

Survey Services

Company Brochure 2023





25 years of marine experience

Established in 1996, A-2-Sea Solutions have provided expert cable solutions to the global subsea community for over 25 years.

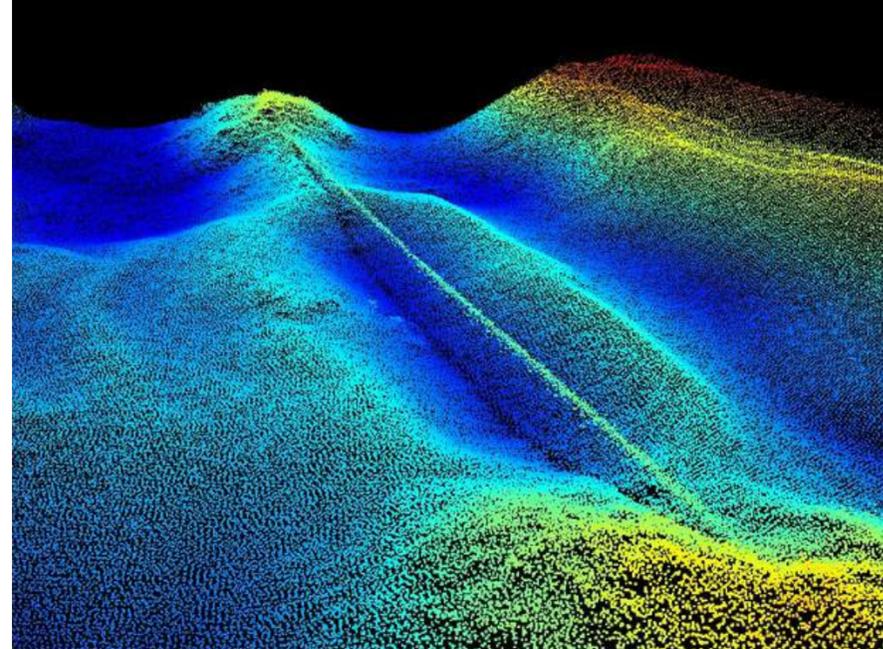
A-2-Sea Solutions has traditionally provided subsea cable solutions including cable engineering, jointing, shallow water system installation and cable maintenance services. With a solid reputation for delivering quality projects on time and on budget, the company has since developed a strong in-house survey capability.

We offer a range of hydrographic, geophysical and UXO survey services, serving clients from various industries including offshore renewables, nautical charting, oil and gas, marine aggregates, and, naturally, subsea cables.

The company plays an active role with the UK Government's MCA Civil Hydrography Programme, and was awarded a larger scope of work during 2021.

A team of 40+ professional personnel deliver a range of projects globally. We pride ourselves on our superior customer service, providing a personal, flexible and responsive approach to projects. The company has a track record of delivering rapid mobilisations and meeting bespoke requirements at short notice.

The company is accredited to ISO9001, ISO45001 and ISO14001, and is regularly audited by various external agencies including Achilles UVDB.



Providing solutions to the telecoms industry since **1996**

40+ professional, full-time personnel



2.003bn seabed data points acquired for a cable install project



Why A-2-Sea?

We work closely with your team to deliver a high-quality, tailored service

Customer-First Mentality

A strong customer-focus is at the core of the business. From the tender response and contract negotiation through to delivery of the final report, we strive to meet and, whenever possible, exceed expectations. By working with our team, you can be assured we'll support you at every stage of the project.

Expertise

We promote the development of our in-house capability, prioritising the retention of talented personnel rather than contractors. This means we offer a high level of expertise in the company.

Agile and Flexible

The company can react quickly to a change of requirement, working closely with your team to ensure the change is managed effectively. For our clients in the telecommunications industry, we offer a 24/7 on-call service to rectify any issues, and this mentality flows through the organisation.

Supporting Customers Globally

We're experienced in providing cable jointing and survey services globally. Our setup allows for rapid mobilisation of vessels of opportunity, with onsite data processing and route engineering as standard. Our cable landing installation expertise gives us a 'visit site once' mentality.

Personal Approach

Our team offer a personal approach to project management. We focus on nurturing long-term relationships with our customers which flows through all aspects of our operations.

Survey Capability

Our survey services cover the full life cycle of a project.

With a solid reputation for delivering quality projects on time and on budget, A-2-Sea has developed a strong in-house survey capability.

A-2-Sea Solutions offers a range of hydrographic, geophysical and UXO survey services, serving clients from various industries including offshore renewables, nautical charting, oil and gas, marine aggregates, and, naturally, subsea cables.

Our team of talented surveyors and geophysicists have experience in working on globally recognised projects, including some of the largest offshore wind farms in the world.

We acquire high-resolution multibeam and side scan sonar data, shallow seismic and magnetometer data to provide a tailored dataset to meet the project requirements. Using sensors from industry leaders such as Kongsberg, Edgetech and Innomar, we create high-quality datasets to inform the next phase of the project.

Service Benefits:

- Permanently mobilised survey vessels
- Land and inter-tidal capability
- Rapid mobilisation for survey projects, globally
- In-house processing and reporting team

Survey Services



Offshore Renewables Surveys

From high-specification geophysical acquisition to accurate post-construction monitoring, our team are experienced in providing high-quality survey services for offshore wind farms, wave and tidal developments.

For pre-construction site investigation, we mobilise a suite of geophysical equipment including industry-leading multibeam echosounders, side scan sonars, sub-bottom profiler and chirp systems, as well as magnetometer arrays. Working with experienced contractors, we supplement our core offering with benthic, environmental and shallow geotechnical investigation.

Post-construction monitoring typically consists of high-resolution multibeam bathymetry, side scan sonar and visual inspection data. For cable depth of burial monitoring, we employ a range of acoustic and ROV techniques, providing a flexible and cost-effective service.

Cable Route Surveys & Route Engineering

We perform pre-installation cable route surveys from Beach Manhole to Beach Manhole using a full spread of advanced geophysical and geotechnical equipment.

We are also able to offer topographical surveys between the Beach Manhole and the Cable Landing Station utilising traditional topographical survey techniques and drones.

Using trusted partners, we can also offer benthic and environmental investigation and shallow geotechnical work to inform route engineering and burial assessment studies.

Pipeline Integrity Surveys

Our offering includes high-resolution multibeam and side scan sonar surveys for acoustic pipeline inspection, identifying areas of exposure and freespan. We also perform depth of burial tracking using both ROV and geophysical techniques.

Nautical Charting

Our team are experienced in delivering surveys to the Maritime and Coastguard Agency as part of the United Kingdom Civil Hydrography Programme.

The team are comfortable with the use of relevant related standards; HM Operational Guidance (HMOG's) NP145, The Mariner's Handbook (NP100), and our data meets and typically exceeds International Hydrographic Organisation S-44 standards.

pUXO Surveys

We offer a range of both ferrous and non-ferrous UXO survey services. From magnetometer and gradiometer arrays through to 3D chirp technology, we provide cost-effective and efficient acquisition and processing services to ensure the project remains on schedule.

Shallow water experts

Working in the nearshore and intertidal environment is notoriously difficult. Our team have successfully performed a myriad of surveys on even the most environmentally challenging sites.





Survey Vessels

A-2-Sea Solutions owns and operates 3 dedicated survey vessels and regularly charters larger offshore vessels.

Our vessels provide stable platforms for acquiring quality survey data, with well-laid out working areas and a comfortable accommodation provision. Both the Cerys Line and Morven are permanently equipped with a comparable survey spread, ensuring consistency of data formats, and leading to enhanced processing and interpretation outcomes.

White Ribbon is a multi-purpose survey vessel, offering a stable, versatile platform for surveying inshore coastal areas.



Morven



White Ribbon



Cerys Line



Noortruck - 2021-2023



Cerys Line



Cerys Line is perfectly suited for 24-hr survey operations and has an extensive track record in providing survey services since 2009.

Cerys Line is a 26.1m LOA, 2.1m draft survey vessel with 24-hr operational capability and an endurance of up to 8 days. The vessel is UK-registered and operates under the MCA workboat code Category 2 and can accommodate up to 4 marine crew and 4 survey crew members for 24-hr operations, with capacity available for a client representative.

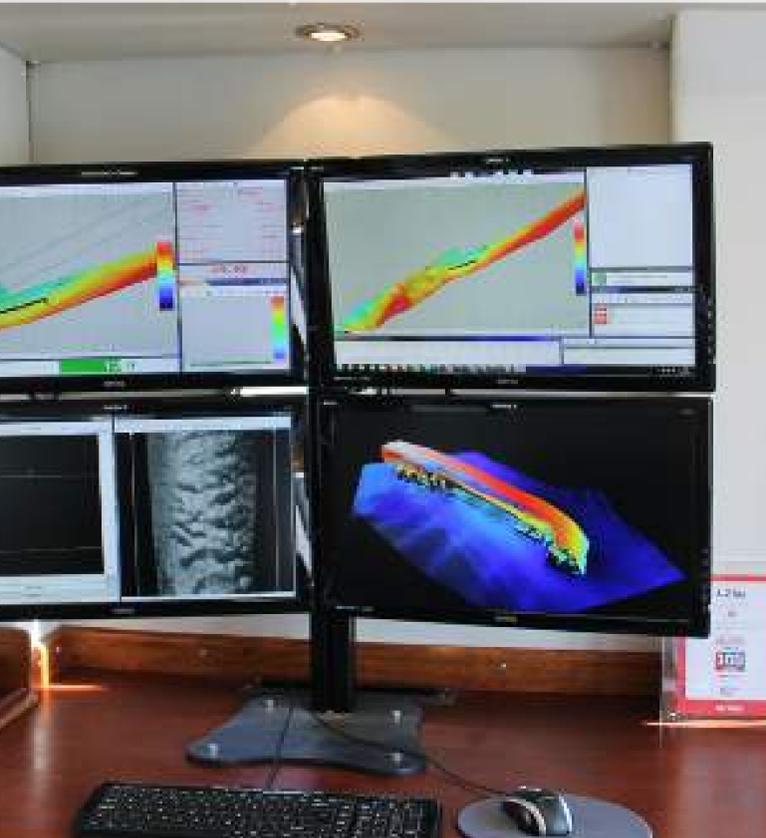
Equipped to accommodate four persons, a galley, a TV lounge area and internet in all areas provide a comfortable working environment. Two diesel engines and two water jet engines allow for varying speeds of up to 12 knots, with survey speed of between 4-8 knots depending on water depths.

Cerys Line is permanently mobilised with the latest generation survey equipment, including a Kongsberg EM2040 Compact (dual-head configuration; hull-mounted) multibeam echosounder (MBES) integrated with an Applanix POSMV OceanMaster GNSS-aided inertial navigation system. QPS QINSy is utilised as the hydrographic survey management system which integrates the GNSS navigation solution and geophysical survey equipment to geo-reference the survey data.

A comprehensive suite of navigation equipment is equipped, including a Furuno FA150 AIS, Bridge Master E TRANSAS NaviRadar and Furuno Navnet VX2 radars interfaced with a TRANSAS NaviSailor ECDIS system, meeting IMO and SOLAS regulations.



Flag	UK
Class	MCA Cat 2 (60 Nautical Miles)
LOA	26.1m
Beam	6.2m
Draft	2.1m



Morven



With an endurance of up to 6 days working on a 24hr basis, the Morven offers a stable, capable working platform ideally suited to hydrographic survey.

The Morven is a 19.82m LOA, 1.9m draft survey vessel with 24-hr operational capability and an endurance of up to 6 days. Operating under MCA workboat code Category 2, the UK registered vessel can accommodate up to 4 marine crew and 3 survey crew members for 24-hr operations, with capacity available for a client representative.

With dedicated survey workstations, a galley and crew mess, the vessel provides comfortable, well-considered working areas allowing for onboard data QC.

The Morven is permanently equipped with advanced survey equipment, including a Kongsberg EM2040 Compact (dual-head configuration; hull-mounted) multibeam echosounder (MBES) integrated with an Applanix POSMV GNSS-aided inertial navigation system. As with the Cerys Line, QPS QPS Qinsy is used as the hydrographic survey management system which incorporates the GNSS navigation solution and geophysical survey equipment to geo-reference the survey data.

Flag	UK
Class	MCA Cat 2 (60 Nautical Miles)
LOA	19.82m
Beam	5.48m
Draft	1.9m



White Ribbon



White Ribbon offers a stable, versatile platform for surveying inshore coastal areas.

White Ribbon is a multi-purpose survey vessel, capable of carrying out a range of surveys including bathymetric, environmental and geophysical surveys.

The vessel was previously owned by the British Geological Survey (BGS) and has been equipped with the latest survey equipment including a NORBIT Subsea WINGHEAD i77h Multibeam Echosounder, Sonardyne Mini-Ranger 2 USBL as well as an Edgetech 4125 Side Scan Sonar and G882 Magnetometer.

At 7.9m, the vessel can be rapidly deployed around the UK by road, allowing a quick response to urgent survey requirements.

QPS Qinsy is used as the hydrographic survey management system incorporating the GNSS navigation solution and geophysical survey equipment to geo-reference the survey data.

With a top speed of 25 knots and surveying up to 10 knots, the vessel is ideal for a range of inshore surveying applications including:

- Bathymetric surveys
- Environmental surveys
- Geophysical surveys
- Subsea pipeline and cable route surveys

Flag	UK
Class	MCA Cat 3 (20 Nautical Miles)
LOA	7.9m
Beam	2.7m
Draft	0.3m

Rapid mobilisations for cable route surveys, worldwide

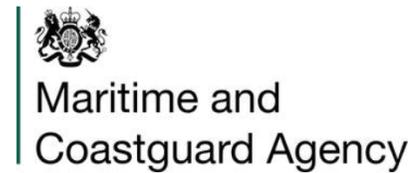
We recognise that urgent requirements inevitably occur when planning cable route projects in the marine environment.

Our team is ideally suited to rapid mobilisation overseas, and our survey equipment permitted on commercial flights which means we can facilitate even the most urgent survey on a worldwide basis.



Our Customers

We work with clients globally from various sectors related to coastal, nearshore and offshore developments.





Our QSHE Commitment

A-2-Sea Solutions places immense importance on continuously improving the quality of services provided to our clients, health and safety within the workplace, safeguarding the environment and ensuring efficiency through the adoption of recognised international standards and certifications.

We operate an accredited integrated management system certified to ISO9001: 2015, ISO45001:2018 and ISO14001:2015 standards, and are also audited by third-party organisations such as Achilles UVDB and Avetta.

Our recent achievements include:

- **Achilles UVDB Verify B2 Silver Plus** audit was passed with a score of 100% in November 2022
- **EcoVadis Gold** rating achieved in Nov 2022 – 91st percentile
- **ISO45001:2018** was successfully re-audited in October 2021 with zero non-conformances
- **ISO14001:2015** was successfully re-audited in May 2021 with zero non-conformances
- **ISO9001:2015** was re-certificated in January 2021 with zero non-conformances
- **Avetta** audit was successfully completed in February 2021
- **Safe Contractor** was renewed in March 2021
- **Alcumus SafePQQ** was awarded in October 2021



Pre-Construction Geophysics

A full spread of advanced survey equipment is equipped to provide a detailed, timely and accurate understanding of the development area.

Whether for large area initial reconnaissance, detailed pUXO assessment or determining the safest and most efficient route to shore, our team can acquire the data you need.

Our team of talented surveyors and geophysicists have experience in working on globally recognised projects, including some of the largest offshore wind farms in the world. We acquire a combination of high-resolution multibeam and side scan sonar data, shallow seismic and magnetometer data to provide a tailored dataset to meet the project requirements.

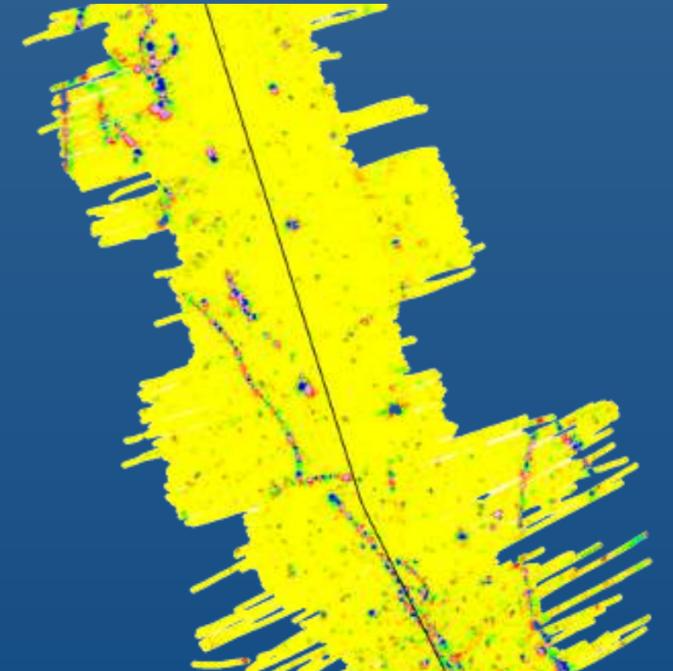
Using sensors from industry leaders such as Kongsberg, Edgetech and Innomar, we create high-quality datasets to inform the next phase of the project. Depending on project requirements, we are experienced in processing and delivering our data using industry-standard software, including:

- QPS QINSy & Qimera
- Teledyne Caris HIPS & SIPS
- QPS Fledermaus
- Chesapeake SonarWiz
- IHS Kingdom
- Oasis Montaj including UXDetect
- ESRI ArcGIS
- Autodesk AutoCAD



pUXO surveys using magnetometer and gradiometer spreads

High-resolution seabed mapping using advanced multibeam echosounder and side scan sonar systems.



Shallow sub-bottom profiler data acquisition using pinger, boomer, and chirp systems.



Post-Construction Monitoring

Using the latest in advanced survey technology, we can monitor the condition of subsea assets, track the development of scour, assess seabed morphology and determine depth of cover.

For subsea assets, condition monitoring can be both expensive and time-consuming. This data must be managed effectively over the lifetime of the asset to inform crucial decision-making and potentially extend the lifespan.

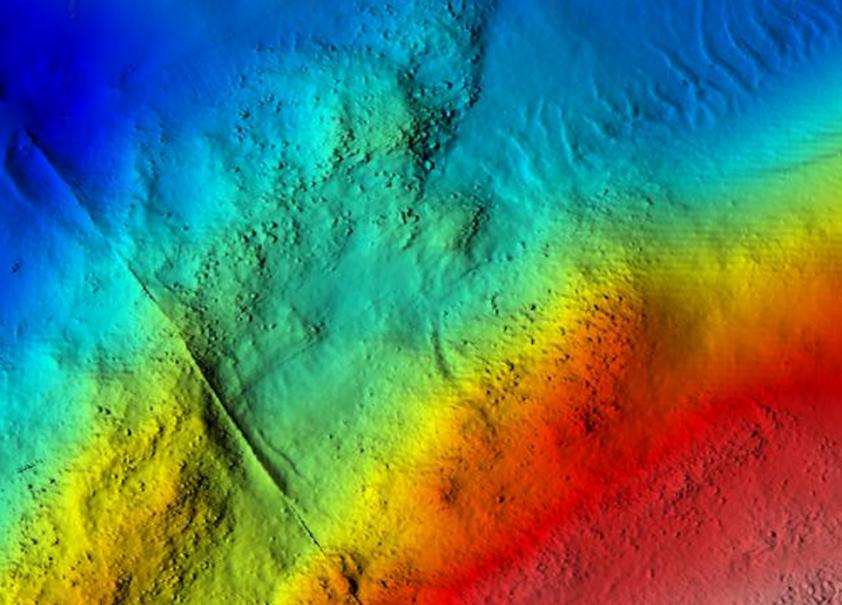
We work closely with our clients to ensure we provide the right data at the right time, within budget. Typically this involves the acquisition of high-resolution multibeam bathymetry of up to 700kHz and side scan sonar data of up to 1600kHz.

The Kongsberg EM2040 Compact shallow water multibeam (dual head, dual swath configuration), provides 1600 soundings per ping, making it ideally suited for object detection.

The dual swath capability allows for increased data density along-track, reducing the survey duration and making the system a more cost-effective option for our clients.

A-2-Sea offers alternative high-resolution MBES systems such as the R2Sonic 2024, Reson SeaBat 7125 and Norbit iWBMS.

These core datasets are then supplemented with cable and pipeline depth of burial data - either visual, pulse induction or 3D chirp - as well as ROV visual inspection data.



Ultra-high resolution multibeam bathymetry for scour monitoring, cable exposures and freespan identification.



Side scan sonar imagery for debris detection and cable monitoring.



Cable depth of burial surveying using acoustic and ROV inspection techniques.



Land & Intertidal

To supplement traditional land survey techniques, the use of Unmanned Aerial Vehicles (UAVs) can provide rapid data acquisition for cable landing surveys.

UAVs are particularly useful for large area surveying, surveying locations where it is either unsafe or inaccessible to access on foot, and for producing high-resolution imagery to provide a greater understanding of the location, which cannot be obtained from traditional techniques.

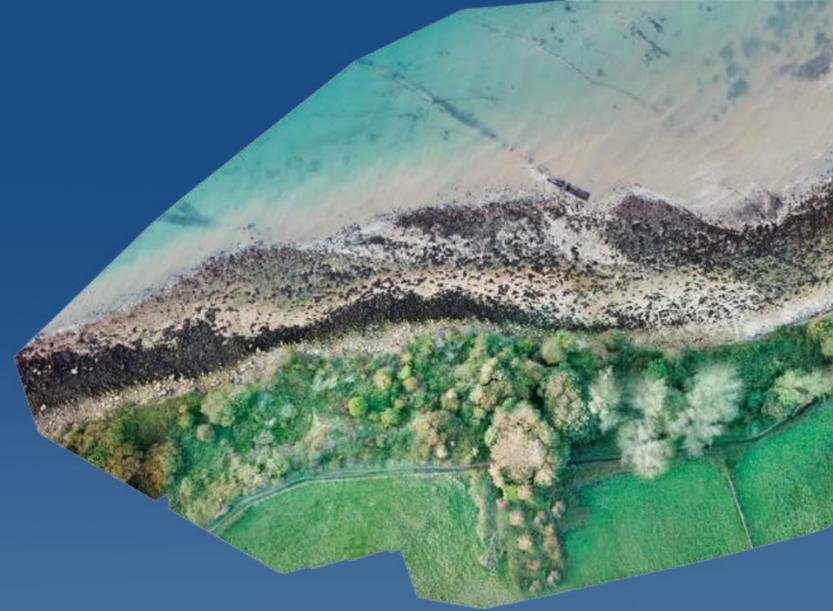
Providing up to 1cm horizontal and 1.5cm vertical (+1ppm) positioning accuracy, the Phantom 4 RTK system provides survey-grade results both efficiently and cost-effectively.

Using the Phantom 4 RTK system, we acquire:

- 3D Point Cloud data
- Digital Surface Models (DSM)
- High-resolution georeferenced Imagery

These datasets are a valuable source of information to inform:

- Route Engineering
- Land route inspection
- Feature identification: including exposed cables in shallow water
- Shore End installation planning



USVs provide rapid mobilisation and data acquisition



DJI Phantom Pro 4 RTK



The DJI Phantom Pro 4 offers survey-grade accuracy





The Z-Boat 1800 remote hydrographic survey boat with Kongsberg GeoSwath 4R

Autonomous Acquisition

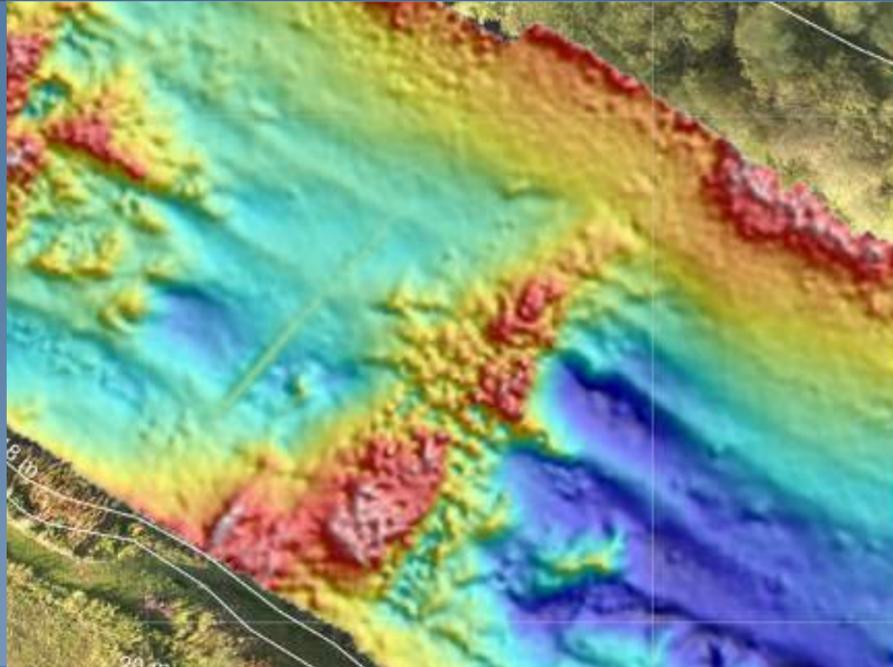
We are using Unmanned Surface Vehicles to acquire high-quality survey data both efficiently and cost-effectively.

Unmanned Surface Vehicles, such as the GeoSwath 4R USV from Kongsberg or the Picotech PicoCAT with PicoPOD, offer remote acquisition in locations where the deployment of conventional platforms is either impractical or hazardous.

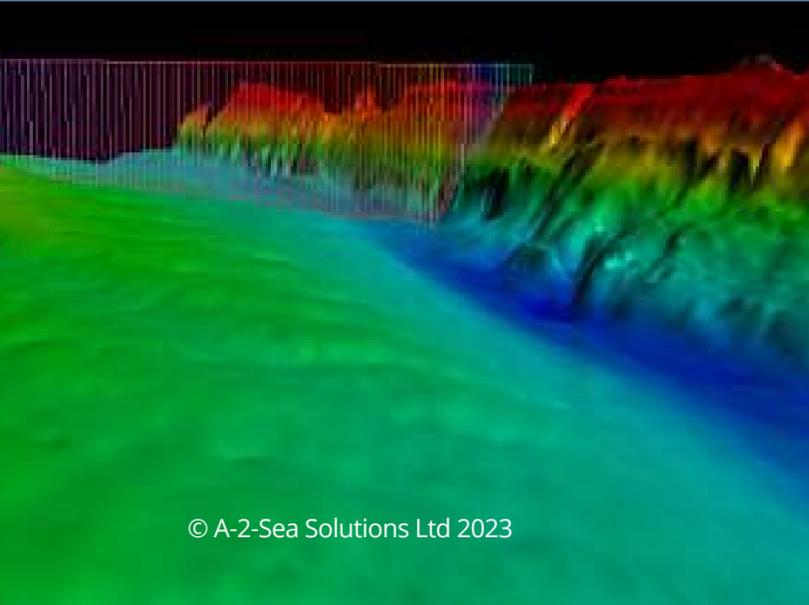
Systems such as this provide simple, easy deployment and operation, and are a useful addition to supplement and optimise data acquisition on site.

The GeoSwath 4R is a phase measuring bathymetric sonar delivering high-resolution wide swath bathymetry data with coverage of up to 12 x water depth.

With accuracies exceeding IHO standards for hydrographic surveys, the system also acquires co-registered and geo-referenced side scan data to support object detection and bottom characterisation. It is integrated with a GNSS position and heading sensor, a motion reference unit and a sound velocity sensor.



The integrated bathymetric sonar offers coverage of up to 12 x water depth



USVs offer rapid and simple deployment to site



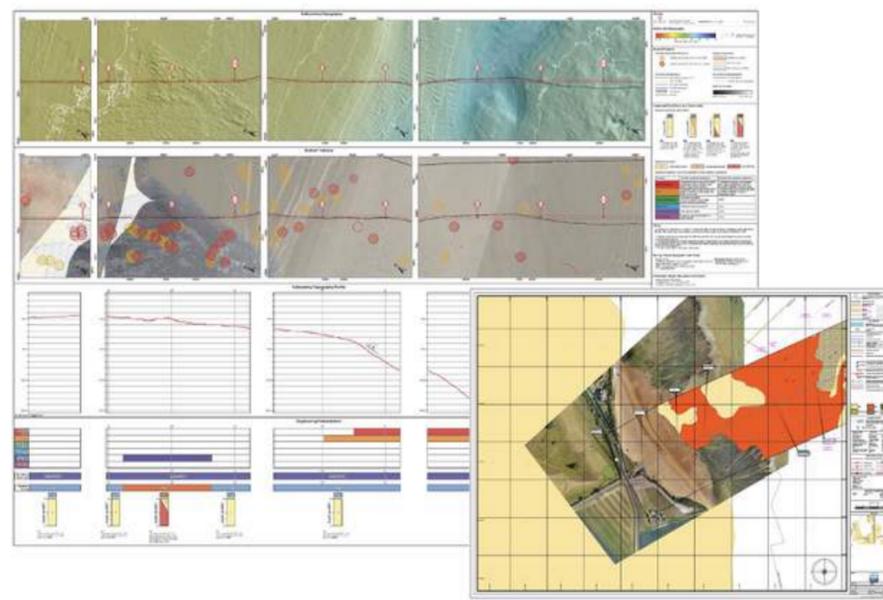
Data Processing & Charting

We use the latest industry-leading processing and presentation software to process and deliver our data in line with client and project requirements.

Our data QC and processing starts on-site, with onboard data processing facilities enabling rapid turnaround time for the provision of data deliverables. Once the data reaches our office, high-performance processing machines allow us to handle large datasets, delivered in a range of formats.

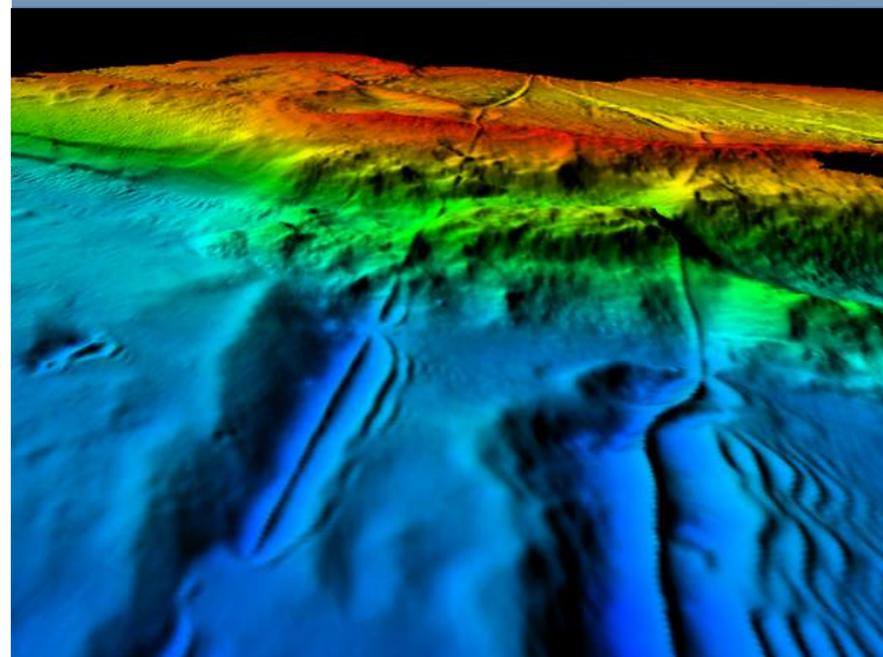
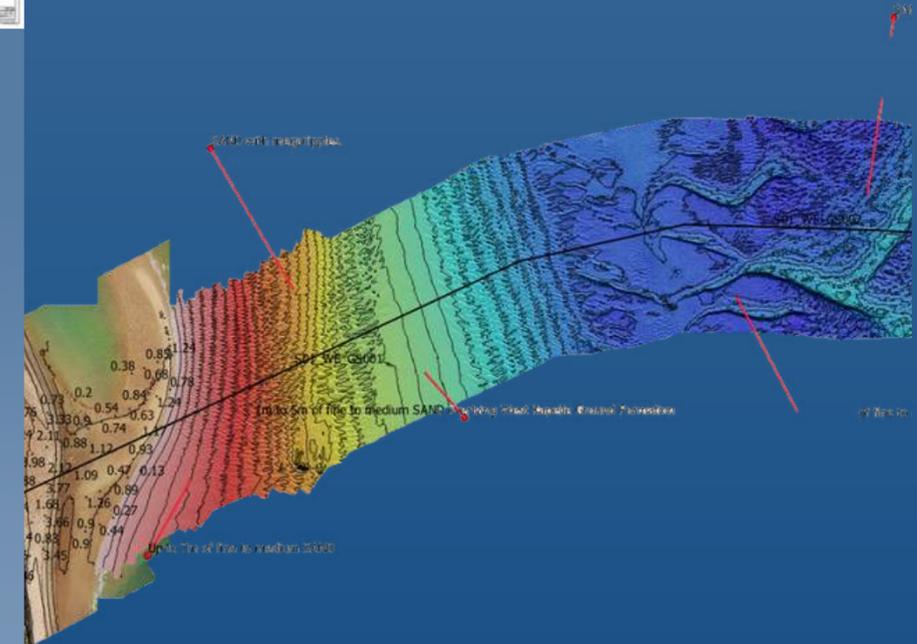
As a contractor on the MCA Civil Hydrography Programme, our survey professionals are experienced with processing in CARIS HIPS & SIPS to the UKCHP specification. We use the latest software from providers including QPS, CARIS, SonarWiz and Oasis Montaj, which allows for the production and visualisation of ultra-high resolution survey deliverables.

A team of GIS and CAD specialists deliver quality charting deliverables, including both AutoCAD and ArcGIS charting.



Core software capability includes CARIS, QPS, SonarWiz, IHS Kingdom, Oasis Montaj & ArcGIS.

Our team are experienced in handling large, complex datasets.



Our vessels are equipped with an onboard QC and processing capability.



Contact

A-2-Sea Solutions Limited
Unit 15 Romsey Industrial Estate
Greatbridge Road
Romsey, Hampshire SO51 0HR
United Kingdom

T: +44(0)1794 830909
W: www.a2sea.co.uk
E: info@a2sea.co.uk

