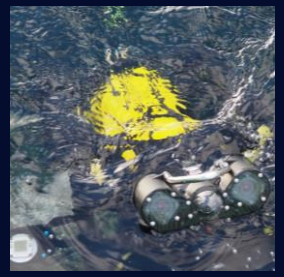
INTRODUCING THE ARV-*i*

The Vison and the possibilities



Introduction ARV-*i*

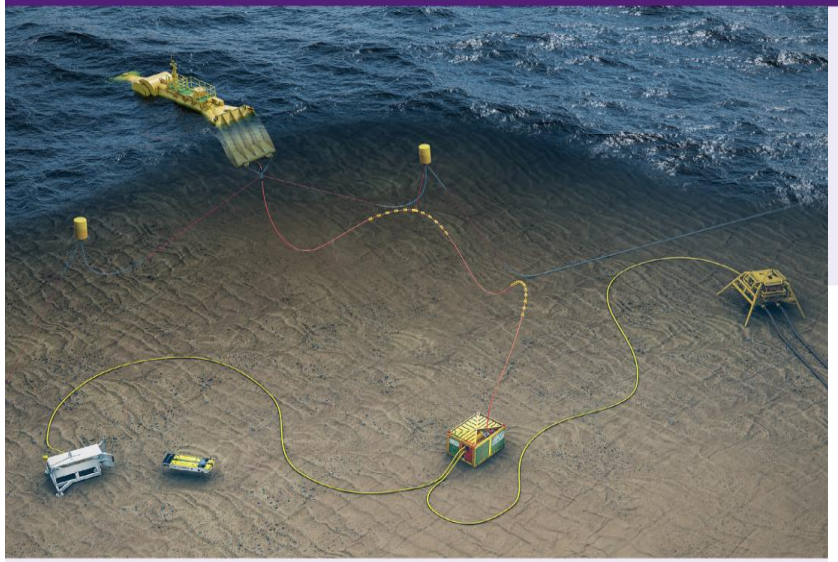
Finished product - live

- Measurement system in Fishnet
- Autonomous mission to take pictures of fish
- Processing photos in the dock
  - *Lice count*
  - Biomass
- Result direct visible in webapp
- Acoustic communication between dock/drone

Finished product - live

Participating in the RSP project

Renewables for Subsea Power



The Project

The Renewables for Subsea Power (RSP) system consist of Mocean Energy's Blue X wave energy converter, EC-OG's Halo subsea energy storage and communications gateway, Modus's residential Hybrid AUV and a subsea production control system from Baker Hughes. Part-funded by OGTC, the system will be built and ready for offshore tests in 2022.

- **Phase 1** – FEED 2020 (complete)
- **Phase 2** – Onshore Testing 2021
- **Phase 3** – Offshore Testing H1 2022
- **Ready for commercial use H2 2022**

mocean energy · EC-OG · MODUS · Harbour Energy · Baker Hughes · Net Zero Technology Centre

Renewables for Subsea Power

The RSP System

The RSP system combines renewable energy from ocean waves with subsea energy storage and over-the-horizon communications to a reliable and continuous supply of power and a wireless communication link for remote, standalone and autonomous subsea systems.

Scalable to support peak loads of up to 10 kW, suitable for the majority of North Sea subsea production assets.

Zero GHG emissions from power production.

Applications include:

- Fixing brownfield power distribution problems
- Residential AUVs/ROVs
- Long step outs and marginal developments
- Sensors and monitoring

mocean energy

blueX

Nominal Power	10 kW
Energy Storage	33 kWh
Communications	4G, VHF, Wi-Fi
Dimensions	19.3m(L) × 7.6m(H) × 4.6m(D)
Total Mass	38 Te

EC-OG

Halo

Energy Capacity	150 kWh (scalable to to 1 MWh+)
Output A (SPCS)	250 VAC 1 PH 50 Hz (configurable)
Output B (HAUV)	350 VDC, 3 kW
Dimensions	4m(L) × 2.9m(W) × 2.5m(H)
Total Mass	10 Te

Transmark Subsea

Battery capacity: 600Wh
Endurance: ~4 hours
Range: ~8 km
ARV-i Drone Dimensions: 0.61m(L) x 0.4m(W) x .36m (H)
Dock Dimensions 1.2m(L) x 1.25m(W) x 0.7m(H)

mocean energy

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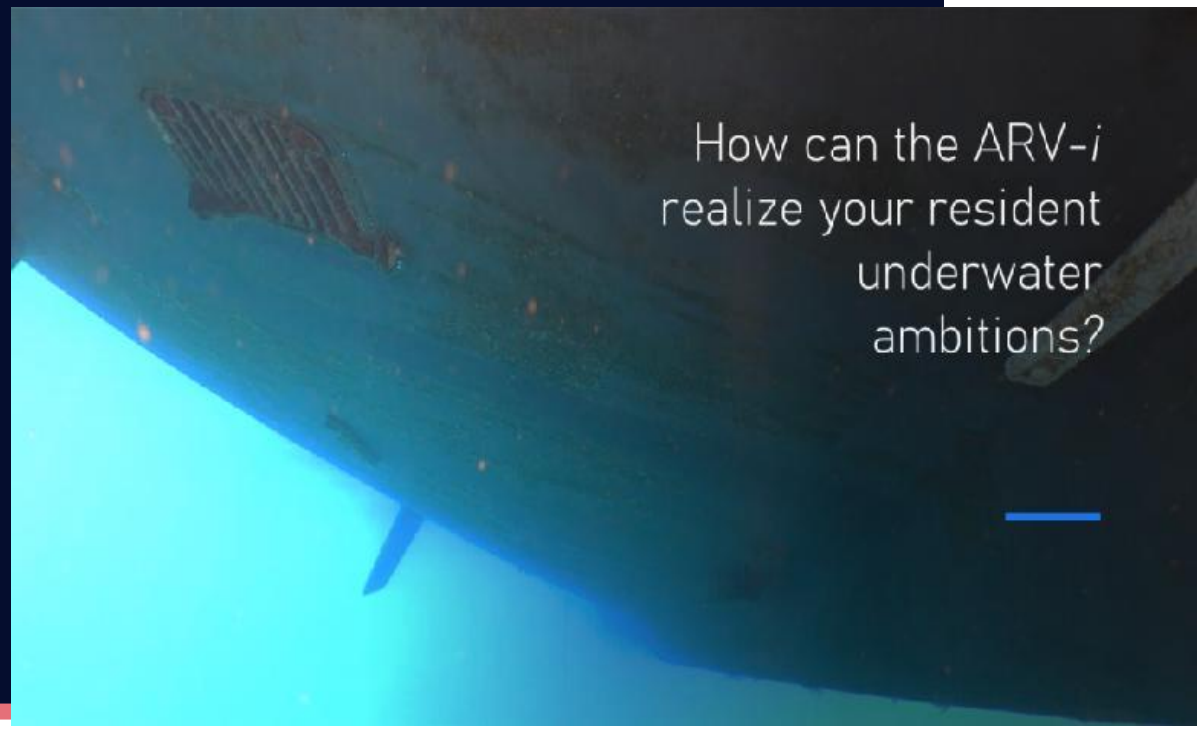
ARV-*i* in open water, autonomously flying to the object for inspection

ARV-*i* areas of use



ARV-*i* to enable

- Cost effective Vessel-free inspection and light intervention
- Reduction of Carbon footprint
- More accurate and frequent data collection
    - Sensor reading and charging
    - Enabler of digital transformation of Subsea

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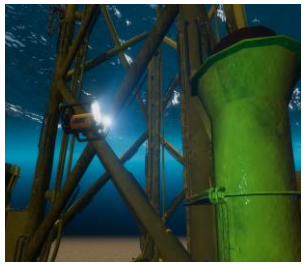
Leakage Detection

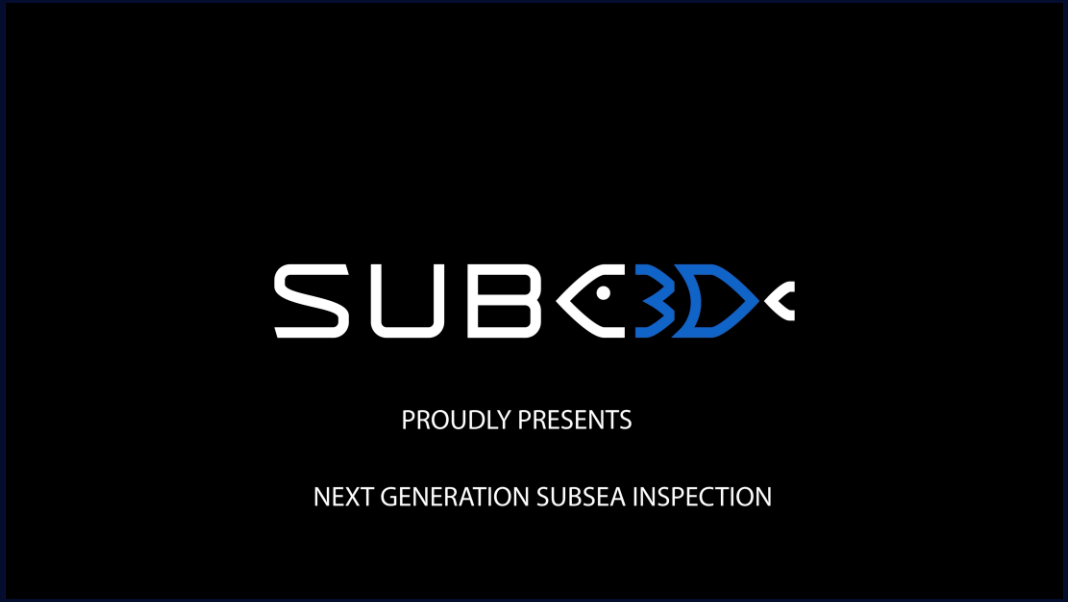
(Floating) Offshore Wind



3D Reconstruction

GVI/CVI

Riser Tracking

CP Survey

Endless benefits of using an autonomous resident underwater Drone