

i-Botics Subsea Robotics Project: Autonomy for Underwater Remote Operations

Publieke samenvatting / Public summary

To improve the safety, sustainability and cost-effectiveness of underwater inspection, repair, maintenance and ecological monitoring in offshore wind farms, the Autonomous Underwater Remote Operations (AURO) TKI WOZ research project aimed to accelerate the transition towards unmanned subsea operations.

To realize this goal, TNO developed a small-sized subsea sensor fusion solution capable of making unmanned underwater vehicles navigate autonomously with hardware costing less than €10,000. Validation tests were conducted in the Scheveningen harbour, which is part of the [North Sea Living Lab](#), a fieldlab designed to provide safe and cost-effective validation of maritime innovations.

The validation tests showed that the developed sensor fusion algorithms can be used to achieve high-end navigation performance using low-end small-sized navigation sensors. This was demonstrated through various experiments in Scheveningen harbour with a self-developed sensor box integrated with a small-sized ROV (BlueROV2 model from Blue Robotics). The research also showed that it is possible to generate accurate estimates of the position uncertainty during operation. These estimates can be used to minimize the collision risk by planning periodic GPS fixes to improve the navigation accuracy or by adjusting

Projectinformatie / Project information

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Subsidiebedrag / Grant amount

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Algemene informatie / General information

Penvoerder / Secretariat

TNO

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track lines to ensure safe manoeuvring around windfarm infrastructure. The project results help to reduce the capital and operational expenses of subsea monitoring while also contributing to safer and more sustainable operations at sea. More information in the navigation solution developed in the PPP AURO project can be found [online](#).

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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