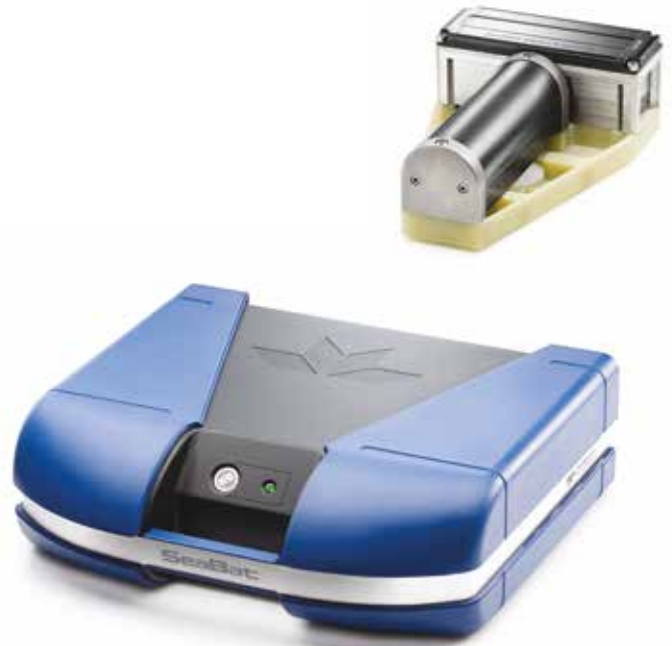


The new SeaBat T20-P Designed with a deeper understanding of your needs





A vision of quality and performance

For almost 30 years, RESON has been the world's most trusted provider of advanced multibeam sonar technology for high resolution hydrographic surveys. The new SeaBat T20-P is the latest addition to our class-leading portfolio of marine survey solutions.

Crafted from decades of sonar expertise and shaped by direct user feedback, the T20-P helps you drive efficiency on board with fast throughput of exceptionally clean data and precise imagery, augmented by user-friendly data management tools.

Seeing is achieving

The T20-P family is built on scalable next generation technology with the flexibility to evolve alongside your business. The T20-P is perfectly suited for small survey platforms through to larger vessels, where portability is demanded, covering a wide range of survey applications

and tasks. Built-in, configurable features—such as high-density beams with multiple detection capabilities, water column and intelligent automation—deliver highly accurate data that can be easily and quickly analyzed, according to your specific needs.



Built to weather life at sea

Our products will match the toughness of your surveyors.

Products that are designed to push the envelope in the most challenging conditions, on even the most exposed survey vessels.

The new T20-P is built for usability and reliability. Our hardware is quality-tested to meet the most demanding standards, and our intelligent software streamlines operations to maximize survey productivity. Backed by the full support of our comprehensive after-sales program, you can be sure that the T20-P won't let you down.



SeaBat T20-P – a highly portable survey solution for smaller vessels

The SeaBat T20-P offers the ultimate combination of portability and performance. With the SeaBat Portable Sonar Processor, survey data is optimized and mobilization time is reduced to help you focus on getting the job done. Fully adaptable to a wide range of applications, the SeaBat T20 wet-end features include:

- Transducer configuration 1° x 1°
- Next-generation electronics
- Compact and low-weight transducers

Controlled using the SeaBat User Interface from a laptop or survey PC, the SeaBat Portable Sonar Processor can be quickly mounted and demounted for ease of use during mobilization. Features include:

- Easy connection and single point, accurate time-tagging of survey sensors
- Water resistant (IP54)
- Flexible power interface 24V DC or 100-230VAC
- Robust and durable design

“RESON’s Portable Sonar Processor handles time tagging and processing of sonar and sensor data internally, removing the load from user supplied laptop – ensuring accurate, tested and reliable processing of sonar data”.



In-depth precision and performance

Our world-class sonar technology is the result of many years' combined research and development, innovation and hands-on experience from servicing customers' needs, worldwide.

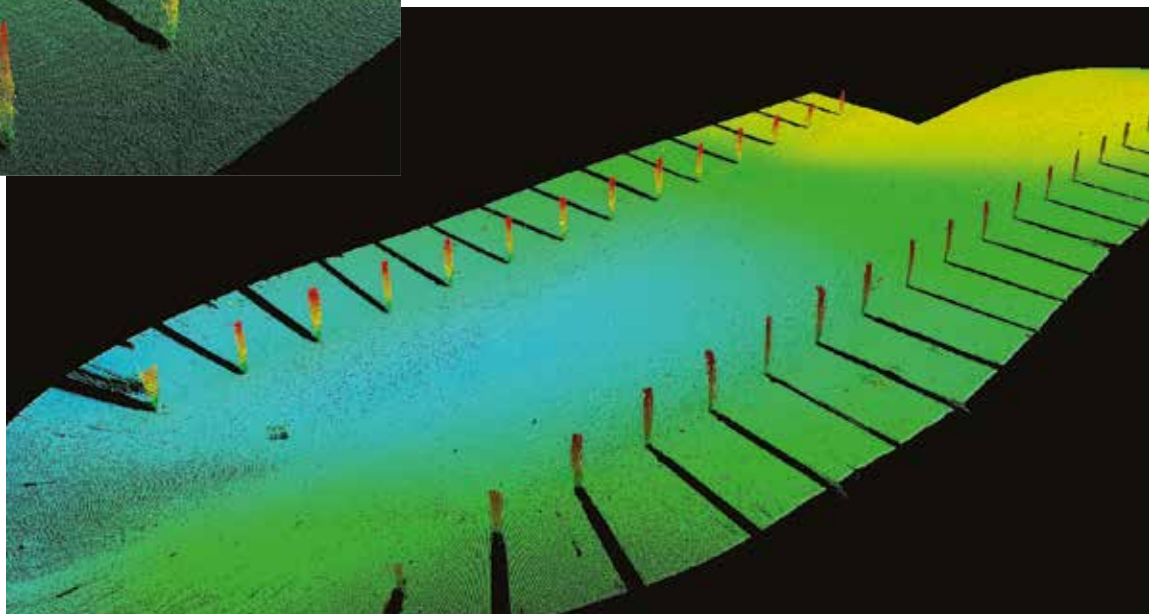
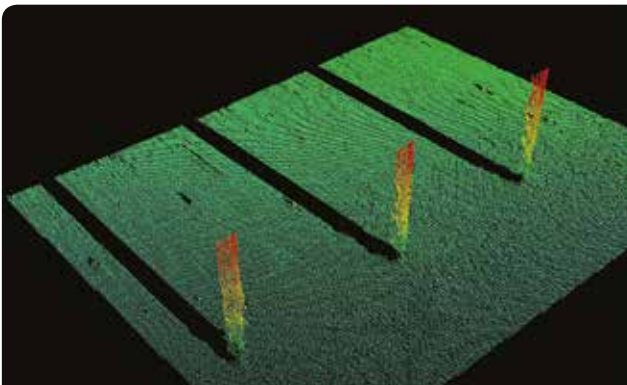
The T20-P introduces new ways to help you expand your business, including faster setup times, better automation and higher quality and more versatile data. Our powerful feature set is able to scale alongside your business providing unmatched utility across a wide range of survey applications.

SeaBat for Hydrography

Our unique sonar technology delivers exceptional acoustic performance for high precision surveys that require minimal data cleaning and post-processing. Built to facilitate a wide range of hydrographic tasks, the T20-P offers a host

of data management tools that help you to meet survey requirements, develop a greater capacity for taking on new project opportunities and maximize your business potential. Highly customizable and adaptable to a wide variety of applications, it also enables you to reduce survey and post-processing times to lower costs and offer a more competitive service to your customers.

SeaBat T20-P –
Harbour pillars

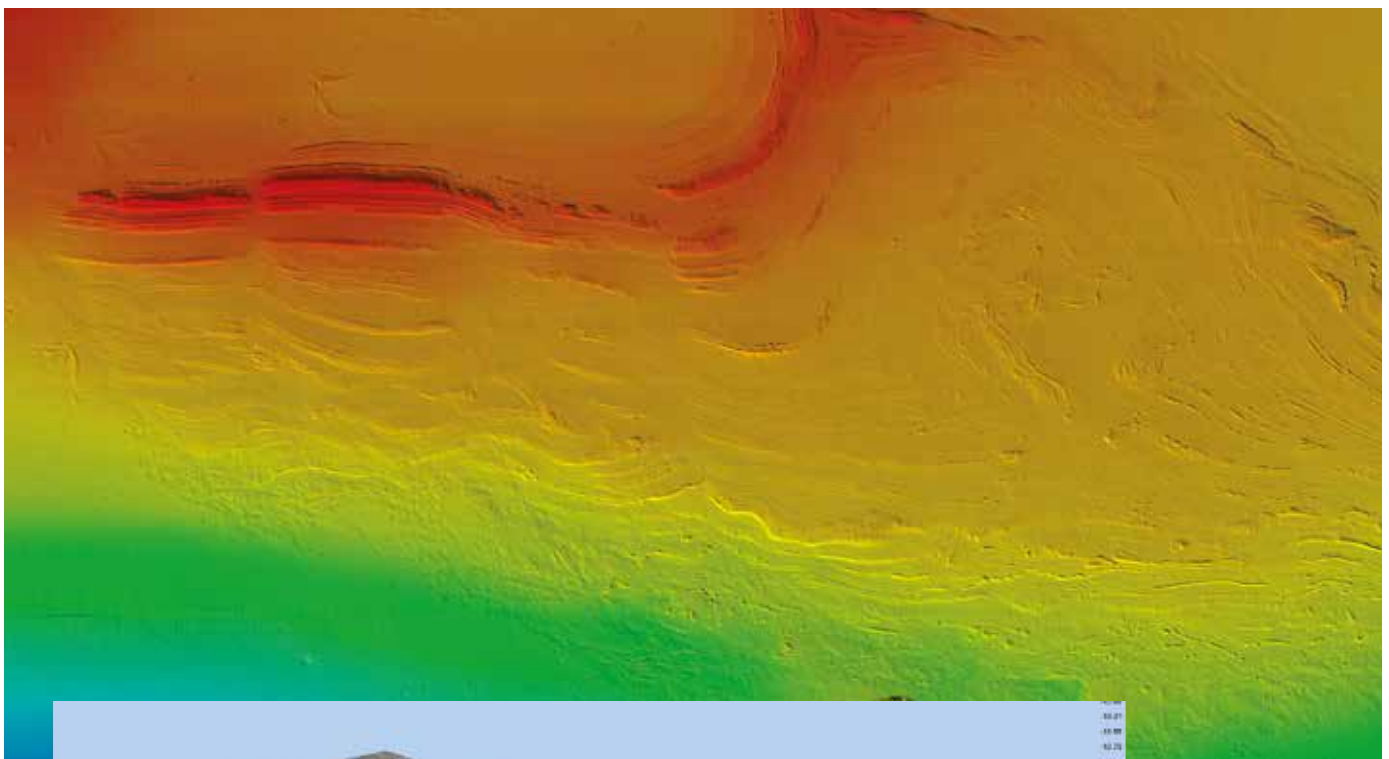


SeaBat for Environmental Research

The T20-P provides a complete solution for collecting valuable environmental research data, including backscatter for efficient characterization of the seabed and habitat mapping, water column visualization and full recording functionality.

Highly customizable and adaptable to a wide variety of applications, it also enables you to reduce survey times to lower costs and offer a more competitive service offering to your customers.

SeaBat T20-P – 1.2 x 1.7km Rock Formation, 20-40m Depth



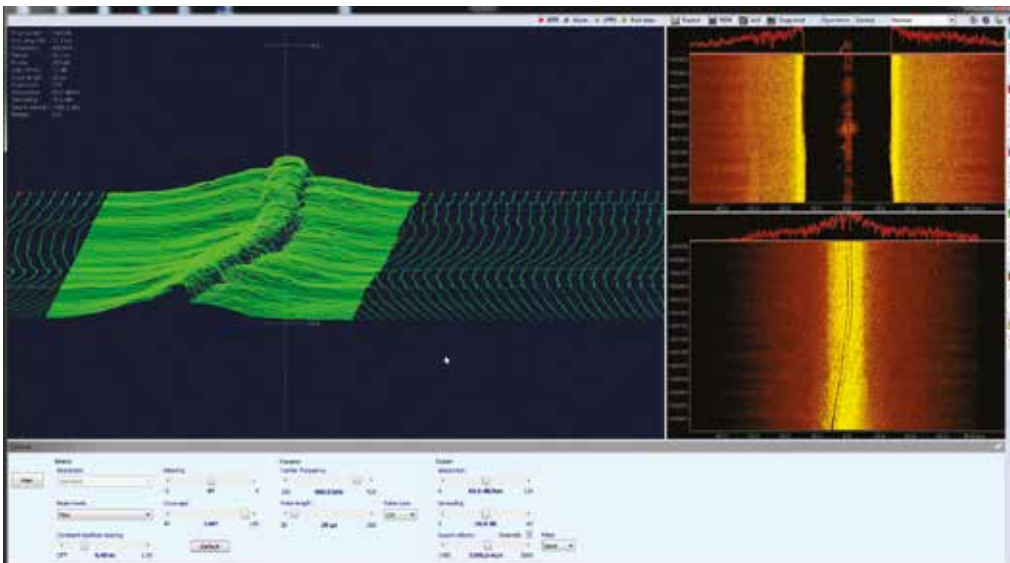
SeaBat T20-P – Draped Backscatter

SeaBat for Pipeline Surveys

Building on the power of FlexMode, SeaBat now offers real-time pipe detection and tracking to minimize risks when assessing pipeline integrity. The unique feedback loop from pipe position to multibeam signal processing enhances pipeline profiling and detection performance. Coupled with our intelligent automated

control systems, SeaBat can minimize processing times and make better use of resources and manpower.

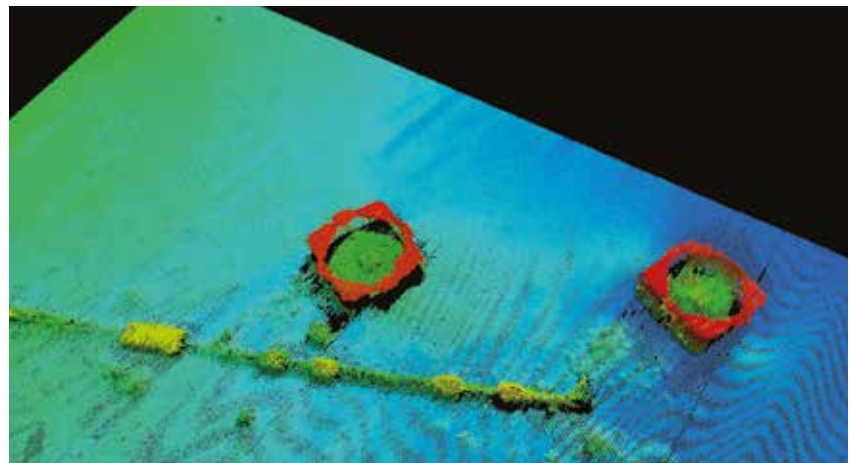
SeaBat Real-Time Pipe Detection



SeaBat for Offshore and Renewables

With a comprehensive set of user-friendly data management tools and sophisticated functionality, the SeaBat T20-P is perfectly suited to the offshore and renewable industries. A High Density mode provides superior image clarity for complex structures on the seabed, and the new Multi-Detect in-the-water column feature enables catenaries of small-diameter cables to be captured all the way from structure to seabed. In addition, the unique FlexMode function enables high-definition trench surveys for small diameter cables and pipes.

Offshore and
renewables



Features designed around you

Over the years, we've developed a uniquely customer-focused approach that delivers an even better, more intuitive user experience and reliable, cleaner survey results every time. To help you get the most out of your investment, we've created a powerful set of features to suit both entry-level surveyors who need uncompromising quality and advanced users who demand world-class performance. We know that you need to stay adaptable to changing survey requirements, which is why our systems can be tailored to suit your individual needs.

SeaBat Software User Interface – powerful and simple

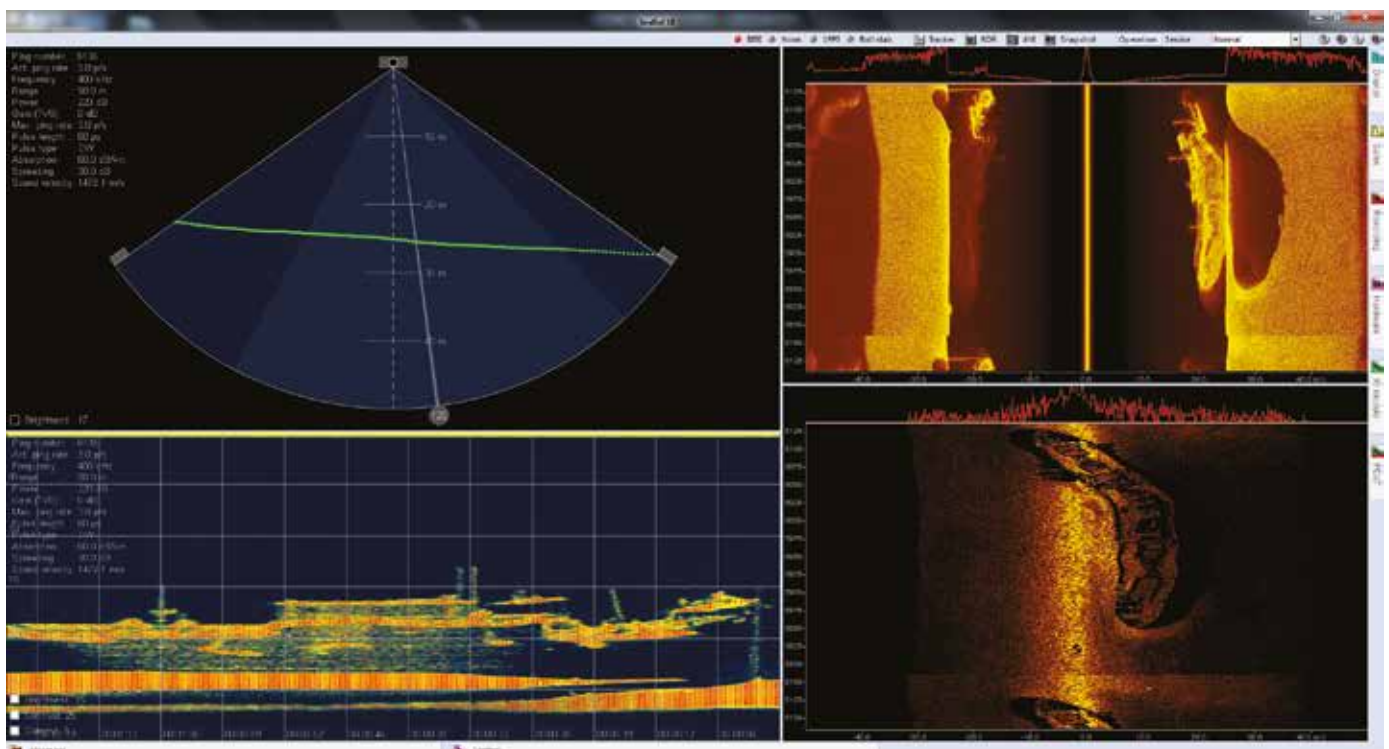
The SeaBat User Interface has been developed to provide complete control over your survey tasks, providing the perfect blend of versatility and productivity.

A new multi-view function provides simultaneous control of bathymetry, water column, snippets and sidescan backscatter. The software also comes with full dual head support, real-time sound velocity filter, water column recording loop and in multiple languages.

We offer a wide range of survey sensors through our trusted 3rd party network, including:

- Motion sensors
- GPS
- Sound velocity
- Survey software

SeaBat T20-P User Interface



Tracker – intelligent automation

Our new automated Tracker tool intelligently optimizes all primary sonar parameters, such as range, power, gain, pulse length and swath width, by analysing the quality of the acoustic signal. Cleaner data is generated via a user-friendly system that can be tailored for advanced users and has pre-set parameters to help less experienced users get started. We are constantly evolving the Tracker with new features; for example, our new Constant Swath mode simplifies survey planning by allowing you to set a desired swath width that is maintained at varying depths so that constant line spacing can be sailed.

Water column visualization – see more of what's below

A new water column display allows visualization both alongtrack and across. This unique

feature reduces the need for high volume water column recording by saving what you see, when you see it, to reduce data volumes, minimize data management tasks and speed up decision making on board.

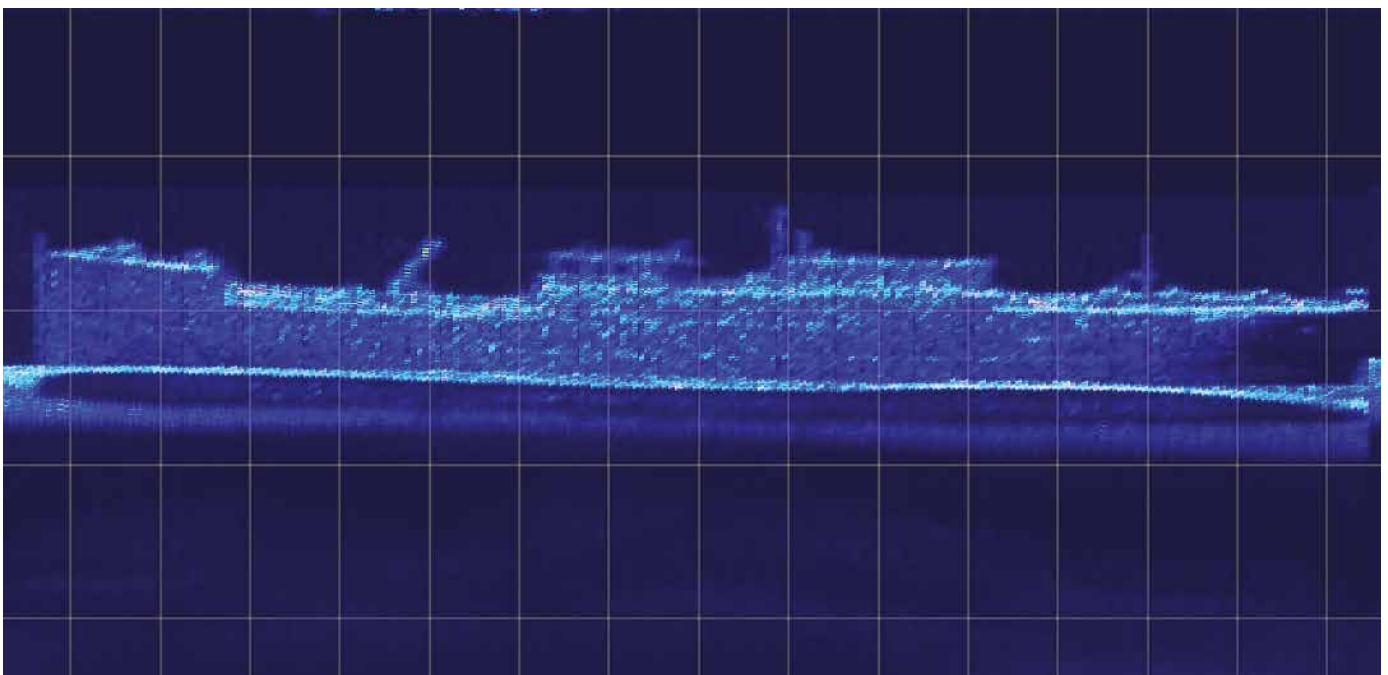
Configurable Beamformer – customize your solution

The Configurable Beamformer allows everything from high density beams for exceptional image clarity and detail, to just a few beams to deliver results faster.

By deploying fewer beams in shallow water, the system allows the user to reduce storage requirements by gathering only the data you need. The system can also hold constant seafloor spacing between beams to provide the same high-quality results with minimal data volume.



Water column detection



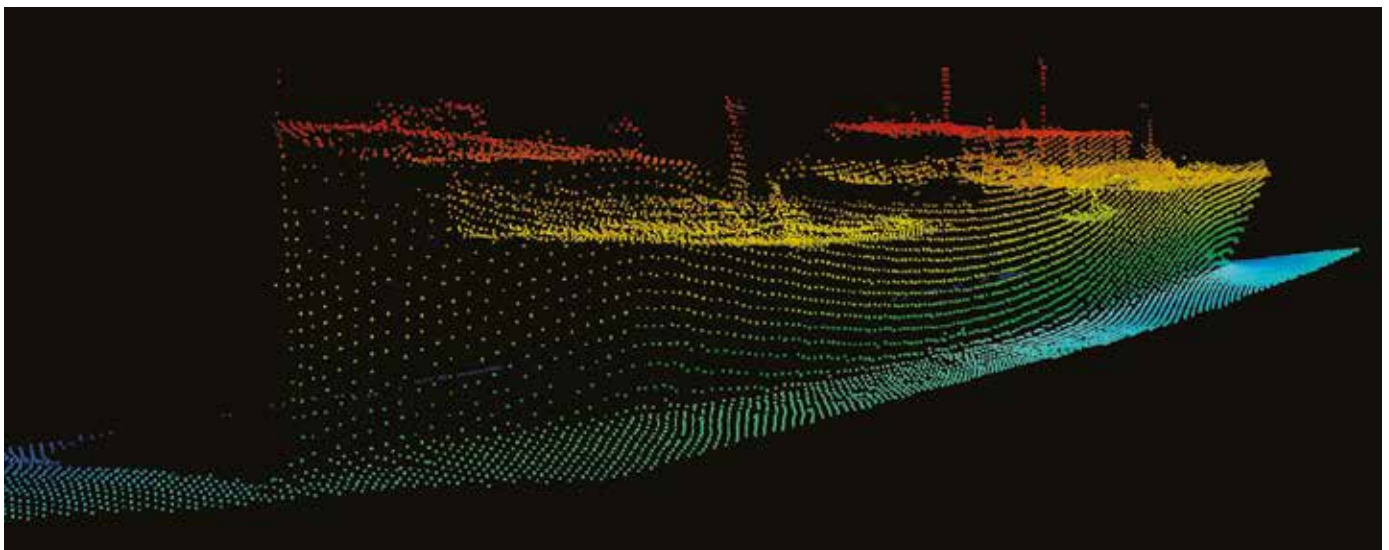
X-Range and Full Rate Dual Head
– wider coverage and cleaner data

If you need more from your multibeam system, X-Range can extend survey coverage by up to 30%. External noise is reduced to ensure the cleanest possible data. When combined with Full Rate Dual Head, survey efficiency can be increased further, to reduce expensive vessel operating costs.

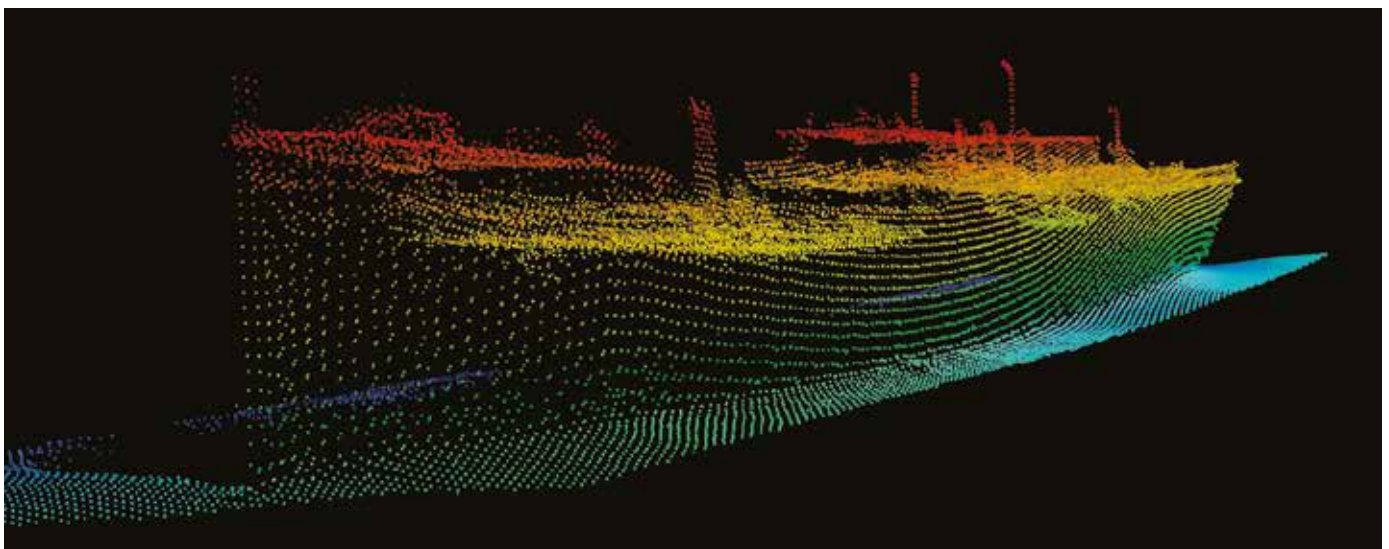
Multi-Detect – capture fine detail

The new Multi-Detect feature provides multiple detections within each beam to capture highly detailed images of complex objects and seabed terrain. Easier and faster than water column processing, Multi-Detect reduces the need for collecting large water column sets for certain applications and helps you make better decisions during the survey process.

Single detect



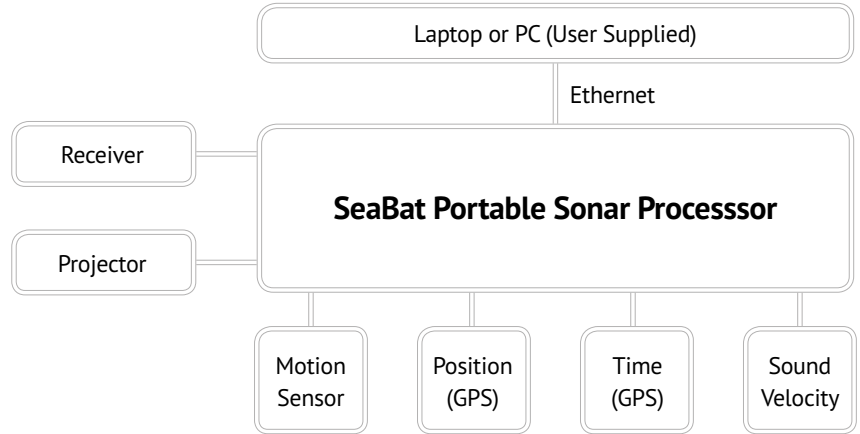
Multi detect





Easy sensor cabling using the Portable Sonar Processor

The Portable Sonar Processor is an essential organizational component that keeps your data synced and time-stamped at a single source. Fewer connections help to keep things simple for operators who need to mobilize quickly and maintain efficient, productive operations at all times. It is also water resistant rated (IP54) allowing you a wider range of locations for installation.



Portable Sonar Processor sensor interface

- **Maximum productivity during data collection**
 - Up to 165 degree swath
 - Roll Stabilization
 - Up to 512 beams in operator selectable modes
- **Uncompromised clean data sets**
 - Quality Filters/flags
 - Interactive, Comprehensive GUI
 - Industry-leading bottom detect methods
- **Ease of installation and use**
 - Fully automatic operation
 - Extremely portable wet-end
- **Maximum operational flexibility**
 - 400 - 200kHz operation for seamless data collection - variable and steerable swath
 - Simultaneous output of bathymetry, sidescan, snippets backscatter, and raw-water column data
 - Adaptive gates
 - Uncertainty Output

Over the last three decades, RESON has set the industry standard for high-resolution multi-beam sonar technology. Today our integrated, customer-focused solutions are the first choice for professional hydrographic surveyors worldwide.

Our passion for innovation and commitment to quality is not only realized in our comprehensive range of products and systems, but is also at the heart of our pre- and post-sales support and global service network.

Whatever your sonar surveying requirements, talk to us; we'll help you find the right solution for your business.



For more details visit: www.teledyne-reson.com or contact our local Teledyne RESON office.

Specifications subject to change without notice.
© 2013 Teledyne RESON A/S. All rights reserved.

Teledyne RESON A/S
Denmark
Tel. +45 47 38 00 22
E-mail:
info@teledyne-reson.com

Teledyne RESON Inc.
USA
Tel. +1 805 964 6260
E-mail:
sales@teledyne-reson.com

Teledyne RESON Offshore Ltd.
Scotland, UK
Tel. +4 1224 709 900
E-mail:
sales@teledyne-reson.co.uk

Teledyne RESON B.V.
The Netherlands
Tel. +31 (0) 10 245 1500
E-mail:
info.nl@teledyne-reson.com

Teledyne RESON Pte. Ltd
Singapore
Tel. : +65 6725 9851
E-mail:
singapore@teledyne-reson.com

Teledyne RESON
Shanghai, China
Tel. +86 1391 876 0861
E-mail:
shanghai@teledyne-reson.com