



Jan 09, 2007

Release Notes

Maintenance Release 1, 2, and 3 for the SeaBat 7125

Maintenance Release 1 (MR1) Item Descriptions

- **Improved Dual Head Sync.** The modifications to this feature allow the system to ping at faster rates with less cross-talk between the sonars and a smaller timeout multiplier value.
- **Fixed Slave System Disconnect.** When clicking "Disconnect" in the Master Slave Dialog, you are prompted to either freeze the slave processor or return it to a free running state.
- **Fixed Range and Ping Rate Slider.** The Slave SeaBat7k appropriately updates the range and ping rate sliders while the Master is changing them. This restores full functionality to the adaptive and absolute gate features on the Slave system.
- **8k Quality Flags.** The 8k-style quality flag reporting is further improved in this release, specifically for Equi-Distant mode. See the Reson 7k Data Format Definition document for a complete description of the reporting method.
- **Alarm Reporting.** The 7k I/O Module now reports time-outs when the data stream is interrupted. The alarms currently report into the IO Module setup page in the SeaBat7k.

Maintenance Release 2 (MR2) Item Descriptions

- Short-Range Focusing.** The sharpness of nearby objects is dramatically improved due to firmware updates. Figure 1 shows a test with the saturation problem apparent. The red circle at the bottom shows a point target “smeared”. Figure 2 shows a test after the fix was implemented.

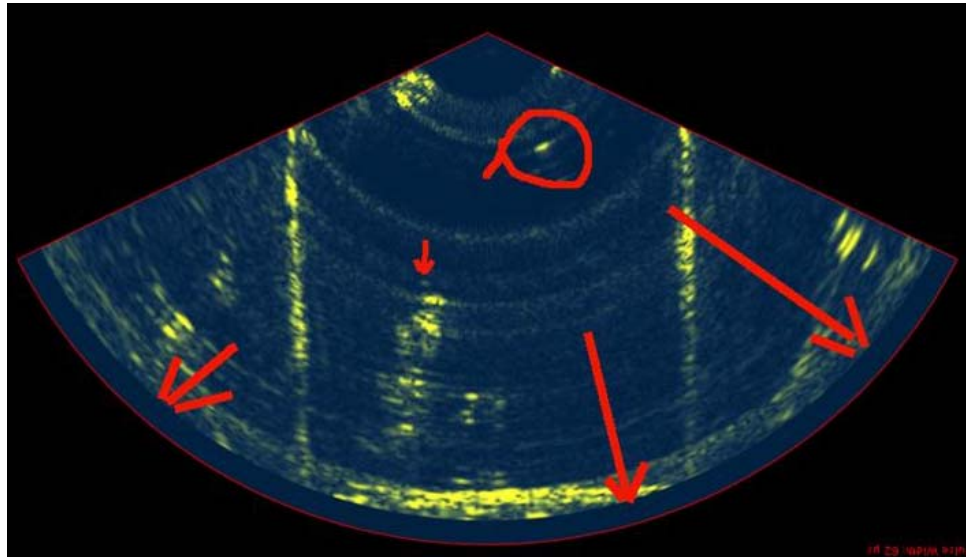


Figure 1: Test Before Fix is Implemented

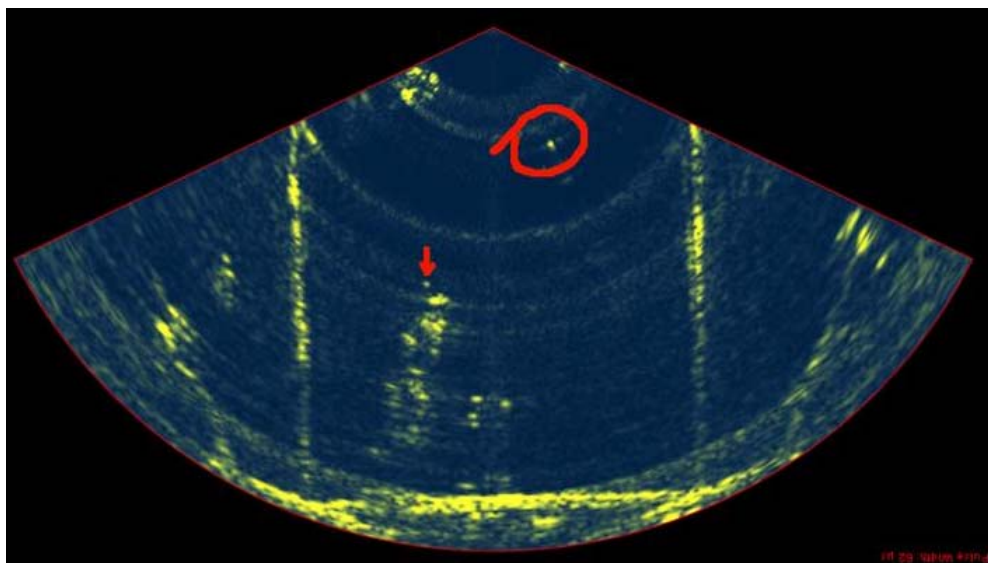


Figure 2: Test After Fix is Implemented

- **Bottom Detection Mode Selection.** The method to select between magnitude and phase detection is optimized. This greatly increases the quality of bottom detection under specific conditions.

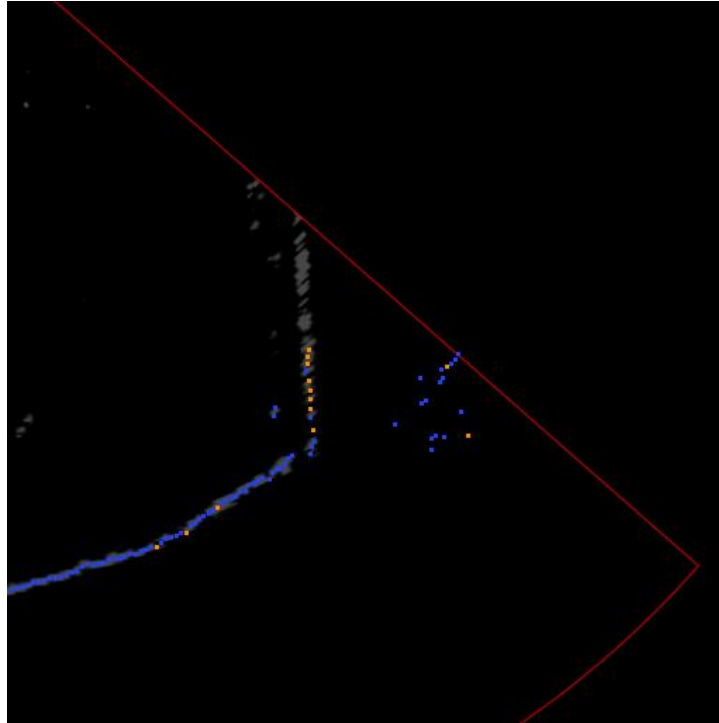


Figure 3: Example of Old Mag-Phase Blending Problems.
(Note the group of detection points occurring far from any real signal.)

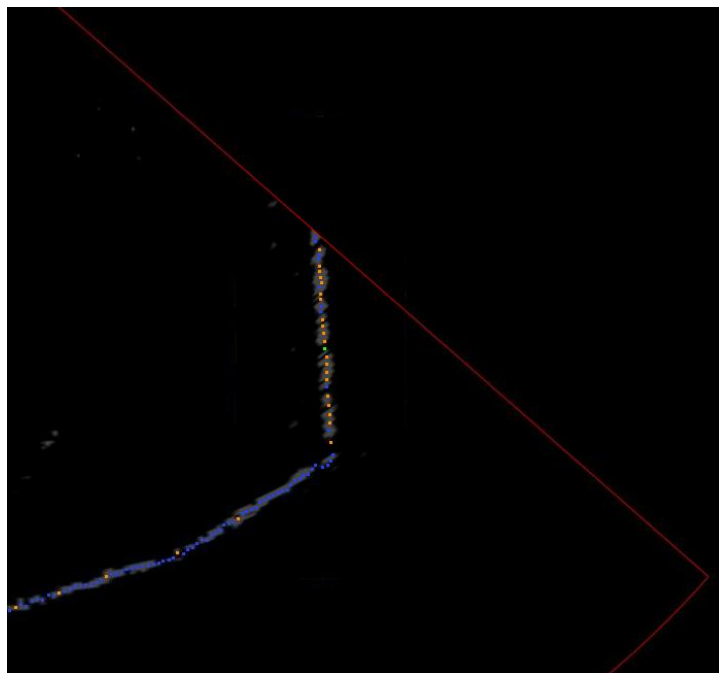


Figure 4: New Mag-Phase Blending Gives Full Detection on Outer Beams

- **Adaptive Gates.** Performance improvement allows the gates to track bottom contour more accurately.

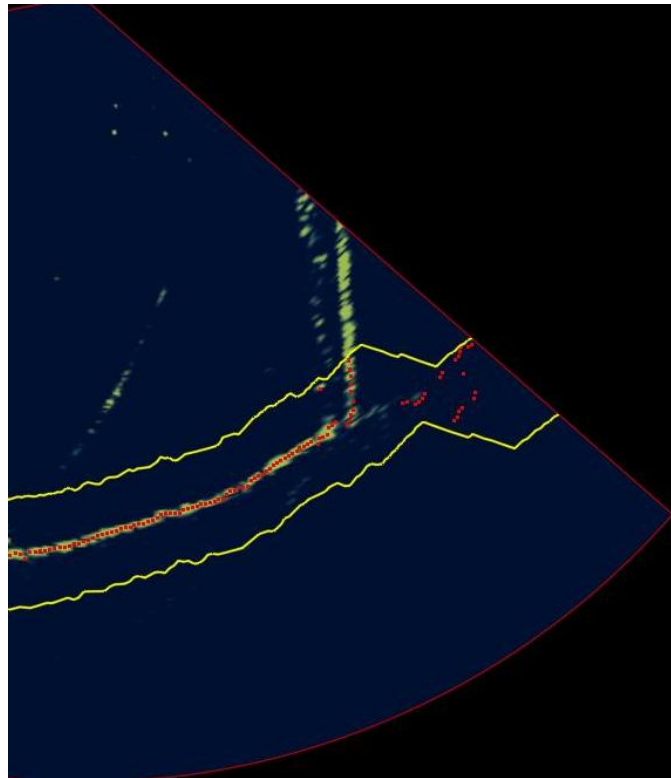


Figure 5: Old Gate Performance on Sharp Contour



Figure 6: New Gate Performance on Same Data



- **Ping Rate.** A better ping rate has been attained in both equi-distant and equi-angle modes for improved performance at all ranges.
- **Motion Sensor Input.** The I/O system is updated to include the input of motion data. Drivers are available for most of the common motion sensors as well as real-time motion data for use in the 7k software.
- **Integrated Approach to Starting/Stopping Modules.** Desktop shortcuts are replaced by the 7kControlCenter module. This module allows the user to select the frequency, number of beams, mode and single/dual-head operation. It also has a Start/Stop button that controls the other 7k software modules, which allows for an orderly shut-down of the system.
- **200 kHz Option.** The option performance is improved and is now supported as a standard product.
- **Receiver Saturation.** Improved handling of the beamformer signal from highly reflective targets no longer results in saturation or signal loss.
- **Stepping.** Improvements to the software and firmware minimize the “stair step” appearance on the seafloor toward the outer beams.
- **Quality Improvement.** The data-cleaning process is much faster due to design changes to provide reliable outlier detection.



Maintenance Release 3 (MR3) Item Descriptions

- **Motion Sensor Input Applied to Depth Gates.** The I/O system is updated to include the input of motion data. Drivers are available for most of the common motion sensors as well as real-time motion data for use in the 7k software.

When motion data is available the vehicle roll information will be used to correct the absolute depth gates.

- **True Equidistant Calculations.** Equidistant beam spacing calculation will take into account the physical mounting angle of the receiver.