to reduce the environmental footprint of the activities and improve the efficiency, safety and profitability of operations.

This project comprises a proof of concept of Cargo Management which, based on a latest generation 5G private network, dedicated logistics software and high definition cameras, started to be implemented in May in one of the warehouses of the Multipurpose Terminal of the Port of Aveiro Administration and will enable substantial advances for port operators in the location, handling and storage of cargo in this which is one of the five largest ports in the country.

The solution developed by Ericsson is based on technologies studied and tested as part of the Corealis project for ports, under the European Horizon 2020 programme. This solution has been widely recognized at several international industry events for its positive impact on sustainability, energy efficiency and CO2 reduction. It is based on a dedicated 5G Stand Alone Core and integrates 5G sensors with a series of innovative software applications which, running over Vodafone's 5G network, enable a complete, efficient and sustainable operation of the port terminal.

Firstly, through a dedicated application, operators can identify, in real time, the position of all cargo in a designated area of the terminal. Additionally, using an Expert System and tablets with augmented reality, they will be able to guide the loading and storage operations of the freights.

A third innovation is the provision of a digital twin, a real-time replica of the terminal built with information gathered from the cargo, the loading plan, the freights and the vehicles. In addition to using a specialised logistics algorithm to organise and position freights, with virtual reality glasses it will be possible to simulate a complete cargo operation, checking freights and their position and defining the best strategy for the operation.

According to Henrique Fonseca, Director of Vodafone Portugal's Enterprise Business Unit, "the solution installed in the port of Aveiro will allow those who are on the frontline of Portuguese exports every day to see the real advantages of a powerful, reliable and flexible 5G network such as Vodafone's. By speeding up their tasks and allowing them to expand their activity, our network makes a clear contribution to one of

the key points of the national economy, opening the way for other operators who want to implement differentiated solutions."

Gema Brea Ibáñez de Gauna, Sales Director at Ericsson, believes that "ports and shipping are vital for the proper functioning of a global economy. The digital transformation of this industry represents a unique opportunity for Portugal, and private 5G networks will allow us to accelerate it. Thanks to the most innovative solutions from Ericsson and Vodafone's 5G network, the Port of Aveiro will become one of the most modern in the country, with fast, secure and reliable mobile connectivity opening new possibilities to be a precursor of a sustainable future."

Isabel Moura Ramos, Member of the Board of Directors of the Port of Aveiro, responsible for Business Development, reveals that "APA accepted, right away, the challenge launched by Vodafone and Ericsson in the certainty that this proof of concept will be an accelerator for the modernization, efficiency and decarbonization of Port of Aveiro, and may become an example at a national level. We expect, as results, the optimization and efficiency of the management of cargo operations of various sizes in a warehouse which is currently owned by the Port Authority, but used by the two port operators, partners of the project.

This use case will put the characteristics of the 5G network - high transmission speed, high data processing capacity, low latency and high reliability and security - at the service of the efficiency, competitiveness and sustainability of one of the main Portuguese maritime ports. With the completion of the project, a report will follow with the conclusions of the aggregate benefits of using this solution.