



The Atlantic  
Testing Platform for  
Maritime Robotics

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<b>Topic</b>	ICT-09-2019-2020 (H2020)
<b>Acronym</b>	ATLANTIS
<b>Title</b>	The Atlantic Testing Platform for Maritime Robotics: New Frontiers for Inspection and Maintenance of Offshore Energy Infrastructures.
<b>Project number</b>	871571
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<b>Deliverable number</b>	D2.4 Communication links and interfaces for interoperability
<b>Dissemination level</b>	PUBLIC
<b>Lead Beneficiary</b>	ABB OY

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## Press release about decision making

ABB OY



## Actions

	Action	Organisation	Date
<b>Technical Manager</b>	Requested deliverable from the Deliverable Responsible.	VTT	01.05.2022
<b>Deliverable Responsible</b>	Prepared draft of the deliverable.	ABB OY	15.06.2022
<b>Technical Manager</b>	Approved the updated draft as the first version.	VTT	26.06.2022
<b>Quality Manager</b>	Approved the updated first version as the second version.	UdG	28.06.2022
<b>Project Coordinator</b>	Approved the updated second version as the final version and sent to the European Commission.	INESC TEC	30.06.2022

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## 1. Introduction

The purpose for this report is the documentation of the press release 'Decision making 3': ABB Ability™ OCTOPUS widens operating window for wind farm development.

## 2. Main objectives

The main objective is the public announcement of the deliverables for WP4.1 (D4.3): The development and release of a mission planning tool for the ATLANTIS project and the benefit of robotics in the offshore environment.

This press release will be distributed by ABB's Marketing department on the ABB's website and media part Press release by ABB OY:



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## ABB Ability™ OCTOPUS widens operating window for wind farm development

Offshore wind turbines have become larger and are operating in deeper waters than ever before. They are also continuously exposed to the elements. Innovative planning software can remove a sticking point for turbine uptime by deploying robots when conditions prove too rough for service engineers.

In offshore operations, being able to track and predict wave heights is critical for establishing the 'operational window' within which it is safe for supply vessels, maintenance boats and davits to operate. The wider the window, the greater the opportunity to make efficient use of service assets and engineering personnel.

Today, offshore wind turbines are larger than ever before. New generation turbines for Europe and the US stand 230-260 meters tall and feature rotor diameters to generate 13-15 MW. Installation farther out to sea, or at least in deeper water, often makes it harder to land turbine inspection and maintenance crews. More than an operational headache for service providers and contractors, resulting delays can quickly translate into lower output from the turbine array.

Weather forecasting software, vessel positioning systems and heave compensation technology provide additional capabilities for support vessels which, used individually or collectively, can widen the safe working window for operations. They help vessel operators decide whether a voyage should be undertaken, whether a vessel can hold station alongside the turbine, whether a connecting walkway can be deployed or it is safe for divers to work underwater.

### Robots in the wind

Increasingly, however, drones are proving highly effective tools in undertaking remote structural survey work in the marine and offshore industries. Again, remotely operated vehicles and autonomous underwater vehicles provide high-performance diver substitutes for investigating cable integrity and sub-structures.

Funded under the EU Horizon Project, ATLANTIS is a pioneering infrastructure pilot offshore facility off the Portuguese coast at Viana do Castelo. One of its key objectives is to demonstrate how robotic technologies can be deployed to support greater efficiency in offshore wind farm operations. Support vessel operation and maintenance are estimated to account for up to 30 percent of the total cost of energy for offshore wind power. ATLANTIS aims to reduce the 'levelized cost of energy' (LCOE) by eliminating or reducing reliance on conventional support vessels for inspection and maintenance operations.

ABB Marine & Ports plays a key role in ATLANTIS and has developed an analysis of data from the project which indicates that using robotic solutions to undertake inspection and maintenance duties at the turbine would increase acceptable wave heights for operations from 1.5 to 2 meters. As a result, safe vessel operations could take place 46 percent of the time, as opposed to the current 34 percent, the analysis concluded. In other words, using robots would increase the operational weather window by an eye-catching 35 percent.

#### **OCTOPUS optimized for offshore**

ABB's broader contribution to ATLANTIS over the last 2.5 years has centered on developing a new version of ABB Ability™ OCTOPUS – the heavylift vessel sector's preferred hydrodynamic/motion behavior monitoring and forecasting advisory software increasingly favored in container shipping. Soon, ABB will launch an 'offshore-optimized' version of OCTOPUS whose additional capabilities are expected to be decisive in removing a key operational obstacle to offshore wind industry development.

"Safe transfers of personnel between a support vessel and an offshore turbine platform are often the limiting factor in maintenance hours, as during rough seas crews cannot land by walkway or from the air," comments Jimi Lipponen, Digital Services at ABB Marine & Ports. "ABB Ability™ OCTOPUS for offshore includes a dedicated mission planning tool which takes into account acceptable vessel responses, rather than solely the wave conditions. It calculates the extent to which vessels deploying robotics-based maintenance, rather than personnel, can work across a wider operational window."

The result is a significant step forward for asset management in offshore wind support, adds Lipponen, with OCTOPUS software enabling safe and effective planning for installation and maintenance work at offshore wind farms.

"OCTOPUS Offshore mission planning will support smarter decision-making, increasing uptime for windfarm vessel owners and charterers, helping ship managers to make the right call on vessel deployment and ensuring a safer working environment for crews and maintenance engineers," he says.

#### **About ATLANTIS**

The ATLANTIS project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 871571. For further information about the ATLANTIS test center, research work and the partners, please visit <https://www.atlantis-h2020.eu>

#### **About CORDIS**

The Community Research and Development Information Service (CORDIS) is the European Commission's primary source of results from the projects funded by the EU's framework programs for research and innovation. <https://cordis.europa.eu/project/id/871571>

**ABB** (ABBN: SIX Swiss Ex) is a leading global technology company that energizes the transformation of society and industry to achieve a more productive, sustainable future. By connecting software to its electrification, robotics, automation and motion portfolio, ABB pushes the boundaries of technology to drive performance to new levels. With a history of excellence stretching back more than 130 years, ABB's success is driven by about 105,000 talented employees in over 100 countries.

#### **Links:**

<https://new.abb.com/news/detail/81426/the-man-from-atlantis-driving-the-offshore-wind-power-transformation>

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## 3. References

Primary distribution channel: <https://global.abb/group/en/media>

