

# Configurable Beamformer

## Feature Description

SeaBat

### Introduction

**Configurable Beamformer** is a feature which allows the surveyor to decide how many beams to form ranging from the maximum capability of the system (system dependent) down to just 10. This allows the surveyor to be able to capture the highest detail using the highest beam density available, but alternatively maximize efficiency by using fewer beams in very shallow water where data volumes traditionally become large quickly due to high beam numbers and high ping rates.

### Constant Seafloor Spacing

A special feature of the **Configurable Beamformer** is the ability to define the desired equi-distant spacing between beams on the seafloor. The system will “hold” this automatically as depth varies within the constraints defined by the minimum and maximum number of beams. As an example, the surveyor may choose to do an IHO Special Order survey which requires at least three soundings in the across-track direction per meter. The surveyor may set the desired seafloor spacing at just less than 0.5m (to achieve three soundings per meter) which will ensure that the most efficient volume of data is acquired to meet the specifications whilst significantly speeding up data handling and processing.

### Benefits

- Optimized data volumes tailored to survey purpose / specifications
- Save of up to 75% of data volume in very shallow water
- Faster Processing
- Reduced time and costs from survey to deliverable
- Increased business potential for the system

### How it Works

The following beam-forming modes are available: Equi-Distant; Intermediate; Equi-Angle; FlexMode (optional)

In Intermediate and Equi-Angle modes, the surveyor can choose the number of beams to be formed using a slider. In Equi-Distant mode, the slider becomes the seafloor spacing desired on the seafloor. The system automatically detects the depth and sets the spacing as required by the surveyor. Adjustments may take place during survey: there is no requirement to stop survey and reconfigure.

There is always a minimum number of beams that theoretically ensures “100% ensonification” of the swath, which might be stated as meaning, roughly speaking, no gaps between beams, that is, each beam adjoins, or slightly overlaps its neighbour. Given that IHO specifications no longer refer to the term “100% ensonification” (it was removed in the most recent publication because it cannot ever be proved conclusively), it is accepted that the situation may arise where “100% ensonification” is not achieved.

### Upgrade Information

**Configurable Beamformer** is available for the new SeaBat Series and SeaBat 7125 in Feature Pack 4 (FP4). A software upgrade is required. Please contact your local RESON representative or [support@reson.com](mailto:support@reson.com) for further information.

Compatible Systems

SeaBat Series

SeaBat 7125 (FP4)