



**iSURVEY**

Provider of  
survey and  
positioning  
services



**MARINE  
CONSTRUCTION  
PROJECTS**

**RIG AND  
MOORING  
OPERATIONS**

**SEABED  
SURVEYS**



# iSURVEY

**iSURVEY is a leading provider of survey and positioning services to the global oil and gas, telecommunications and offshore renewable energy sectors.**

Our experienced team use their technical knowledge together with industry-leading technology to support a range of offshore activities, including marine construction projects, rig and mooring operations and seabed survey services.

Our people are world-leading specialists in their field, continually growing our reputation by offering a first class service and the highest quality technical expertise.

With our clients' needs at the forefront of all that we do, iSURVEY offers a fully integrated service of equipment, personnel and management. We work closely with clients to help them optimise costs and timescales across all stages of a project, never compromising on the standard of work.

## QA-HSE

iSURVEY conducts all operations in a manner that prevents accidents and minimises risk to health, safety and the environment.

We strive to provide a safe, consistent service to clients that goes beyond the minimum requirements.

Our services are delivered to the highest level of quality, guaranteeing satisfaction from our clients and confidence in our ability.

## Accreditations

iSURVEY has implemented an industry leading integrated quality assurance and health, safety and environmental management system. This comprises:

- Quality assurance and HSE policy statements; and
- A management system manual, including process descriptions, procedures, forms and checklists

iSURVEY is certified by Det Norsk Veritas to the ISO 9001:2008 standard. iSURVEY entities are certified by Achilles, Sellich and FPAL with a distribution on markets. Accreditation certificates are available upon request.

## Our Vision

To be acknowledged by our customers, our employees and our stakeholders as the preferred provider of survey and positioning services in our markets.

## Our Mission

To safely and consistently provide survey and positioning services with high-quality to the mutual benefit of our clients and iSURVEY.

**Our Core Values mean that iSURVEY employees shall:**

	<b>Have freedom to create</b>
	<b>Experience joy of contributing</b>
	<b>Be honest and open</b>
	<b>Take responsibility for own safety and for those around</b>

**iSURVEY offers survey and positioning services to support international marine construction projects, rig and mooring operations and seabed surveys. The experienced iSURVEY team applies state of the art technology to provide:**

- **multi-vessel operation management;**
- **a complete range of subsea positioning solutions; and**
- **survey data acquisition and processing**

With our leading survey and positioning services the iSURVEY supports:

- **semi-submersible, jack-up and DP vessel drilling rig and FPSO operations;**
- **marine construction operations, including cable installation operations; and**
- **seabed surveys**

## **General services**

Several of the supporting services iSURVEY provides are common to many project types. For example, for accurate vessel and subsea positioning, a well calibrated vessel survey gyro and USBL system are essential. iSURVEY's experienced personnel provide a range of well-established and proven services to complement our other services, which include:

- Quayside vessel gyro and motion sensor calibrations
- USBL calibrations
- Dimension control surveys, including offset measurements
- DGPS verifications
- Reporting (data processing and reporting)
- Geodetic consultancy
- CAD and GIS
- Video recording for documentation





---

# MARINE CONSTRUCTION PROJECTS

iSURVEY provides accurate and precise surface and subsea positioning solutions to support both simple and advanced marine construction projects.

## ROV operations

Focusing wholly on survey and positioning services allows iSURVEY to support ROV contractors in a variety of operations, from simple subsea positioning during intervention or basic visual inspection, to more complex installations, measurement and marine support operations.

## Cable installation support

iSURVEY supplies ROV-mounted cable and pipe trackers together with subsea positioning, video and/or multi-beam echo sounders (MBES), all with easy integration to GIS (geographical information systems).

iSURVEY supplies in-house hardware and software to provide real-time calculations of cable parameters during cable lay operations.

## Trenching and dredging operations

iSURVEY uses well proven technology and software to provide customers with the data to assess burial depths, free span analysis and more. Using and integrating a wide range of sensors, such as multi-beam echo sounders, digital video recording, depth sensors, altimeters, cable and pipe trackers and USBL/ LBL/ INS positioning, iSURVEY can provide high-quality data to the client.

## Pipelay support

iSURVEY provides positioning and survey support for rigid and flexible pipelay installation operations, whilst having the ability to support platform/jacket installations too.

We provide integrated solutions of USBL (ultra-short baseline), LBL (long baseline) and/or INS (inertial navigation system) depending on the type of pipe, flexible or platform/jacket installation, either in shallow or deep water.

## ROV video inspection

iSURVEY provides support with ROV video inspection, usually in the form of digital video acquisition, processing and eventing. Information can also be provided on a standalone basis. For instance, a pipeline video inspection could be integrated into an ROV contractor's service offering for an end client.

## Subsea structure installations

iSURVEY provides accurate and precise subsea positioning solutions for subsea template and structures installations. Using appropriate subsea positioning systems (e.g. USBL, LBL and/or INS), our track record includes the installation, calibration and utilisation of these subsea positioning systems.



# RIG AND MOORING OPERATIONS

With nearly 500\* rig-related positioning projects completed over the last 10 years, iSURVEY has developed advanced and robust survey and positioning solutions to support the complete range of offshore rig and mooring operations.

iSURVEY's staff of offshore surveyors and project managers have extensive international experience from shallow to deep water rig operations.

## Jack-up rig moves

iSURVEY has a long track record of positioning jack-up rigs alongside existing structures and in open locations. We have well proven, standardised solutions based on Global Navigation Satellite System (GNSS) positioning, in combination with relative positioning systems.

Prior to a rig move, iSURVEY can also offer a full dimensional control survey, prism installation and datum point establishment on existing structures/platforms.

Standardised mobilisation reports and rig move survey reports are provided, containing calibrations, verifications and as-built data to guide the client with easy access to necessary data and positions.

## Semi-sub rig moves

iSURVEY has well proven, extensive experience in positioning semi-submersible rigs safely on to location. As with jack-up rigs, we offer effective solutions based on GNSS to navigate the rig in a safe and controlled operation.

The increasingly common technique of pre-installing anchors using an AHV (Anchor Handling Vessel) complete with ROV, prior to the actual rig move, is fully supported.

A standardised mobilisation report and rig move survey report are provided, containing required calibrations, verifications, as-built data and anchor catenary calculations.

## Well setting

Where the subsea position, heading, inclination and/or height of a wellhead/ guidebase is required, iSURVEY is able to provide the following services:

- High accuracy positioning using LBL systems for positioning of wells/wellhead guidebase in deeper water
- LBL arrays of typically 4-5 transponders
- Topside system on rig/drilling vessel
- Position reference is obtained from range-range geometry from the transponder locations

## FPSO and mooring operations

Where an FPSO is being moored either during initial hook-up, reinstatement or just other mooring modifications, or rigs are skidding their position on existing moorings, the following services are provided:

- Unmanned rig position monitoring systems (iMON)
- Rig gyro calibrations
- Survey and positioning support during FPSO installations

\* As of March 2015



**NEARLY 500\* RIG-RELATED POSITIONING PROJECTS COMPLETED OVER THE LAST 10 YEARS**



**WE LISTEN TO OUR CLIENTS  
NEEDS AND REQUIREMENTS AND  
DELIVER DATA IN MOST KNOWN  
DATA FORMATS, WHILST ALSO  
PROVIDING SUPPORT WITH DATA  
INTERPRETATION.**





---

# SEABED SURVEYS

## Seabed mapping

### Bathymetric data acquisition

iSURVEY has a long track record of collecting bathymetric data, using the latest multi-beam echo sounders, whether it be ROV-based or over-the-side pole-based systems. Offshore applications such as trenching (pre-cut, pre-lay, post-lay and intermediate surveys), dredging (pre-, post- and real-time surveys), sonar/acoustic pipeline inspection, site surveys, or any requirement for a map of the seabed, can be supported with a suitably designed mapping system.

Using versatile, flexible sensors and software we can provide clients' with specialised system set-ups, covering everything from vessel navigation systems, subsea positioning, ROV instrumentation, digital video recording systems, tidal corrections and time synchronisation, all needed to gather high-quality data.

iSURVEY specialises in providing systems that can be used on a wide range of platforms, with short mobilisation time, and we are capable of doing the necessary calibrations and verifications to provide a well-integrated system. iSURVEY listens to our clients' needs and requirements, and delivers data in most known data formats, whilst also providing support with interpreting data.

## Route surveys

### Side Scan Sonar data acquisition

iSURVEY provides services to acquire high-quality side scan sonar (SSS) data. Such data is used to provide highly detailed imagery of the seabed and potential debris. iSURVEY can provide either ROV, pole-mounted or more traditional towed SSS systems. For towed systems, iSURVEY can provide the clients' with all of the equipment and solutions needed, including winch system, depth sensor, vessel positioning and optional USBL positioning of the SSS fish.

iSURVEY uses industry standard systems and processing tools, and is able to deliver data in most known formats depending on clients' requirements.

### Sub-bottom profiler data acquisition

iSURVEY is able to gather and provide high-quality sub-bottom profiler (SBP) data, using pole-mounted or towed sensors. Sub-bottom profilers use low frequency acoustics to penetrate into the seafloor. iSURVEY is able to deliver data acquired with sub-bottom profilers to clients' in most known formats.

## Data processing, charting and reporting

Supporting all elements of data acquisition both during seabed mapping and route surveys, iSURVEY offers data processing, charting and reporting of the acquired data. We provide clients with the tools and personnel needed to perform data processing, either onboard the vessel or using iSURVEY office facilities.

iSURVEY uses the full Eiva NaviSuite, together with supplementary tools such as GIS and CAD-based charting, all to industry standards. We can provide USBL and DVL positioning post-processing, powerful INS post-processing and automated multi-beam echo sounder data cleaning, all tools which increase the quality of data and increase efficiency to save valuable time.



## iSURVEY PRODUCTS

### iNAV

*The iNAV vessel positioning suite is a “modularised” technology for effective positioning and survey support during all offshore drilling, marine and survey projects.*

*Master Vessel and Rig Positioning System:*

- Dual online navigation system using Eiva NaviPac
- Redundant dGNSS
- Helmsman’s displays
- AIS (Automatic Identification System) input

### Extensions to iNAV

- **Multi vessel operations**
  - iSAFE for tracking AHVs
  - iSURVEY’s TMS (tug management system)
  - iBUOY for anchor tracking
- **iROV for ROV support**
  - ROV helmsman’s displays
  - Interface to ROV sensors
  - Digital video interface
  - SVP/CTD profiling
- **Subsea positioning**
  - USBL and LBL positioning
  - Subsea telemetry communications
- **iMAP for seabed mapping**
  - Pipe and cable tracking
  - ROV-mounted MBES
  - Over-the-side mounted MBES
  - ROV-mounted or towed SSS
  - Data acquisition and processing suite
- **iCONTROL for remote access**
  - Secure site-to-site VPN link between vessel and office
  - For updates of iNAV
- **Miscellaneous**

## **iROV**

*Integration and effective use of ROVs for survey applications.*

*Used to interface any ROV sensors, typically:*

- ROV heading, pitch, roll, depth and altitude (FOG & DVL)
- Bathymetric system
- Video overlay
- Optional Sprint INS

## **iSAFE**

*Complete tug positioning and display system for multi-vessel operations.*

iSAFE® is a system for remote vessel survey which consists of a UHF radio modem, DGPS and a computer. The NaviPac™ software supplied by EIVA is used as the navigation software suite and supports multi-vessel operations, including USBL interface for positioning of subsea units and AIS heading from AHVs.

The iSAFE® system provides graphical as well as numerical online information about the AHV's own position and is user friendly for the crew, as everything is prepared by iSURVEY personnel onboard the rig before commencing the multi vessel operation.

## **iCABLE**

*Specialised survey module for offshore cable installation projects.*

The iSURVEY cable calculation software is based on basic catenary calculation with an extension for cable lay on slope.

*The software covers three calculation methods:*

- Angle meter mounted on stern chute
- Angle meter mounted on subsea object
- Touch down monitoring by subsea object

## **iMAP**

*Survey solution for seabed mapping projects including bathymetry and integrated video.*

### **Bathymetry**

iSURVEY delivers multi-beam echo sounder and side scan sonar solutions for ROV and surface vessels, creating bathymetric maps and 3D models and visualisation.

### **Video survey**

ROV-mounted cameras provide an optimal visualisation with full geographic reference. This is ideal for inspection survey, with possibility for playback and video integration to GIS.

This can be combined in NaviModel together with MBES survey for a complete documentation.

### **Cable and pipe survey**

iSURVEY supplies ROV-mounted cable and pipe trackers together with subsea positioning, video and/ or multi-beam echo sounder, all with easy integration to GIS systems.

## **iMON**

*Robust module for online rig position visualisation and rig crawl calculations during drilling operations.*

The iMON® position monitoring system offers a graphic display including pipelines and waypoints, numeric object position, range and bearings, alarms, anchor data, manual measurements in map display, online rigcrawl calculations and more.

### **iBUOY (patent pending)**

*Transponder based ruggedized anchor positioning.*

iBUOY consists of a transponder encapsulated in a flotation device, which provides protection against possible rough handling during deployment and recovery of the anchors.

Compared with the methods most commonly used for anchor positioning today, the iBUOY anchor tracking system provides reliable online information of the anchor position during

deployment and after the anchor is landed on the seabed. In addition, an indication of the drag length can be calculated.

## **iCONTROL**

*Remote control of offshore survey systems through secure internet connection.*

iCONTROL™ allows full remote control of offshore survey systems at any time, from any place.

iCONTROL™ can minimise the time and personnel resources required by giving iSURVEY's onshore experts a visual overview of the situation, which can be corrected if necessary.

iCONTROL™ can communicate via the internet or SOIL. SOIL is a global network for oil and gas companies, ensuring a high level of security via a closed member-only network. SOIL differs from the internet in that the network is managed and controlled by higher operational levels.

## **iLINK**

*iLINK allows video data to be transferred between marine vessels, rigs, etc, for applications such as:*

- **Cable laying**
  - Bellmouth video transferred to vessel and pull-in winch
- **Subsea Positioning**
  - Multi-vessel operations with video distribution needs
- **Seabed Mapping**
  - Multi-vessel operations with video distribution needs
- **Remote Control Vessel Survey System**
  - Live video image transferred to shore via iControl
- **Miscellaneous**
  - Any SD and HD video image to be transferred from A—B

## Marine Construction Projects

ROV operations  
Cable installation support  
Trenching and dredging operations  
Pipelay support  
Subsea structure installations  
ROV video inspection

## Rig and Mooring Operations

Jack-up rig moves  
Semi-sub rig moves  
Mooring operations  
FPSO installations

## Seabed Surveys

Seabed mapping  
Route surveys



### NORWAY

iSURVEY Group AS  
iSURVEY AS  
Billingstadsletta 14  
NO-1396 Billingstad  
Norway  
+47 4541 4100  
norway@isurvey-group.com



### UNITED KINGDOM

iSURVEY Offshore Limited  
Unit 4a, Burn O'Bennie Road  
Banchory, Aberdeenshire  
AB31 5NL  
United Kingdom  
+44 (0)1224 418210  
uk@isurvey-group.com



### SINGAPORE

iSURVEY Pte Ltd  
22 Pandan Road  
Singapore 609274  
+65 6513 0589  
singapore@isurvey-group.com