Survey and Inspection Subgroup webinar

6th April 2023

DeepWind

Survey and Inspection Subgroup

Image source – Dean Boyce, SSE Renewables

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Survey & Inspection Subgroup

Programme

14.00 - Introduction and housekeeping **– Jeya Calder**, Highlands and Islands Enterprise
14.05 - New Co-chairs introduction – **Paul O'Brien**, DeepWind
14.10 - Introduction to Sonardyne – **Michael Ellis**
14.20 - Introduction to Rovco, - **Craig Davis**
14.30 – Offshore Wind Growth Partnership - **Anil Sayhan**
14.45 – OWGP Case Study – **Jim Gardiner**, Sulmara
14.50 - Q&A Session
15.00 - End of webinar

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Survey & Inspection Subgroup

Michael Ellis
Sonardyne

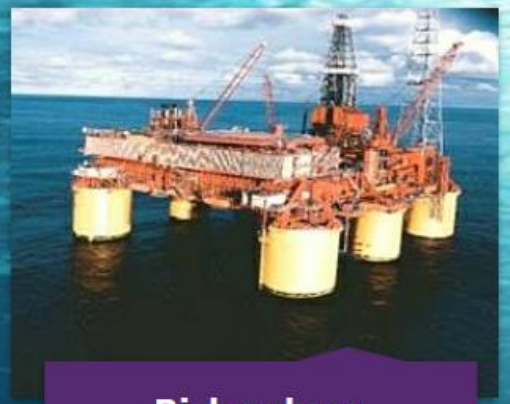
Mike Ellis

Business Development Manager – Renewables

6th April 2023

A marine technology company

Over 50 years subsea experience



Rich subsea engineering heritage

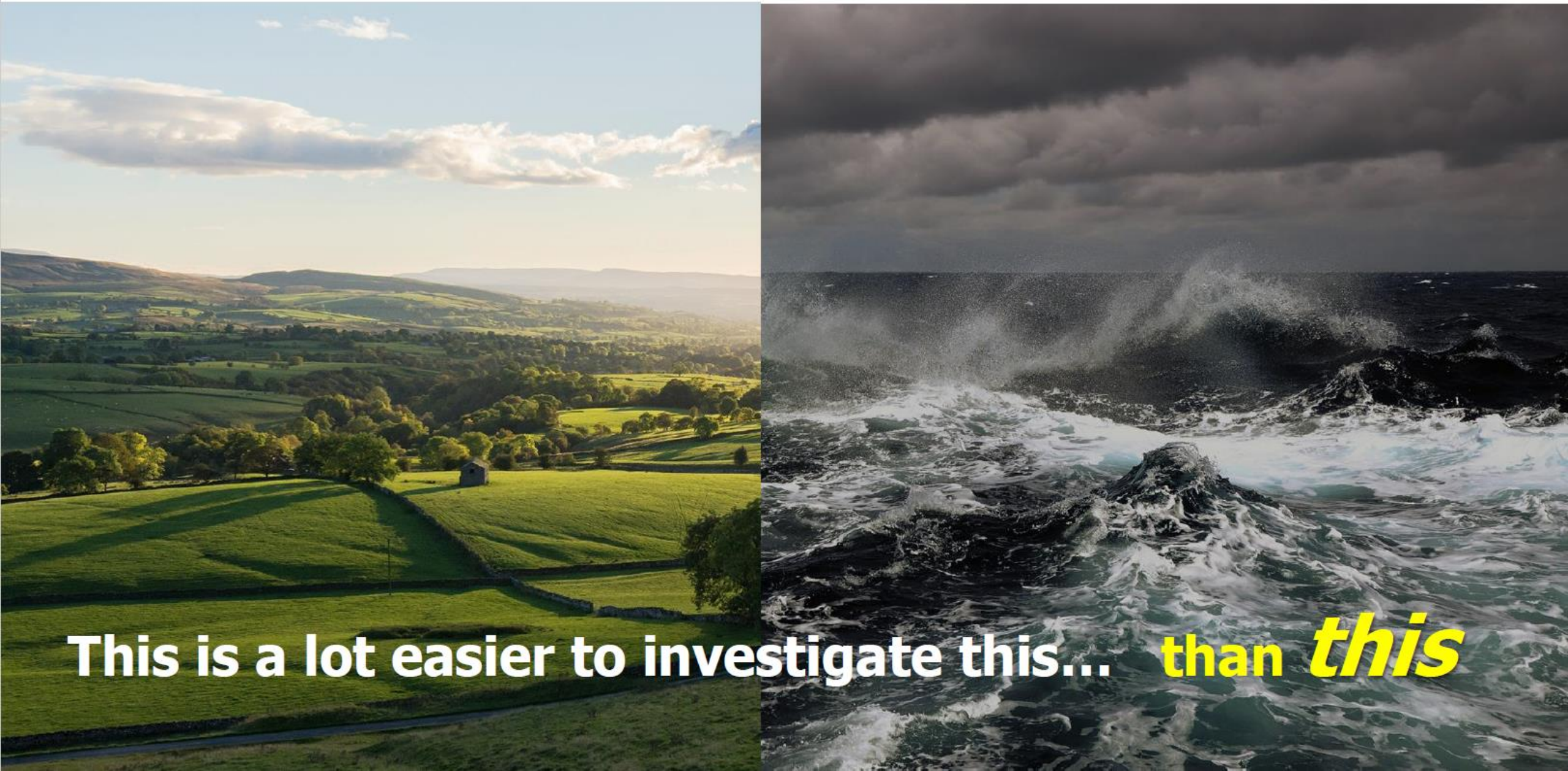
Evolving subsea technologies

Compatible technology group

Welcome to our world.

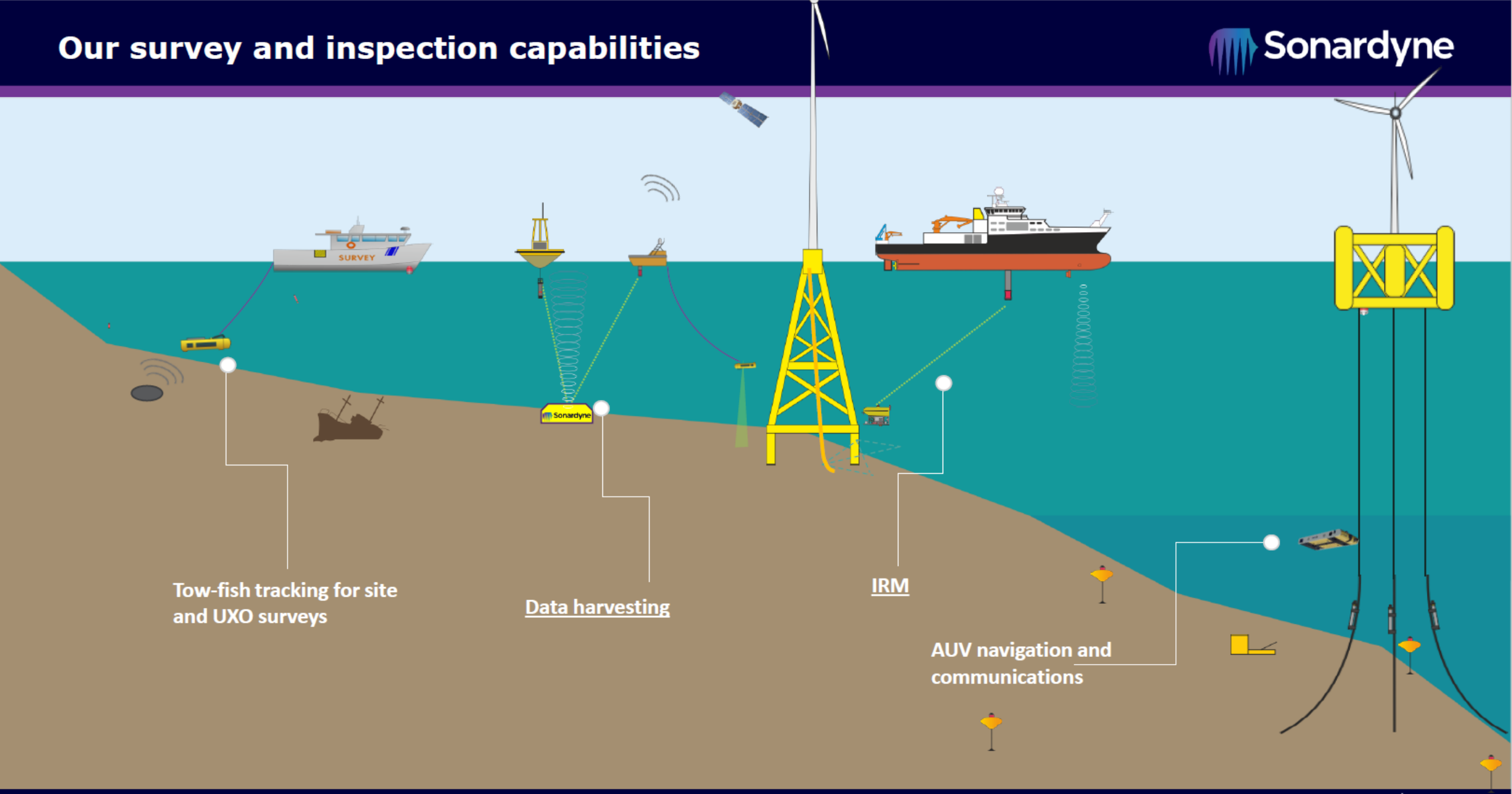
Offshore survey and inspection

Sonardyne



Our survey and inspection capabilities

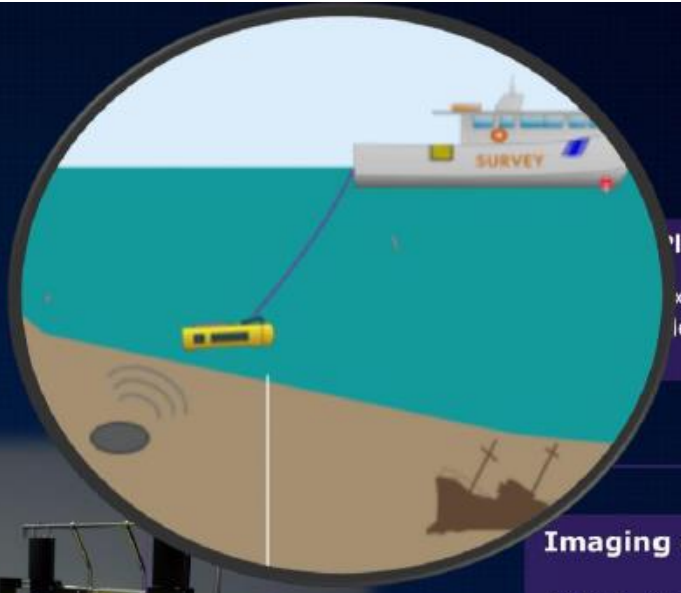
Sonardyne



Sonardyne

Positioning, Tracking, and Communications

For UXO operations, Ranger 2 is a one-stop shop for all your subsea positioning, tracking, and communication needs in any water depth. A family of simple to use USBL systems with superior, advanced and secure communications, you can position, track, and communicate with your asset more accurately and reliably.



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XO detection and
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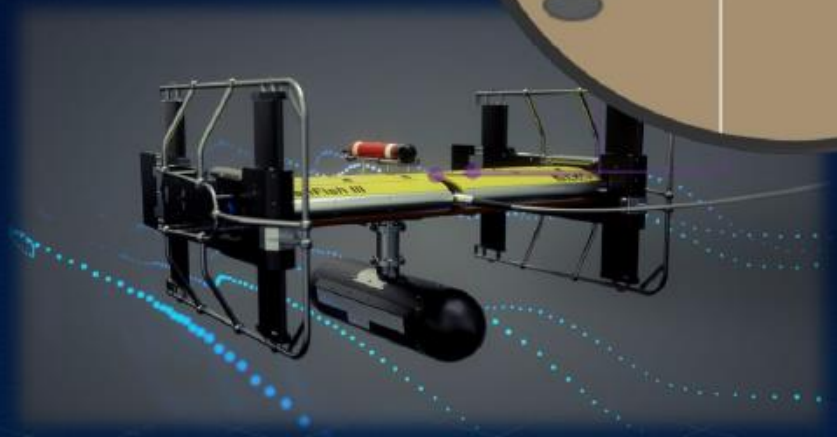
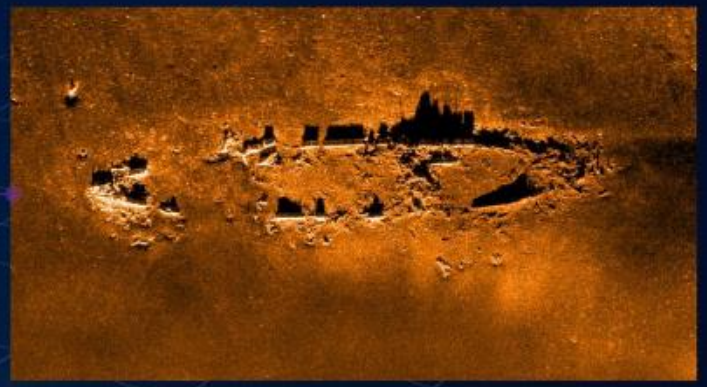


Imaging and Mapping

Search, classify and map, capturing every feature and detail in ultra-high resolution. Solstice multi-aperture side-scan sonar significantly increases the operational envelope of your underwater vehicle by providing wide swath coverage, at high resolution – all while consuming very low power.



Precise Navigation

SPRINT-Nav is a family of all-in-one INS and DVL hybrid acoustic-inertial navigation instruments that enable subsea vehicles to navigate themselves in the subsea domain, and provide precision improvements to USBL positioning solutions. Unlike inertial solutions created from disparate products, SPRINT-Nav is a pre-calibrated, plug-and-play solution engineered in compact, low-power, easy-to-install form factors suitable for any vehicle conducting UXO operations.

Safe Initiation of UXO Disposal

For use with non-electric (NONEL) 3 mm shock tube the IT 6 is designed to initiate safely when subsea. Featuring several fixed and configurable safety features to prevent unintentional arming or firing.

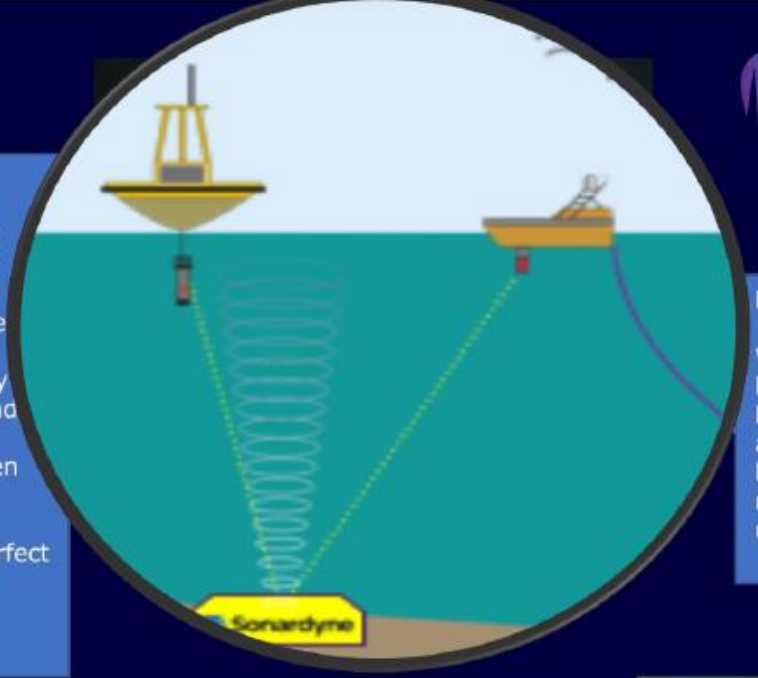
UXO Operations

Survey, locate, identify, dispose. UXO survey platform delivers unrivaled stability, quality of image, position accuracy, and results in real-time – wider coverage quicker, better percentage clearances, and the safest most secure method of initiating high and low-order detonation.

Lander Solutions

Sonardyne assists customers in the creation and delivery of a variety of custom-made environmental lander packages. Whatever sensor package you want to deploy, Sonardyne technology can enable you to deploy and geolocate your lander, to log and recover the data, and recover the lander itself back to the surface when the mission is over.

Environmental landers make the perfect solution for baseline environmental monitoring of CCS and offshore renewable ecosystems.



Positioning and data recovery

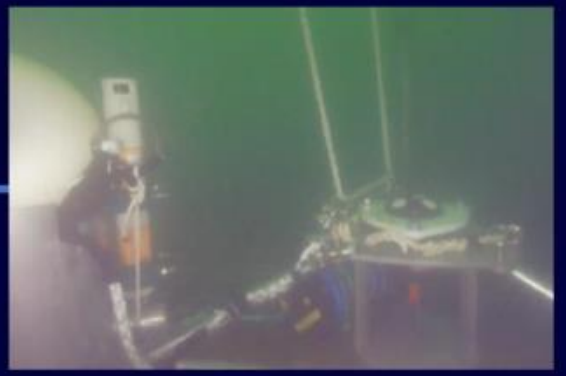
Whether using a Sonardyne lander, or your own bespoke lander, Sonardyne technology allows you to geolocate your lander on the seabed, and recover data wirelessly through underwater modem technology.

Current Profiling

Sonardyne's ADCP technology can measure water currents live and transmit that data wirelessly through the water for real time actional awareness. Data logging ADCPs are also available for long duration baseline surveys, with the data available at anytime via wireless data harvesting, without the need for equipment to be recovered from the seabed.

Releases

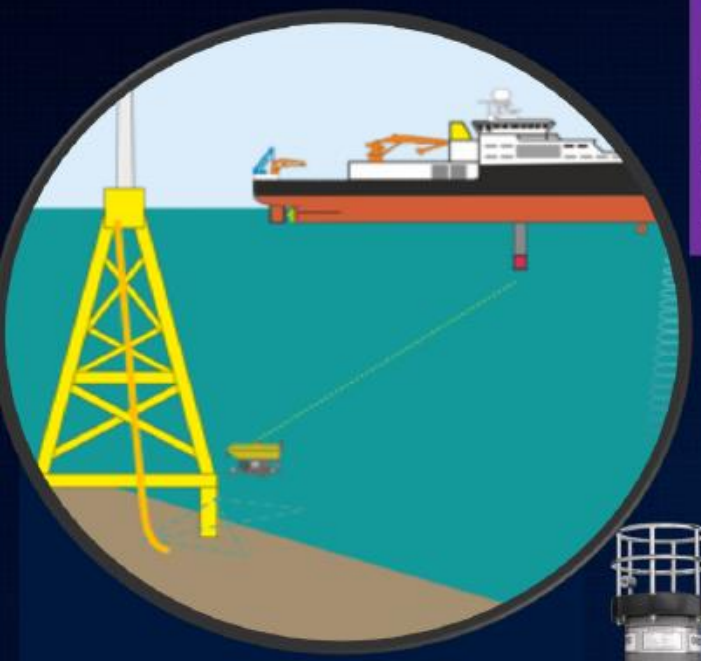
Sonardyne releases can be added to any environmental sensor payload. They can be used to wirelessly release a clump weight to allow the payload to float to the surface, or be used to remotely initiative the deployment of a recovery line to the surface. The releases can also be tracked by Sonardyne positioning systems so you can geolocate your sensors.



Environmental Surveys

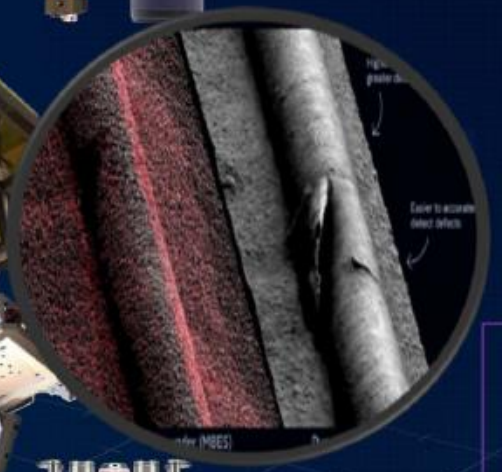
Track divers & vehicles & landers, stream ADCP data, provide navigation to an autonomous vehicle, deploy and retrieve sensor packages. Our environmental survey toolbox is equipped with the solutions you need to get your project completed on time and on budget.

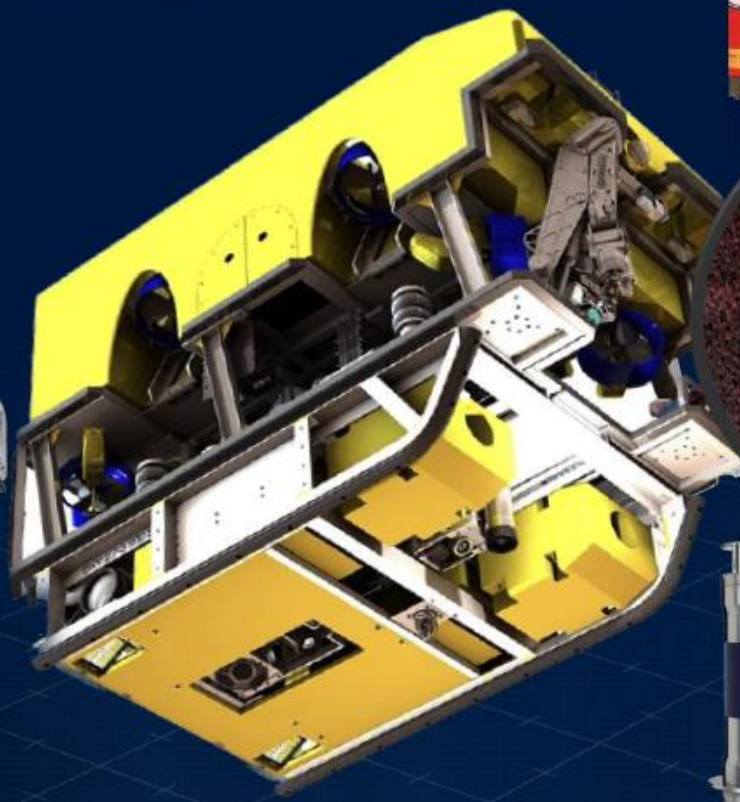
Sonardyne



Positioning

Ranger 2 USBL is a family of vessel deployed technology that allows you to position, track and communicate with your ROV with superior and reliable performance. Unlike other systems that are overly complicated, or with inadequate performance, Ranger 2 is your one-stop shop for finding the right subsea positioning system.





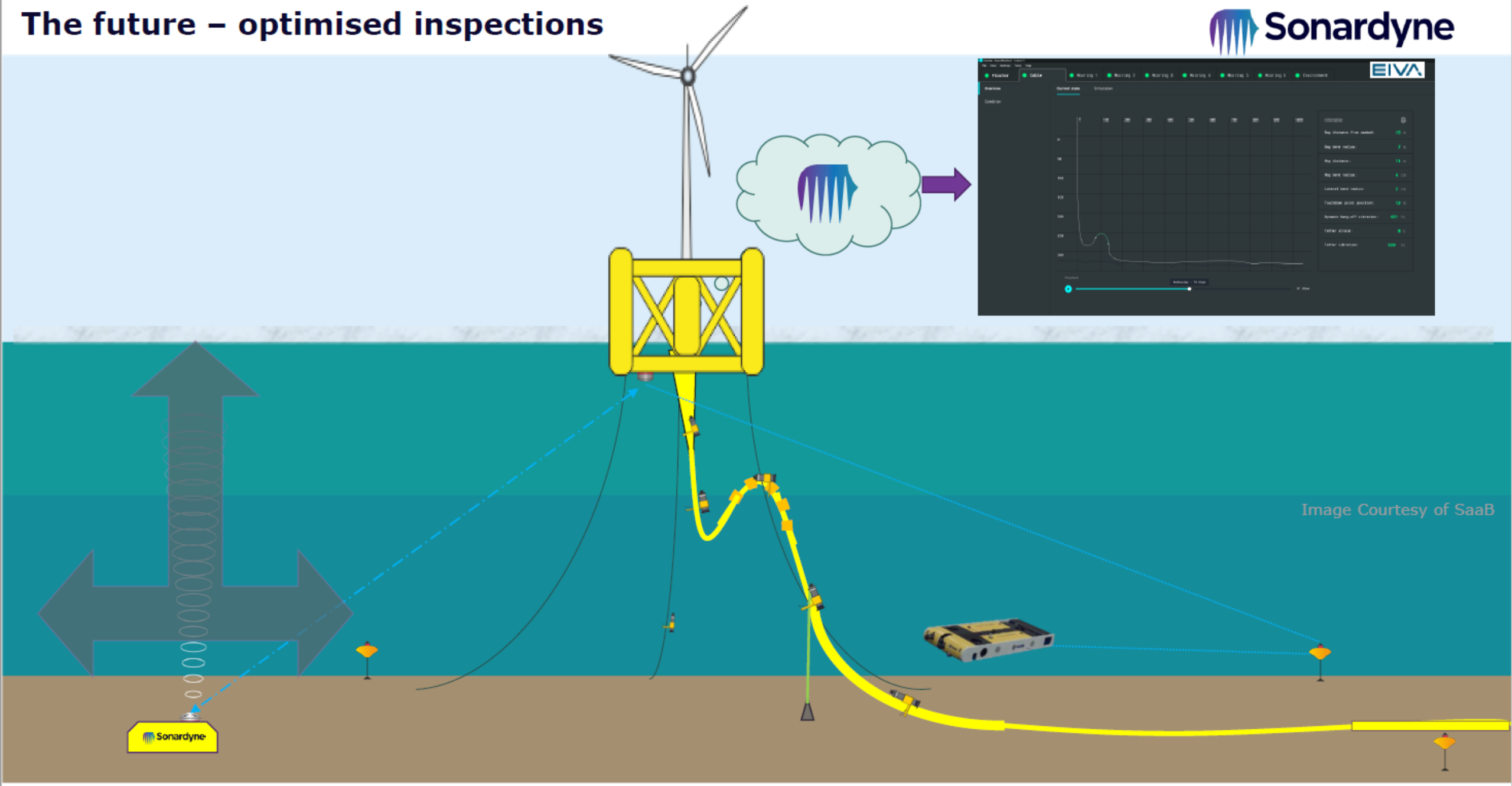
Navigation

SPRINT-Nav is a family of all-in-one INS and DVL hybrid acoustic-inertial navigation instruments that enables subsea vehicles to navigate themselves in the subsea domain, and provides precision improvements to USBL positioning solutions, and reduces the operation cost of LBL positioning solutions. Unlike inertial solutions created from disparate products, SPRINT-Nav is a pre-calibrated, plug-and-play solution engineered in compact, low-power, easy-to-install form factors suitable for any vehicle.

ROV Operations

ROVs come in all shapes and sizes, that's why our subsea technologies have been designed to be compatible with all vehicles and capabilities, whether that conducting a small site or asset survey, assisting in cable and pipe laying, or heavy construction activities.

The future – optimised inspections



Sonardyne

Thank you for your time today

Any questions?

Contact: Mike Ellis
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Optional Contact No. +44 7969 076101

sonardyne.com

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Craig Davis
Rovco

ROVCO
OCEAN INSIGHT

Rovco Renewables update

Craig.G.Davis

Director - Site Characterisation

Craig.Davis@Rovco.com

ROVCO OCEAN INSIGHT | vaarst

Combining novel survey techniques with our vast offshore wind industry knowhow

- Winning survey solutions, driven by our deep knowledge of the offshore wind sector
- Industry experts, having worked on over 50% of operational wind farms in UK waters
- Systems designed to dramatically increase efficiency across projects, lower emissions, and deliver industry-leading data

BORN FOR RENEWABLES

SERIES B LEAD INVESTORS equinor Legal & General

ROVCO OCEAN INSIGHT

- Extensive renewables sector subsea track record
- Leveraging innovative technology to differentiate and excel at project delivery
- Focus on quality and accuracy of reporting to clients to inform key decisions

Key Customers Include:

IBERDROLA SSE Van Oord

Data collection and analysis business using robotics - specialised in renewable energy sector

vaarst

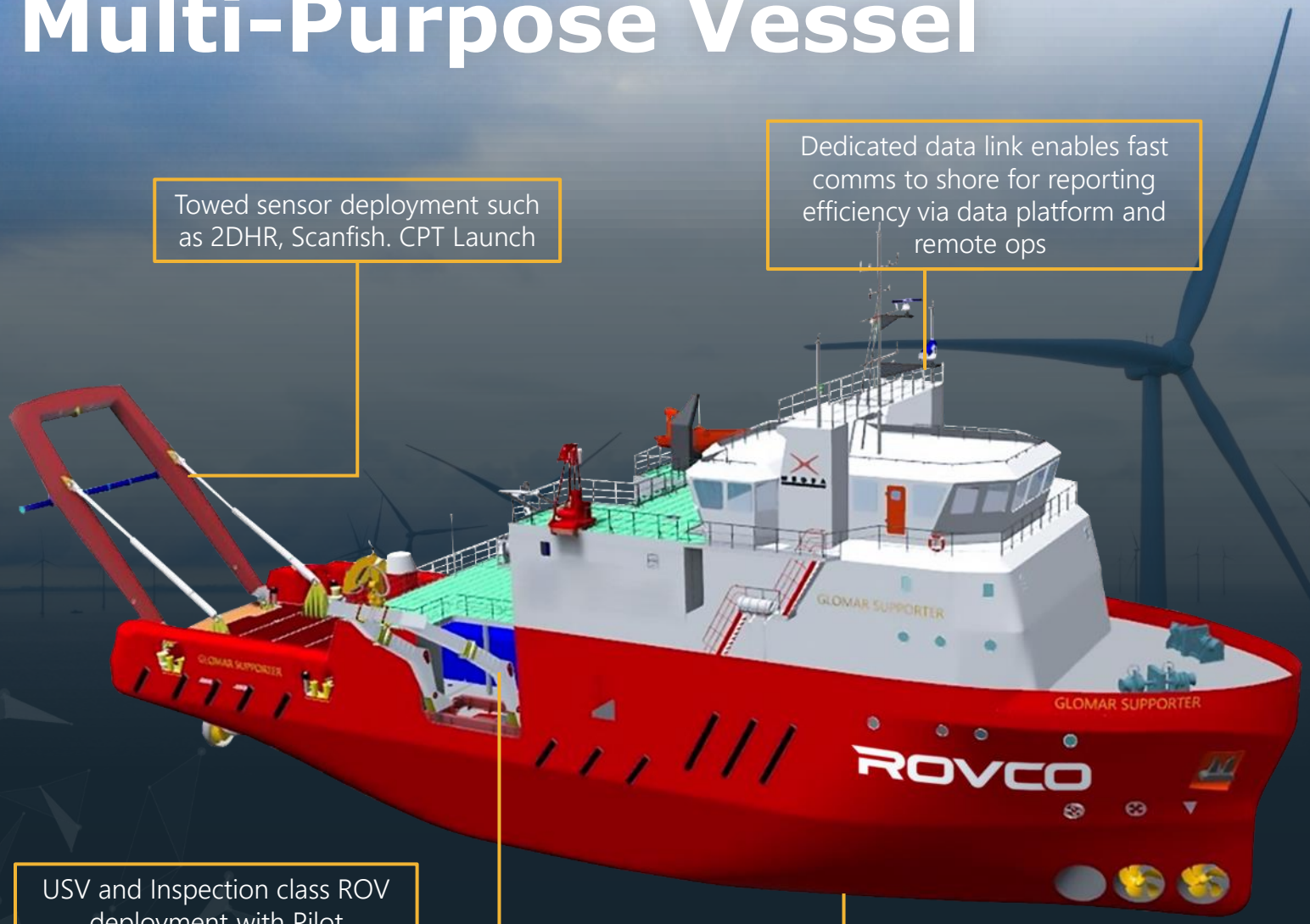
- Developers of 3D vision and ML tech
- Sea – Air – Land solutions for industrial spaces, asset mapping and data trending/analysis
- Solving autonomy challenges in harsh environments to enable truly autonomous robotics

Key Customers Include:

VATTENFALL Shell DEEPOCEAN

Technology business creating new IP and robust 3D Vision solutions

Multi-Purpose Vessel



Towed sensor deployment such as 2DHR, Scanfish. CPT Launch

Dedicated data link enables fast comms to shore for reporting efficiency via data platform and remote ops

USV and Inspection class ROV deployment with Pilot Assist/RPL following capability – enables detailed survey of areas of interest

Gondola mounted survey sensors enable high quality, repeatable data collection

- Dedicated DP2 survey vessel, delivering a versatile and superior quality spread for consistent, industry-leading data capture and reporting.
- USV onboard for simultaneous data collection with instant upload to vessel, as well as an all-electric WROV to enable concurrent inspection work.
- Differentiated by technology and equipment to provide synergistic working and flexibility of sensor deployment.
- Negating the need for remobilisation, bringing unrivalled efficiency and lower operating costs.

- Hydrographic / Bathy survey (MBES, SSS)
- Geophysical (SBI, SBP, Sparker, Mag)
- Magnetic anomaly detection (pUXO)
- Marine archaeology and Benthic survey
- Cable route surveys (Export and Array)
- ROV asset integrity (structural inspections)
- ROV cable depth of burial assessments


ROVCO
GM
GLOMAR SUPPORTER


ROVCO
GLOMAR SUPPORTER

USV solutions

The ideal solution to increase survey coverage in limited timeframes

- Proven offshore survey “force multiplier” with capacity to operate up to 7 days at a survey speed of around 7 knots
- Fixed payload location for accurate offset measurement
- Proven to perform hydrographic operations as well as a crewed survey vessel, with substantially lower fuel consumption
- Shallow draught and excellent manoeuvrability, enabling operations in areas that large vessels cannot reach
- Docking system for LARS from the Glomar Supporter mothership
- Advanced autonomy - pre-programmed missions can be set up, executed and monitored using graphical user interface

HSE improvements & cost savings

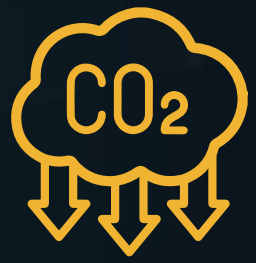
Bringing unparalleled efficiencies to operations

Reduced Operational Costs

- A multi-tasking survey vessel that negates the need for mobilisation of smaller support craft.
- Autonomous operations enable projects to be managed remotely and in real-time, reducing project costs by applying force multiplier.

Safer Personnel

- C-Worker 5 USV removes people from hazardous offshore environments
- VSat enables data transmission from ship to shore in real time, allowing reporting teams to be based onshore for remote supervision and report collation.

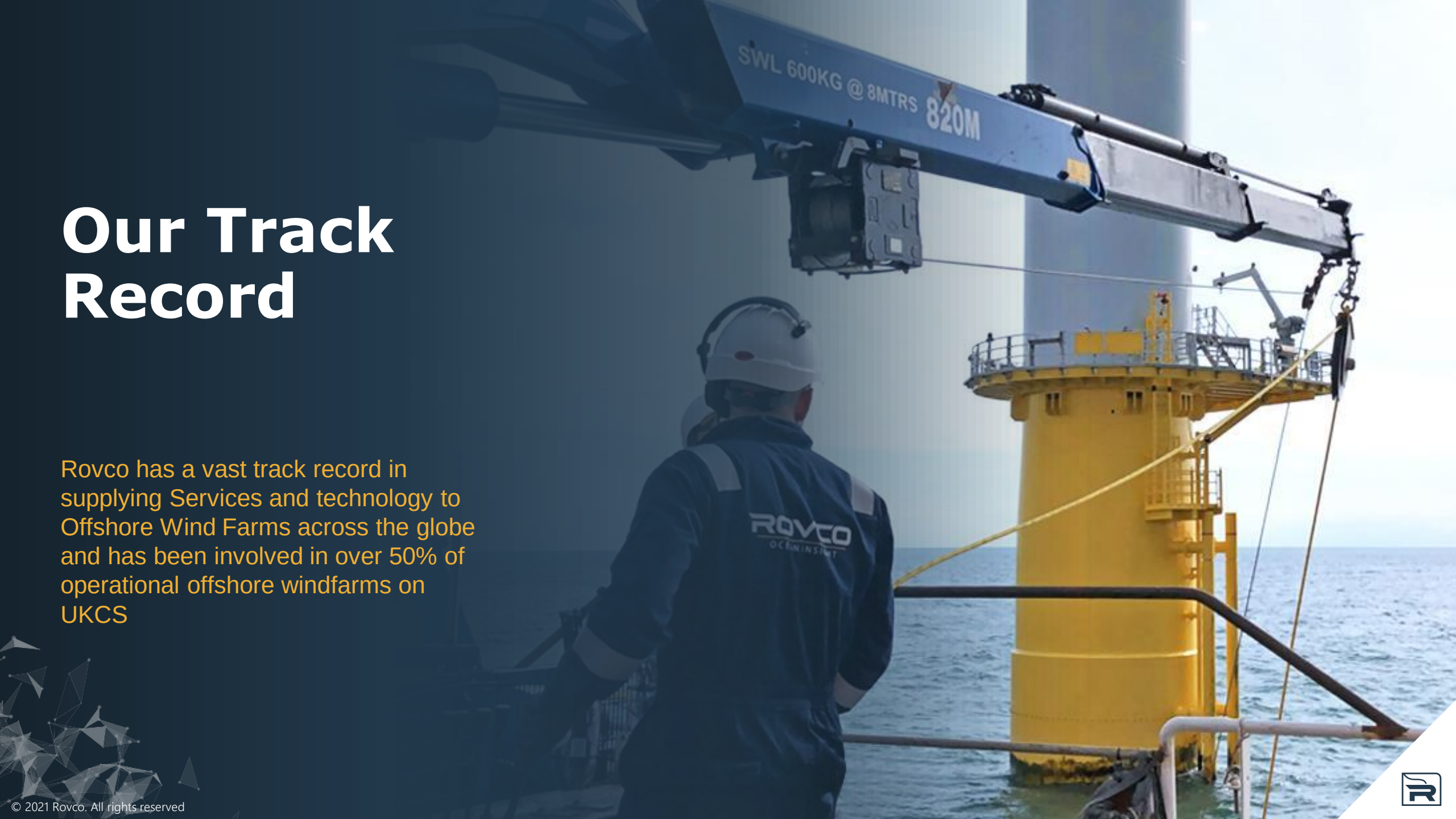


Lower CO2 Emissions

- 7,000 tonnes CO2 saved for every survey vessel replaced with an USV

Our Track Record

Rovco has a vast track record in supplying Services and technology to Offshore Wind Farms across the globe and has been involved in over 50% of operational offshore windfarms on UKCS



THANK YOU

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Anil Sayhan

Offshore Wind Growth Partnership

Offshore Wind Growth Partnership

OWGP Overview

Anil Sayhan – OWGP Programme Director

6th April 2023

Agenda

- Introduction to OWGP
- Grant Funding Programmes
- Business Transformation Programmes
- OWGP in Scotland
- Case Studies
  - Kraken Robotics
  - Sulmara
- OWGP in numbers
- OWGP Future
- Summary and Q&A

Introduction to OWGP

Offshore Wind Growth Partnership

Aim:

A long-term business transformation programme for the UK offshore wind supply chain

Funding:

- OWIC (offshore wind developers) are funding OWGP.
- OWGP can leverage public funding

Delivery:

Budget of £100m over ten years to provide:

- **Business Transformation** – structured programmes to help companies grow.
- **Grant Funding** – for developing new products, services, capacity and capability

Objectives:

Grant Funding Programmes

Offshore Wind Growth Partnership

Development Grants

Coming Soon!!

Large scale grants for transformative projects that will deliver a step change in company growth.

£100k to £1m

Two-stage application process

Open scope competition focusing on:

- Commercialising new technology
- Investing in new facilities
- Implementing new processes
- Investing in new equipment

Innovation Grants

Grants for game-changing projects that will deliver new Innovations to the OSW market

£25k to £200k

Targeted scope to specific offshore wind innovation priorities such as:

- Accelerating site development and consenting
- Supporting decarbonisation
- Improving reliability

Grant Funding in Numbers:

60 funded projects

£11m grant funding

£11.9m match funding

Up to **£1.6m** beneficiary contribution

Business Transformation Programmes

Offshore Wind Growth Partnership

WEST

Open to applications!

Specialist advice, market intelligence and insight into offshore wind.

8 to 10 weeks

Needs-focused support within offshore wind domain and business capabilities.

Provision of structured, tailored business support with access to specialist advice, market intelligence and strategic insight into the sector.

F4OR Fit For Offshore Renewables

Boosting competitiveness, and supply chain readiness to win new contracts.

12 to 18 months

Regional and national cohorts supported in batches

Journey of comprehensive business excellence and sector specific support delivered by independent experts, against agreed set of industry criteria.

SHARING IN GROWTH

Open to applications!

Embed proven approaches to drive holistic business improvements.

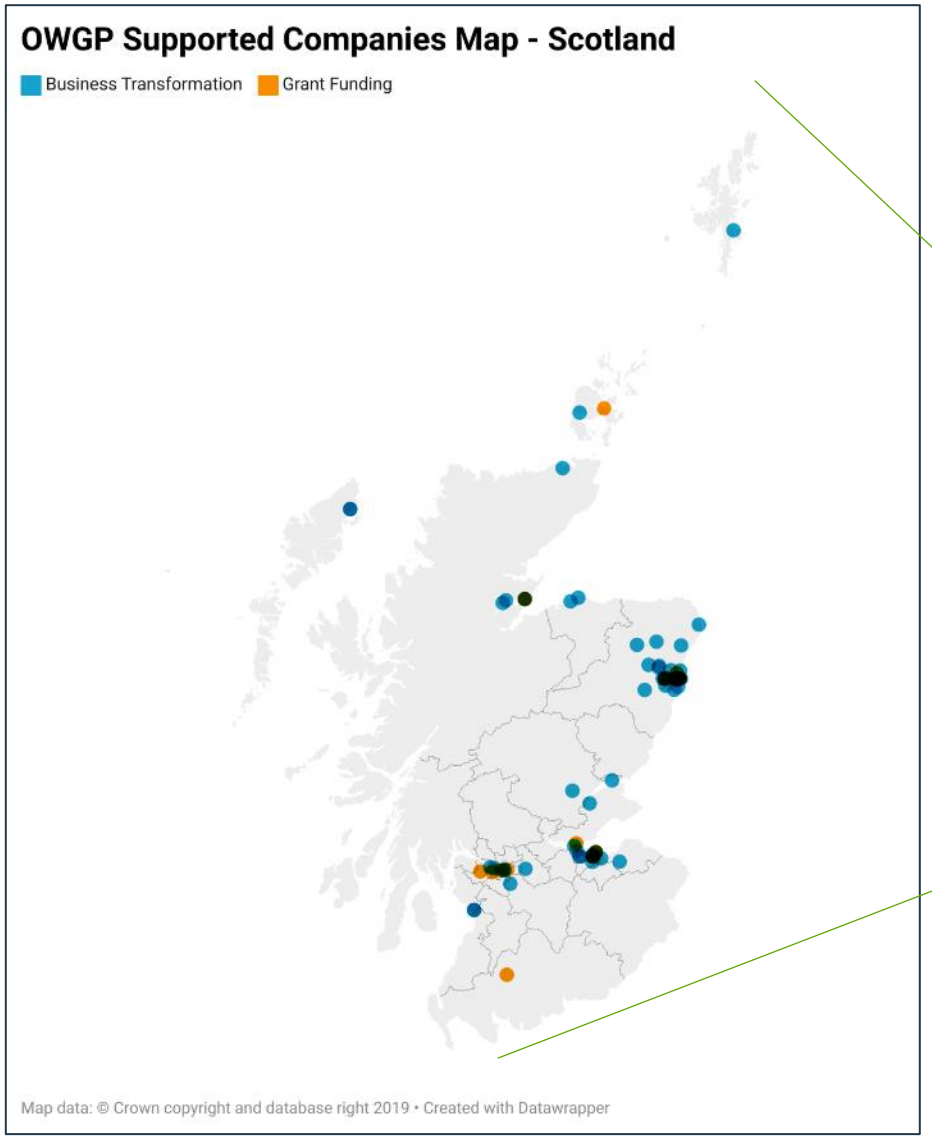
Funding up to 4 years

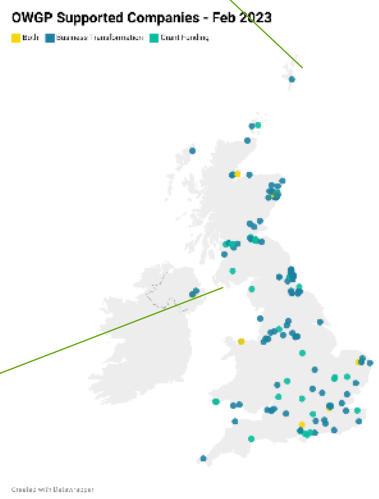
1-2-1s for application support available

Utilising SiG specialists to deliver a high intensity, long-term advanced programme focusing on strategic input to enhance the participating companies' future direction and growth opportunities.

Duration & Intensity

Supported Companies in Scotland





Positive engagements to date with companies registered with DeepWind & Forth & Tay Clusters

82 of our 210 project support activities have been in Scotland – Scottish companies have a lot to offer to the Offshore Wind Supply Chain!

Find us at an event near you….	
SR Offshore Wind, Glasgow	25th / 26th January 2023
Marine Energy Wales, Swansea	21 / 22nd March 2023
Developer Days, Pembrokeshire & Falmouth	25th / 26th April 2023
SNS2023	24th / 25th May 2023
Global Offshore Wind	14th / 15th June 2023

OWGP accelerating growth in the UK's offshore wind supply chain

PARTICIPANT IN SIG OFFSHORE WIND PROGRAMME

Kraken Robotics: Providing 3D imaging technology to reduce risk in offshore wind installations

> "The programme has been an extremely valuable experience which has made a tangible difference to support Kraken for growth. The process has challenged our thinking and driven us to change our business model for the ultimate benefit of customers."

Lynne Adu, Vice President Commercial

Intensive 6 month Business Transformation programme with OWGP partner, SiG to transform Kraken's sales strategy and set the business up to operate at scale.

- **Improved customer satisfaction**
- **Improved business performance**
- **Created clarity around load and capacity**

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Jim Gardiner

Sulmara

Offshore Wind Growth Partnership

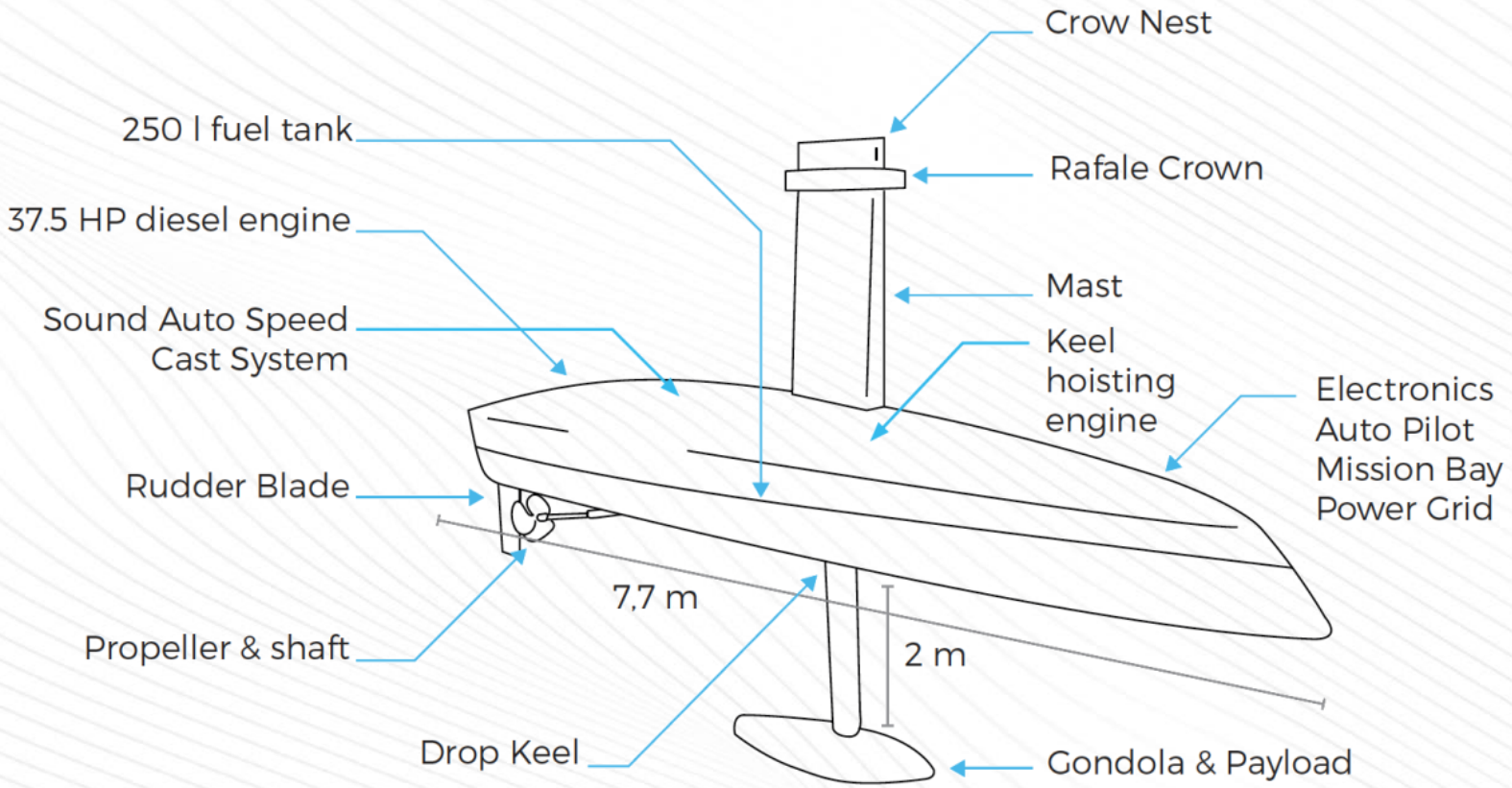
sulmara

An Over the Horizon remote survey and inspection service for offshore wind farms

- 18 month project duration
  - Awarded October 2021
  - Kicked off Dec 2021
  - Due for completion June 2023
- Deliverables:
  - A client endorsed commercially viable uncrewed survey service
  - **Full OTH operational capability, proven during field testing.**
  - Establishment of a remote operations centre (ROC) in Glasgow, accompanied by a build report, to be used as template for subsequent ROC builds**.**
  - **Operational capabilities to undertake OWF surveys without support vessel coverage**
  - A fully functional USV-ROC communications system, facilitating fully remote operations
  - Implementation of an automated USV command and control, obstacle avoidance, and vessel management system.
  - Implementation of cloud-based data management system, including:
    - A secure remote data access platform for clients
    - A repository of historical and present survey monitoring data.
  - Integration of an automated vessel based data processing system
  - Successful demonstration of our remote survey concept to clients during field trials
  - **Regulator certification of our USV service.**

Offshore Wind Growth Partnership

sulmara



Design Functionality

- DriX highly hydrodynamic monohull – pierces waves and cannot capsize
- Data acquisition in up to sea state 5 at 6 knots
- Transit speed at up to 14 knots
- Mission endurance of up to 10 days depending on speed and payload
- Wide range of payloads of high-quality data acquisition in both shallow and deep waters

Key Specifications

- Length 7.7m, Beam 0.82m, Draft 2.0m
- Weight 1.8 tonnes
- Fuel consumption 2l / hour
- Navigation DGPS, mission software, LiDAR. Video cameras, IR cameras, Radar

Offshore Wind Growth Partnership

sulmara

Windfarm Lifecycle Support

- Site assessment
  - High resolution Geophysics
  - Sandwave monitoring
- Construction phase USV (resident or from shore)
  - Replacing CTV surveys – de-risking data collection
  - MBES/SBP data collection (& Metocean)
  - Reduce mobs/ demobs/ personnel transfers
  - Improved data collection platform
- Operations and maintenance
  - Scour surveys
  - Cable burial monitoring
  - Sandwave monitoring

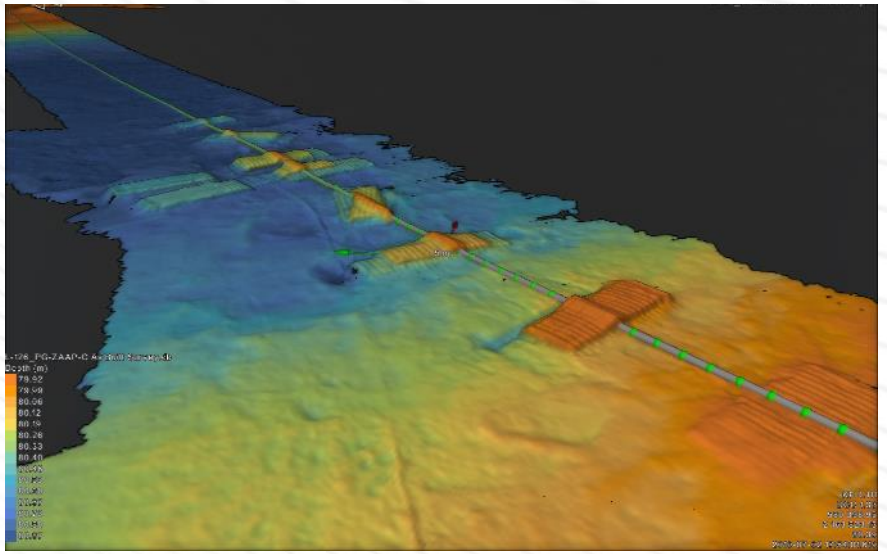
Offshore Wind Growth Partnership

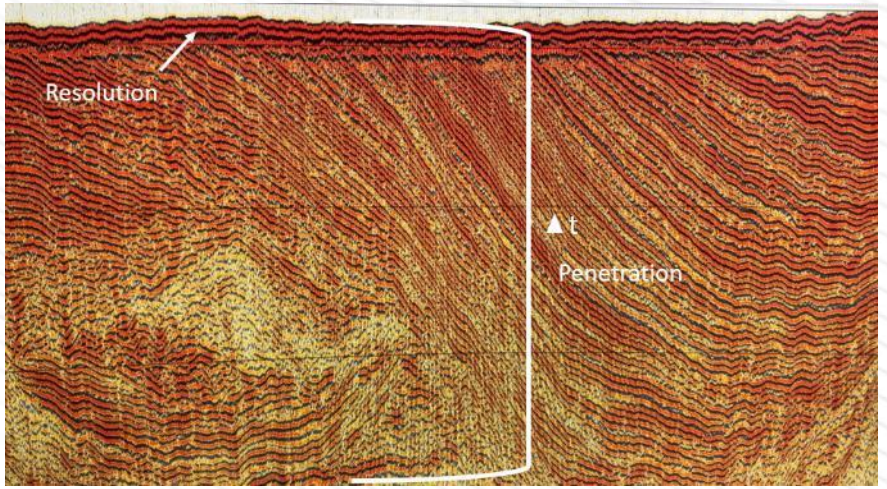
sulmara

Geophysical Data Collection

- Multibeam data – Kongsberg EM2040 Dual Swathe
  - Seabed Topography
  - Debris / hazard identity
  - Pre-lay/ post-lay / pre-trenching / post-trenching
  - Scour Survey
  - Ecological habitat assessment (backscatter)

- Sub bottom profiler data – Innomar Standard
  - Seabed shallow geology
  - Bedrock detection
  - Cable depth of burial / crossing detection
  - Boulder detection





Maritime Assurance – keeping operations safe

Sulmara Maritime Resources Increased

- Recruitment of maritime personnel to drive safe USV technology implementation + operation
- Sulmara are members of the IMCA working group on USV CMID

Stakeholder Engagement

- Sulmara Sit on various working groups to steer the regulatory framework for MASS

Flag State and Certifying Bodies

- Liaise with flag states on regulations governing USV
- Lloyds UMS and Bureau Veritas Certificate of Classification
- Process with UK MCA to obtain a load line exemption for DriX 09

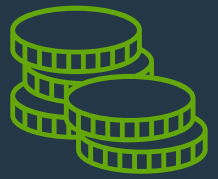
OWGP in Numbers – March 2023

Offshore Wind Growth Partnership

1233

Companies Registered

£14.57m



Funding Awarded

209

Projects Supported

83

Live Projects

180

Jobs

£10.51m

Turnover

£3.20m

Exports

28

IP

OWGP - Future

Requirements

- Focus
- Governance
- Efficient and effective

Constraints

- Competition Law
- Conflicts of Interest
- Subsidy Control

OWGP Strengths

- Legal entity able to manage funds and subcontract
- Board has diverse and balanced representation from OWIC, OREC, RUK, and independents
- Dedicated delivery team supported by ORE Catapult's corporate teams and sector knowledge
- Compatible with a blend of public and private funds
- Commitments can be made independent of any changes in governments or spending reviews.

Other possible intervention areas:

- Infrastructure
- Fabrication yards
- Manufacturing facilities
- Technology commercialisation facilities
- Financial investments
- Supply chain skills development

Summary

- OWGP was set up in 2019 after the Sector Deal
- Has established grant funding and business transformation programmes
- ~40% of its support activities are in Scotland
- Working closely with Clusters and Enterprise Agencies
- Initial intervention data set shows strong correlation between OWGP support and beneficiary growth
- Survey and inspection services are expected to deliver high UK content
- OWGP is assessing viability of other future interventions
- Keep / get in touch!
- Q&A

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Q&A Session


Thank you
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Image source – KOWL