

Unmanned Surface Vessel Solutions for Sub-Sea Inspection and Maintenance of Offshore Wind Assets

Publieke samenvatting / Public summary

Aanleiding

It is generally expected offshore wind turbines remain operational at least 2 decades, yet they are prone to extreme conditions: strong winds, turbulence, waves, current, changing seabed conditions and salty water. To ensure all systems remain operational and power supply is not disrupted, frequent inspection of offshore wind assets is pivotal. It reduces the chance of failure and optimises wind farm life time and energy output. Inspections are costly, especially for subsea structures. The offshore wind industry has a strong drive to reduce costs over the wind farm's lifetime. Cost-effective solutions are therefore needed to enable more frequent inspection, repair and maintenance (IRM) tasks. Fugro plans to introduce a cost effective solution by developing a fully remote operated Unmanned Surface Vessel (USV) that can deploy a Remotely Operated Vehicle (ROV) to conduct regular inspections, small repairs and maintenance works on wind farm subsea structures, the USV-ROV.

Doelstelling

This USV-ROV development and demonstration project aims to deliver a very cost effective solution to conduct regular inspections as part of the O&M strategy which will increase wind farm energy output of existing and to be developed offshore wind farms. The project focuses on the IRM market in the Offshore Wind Industry. It aims at developing,

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Algemene informatie / General information

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Publicaties en materialen / Publications and attachments

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building and demonstrating a solution that will contribute to a more sustainable and cost effective construction, inspection and identification of objects and structures on the seabed and in the water column. This innovation will be relevant for offshore asset developers, owners, service providers as well as legislators and international regulatory bodies. It will enable significant cost savings, prevent losses and improve efficiency throughout the entire lifecycle of an offshore renewable energy asset.

Korte omschrijving

Fugro will execute the project together with involved specialized third parties like C-Job, Marin and ASV Ltd. Fugro is the lead developer and also owner and user of the new USV-ROV product. The project has two distinct phases. The first phase consists of Experimental development activities and will generate detailed designs of the USV and all additional components. The second phase comprises of demonstration activities and includes the procurement, building and validating the USV-ROV product. The project will be finalised by offshore sea-trials that demonstrate the correct working of this innovative product. After the project the product will be further tested and demonstrated within offshore conditions before actual commercial use.

Resultaat

The project will result in a remote operated USV including a ROV for subsea wind assets inspection, maintenance, monitoring and repair. The USV will be an unmanned surface vessel of approximately 24 m length that is able to automatically launch, operate and recover a ROV and synchronize its navigation with the ROV paths. The USVROV product will be the first completely unmanned, remotely operated solution to be used by Fugro. The project aligns with the Smart Shipping ambitions of the Dutch Ministry of Infrastructure and Water Management. The project will generate new revenues for Fugro, increased power output for wind farm owners and lower repair and maintenance costs throughout wind farm lifetime. The project will also have the potential to lead to additional

sustainable electricity production, an estimated 3,211.80 GWh annually. CO2 emission reduction will be an estimated 1,9 million tonnes.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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