



Sonar UI

Release Notes

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AMENDMENT RECORD SHEET

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1 INTRODUCTION

This document contains the release notes for the Sonar UI application.

As the Sonar UI application is build using PDS core engine and visualization engine technology all improvements made in these engines will be available in the Sonar UI also. Listed in this document are the items which are operator UI changes or changes that stand out and should be known to the operator of the software.

1.1 References

- 1) Sonar UI User Manual.pdf
- 2) 7k IO Module Manual.pdf

2 VERSION 5.5

2.1 5.5.1.0 (13-12-2023)

2.1.1 Bug fixes

1. Fixed crash when selecting a different .s7k file with F30 sonar data to replay.
2. Stave data did not work anymore.
3. SUI-123: Fixed updating contrast of stave display when frozen.
4. Robustness of the Sonar UI has been improved by several small fixes.

2.2 5.5.0.0 (08-11-2023 – not released as a public version)

2.2.1 Bug fixes

1. Add missing drivers to installer.
2. Don't use RX delay for roll stabilization in the wedge image. It is already part of the range.
3. Fixed scrolling with a smooth mouse wheel in SUI property grids.
4. Fixed stabilization of HydroSweep wedge when playing back s7k files.
5. HYD-55: Implemented work-around for bugs in HydroSweep 7042 record.
6. SEAB-178: Fixed description text for SV interlock in SUI.
7. SEAB-216: Added 7kRTT and other 7k Utilities to SUI installer.
8. SEAB-222: Enforce frequency limits on ping sequencing parameters in SUI. Disable UI controls when not appropriate.
9. T51-149: Only disallow recording with too many beams in SUI with 7018 (full water column) record, and not with 7042 (compressed water column) record.
10. Robustness of the Sonar UI has been improved by several small fixes.

2.2.2 Modified features

1. Drivers; Add support for set points in pan and tilt drivers.

2.2.3 Added features

1. HYD-55: Support added for playback of HydroSweep s7k files with compressed water column data (7042).
2. The following device drivers have been added:
 - a. Teledyne - TSS Binary 1 [hdg].dev
 - b. Teledyne - TSS Binary 1 [vru].dev
 - c. Teledyne - TSS NAV Binary 1 [pos].dev

3 VERSION 5.4

3.1 5.4.0.0 (25-10-2023 – not released as a public version)

3.1.1 Bug fixes

1. Fixed extents in paused wedge display.
2. Only buffer 500 wedge images for freeze panel in CAD sonar view.
3. SEAB-178: Made sound velocity interlock feature available for all types of sonars in advanced section of Sonar UI.
4. Robustness of the Sonar UI has been improved by several small fixes.

3.1.2 Modified features

1. Rendering of SUI splitter improvements.
2. The following device drivers have been modified:
 - a. Trimble GSOF 1+2+9+12[pos].dev
 - b. Trimble GSOF 1+27[vru].dev
 - c. Trimble GSOF 49+50[pos].dev
 - d. Trimble GSOF 49+50[vru].dev
 - e. Trimble GSOF 65+66[pos].dev
 - f. Trimble GSOF 65+66[vru].dev
 - g. Trimble GSOF 67+68[pos].dev
 - h. Trimble GSOF 67+68[vru].dev
 - i. TSS1[vru].dev
 - j. TSS1-Orion[vru].dev
 - k. PosMV all coupled modes- ethernet msg 3+10+12+20+103+105[pos].dev
 - l. PosMV with velocity- ethernet msg 1+3+10+12+20+102+104[pos].dev
 - m. IXSEA OCTANS-TAH[vru].dev

3.1.3 Added features

1. Implemented internal web server for viewing raw data in 7k IO Module via port 802.
2. The following device drivers have been added:
 - a. Teledyne Saturn05 – TSS Binary [hdg].dev
 - b. Teledyne Saturn05 – TSS Binary [vru].dev
 - c. Teledyne Saturn05 – USBL1 Binary [pos].dev

4 VERSION 5.3

4.1 5.3.2.0 (10-05-2023) – not released as a public version

4.1.1 Bug fixes

1. Don't check max amplitude for saturation indicator when clipping flags are available.
2. Allow multi-detect with high sample rate. Processor usage is no longer an issue.
3. Grid layer was changing when Wedge display was paused.
4. Don't start IO Module when installing on operator computer.
5. Fixed assertion caused by recursive initialization.
6. Renamed 'Wall-Detect' feature to 'Vertical Detection Mode'.
7. SUI-76: Open pdf manual for F1 and Help button.
8. Support large display bit shift (default contrast setting) for 32-bit Wedge Image data of HydroSweep sonar.
9. Support maximum file size from sonar XML (RDR max size attribute) for 7kLogger.
10. Update to 7kLogger 5.8.5.0 with fix for dual-head offsets.
11. Use 7kLogger 5.8.4.0 with fix for SEAB-155 in Sonar UI installer.
12. SEAB-170: Synchronize Vertical Detection Mode in classic dual head mode.

4.1.2 Modified features

1. The following device drivers have been modified:
 - a. SBG Systems 02[tim].dev
 - b. NMEA PASHR[vru].dev
 - c. PosMV all coupled modes- ethernet msg 3+10+12+20+102+104[pos].dev
 - d. PosMV all coupled modes- ethernet msg 3+10+12+20+103+105[pos].dev
 - e. Trimble MPS865[pos].dev
 - f. Valeport miniIPS[dps].dev
 - g. Valeport miniSVS[dps].dev
 - h. AML Micro X[dps].dev

4.1.3 Added features

1. SEAB-143: Support different cable lengths per SeaBat system.
2. SEAB-149: Support hiding components in BITE schema.
3. Enabling of harbor wall detect mode in Sonar UI and show an indicator in the Wedge view when enabled (only shown when sonar supports the wall detect feature).
4. The following device drivers have been added:
 - a. Geometrix G882[dps].dev

5 VERSION 5.2

5.1 5.2.1.4 (01-11-2022)

The version bumped two (2) versions due to logistical reasons.

5.1.1 Bug fixes

- 1) 7k IO Module SEAB-86: Made heave data optional and set to zero in 1012 record from IO Module. This allows the user to ignore the heave in the motion driver
- 2) 7k IO module: Fixed Modbus configuration settings for pan-tilt in IO Module.
- 3) 7k IO module: Initialization for extra outputs was done too early.
- 4) 7k IO-Module: Recover Modbus TCP IP when cable is unplugged.
- 5) Automatically apply bracket changes to all enumerations in case of shared hardware like T51-R.
- 6) Beam selection did not work anymore in sonar wedge.
- 7) Don't show detection history for forward-lookers when still enabled in sonar wedge.
- 8) Fixed RESON 7112 sonar wedge.
- 9) Fixed RESON HydroSweep sonar wedge.
- 10) Fixed BITE data.
- 11) Fixed depth annotation for samples in bathy sonar wedge.
- 12) Fixed file playback of snippets (7028).
- 13) Fixed head tilt of slave wedge for a classic dual head system (not IDH).
- 14) Fixed OpenGL error when closing Snippets display.
- 15) FM sweep value was wrong on inactive enumerations after resetting sonar settings.
- 16) Keep the same sonar system (by MAC address) only once in the recent IP address list.
- 17) SEAB-133: Don't reject ping records with zero detections, otherwise the sonar wedge is not displayed.
- 18) SEAB-70: East and north velocity were swapped in SBG sensor driver.
- 19) Show default COM ports for the sonar in the IO Module pane for sound velocity, motion, and time.
- 20) Slave properties were still shown in hardware pane after leaving dual head mode.
- 21) Sonar wedge: Sonar wedge is not visible for RESON HydroSweep systems.
- 22) SUI-102: Playback tab disappeared when selecting a singlebeam s7k file in SUI.
- 23) Take over current sensor value when enabling manual override for sound velocity and temperature.
- 24) Wedge extends gets corrupted when play back 7503 single record requests.

5.1.2 Modified features

- 1) 7k IO Module: The following device drivers have been updated:
 - a. Generic[dps].dev
 - b. Generic[vru].dev
 - c. OCTANS-TAH + output[vru].dev
 - d. OCTANS-TAH cross + output[vru].dev
 - e. OCTANS-TAH cross + rev. cross output[vru].dev
 - f. PosMV all coupled modes- ethernet msg 3+10+12+20+102+104[pos].dev
 - g. RESON-7k[dps].dev
 - h. Trimble MPS865[pos].dev
 - i. Valeport miniIPS[dps].dev

5.1.3 Added features

- 1) 7123: Disable logging directory when not editable. Hide checkbox to start external logger when internal logger is used.
- 2) Added support for receiving multicast network data in 7k IO Module.
- 3) SEAB-123: Added sensitivity control in SUI for forward detect algorithm (FDA).
- 4) SEAB-135: Renamed raw data recording group in SUI to 'Sensor data for navigation'. Added 1017 (pan and tilt), and 1008 (depth) records to sensor data.
- 5) SEAB-70: Support output of 1018 record with NED velocity for POS MV and SBG sensors.
- 6) SEAB-83: Support setting gateway IP address from SUI.

- 7) SUI-113: Show indicator in sonar wedge when multi-detect is enabled.
- 8) Support 'FLS Bathy Display' license to display detection points in forward looker wedge.
- 9) Support playback of 7044 record with magnitude only beamformed data as wedge image.
- 10) 7k IO Module: The following device drivers have been added:
 - a. PosMV all coupled modes- ethernet msg 3+10+12+20+103+105[pos].dev
 - b. PosMV ethernet 3+103+105[hdg].dev
 - c. PosMV ethernet 3+103+105[vru].dev
 - d. NMEA 2000 – PNG 126992[tim].dev
 - e. NMEA 2000 – PNG 127250[hdg].dev
 - f. NMEA 2000 – PNG 129029[pos].dev
 - g. ImpactSubsea DPT4000[dps].dev

5.2 5.2.1.1 (01-11-2021)

5.2.1 Bug fixes

- 1) SEAB-85: The version of VC_Redirect packaged up with the new SeaBat UI does not work with Windows 10.

5.3 5.2.1.0 (05-10-2021)

5.3.1 Modified features

- 1) Added GUID, hoist rotate angle, range- and bearing uncertainty as fields to the 3001 contact record.

5.4 5.2.0.0 (30-9-2021)

5.4.1 Bug fixes

- 1) 7k IO Module: Fixed automatic switching of drivers to computer clock for time stamping to work like Acquisition. Only applicable when clock sync is not enabled and not all drivers use time in message.
- 2) SUI-107: Second head of a dual head system disappeared after reselecting the IP address in the SUI.
- 3) SUI-100: Fixed black lines in snippets display.
- 4) SUI-105: Fixed IO Module crash when device DLL could not be found.
- 5) SUI-106: Show empty field in IO Module when data item (e.g. heave) is missing instead of value 0.00.

5.4.2 Added features

- 1) Implementation of Seabat T51.
- 2) Added NMEA PASHR attitude format to Simulator for testing.
- 3) 7k IO Module: Implemented new 1018 velocity record. The record is output together with 1003 (Position) when PosMV all coupled modes driver is selected.
- 4) Use minimal image data (fewer beams) for wedge image in SUI.

6 VERSION 5.1

6.1 5.1.0.0 (26-05-2021)

6.1.1 Bug fixes

- 1) 14915: Advanced Options were not shown when X-Range was not licensed.
- 2) 7k IO Module: Incorrect device ID in output records.
- 3) 7k IO Module: SUI crashed on reconnection.
- 4) BITE display, Roll Stabilization indicator and Sound Velocity slider did not work anymore.
- 5) BITE schematic wrong for dual head.
- 6) Prevent accidental disabling of Extents mode in Wedge view when using a mouse with a smooth scroll wheel.
- 7) Robustness of the Sonar UI has been improved by several small fixes.

6.1.2 Modified features

- 1) Changed button name of screenshot so that it won't be confused with BITE snapshot.
- 2) Changed large step size of slider controls for Range and Sound Velocity.
- 3) Hide frequency slider when minimum and maximum are equal.
- 4) Only support multi frequency ping sequence in SUI when feature is in system XML.
- 5) Update splash screen.
- 6) 7k IO Module: The following device drivers have been modified:
 - a. Generic ZDA + 1PPS using Trimble cable[tim].dev
 - b. Generic ZDA + 1PPS[tim].dev
 - c. Ifremer PPS & ZDA{88}[tim].dev
 - d. IXBlue - PosMV GR111[heave].dev
 - e. NMEA PHTRO[vru].dev
 - f. NMEA ZDA [tim].dev
 - g. Novatel SPAN NMEA ZDA + 1PPS[tim].dev
 - h. PosLV all coupled modes- ethernet msg 1+2+3+10+12+20[pos].dev
 - i. PosLV ethernet 1+2[hdg].dev
 - j. PosLV ethernet 1+2[vru].dev
 - k. PosLV ethernet 102[vru].dev
 - l. PosMV all coupled modes- ethernet msg 3+10+12+20+102+104[pos].dev
 - m. PosMV ethernet 3+102+104[hdg].dev
 - n. PosMV ethernet 3+102+104[vru].dev
 - o. PosMV ethernet 3+7[tim].dev
 - p. PosMV ethernet 3+7+1PPS[tim].dev
 - q. SBG Systems 06[hdg].dev
 - r. SBG Systems 06[vru].dev
 - s. SBG Systems 08[pos].dev
 - t. Topcon PPS & ZDA[tim].dev
 - u. Valeport miniIPS[dps].dev

6.1.3 Added features

- 1) The SUI can connect to the HydroSweep sonar system. The appropriate HydroSweep controls and features in the SUI panes are now available, and HydroSweep data is shown.
- 2) Added board time out status in BITE.
- 3) Master-Slave dual head system, the slave system has been added to a BITE snapshot.
- 4) Implemented power modes for T20 ASV.
- 5) Implemented multi frequency ping sequence via 1123 command.
- 6) Use receiver clipping flags for saturation indicator in wedge display.
- 7) 7k IO Module: The following device drivers have been added:
 - a. NMEA \$PTNTHPR[hdg].dev
 - b. NMEA \$PTNTHPR[vru].dev
 - c. RESON-7k OMS hoist control[hst-ctl].dev
 - d. RESON-7k OMS hoist control[sonar-cfg].dev
 - e. Trimble GSOF 1+2+9+12[pos].dev
 - f. Trimble GSOF 1+27[hdg].dev

- g. Trimble GSOF 1+27[vru].dev
- h. Trimble GSOF 49+50[hdg].dev
- i. Trimble GSOF 49+50[pos].dev
- j. Trimble GSOF 49+50[vru].devOther

6.1.4 Other

- 1) The following documentation has been modified:
 - a. Sonar UI User Manual

7 VERSION 5.0

Sonar UI and 7k IO Module are 64 bit Windows versions offering faster performance, optimized memory management and better feature utilization.

With Sonar UI version 5.0.0.10 we stopped supporting Microsoft Windows Vista. Hence, the minimum version of Windows we support is Windows 7.

7.1 5.0.0.20 (15-07-2021)

7.1.1 Bug fixes

- 1) The installer did not correctly put the proper user rights to the folders, the 7k IO Module and the Sonar UI use to save the settings file. Therefore, the settings were not always stored as expected. This has now been corrected.

7.2 5.0.0.19 (06-04-2021)

7.2.1 Bug fixes

- 1) Fixed problem where clock sync in IO Module stopped working soon after turning the GPS on.

7.3 5.0.0.18 (14-07-2020)

7.3.1 Bug fixes

- 2) 14939: Fixed visual glitches with Intel integrated graphics card.

7.4 5.0.0.17 (24-10-2019)

7.4.1 Bug fixes

- 1) 14514: 7k IO Module: Raw data messages in QC tab did not shown after reconnecting Sonar UI and raw data is now shown in multiple Sonar UI's.
- 2) 14549: Fixed FM sweep setting.
- 3) 7k IO Module: Event messages (7051 record) about clock sync were garbled. Only a 'C' was shown in the Sonar UI Message pane.
- 4) Controls (e.g. range) didn't work after resetting system from dual head to single head.
- 5) The Depth Color legend stayed highlighted when pointer was outside the wedge.
- 6) The measure line was shown when the mouse pointer is outside the wedge.
- 7) Robustness of the Sonar UI has been improved by several small fixes.

7.4.2 Added features

- 1) 7k IO Module: Display Pan and Tilt data.
- 2) 7k IO Module: The following device driver has been added:
 - a. RESON-7k[pan-tilt]

7.5 5.0.0.16 (02-10-2019)

7.5.1 Bug fixes

- 1) 13187: Show correct offline status of recent connections in the Sonar UI.
- 2) 14202: Fixed start time of s7k log file in 7200 record so that there is no 10 seconds delay when playing back a file. The log file contains 10 seconds of lead-in data before the start time.
- 3) 14204: Stop update did not freeze bathy data in Sonar Wedge display.
- 4) 14258: Vernier depth colors were incorrect after combining with intensity.
- 5) 14326: Integrated Dual Head: Changing swath coverage of a head did not change the wedge until you grab a gripper.

- 6) Don't show message about 'pipe detection still running' on forward looker when closing the main window.
- 7) Fixed couple of missing pixels at the bottom of the Detect display when the screen is split.
- 8) Fixed display of zoom rectangles in the Sonar Wedge display.
- 9) Fixed freezing of Sonar UI when switching to playback mode by closing sockets safely.
- 10) Fixed infinite loop while playing back s7k file.
- 11) Fixed Measure functions in sonar displays: Show along track measurement information in Vernier Profile display, Update measurement information when rescaling and mouse cursor stays the same, Do not enable Measure function when pressing M key in Water Column display.
- 12) Fixed spelling of 'collinearity' in Pipe Detection pane.
- 13) Fixed wrong initial extents of Sonar Wedge display.
- 14) Full-rate check box was grayed out for Integrated Dual Head (IDH).
- 15) Integrated Dual Head (IDH) did not work anymore (only one wedge, no snippets).
- 16) Update dialog with possible configuration names.
- 17) Robustness of the Sonar UI has been improved by several small fixes.

7.5.2 Modified features

- 1) 11775, 12367: Removed Normalization LED and button in SUI. Manual normalization can be started from the Hardware pane.
- 2) HydroSweep: Removal of control and indicators that are not fully functional with HydroSweep.
- 3) 7k IO Module: The following device drivers have been modified:
 - a. Topcon GGA & GST 5Hz[pos].dev
 - b. Topcon GGA,GST,VTG[pos].dev
 - c. Topcon GGA[pos].dev
 - d. Topcon GGA10[pos].dev
 - e. Trimble-PTNL-GGK-GST[pos].dev
 - f. Trimble-PTNL-GGK[pos].dev

7.5.3 Added features

- 1) 10993: Highlight high density sector in Flex Mode.
- 2) 11459: The Sonar UI is now able to log s7k data locally by means of an external logger. In addition, the classic dual head with a Master and Slave prefix is supported by the external logger. AUV systems still use the internal logger inside 7k Center.
- 3) 13923: Implemented AUV Restore options to restore the Recording and Tracker state.
- 4) Show tooltip to update depth colors in Vernier wedge by clicking on the color table legend.
- 5) Show tooltip to update wedge depth colors by clicking on the color table legend.
- 6) Sonar Contacts feature added to Forward Looking Sonar Wedge. It is now possible to add and edit Sonar Contacts in the Sonar Wedge.
- 7) Sonar Wedge Toolbar: Added Create Sonar Contact button.
- 8) 7k IO Module: The following device drivers have been modified:
 - a. OCTANS-TAH cross + rev. cross output[vru].dev
 - b. TSS1 rev. cross[out].dev
 - c. Valeport miniSVS P+T+SV and CTRL[svp].dev
 - d. ADAM Depth Sensor[dps].dev
 - e. NMEA 2.30 GGA-GST - Grapnel survey[pos].dev
 - f. Teledyne HPR[att].dev
 - g. Teledyne HPR[hdg].dev
 - h. Teledyne HPR[vru].dev

7.6 5.0.0.15 (24-04-2019)

7.6.1 Bug fixes

- 1) 14157: Fixed POS M/V drivers in favorite list for 7k IO Module.
- 2) Fixed 60.0 seconds rounding problem in 7k time correctly.

7.6.2 Modified features

- 1) 7k IO Module: The following device driver has been modified:
 - a. SBG Systems 06[vru].dev

7.6.3 Removed features

- 1) 7k IO Module: The following device drivers have been modified:
 - a. SeptenTrio SBF AttEuler-AttCovEuler[hdg].dev
 - b. SeptenTrio SBF AttEuler-AttCovEuler[vru].dev
 - c. SeptenTrio SBF PVTGeodetic-PosCovGeodetic[pos].dev

7.7 5.0.0.14 (14-03-2019)

7.7.1 Bug fixes

- 1) 8585: Show only one head tilt edit property per receiver in SUI. (Roll head tilt is shown for bathy systems. Pitch head tilt is shown for forward lookers.)
- 2) The range of the text in the BITE display was incorrect for the activity and error counter types.
- 3) Dynamic delay increased one second every time playback looped.
- 4) Sonar wedge extents did not work when playing back.
- 5) Projector selection did not work anymore.
- 6) First ping was not always shown after selecting file to play back.
- 7) Playback could get stuck in an infinite loop when scrubbing to the end while playing back in loop mode.
- 8) Only show vessel offset for dual-head systems.
- 9) Fixed display flicker when last layout tile button was pressed.
- 10) Reduced flickering in hardware pane when connecting to sonar.
- 11) Raw data recording options were gone after using playback.
- 12) Normalization button on IDH systems would vanish after pressing it.
- 13) Fixed line spacing in Sonar Wedge Info layer for high DPI.
- 14) Fixed resetting layout with Vernier wedge.
- 15) Wedge extents was wrong after playing back a 7112 file.
- 16) Always start with zoom extents.
- 17) Support Vernier tile when playing back F30 file.
- 18) Robustness of the Sonar UI has been improved by several small fixes.

7.7.2 Added features

- 1) Display Vernier wedge for F30.
- 2) Allow both Wedge and Vernier tiles to be shown.
- 3) Support entering of pitch mounting angle for forward lookers (Bow horizontal as reference).

7.7.3 Modified features

- 1) 7k IO Module: The following device driver have been modified:
 - a. Trimble-PTNL-GGK-GST[pos].dev
 - b. Trimble-PTNL-GGK[pos].dev

7.7.4 Removed features

- 1) 7k IO Module: The following device drivers have been modified:
 - a. PosMV-PTNL-GGK[pos].dev
 - b. PosMV-PTNL-GGK-GST[pos].dev

7.8 5.0.0.13 (14-02-2019)

7.8.1 Bug fixes

- 1) Absorption and spreading settings did not work anymore on IDH system.
- 2) Port wedge grippers were wrong on IDH system.
- 3) Port wedge grippers were wrong on IDH system after resetting sonar settings.
- 4) Sonar UI could not start when projects path was in the root (e.g. 'T:\').
- 5) Fixed super tall ribbon bar when running on a laptop.
- 6) Fixed display of undefined network port settings in 7k IO module.
- 7) XML settings and license info was removed when resetting the sonar.
- 8) Fixed Sonar UI crashing when connecting to a sonar.
- 9) Second head was not shown when reconnecting to an IDH system.
- 10) Wedge view was not repainted on resize when ping rate was zero.
- 11) Resetting an inoperative sonar did not work.
- 12) Wedge did not update when motion data was time-stamped incorrectly.
- 13) Robustness of the Sonar UI has been improved by several small fixes.

7.8.2 Added features

- 1) Output of TSS1 message from an input OCTANS-TAH input message. An OCTANS-TAH message received over Ethernet can now be used for the roll stabilization. The TSS1 message is output default on COM4 of the IO module. The OCTANS-TAH cross driver will swap the roll and pitch in case the sonar head is mounted perpendicular with respect to the MRU orientation.
- 2) Support high DPI displays.
- 3) 13870: When the AutoConfig cannot determine the exact sonar system, the Sonar UI will show a dialog where the user can manually select the correct sonar system.
- 4) 7k IO Module: The following device drivers have been added:
 - a. Valeport miniSVS[dps].dev
 - b. Trimble MPS865[pos].dev
 - c. Trimble MPS865[hdg].dev
 - d. SeaBotix[hdg].dev
 - e. SeaBotix[dps].dev
 - f. SeaBotix[vru].dev
 - g. TSS1 cross[out].dev
 - h. OCTANS-TAH cross + output[vru].dev
 - i. OCTANS-TAH + output[vru].dev

7.8.3 Modified features

- 1) 7k IO Module: The following device driver has been modified:
-

- a. Ixsea Phins Halliburton SAS[dps].dev

7.9 5.0.0.12 (27-09-2018)

This version is released together with 7k Center version 6.3.0.13 (27-09-2018)

7.9.1 Bug fixes

- 1) 13293: Constant spacing check box was invisible in Sonar UI until hovering the mouse pointer over the control.
- 2) 13373: Made area for normalization status text twice as high so that text is not truncated for failure on IDH.
- 3) 13409: Fixed recording options in Sonar UI.
- 4) 13558: Pitch values were displayed with the wrong sign in the Sonar UI.
- 5) 13574/13510/13529: Time from IO Module was not displayed in Sonar UI QC
- 6) Switching from dual to single head left extra wedge on screen.
- 7) Progress dialog was not shown when normalization got stuck
- 8) Use correct first, last, and zero degrees beam for 7k sonar image.
- 9) Made time column in messages pane wide enough for AM/PM.
- 10) Fixed crash when selecting a sonar address from the list
- 11) Address field was not cleared when an IP address was selected in the network port settings dialog.
- 12) Fixed crash when resetting sonar settings.
- 13) Fixed editing the view properties of a sonar wedge display.
- 14) Fixed circular wedge of SeaBat 7112 system.
- 15) Hide empty main pane for forward lookers.
- 16) Wedge extents of first ping was wrong.
- 17) Detect extents of first ping was wrong.
- 18) Bathy was not visible when enabling wedge or detect view.
- 19) Fixed empty IP address for socket interface meaning local host.
- 20) Display normalized snippets in Sonar UI when available.
- 21) Robustness of the Sonar UI has been improved by several small fixes.

7.9.2 Added features

- 1) s7k playback: Implemented playback of .s7k files.
- 2) Implemented Vernier display mode to display wedge image as intensity
- 3) Support Vernier IF data (7019 record). E.g. 7131 system.
- 4) Support Equi-Angle FlexMode for forward lookers.
- 5) Show text hint about drag-and-drop.

7.9.3 Modified features

- 1) 13318: Record image data (7011 record) by default on forward lookers.
- 2) Stripped some options from the Sonar UI application settings dialog.
- 3) Updated toolbar icons.

- 4) Made emulated wedge image 8-bit, so contrast is not too dim.
- 5) Store all XML texts for logging 7001 record to .s7k file.

7.9.4 Removed features

- 1) Removed Vernier image angle display from Sonar UI.

7.10 5.0.0.11 (01-05-2018)

This version is released together with 7k Center version 6.3.0.12 (01-05-2018)

7.10.1 Bug fixes

- 1) 13343: Sonar Sidescan view showed Snippets data.

7.11 5.0.0.10 (19-03-2018)

This version is released together with 7k Center version 6.3.0.9 (19-03-2018)

7.11.1 Bug fixes

- 1) Forward Looker sonar system: Made startup faster by not updating disabled (water column) views.
- 2) Clear all displays when selecting a different system enumerator for ping sequencing.
- 3) Robustness of the Sonar UI has been improved by several small fixes.

7.11.2 Added features

- 1) 13218: Don't ask to reboot sonar system to exit deck mode. 7kCenter will now restart internally when deck mode is disabled.
- 2) Support 7k enumerator selection in Sonar UI for ping sequencing.
- 3) Automatically update license dialog after updating the license file via drag and drop.
- 4) 7k IO Module: The following device drivers have been added:
 - a. Kearfott SeaNav[dps].dev
 - b. Kearfott SeaNav[hdg].dev
 - c. Kearfott SeaNav[pos].dev
 - d. Kearfott SeaNav[vru].dev

7.11.3 Modified features

- 1) 7k IO Module: The following device drivers have been modified:
 - a. NMEA-HDT[hdg].dev
 - b. NMEA-HDG[hdg].dev

7.11.4 Removed features

- 1) The DK2 installer has been removed from the Sonar UI installer.

7.12 5.0.0.9 (21-12-2017)

This version is released together with 7k Center version 6.3.0.8 (19-12-2017)

7.12.1 Bug fixes

- 1) 13185: It is now possible to determine the distinction between 200 kHz Wide and 200 kHz Narrow projectors for Teledyne RESON SEABAT Sonars.

- 2) 13198: Do not overlay combo box for operation mode with frequency slider.
- 3) Fixed heavy flickering when changing projector selection.
- 4) Fixed crash when clicking on Movie button when no system is active.
- 5) Fixed alignment of pulse type control when system had multiple enums
- 6) Fixed projector selection when enum is missing because of license issue.
- 7) Settings were wrong if enum was missing because of license issue.
- 8) Robustness of the Sonar UI has been improved by several small fixes.

7.12.2 Added features

- 1) Show the name of the active system in the title bar.
- 2) Don't ask to reboot sonar system after installing a new license file.

7.13 5.0.0.8 (29-11-2017)

This version is released together with 7k Center version 6.3.0.7 (29-11-2017)

7.13.1 Bug fixes

- 1) 13135: Decreased time that Sonar UI toolbars are shown, obscuring data.
- 2) Show duty cycle limitation when sonar supports it, not just on IDH.
- 3) 7k: Fixed signed size and offset fields in 7052 and 7054 records.

7.13.2 Added features

- 1) 13148: Only show normalized snippets in Sonar UI when sonar supports it.
- 2) Hide extra BITE boards (e.g. TX2) used for AutoConfig.

7.14 5.0.0.7 (22-06-2017)

This version is released together with 7k Center version 6.3.0.6 (22-06-2017)

7.14.1 Bug fixes

- 1) 12981: 7k IO Module: Fixed PPS when using time and position on same serial port.
- 2) 12984 and 13003: Fixed AUV options for T50-S.
- 3) 13017: Fixed hardware offsets for multi projector systems (e.g. T50-S).

7.14.2 Added features

- 1) Dynamically load DK2 DLL so that it is not necessary to install DK2 driver for running Sonar UI and 7k IO Module.

7.15 5.0.0.6 (22-05-2017)

This version is released together with 7k Center version 6.3.0.5 (22-05-2017)

7.15.1 Bug fixes

- 1) 12927: Sidescan display only updated if Snippets display was also enabled.

7.15.2 Added features

- 1) 10751: Sonar wedge: Adjust depth gate tilt interactively via the right mouse button.

7.16 5.0.0.5 (04-05-2017)

This version is released together with 7k Center version 6.3.0.4 (04-05-2017)

7.16.1 Bug fixes

- 1) Sonar wedge: Color multi-detect points orange instead of black when higher than 5.
- 2) Clock sync was disabled when connecting Sonar UI to slave system.
- 3) Switching IP address would set 7k IO module settings of previous system on new system.
- 4) Fixed BITE configuration switching for 7130 and 7131 sonar when selecting a different frequency.
- 5) Robustness of the Sonar UI has been improved by several small fixes.

7.16.2 Added features

- 1) Use system specific maximum absorption and spreading value.
- 2) Support separate sound velocity on slave system.

7.17 5.0.0.4 (23-03-2017)

This version is released together with 7k Center version 6.3.0.3 (28-02-2017)

7.17.1 Bug fixes

- 1) Fixed display of Vernier data (7019 record) in wedge for 7030 sonar.
- 2) 7k IO Module: ClockSyncDevice.dll time stamp encoding was wrong.

7.18 5.0.0.3 (28-02-2017)

This version is released together with 7k Center version 6.3.0.3 (28-02-2017)

7.18.1 Bug fixes

- 1) 12698: Fixed roll in Snippets view when roll stabilization was enabled.
- 2) 12709: Snippets did not run when switching between systems with or without license for Normalized Backscatter.
- 3) Pin labels did not move when resizing BITE schema view.
- 4) 7kLogger: Remote logger did not force network logging folder.

7.18.2 Modified features

- 1) 12626: Clicking on the text label now selects pin in BITE schema.
- 2) HydroSweep: 7k protocol change to accommodate a TX delay for the 7004 7k Beam Geometry record.
- 3) HydroSweep: 7k protocol: Added support for 7014 record (7k Adaptive gate descriptor).
- 4) HydroSweep: Sonar wedge: Correct image for TX delay.
- 5) HydroSweep: 7k Normalizer: Processing of 7027 and 7047 records has been optimized.
- 6) Support UTF-8 text in SeaBat 7k BITE.
- 7) Allow disabling of action layer to hide wedge grippers.

7.18.3 Added features

- 1) Added 7012 (ping motion data) to record set for water column recording. It is necessary for replaying roll stabilized data in 7kCenter.

- 2) HydroSweep: Add RX Delay support for Sonar Image.
- 3) Odom MB2: Power Built-In HPR command to SUI.

7.18.4 Removed features

- 1) HydroSweep: Remove 7047 multibeam driver, add 7k message to standard multibeam drivers in PDS and SUI.

7.19 5.0.0.2 (24-01-2017)

This version is released together with 7k Center version 6.3.0.1 (24-01-2017)

7.19.1 Bug fixes

- 1) 12576: Automatically recover after TCP connection with 7k sonar is lost.
- 2) 12580: IP address readout in SUI did not work, this has been fixed.
- 3) The robustness of the SUI has been improved.

7.19.2 Modified features

- 1) Override check boxes for Sound Velocity and Temperature only appear when there is incoming sensor data.

7.20 5.0.0.1 (06-01-2017)

This version is released together with 7k Center version 6.3.0.0 (15-12-2016)

7.20.1 Bug fixes

- 1) 12543: License file transport from SUI to 7kCenter (when drag 'n' drop license file on SUI) has been fixed.
- 2) Adjust true angle selection for displaying detections.

7.20.2 Modified features

- 1) Multibeam computation: Use true angles for record 7027 (7k Raw Detection Data).

7.21 5.0.0.0 (15-12-2016)

This version is released together with 7k Center version 6.3.0.0 (15-12-2016)

7.21.1 Bug fixes

- 1) 12010: Fixed parsing error in Novatel OEM4 time driver for 7k IO module.
 - 2) 12122: Show applied frequency in sonar info. Don't show actual frequency used for separation in FRDH.
 - 3) 12233: Set 7k IO Module defaults when resetting to factory defaults in SUI.
 - 4) 12324: SUI LEDs turned blue when plugging power into laptop.
 - 5) 12424: Implemented default coverage on both heads with overlap.
 - 6) Sidescan and Snippets views did not fill color palette properly.
 - 7) Several small fixes made the SUI more robust.
 - 8) Fixed disappearing panes when reselecting the IP address.
 - 9) Don't show local instead of computer name for discovered 7k systems. A local system will always be 127.0.0.1.
 - 10) Side Scan Sonar View: The starboard side was missing the maximum range annotation.
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- 11) Exiting SUI could hang when connected to internal web server.
- 12) Slave kept connected to previous sonar when selecting a new IP address.
- 13) Fixed tiny wedge when reducing the range.

7.21.2 Modified features

- 1) 12373: Renamed RDR button to Recording.
- 2) Sidescan and Snippets Views now have better support for Multi-ping and deep water systems.
- 3) Snapshot created in Sidescan and Snippets View is now taken from the whole view, not only the data.
- 4) Draw tooltip with depth / range under mouse cursor while dragging a gate in the sonar wedge.
- 5) Don't show grid axis for negative depth.
- 6) Removed FRDH LED. Added text after ping rate: full rate / alternating.
- 7) Changed order of display properties from alphabetical to logical. Collapse layer properties by default to make it look simpler.
- 8) Set Snippets / Sidescan range mode to automatic.
- 9) Cosmetic improvement: Renamed 7k IO Module items to be consistent with port labels on processor box.
 - a. Attitude -> Motion
 - b. Clock -> Time
 - c. Sound velocity -> Sound velocity probe
- 10) Added scrollbar so that all copyright info can be shown in SUI about dialog.
- 11) Support display of adaptive gate lines in sonar wedge in PDS. SUI now uses 7027 instead of 7017 bathy record.
- 12) 7k IO Module: Removed favorite driver names from 7k IO module list that are not installed.
- 13) SUI BITE: Use new BITE sensor value text from 7021 record. Use different range text per sensor type, or leave out when not checked.
- 14) Remember computer name of recent connections for resetting LAN settings. No need to type name in manually any more if it was recently selected.
- 15) Made BITE details friendlier.
 - a. Removed prefix on sensor names.
 - b. Don't show full name of selected object.
 - c. Only show ID of selected object after Ctrl-B.
- 16) Show network port settings when not connected to a sonar system yet, so that it is possible to enter the computer name and reset the ports.

7.21.3 Added features

- 1) Support running SUI on T50-R and T20-R Integrated Dual Head sonar system.

8 VERSION 4.2

8.1 4.2.0.20 (26-05-2016)

This version is released together with 7k Center version 6.2.0.22.

8.1.1 Modified features

- 1) Hide `Entire RX Duration` trigger option in the Sonar UI when not available.
- 2) Advanced properties on the Hardware pane in the Sonar UI are now enabled by X-Range license.
- 3) Remove logging option of Snippets and Sidescan for Forward lookers.

8.2 4.2.0.19 (18-05-2016)

This version is released together with 7k Center version 6.2.0.21.

8.2.1 Modified features

- 1) 7k IO Module: Edge definition in 7k IO Module did not match DFD.
- 2) 7k IO Module: Enabled SBG brand drivers for 7k IO Module.

8.3 4.2.0.18 (06-04-2016)

This version is released together with 7k Center version 6.2.0.15.

8.3.1 Modified features

- 1) Added RemoteIOClockSyncDeviceDllR.dll to the installer.

8.4 4.2.0.17 (22-03-2016)

This version is released together with 7k Center version 6.2.0.12.

8.4.1 Modified features

- 1) Always record BITE data (7021 record).
- 2) Removed troubleshooting checkbox from recording pane.

8.5 4.2.0.16 (28-01-2016)

This version is released together with 7k Center version 6.2.0.3.

8.5.1 Bug fixes

- 1) 11760 : Sonar UI IP connection information. When a different IP address is selected the dockable panes are cleaned.

8.5.2 Modified features

- 1) 11768: Pipe Detection and Tracking: The Segment length field has been moved to the Pipe Route settings part.
- 2) 11769: Toolbar Sonar UI repositions of indication LEDS and changed JPG and AVI button names to Movie and Snapshot.

8.6 4.2.0.15 (23-11-2015)

This version is released together with 7k Center version 6.2.0.1. and 6.2.0.2.

8.6.1 Bug fixes

- 1) 11803: Static IP address was not shown when cable was unplugged. Only allow one port to be set to DHCP, otherwise we can't get the interface name.
- 2) 11825: Disable Multi Detect with high sample rate on T50.

8.7 4.2.0.14 (13-11-2015)

This version is released together with 7k Center version 6.2.0.0.

8.7.1 Bug fixes

- 1) 10260. Fixed crash when SUI was used with older IO module. Check if 7400 record has optional data.
- 2) 11262. SUI window was too large when maximized in Windows Basic theme.
- 3) 11596: MB2: Improperly reboot of Sonar UI has been fixed.
- 4) 11625: Full Rate Dual Head could not be enabled, this has been fixed.
- 5) 11635: Backscatter mosaic was stretched when snippet computation number didn't match multibeam device number, and cell size was different than height model. Choosing high resolution also didn't work for the same reason.
- 6) 11639: Don't remember turned off master or slave wedge in SUI.
- 7) 11648: Disable dual head connect property when selecting same IP address when it has the focus.
- 8) 11650: Ignore POS Time (time type 0) in POS MV clock driver. Only allow GPS time (time type 1) and UTC time (time type 2).
- 9) 11655: PPS on Reson Test clock driver didn't work anymore.
- 10) 11675: Sonar UI for MB2 must message exit when pinging and or logging.
- 11) 11682: Frequency slider was wrong in FRDH.
- 12) 11683: Sonar data history was very short after resetting Sonar UI layout.
- 13) 11695: Update remote IO module clock driver when IP address changed.
- 14) 11695: Disable remote clock sync on slave when exiting dual-head.
- 15) 11695: Command for removing clock device on slave was not always sent. Flush last command before closing connection with slave IO module.
- 16) 11733: Calibrated snippets became very slow when bottom detection sample was outside snippet window.
- 17) 11802: Fixed dark spots in dual-head snippets. This was caused by gaps in snippets after data reduction.
- 18) 11803: Setting IP address did not work when port name was not HOST or DATA. Local Area Connection and Local Area Connection 2 now also work again.
- 19) 11813: POS MV drivers had invalid formula.
- 20) Snippets display didn't work when normalized backscatter was not licensed.
- 21) Show correct head tooltip when connected to slave sonar.
- 22) Clear wedge when switching sonars.

- 23) Slave was not disabled when switching between dual-head and MB2 system.
- 24) Range slider was broken with T20-S.

8.7.2 Modified features

- 1) 11218: Try to open serial port every 5 seconds if opening failed.
- 2) 11444: Moved sonar address to the ribbon bar. Moved color mode to the application settings dialog.
- 3) 11590: MB2: Transmit controller has been moved to the main tab.
- 4) 11594: Roll Stab on by Default.
- 5) 11623: Show calibrated snippets in Sonar UI when licensed.
- 6) 11631: Allow FM sweep to be changed in ping-pong mode, and slave center frequency.
- 7) 11632: Support recording 7058 record (calibrated snippets) in Sonar UI.
- 8) 11677: Replaced camera image in toolbar.
- 9) 11677: Removed some icons in the toolbar of the Sonar UI, images replaced by gray led except camera.
- 10) 11687: MB2: Color by Multi Detect in MB2 Sonar UI can be disabled, removed Multi Detect option from popup menu.
- 11) 11702: MB2 BITE pages have been improved.
- 12) 11743: MBCenter quick restart enhancement.
- 13) 11803: Support older netsh output format for setting IP addresses in SUI.
- 14) Don't delay drawing of sonar image when slave wedge is hidden.
- 15) Disable sample rate property in Full Rate Dual Head. FRDH is now always done at 34 kHz on T50.
- 16) Remove history attributes in Sonar UI for forward looker sonars.
- 17) Replace battery and speedometer bitmaps in Sonar UI, replace led's in Sonar UI.
- 18) Renamed licensed feature to Normalized Backscatter.
- 19) Don't hide snippets driver for calibrated backscatter.
- 20) Support maximum coverage angle for Tracker swath control.
- 21) Simplified multi-detect controls. Removed object sensitivity. Use 5 steps for amplitude sensitivity
- 22) Fixed display properties.
 - a. Use fixed green data color in detect view instead of always good quality.
 - b. Added transparency to data layer in Detect view.
 - c. Removed manual grid interval in detect view.
 - d. Removed duplicate properties in view and data layer.
- 23) Expand dual head properties when there is valid slave IP address from the last time.

8.7.3 Added features

- 1) 11521: Show temperature slider when calibrated backscatter is licensed. The absorption is now calculated from sound velocity and temperature.
- 2) 11564: Support RTK modes and number of satellites in 1003 (Position) record.
- 3) 11595: MB2: Indicator for Laptop off power source.
- 4) Add support for 7019 Vernier Parameters command.

- 5) Sonar UI now supports 7130 and 7131 Interferometry sonars.
- 6) Indicator for Sonar UI power management.
- 7) Added keyboard shortcut 'M' for measure in plan views.
- 8) Added sound velocity driver for AML Smart.X sensor with support for temperature and pressure.
- 9) Added option to maintain swath coverage for constant spacing.
- 10) Added control flag for single absorption value to 7058 (calibrated snippets) record.
- 11) Added absorption value for calibrated backscatter to data block.
- 12) Support frequency agile Full Rate Dual Head. (Don't disable center frequency slider.)
- 13) Implemented controls for temperature compensation.

8.8 4.2.0.13 (30-06-2015)

This version is released together with Odom MB2 version 1.0.0.7.

8.8.1 Bug fixes

- 1) 11501: Disable toolbar buttons when contrast is changed via the display properties.
- 2) Install Shield improvement.

8.9 4.2.0.12 (26-06-2015)

This version is released together with Odom MB2 version 1.0.0.6.

8.9.1 Bug fixes

- 1) Adapting the Hardware pane when switching between sonar has been made more robust.

8.9.2 Modified features

- 1) 11506: Water temperature and pressure has been removed for MB2 SVP I/O module QC

8.10 4.2.0.11 (24-06-2015)

This version is released together with MBCenter version 1.0.0.5 and 7kCenter version 6.1.0.7

8.10.1 Bug fixes

- 1) Fixed gate limits. Maximum range depends on selected sample rate.
- 2) Gaps in snippets were not being displayed.
- 3) Select first item when space bar is pressed in a grid property when nothing is selected yet.
- 4) Sonar data color legend for intensity was unreadable when pinging was off.
- 5) Minimum depth gate line sometimes disappeared with tilted gate.
- 6) Grid annotation text was being clipping in Detect view.

8.10.2 Modified features

- 1) Only show green color in Multibeam Data Color Mode – Quality legend when only showing valid beams in sonar wedge.
- 2) Added 7002 record (FM match filter) to the minimum set for recording.
- 3) Check box properties can now be changed by pressing the space bar.

8.10.3 Added features

- 1) 11456: T50-P: Implemented different maximum range for 66 kHz sample rate.
- 2) Support down sampling option for water column data in 7042 record.

8.11 4.2.0.10 (26-05-2015)**8.11.1 Bug fixes**

- 1) 11218: 7K IO Module sensor data was missing after reboot. Now try to open serial port every 5 seconds if opening failed.
- 2) 11262: Sonar UI window was too large when maximized in Windows Basic theme.
- 3) 11353: Fixed color of splitters in Sonar UI.
- 4) 11376: Hardware offsets were zero with fresh install.
- 5) 11412: MB2: Sonar UI was not updated with MBCenter values when started.
- 6) 11395: Don't draw adaptive gates when disabled for remaining beams.
- 7) 11415: Don't clock sync when ZDA message has missing fields.
- 8) 11417: Sonar UI Snippets view could freeze, this has been fixed.
- 9) Snippets data reduction was doubling the amount of data, this has been fixed.
- 10) MB2 and 8k Seabat: Fixed pulse length slider.
- 11) Several fixes in the software to make the Sonar UI more robust.

8.11.2 Modified features

- 1) 10666: Seabat: Implemented follow seafloor for depth gate.
- 2) 11118: Use minimum value for intensity color mode, and scale as dB's.
- 3) 11148: Added nadir depth to Info layer on the Wedge display.
- 4) 11203: Removed Snippets Window size option from Sonar UI.
- 5) 11299: MB2: Center frequency slider becomes active when the slider is released.
- 6) 11379: Seabat: T50: Use separate pulse length limits for different sample rates.
- 7) 11393: Use linear intensity color mapping. Use blue color below minimum.
- 8) 11414: Enforce minimum splitter position of 10% so that views cannot be hidden in Sonar UI.
- 9) 11419: Use high-contrast color palette for Water Column view by default in Sonar UI.
- 10) 11421: Toggle roll stab and pitch stab by clicking in the Sonar UI ribbon bar.
- 11) Seabat: Only show raw data from master 7K IO Module, not from slave.
- 12) Changed text on max rate slider in Sonar UI for external triggering.
- 13) MB2: MB2 has no multi detect color. Multi Detect color scale will only show the First color in the legend. Detections are Always primary detections.
- 14) MB2: Enable Side Scan view for MBCenter.
- 15) Seabat: Disable FM sweep property when Tracker is enabled and controlling the pulse.
- 16) Seabat: Don't show warning about exiting while Pipe Detection is running when not licensed.
- 17) Seabat: Implemented sample rate switching for T50-P. Pulse length limits and FM sweep limits are different for each sample rate. Slave sample rate command in dual-head.

8.12 4.2.0.9 (26-03-2015)

8.12.1 Modified features

- 1) 11255: It is no longer necessary to reboot after setting the cable length.
- 2) Show dialogue when exiting SUI while pipe detection is running.
- 3) Don't update sound velocity slider when in manual override. Disable sound velocity filter control.

8.12.2 Added features

- 1) Support running SUI on SSP for real-time pipe detection.
 - e. All views can now be disabled in AUV mode.
 - f. Stop view processing to reduce CPU usage when the view is disabled.
 - g. Unsubscribe from 7k records when views are disabled.
- 2) Enable deck mode when reboot dialog is canceled.

8.13 4.2.0.8 (12-03-2015)

8.13.1 Bug fixes

- 1) 11201: Small typo in SUI for MB2 recording, this is fixed.
- 2) 11210: Change text "Data from 7k center" to "7k message from center", this is also a valid statement when an MBCenter is connected.
- 3) 11213: Send deck mode command to device ID 7000. It is not system specific.
- 4) Fixed crash in 7k sonar control view.
- 5) Toolbar button to decrease point size was not disabled at lowest setting.
- 6) Head tilt was incorrect when changed while view was disabled.
- 7) Min/max number of custom beams on slider didn't change when switching sonars.

8.13.2 Modified features

- 1) 11138: Don't disable power, range, and ping rate in deck mode on T20-S.
- 2) 11160: SUI snippets computation now works immediately after enabling snippets view.
- 3) 11176: MB2 Autopilot is activated but can still be useless. Function of status Led improved.
- 4) 11219: Reboot the system when exiting deck mode.
- 5) Only show AUV options and deck mode in enhanced AUV mode.
- 6) Added note about damaging system with incorrect cable length.
- 7) Expand dual head properties when there is valid slave IP address from the last time.
- 8) Made Sonar UI code more robust.

8.13.3 Added features

- 1) Show modal dialog to set cable length. Support presets for T20-S (1, 3, or 5 m), or a custom value.

8.14 4.2.0.7 (19-02-2015)

8.14.1 Bug fixes

- 1) 10941: An "Input Distribution (RRIO)" port number check has been added to prevent sending RRIO data to port 7000 which is used by 7kCenter.

8.15 4.2.0.6 (12-02-2015)

8.15.1 Bug fixes

- 1) 10783: Snippets view didn't update when looking at slave.
- 2) 10927: BITE configuration items were not shown in status page when out of range.
- 3) 11002: Don't enable bathy points each time a wedge view property is changed.
- 4) 11027: Hardware offsets were empty after reconnecting.
- 5) 11028: Wedge view could skip pings at low ping rates.
- 6) 11035: Large range set in configuration causes Sonar UI to crash.
- 7) 11084: Check box property would disappear when a key was pressed.
- 8) 10771: Only enable pulse port select when network port selected for clock.
- 9) Fix for negative depth gate. Don't allow depth gate to be dragged outside the wedge extents.
- 10) Center frequency slider was not disabled after enabling FRDH while in CW.
- 11) Gain was not shown in wedge info layer any more for 7k sonars.
- 12) Dual head snippets didn't use offsets when connecting to a system that was already in dual head mode.
- 13) Pipe pane has been made more robust.
- 14) Don't re-initialize 7k IO Module when starting Sonar UI or when changing settings of disabled devices.
- 15) Don't color the word 'Warning' orange if it is an enumeration value in the BITE details.
- 16) Fixed validation of manually entered sonar IP address.
- 17) Fixed text annotation color in sonar wedge legend.
- 18) Fixed description of trigger output pulse length property.

8.15.2 Modified features

- 1) 10170: Show visual cue for gates outside the wedge range.
 - 2) 10246: Use remote 7k IO Module on master for clock sync on slave. No need to split cable for NMEA ZDA anymore.
 - 3) 10477: Improved description text of adaptive gate window size.
 - 4) 10592: Show more range rings in sonar grid when zoomed in with forward looker. Also, use nice steps when annotating with samples or time.
 - 5) 10644: Hide Sonar UI controls by default if not always available.
 - 6) 10703: Show wedge and snippets with 2/3 ratio in default layout.
 - 7) 10705: Show detect view before water column in tile button.
 - 8) 10745: Only draw search gate for adaptive gate around nadir
 - 9) 10753: Show units as [Pings] for history length.
 - 10) 10761: A snapshot in the Sonar UI is now saved without open up the file saving dialog.
 - 11) 10868: Added NMEA ZDA driver to the obsolete folder.
 - 12) 10871: Changed description of sound velocity interlock. It turns pinging off, not power.
 - 13) 10891: Sonar UI optimization, stop data rendering when a view is closed.
 - 14) 10892 / 10903: Rename SeaBatUI.exe to SonarUI.exe, (change SeaBat UI to Sonar UI)
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- 15) 11077: Set default path for recording AVI's and JPEG to C:\Data.
- 16) 11138: Only change power, range, and ping rate for deck mode on MB2.
- 17) 11140: Changed check box text to 'Normalize at startup'.
- 18) Hide tracker button for forward looking sonars.
- 19) Update master offset when changed externally.
- 20) Moved compressed water column settings from detection pane to recording pane.
- 21) Set default 1PPS serial port name for the clock device.
- 22) Support different BITE configuration per projector for Seabat 7131 system.
- 23) Clear BITE schema when connecting to sonar that doesn't support it (e.g. Seabat 7101).
- 24) Show BITE time from sonar system instead of where UI runs. This makes it easier to debug clock sync issues, especially in dual-head.
- 25) Added 7504 to the minimum set for recording. Useful for seeing if dual head is enabled.
- 26) Gating feature has been made more robust.
- 27) Changed help file name from SeabatUi.chm to SonarUi.chm
- 28) Changed Sonar UI Ribbon Logo to new Teledyne logo.
- 29) Only allow dragging of nadir search gate where short line is drawn.
- 30) Update splash screens of the Sonar UI.
- 31) Update Normalization LED when switching projectors.
- 32) Hide Sidescan / Helmsman button by default. Don't hide or show panes unnecessarily.
- 33) Hide wedge after switching sonars until it receives new data.

8.15.3 Added features

- 1) 10133: Add Sonar UI multi detect coloring.
 - 2) 10985: Implemented wake-on-LAN.
 - 3) 10852: Added separate option to reset sonar settings without resetting the LAN ports.
 - 4) Implemented AUV Configuration Options:
 - a. Normalization at startup
 - b. Restore Ping Rate
 - c. Restore Power Level
 - d. Sound Velocity Interlock
 - e. Ignore PPS Errors
 - 5) Implemented support for deck mode on T20-S.
 - 6) Implemented Power saving mode on T20-S.
 - 7) Implement "trigger out for RX duration" on T20-S.
 - 8) Implemented intensity beam color mode and saturation indicator in sonar wedge.
 - 9) Added range blanking percentage to AUV options. Hide power saving mode for max power.
 - 10) Sonar UI now supports Fatal BITE severity.
 - 11) Show fatal event messages in a pop-up window.
 - 12) Added checkbox for compressed water column (7042 record) in recording pane.
 - 13) Make it possible to drag a negative depth gate when outside the wedge.
-

- 14) Sonar UI now supports ODOM MB2Center
- 15) Slave logging settings in dual head mode.
- 16) Add 7k Logger support for automatic file breaking and lead-in recording.
- 17) Support HOST and DATA names for LAN ports.

8.15.4 Manuals and documentation

- 1) Added Technical Bulletin – Replay a S7K file in the SeaBat User interface.

8.16 4.2.0.5 (30-10-2014)

8.16.1 Bug fixes

- 1) 10794: Disable frequency combo box when in full-rate dual head.
- 2) 10789: Default layout was wrong when SeaBatUI.ini file was missing.

8.17 4.2.0.4 (08-10-2014)

8.17.1 Bug fixes

- 1) 10658: Only allow changing of network ports in SUI on T20.
- 2) 10595: SUI did not send start & stop pinging commands (1100 & 1101).

8.18 4.2.0.3 (18-06-2014)

8.18.1 Bug fixes

- 1) 10540: BITE LED would stay blue after switching between sonars. This is fixed.
- 2) 10565: Use orange color for components, wires, and pins with only warnings in BITE schema.
- 3) 10579: Don't restore SUI splitter positions outside the window.
- 4) 10459: Don't update 7k IO Module tabs when not visible.
- 5) Installing SUI and 7k IO Module on a new OS image gave a DK2win32.dll error. This is fixed.
- 6) Fixed number of messages in PosMV-PTNL-GGK driver.
- 7) Made 7k IO Module more efficient.

8.19 4.2.0.2 (11-06-2014)

8.19.1 Bug fixes

- 1) 10315: Fixed flickering of dual head wedge when range changes.
- 2) Connecting to slave sonar did not work when already connected and SeaBatUI.ini was deleted. This has now been fixed.
- 3) Remember if slave layer were enabled.

8.19.2 Added features

- 1) Show wait cursor when connecting to a sonar. After changing the IP address it may take up to 30 seconds.
- 2) Check if IP address on LAN 1 and LAN 2 are the same.
- 3) Technote: Added "replay a S7K file in the SeaBat User interface".

8.20 4.2.0.1 (03-06-2014)**8.20.1 Bug fixes**

- 1) 10554: Pipe pane could be empty when replaying a .s7k file. This has been fixed.
- 2) Fixed warning about IP address range on LAN2 when cable is unplugged.
- 3) Fixed getting IP settings of unplugged network interface.

8.20.2 Modified features

- 1) Description for Restore factory settings now mentions LAN and IO module.
- 2) No need to scroll to see all properties in application settings dialog.
- 3) It is no longer needed to close the SUI after installing a new sonar license.
- 4) Only show real errors when setting sonar IP addresses.

8.20.3 Added features

- 1) Added GDAL111.dll to support a new version of Geospatial Data Abstraction Library (GDAL).
- 2) The following device driver has been added:
 - a. Standard-NMEA-DPT[dps].dev

8.21 4.2.0.0 (22-05-2014)**8.21.1 Bug fixes**

- 1) 10519: Watercolumn autozoom on by default.
- 2) 10188: The toolbar images for brightness and contrast were switched around. This has been fixed.
- 3) 10476: LEICA PMVXG 830 clock driver did not work.
- 4) 10387: Removed the word 'failure' from clock sync error messages. Use resource strings.
- 5) 10178: Fixed out of memory when disconnecting ethernet plug with RRIO.
- 6) 10434: Hide sound velocity override check box when no sensor is configured in the 7k IO Module.
- 7) 10438: Update LED with status of last successful calibration results.
- 8) 10417: Remember custom beam settings when changing beam modes.
- 9) 10324: Fixed crash with taking screen snapshot and AVI recording with different screen sizes.
- 10) 10371: Set default IP address to 127.0.0.1 instead of 0.0.0.0.
- 11) 10261: Allow frequency changes in dual head, except when full rate.
- 12) 10359: IP address in SUI title bar was incorrect after changing sonar address.
- 13) 10332: The process of acceptance of all alert messages is much faster.
- 14) 10309: Don't reset coverage when changing beam mode. The 7kCenter now reduces the coverage automatically if necessary.
- 15) Use of SUI in Windows XP environment is fixed.
- 16) Double clicking the head shape would reset the beam selector in the wedge.
- 17) Use maximum number of beams by default in custom mode.
- 18) Fixed corrupted layout. No need to reset layout.
- 19) Don't enable pulse type combo in Full Rate Dual Head when switching to slave and back.

- 20) Don't move beam selector when making bathy point size bigger in the wedge when clicking quickly in the toolbar.
- 21) Resize SUI tiles proportionally.
- 22) Slave multi-detect parameters.
- 23) Update trigger, cable, and ping properties after switching to dual head.
- 24) Disabled trigger settings in dual head mode. Hide for 8k wet end.
- 25) Hide gates when sonar head is hidden by double-clicking it.
- 26) Don't allow dragging of disconnected (invisible) slave gates.
- 27) Fixed enabling of ping sweep properties in FM mode.
- 28) Leap seconds did not work with favorite 7k IO Module drivers.
- 29) Removed driver with comma in name that has been moved to obsolete folder.(LEICA PMVXG,830[tim].dev).
- 30) Fixed memory issue (saturation of memory or memory leak).
- 31) Fixed crash in 7k IO Module when connecting UI.
- 32) Automatically set PPS edge from external clock sync driver 7k IO Module.

8.21.2 Added features

- 1) 10345: Implemented Lambert's law correction for better presentation of raw snippets. A toolbar button will be added in the future.
- 2) 10162: Separate serial port for 1 PPS clock pulse is now also supported by the 7k IO Module.
- 3) 9997 and 10136: Implemented check box and LED for full rate dual head.
- 4) The IP addresses of the Ethernet ports of the sonar system can now be set via the application settings dialog.
- 5) By default DHCP is disabled, therefore set default static IP address and mask when DHCP is disabled.
- 6) Added 100 meter cable length selection.
- 7) Implemented sonar route steering.
- 8) 7k IO Module: Extended 7k IO Module with depth sensor to generate 1008 records.

8.21.3 Modified features

- 1) 10494: The 7k IO Module QC Clock page status indicator in the SeaBat UI didn't show all clock sync issues of the 7k IO Module. This has been fixed.
- 2) 10470: Added property for ping-pong delay in SUI.
- 3) 10355: Helmsman view always selectable.
- 4) 10333: Added option to set fixed snippet window.
- 5) 10314: Color bathy points by quality by default.
- 6) Removed (unused) language and units properties from application settings.
- 7) Change column width proportionally when resizing properties pane.
- 8) Use min and max sound velocity values from sonar XML.
- 9) Leave space for toolbar at top of wedge view in SUI.
- 10) Use COM ports from sonar XML as defaults for 7k IO module.
- 11) Fixed resetting of layout, auto-hide panes for full screen, and remove detection and pipe panes for forward looking sonars.

- 12) Dock panes together.
- 13) Show grid axis in sonar wedge when zoomed to extents.
- 14) Master 7k Center slaves all reference data to the slave in dual head mode.
- 15) Slave motion sensor and PPS edge settings in dual head mode.
- 16) Fixed annotation of grid axis in wedge when zoomed in.

9 VERSION 4.1

9.1 4.1.0.7 (15-01-2014)

9.1.1 Bug fixes

- 1) 10272: Echo 7k 1207 – Set Recording Directory not handled. RDR recording folder is now synchronized between all SeaBat UI instances.
- 2) 10227: Wedge View: zooming in is now limited to a fixed zoom level; precision of annotation will be linked to zoom level.

9.1.2 Added features

- 1) New PosMV driver supporting Tightly coupled mode, closely coupled mode and Auxiliary GPS aided mode.
- 2) The following device drivers have been added:
 - a. PosMV all coupled modes- 33thernet msg 3+10+12+20+102+104[pos].dev
 - b. PosMV 33thernet 20+102+104[pos].dev
 - c. PosMV 33thernet Closely coupled mode 3+10+102+104[pos].dev

9.2 4.1.0.6 (20-12-2013)

9.2.1 Bug fixes

- 1) 10097: Ignore range changes when Wedge view data is frozen.
- 2) 10122: 'Input Distribution (RRIO)' on SeaBat UI '7k IO Module' panel now works correctly for data distribution strings larger than 99 characters.
- 3) 10132: Fixed progress when normalizing 7125 SV2 at startup.
 - a. Added system text (e.g. 200 kHz) to the progress dialog.
 - b. Always show normalization status of the correct system enum.
 - c. Show error message in dialog when normalization fails.
 - d. Show correct status (last good) in hardware pane when normalization fails.
 - e. Support canceling of slave normalization.
- 4) 10176. Allow all measurements when history is enabled in wedge.
- 5) 10221: 7k IO Module: Possible crash, when sync character or string could not be detected in data string, has been fixed.
- 6) 7k IO Module: Closing socket connection has been made more robust when closing 7k IO module.
- 7) 7k IO Module: RRIO did also send data to local computer when address was blank. This has now been fixed.
- 8) The Pipe Detection and Tracking engine has been made more robust.
- 9) The 7k IO Module has been made more robust.
- 10) SeaBat UI internal improved handling attribute handling.
- 11) Fixed absolute gates when a maximum depth gate less than 2.1 m was entered.
- 12) Fixed SeaBat UI window title so that 7kControlCenter can stop it.

9.2.2 Modified features

- 1) 9268. Made BITE schema more compact vertically.
- 2) 10036. Support manual normalization in dual-head mode.
- 3) 10146: Dual Head Master Select fixed.
 - a. Never allow the following connections
 - i. Never connect invalid IP addresses
 - ii. Never connect the same IP addresses
 - iii. Never connect to 127.x.x.x slave IP address
 - iv. Never connect local master to local slave
 - b. Allow the following connections for valid IP addresses
 - i. Connect local master to remote slave
 - ii. Connect remote master to remote slave with different IP address
 - iii. Connect remote master to local slave with IP address unequal to 127.x.x.x
- 4) 10160: We would like to have more grid divisions below 1m. When zooming in to 1m range there is only one major gridline, which makes it impossible to see the range scale. This has now been implemented.
- 5) 10181: Show tooltip with angle when dragging wedge gripper. Also, hold down Control key to snap to 5 degree increments.
- 6) SeaBat UI User Manual has been updated to version 1.1.0.
- 7) Wedge view: fixed border width of legend boxes for bigger bathy points.
- 8) Only support beam spacing (not custom beam number) for True ED.
- 9) Made it easier to click on pins in BITE schema.
- 10) Color objects in BITE schema with only information items green or red. It used to be blue, which means 'no data'.
- 11) Show BITE items with an invalid location in a special category with 'FIX ME!'.

9.2.3 Added features

- 1) 10147: added a label in the title bar as: (Stand Alone) or (Master sonar with IP connected to slave sonar at IP).
- 2) 10148. Hide master or slave wedge by double-clicking on the head.
- 3) 10149: Show tooltip for which head is master or slave.
- 4) 7k IO Module: (from the PDS2000 release notes) Clock synchronization using remote 7k IO Module. This feature allows you to select a remote 7k IO Module from the Time Synchronization application. This feature exists next to the currently available (local) 7k IO Module time synchronization option. **This option will be available from 7k IO Module version 4.1.0.6 and higher.**
- 5) 7k IO Module: the 7k IO Module is now allowed to jump (synchronize) back in time.
- 6) Added support for True Equi-Distant beam mode.

9.3 4.1.0.5 (22-08-2013)

9.3.1 Bug fixes

- 1) 10027: Slave sonar layer attributes could be wrong. Don't disable slave layers when disconnected.

- 2) Fixed snippets computation for multi-detect. There can be more or less detections than beams.
- 3) Changed multi-detect parameter name from Object size to Object sensitivity.
- 4) Changed multi-detect parameter sensitivity slider ranges from 0-100 to 1-100.
- 5) SeaBat UI install folder name is now set back to: ..\SeaBat UI Vx.x.x.x
- 6) Advanced pane: fixed scrollbar for constant spacing (steps smaller than one).

9.3.2 Modified features

- 1) 9824: Added 'ValueNoCheck' driver formula to not invalidate datablocks when non crucial data values in data string are empty.
- 2) 10030 and 10031: Don't automatically open property and control panes in the SeaBat UI. You now have to click on a tab to open it. Click anywhere outside of the pane to hide it. Disabled animation and eliminated wait time for auto-hide.
- 3) 10038: Disable check box to restore sonar factory settings in dual head mode.
- 4) Added text about drag and drop of license files on SeaBat UI. Drag on drop now also works on the license dialog.
- 5) Disable measuring of objects in the Wedge view when history is enabled.
- 6) Make history points in the Wedge view half the size of the active ping. Points of one pixel can sometimes be hard to see.
- 7) Annotate messages from the slave sonar with '(slave)'.
- 8) Combine status of Normalization, BITE, PPS, and motion LEDs for master and slave sonars.
- 9) Don't slave motion compensation and PPS edge control.
- 10) Disable more controls when in slave mode: Gates, Tracker, range, power, gain, pulse length, frequency, and beam mode.
- 11) Don't use slave status for Normalization LED when disconnected. Show normalization progress of master first, slave next.
- 12) Disabled manual normalization in dual-head mode.
- 13) Update Normalization LED when slave is connected or disconnected.
- 14) Auto-hide property panes when clicking in one of the control panes. Support quickly showing and hiding an auto-hide pane. Immediately hide Pipe Detection pane.
- 15) Enable frequency selector on dual head master. Full Rate Dual head (FRDH) is not supported at 200 kHz on 7125 ROV2.
- 16) 'Host Address' has been renamed to 'Destination Address' in the 'Input Distribution (RRIO)' node of the SeaBat UI 'IO Module' panel.
- 17) Support dual head master modes for both full and half rate.

9.4 4.1.0.4 (19-08-2013)

9.4.1 Bug fixes

- 1) 9966 & 9967: Enable Show History enables only the master Data Layer and Pipe Layer.
- 2) 9957: Pipe is not drawn with mounting offset in SeaBat UI wedge.
- 3) 9983: Scrollbars now move 1, 2, or 5 steps per page.
- 4) 9980: Snippets would freeze with multi-detect.
- 5) Display correct FM sweep on slave SeaBat UI.
- 6) Sonar controls were not initialized when SeaBat UI was started while normalizing.

- 7) Removed incorrect text about default values for multi-detect. The default is 50% (not 77%). You can reset them by choosing Restore Factory Settings.

9.4.2 Added features

- 1) 9029: SeaBat UI and related software versions must be shown. This has now been implemented in the About dialog.
- 2) 9860: Added 'Stop update' button to IO Module QC page to stop/resume updating the raw data message list.

9.5 4.1.0.3 (14-08-2013)

9.5.1 Bug fixes

- 1) 9898: The RDR recording file path is now properly remembered in between sessions.
- 2) 9837: The AVI / Snapshot recording file path is now properly remembered in between sessions.
- 3) 9908: Pass 7k IO Module Clock status to SeaBat UI IO Module QC Clock page.
- 4) 9027: Font size for all views / layers / panes is now set in the Application Settings dialog.
- 5) 9922: The Snippets display is now shown on the right of the Wedge display, when the Wedge and Snippets displays are active together.
- 6) 9917: Added check to context menu to show when in full screen.
- 7) 9948: Only show slave sonar when connected.
- 8) 9731: SeaBat UI crashes when Water column display is enabled.
- 9) 9900: Seabat UI FP4 crashes on windows XP.
- 10) 9956: Point size of history in Sonar Data layer should be smaller than current ping point size.
- 11) 9962: 7k IO module: Ensure only one device per device type (group) in 7k IO Module to be selected.
- 12) Group gating advice messages for all pipes in one message.
- 13) Browsing the network folders on MS-Windows 7 computers is now working properly.
- 14) SeaBat UI has been made more robust.
- 15) Improve starting and stopping of Pipe Detection and Tracking in SeaBat UI.
- 16) Improve synchronization of Pipe Detection and Tracking rendering with Wedge and Helmsman layers.
- 17) Disable frequency selector (200/400 kHz) when in FRDH.
- 18) Disable slave offsets when not connected.
- 19) Remove favorite driver mark ('>') in 7k IO Module when receiving 'set device' request to fix 7k IO Module configuration in legacy 7k UI.

9.5.2 Modified features

- 1) 9926: Pipetracker record 2004 is now recorded in S7k file.
- 2) 9378: Wedge items should be moved to the Data Layer, because these items are linked to the data and not to the wedge.
- 3) 9940: Changed text of 7k Data Distribution (7k IO Module) and Raw Data Distribution (SeaBat UI) for better distinction.
- 4) AVI recordings and Snapshots can now be made even if MS-Windows is in Aero mode.
- 5) Use multidetect primary detection for Pipe Detection and Tracking.

- 6) SeaBat UI 7k IO module QC: Implemented RRIO packets version 01 (according to RRIO Technical Bulletin version 1.1).
- 7) Disable center frequency control and FM sweep properties when in FRDH mode. Full-rate dual head uses fixed frequencies.
- 8) Renamed CW frequency to center frequency. It also works for FM.

9.5.3 Added features

- 1) Implemented Pipe Detection and Tracking gating control.
 - a. Add gating control to Pipe Detection and Tracking properties pane.
 - b. Always sent gating for all pipes.
 - c. Sent empty gating message when gating is stopped or no more pipes are tracked.
- 2) Multidetect is now available from the SeaBat UI.
 - a. Use multidetect primary detection for snippets in SeaBat UI. Detection priority is now a separate data array item.

9.6 4.1.0.2 (04-07-2013)

9.6.1 Bug fixes

- 1) IO Module: Favorite driver list (the drivers which are shown in the top of the IO Module driver selection controls) is now created more robust.
- 2) Computations are improved to be more agile when processing bulk datasets while in parallel computation attributes are changed (by the operator). This prevents the user interface to block.
- 3) Pipe steering is done immediately when pipe steering mode changes.
- 4) The check box for Custom Beam Mode was not checked when Constant Spacing was enabled. Also, the check box for Constant Spacing was gone in this case. This has now been fixed.

9.6.2 Modified features

- 1) The Pipe Detection computation has been made more robust.
- 2) Do not synchronize the Sonar Pipe layer in the Wedge view, it may stop updating the wedge.
- 3) Disable Tracker Coverage Angle option when Pipe Detection and Tracking Swat or Flexmode steering is enabled.
- 4) The SeaBat UI is now capable to capture snapshots in Windows 7 and Windows 8 Aero mode. The need to switch the Windows UI theme to Classic or Basic mode for creating snapshots is not available anymore.
- 5) Hide Cable Length property when not supported by the sonar. Expand Cable Length node when nothing has been selected yet.
- 6) Removed Cable Length of slave sonar (for now). Show vessel offsets under dual head.

9.6.3 Added features

- 1) IO Module: When clock and pulse in a clocksync device could not be matched by their time, a message will be reported.

9.7 4.1.0.1 (03-07-2013)

9.7.1 Bug fixes

- 1) 9387: IO Module: For some drivers are the { } visible. This has now been fixed.
- 2) Configuration panels; don't update grid properties while editing in-place.

- 3) Fixed installing of license file on system with no valid license or with a dongle.
- 4) Fixed reboot and shutdown of 7kCenter when started without a valid license.
- 5) Adaptive gates were not drawn when less detections than beams. This has now been fixed.
- 6) Fixed pipe detection for multiple detections per beam. Number of angles is not equal to number of detections.

9.7.2 Modified features

- 1) 9761: View list in Display pane: sorted main items on alphabet.
- 2) 9827: IO Module QC: Display same datablock items on clock page of 'IO Module QC' tab as on clock page of IO Module.
- 3) 9835: IO module QC: Hide dynamic delay datablock items on 'IO Module QC' device pages.
- 4) 9861: IO module QC: Fixed Raw Data Distribution in IO module (incorrect data string).
- 5) 9883: IO module QC: Fixed trailing spaces in device driver names in SUI.
- 6) 9885: Activation of cable length compensation requires reboot.
- 7) Possible time out of clock device data in IO Module with PosMV ('Generic ZDA + 1PPS' driver) has been fixed. Set 50ms tolerance in time difference of clock message and pulse.
- 8) Decreased default transparency of sonar data layer. Bathy points were barely visible.
- 9) Hardware property pane has been re-ordered to cope with all the hardware configurations for master and slave sonars.

9.8 4.1.0.0 (24-06-2013)

9.8.1 Bug fixes

Lots of small and big issues have been fixed.

9.8.2 New features

All these features can have more view layers and controls available for usage.

- 1) Water column visualization
- 2) Dual head display in one SeaBat UI application
- 3) Pipe detection and tracking, including a Helmsman view for pipe tracking (licensed feature)
- 4) IO module QC is now embedded in the Service page

9.8.3 Modified features

- 1) Improved Detect view
- 2) Improved History layer in the Wedge view
- 3) Improved layout of the Sonar Control panes
- 4) Improved Message view

10 VERSION 4.0

10.1 4.0.0.11 (17-07-2017)

This version is released together with 7k Center version 5.3.9.10 (17-07-2017).

This is a special 7160 release.

10.1.1 Added feature

- 1) Added support for Compressed Water Column (7042 record) for SeaBat 7160.

10.2 4.0.0.10 (30-01-2013)

10.2.1 Bug fixes

- 1) 9565, 9575: When the sound velocity override check box is clicked, the sound velocity control should be enabled. Currently, it works exactly the other way around! This is now fixed.
- 2) 9576: SUI Tracker button should be disabled when in master mode. This is now fixed.
- 3) Trigger is disabled for 8k wet end.

10.2.2 New features

- 1) 9255, 9543: Trigger configuration is added to the Hardware configuration page of the SUI.
- 2) 9461: For 7160 the FM sweep settings are added to the Hardware configuration page of the SUI.
- 3) 9536: For 7160 the frequency CW slider is added; the slider will be disabled when FM pulse type is selected.

10.2.3 Modified features

- 1) Dutch translation of the SeaBat UI has been completed.
- 2) Update 7k XML to support CW frequency step size.
- 3) Layout of the Advanced Settings page is updated due to the fact that the CW frequency slider is added.

10.3 4.0.0.9 (09-01-2013)

10.3.1 Bug fixes

- 1) 9325: SUI RDR pane has two issues (file size units and RDR other-records-selection). These have now been fixed.
- 2) 9432: Incorrect gain value shown on slider in SUI after switching TVG/Fixed. This is now fixed.
- 3) 9434: SUI should disable absorption and spreading controls in Fixed Gain mode. . This is now fixed.
- 4) 9441: Get number of 8k pulse length settings from sonar XML. . This is now fixed.
- 5) 9458: SUI should disable Range control when Tracker is enabled. . This is now fixed.
- 6) 9476: SUI should disable more controls in dual head slave mode. Also disable Tracker, Normalization and RDR Recording when in slave mode. . This is now fixed.
- 7) 9504: SUI could not be used for dual-head without FRDH license. . This is now fixed.
- 8) 9528: Head tilt in SUI editing 1000 times to great. . This is now fixed.

- 9) 9940: Power settings are wrong on 8125-H in SUI. (Use power settings from XML. Each 8k projector has its own set.) . This is now fixed.
- 10) Disable history in Detect view when upgrading to a newer SUI version.
- 11) Fixed transparent letters in splash image.
- 12) Added all levels of the main icon so in Windows the icons look good in all possible situations (zoom levels).
- 13) Fixed command for enabling dual head.
 - a. Some fields were uninitialized.
 - b. Enable trigger for FRDH.
 - c. Set multiplier to 1.0 for ping-pong mode.
- 14) Fixed resetting to default coverage.
- 15) Improved scrollbar behavior in SUI.

10.3.2 New features

- 1) 9337: Add support for beam width option for 7160.

10.3.3 Modified features

- 1) Use default log file naming when starting 7k recording from the SUI.
- 2) Dutch translation of the SeaBat UI has been completed.
- 3) New icons for the existing tabs in the application are created.
- 4) Internal code clean-up.
- 5) Internal: source code improvements have been made.
- 6) Internal: source code has been made more robust.
- 7) Minimum gates window size set to 5 percent.

10.4 4.0.0.8 (18-10-2012)

10.4.1 Bug fixes

- 1) 9260: 7160 sonar beam modes did not fit the Beam Mode combo box. This has now been fixed.
- 2) 9152: Roll stabilization option is now grayed out for the 8125-H sonar.
- 3) 9195: Recording pane: label for 'Free disc space' now indicates the value is a percentage.
- 4) 9265: Recording pane: 'Current file size' for s7k recording is now updated while recording.
- 5) 9264: Recording pane: 'Records logged' is not updating during the recording, it is only updated when the recording is stopped. This has now been fixed.

10.4.2 New features

- 1) 9258: Pitch stabilization operator control has been added for the 7160 sonar.

10.4.3 Modified features

- 1) 8931: The About box lay-out has been improved.
 - 2) Operator's manual has been updated.
 - 3) Internal: source code improvements have been made.
 - 4) Internal: source code has been made more robust.
 - 5) Detect view: 'Only Show Valid Beams' enabled by default; in this case the auto extents works less dynamic.
-

- 6) Moved the History feature from the Detect view to the Wedge view.
 - a. History is now scrolling from top to bottom.
 - b. Added option to scroll to bottom left, bottom center or bottom right.
 - c. Added option for swath spacing.
 - d. Added option in the Data layer to set transparency from 0 to 100 percent. Switched off the transparency for the first swath. Use transparency for the history swaths only.

10.4.4 7k IO Module

10.4.4.1 New features

- 1) 9332: Added water temperature and depth pressure to 7610 SV 7k record. Modified PDS2000 and the 7k IO Module to support these new values.
 - a. There are currently two drivers that support the new fields:
 - i. RESON SVP70 RESON
 - ii. RESON SVP-C

10.5 4.0.0.7 (13-09-2012)

10.5.1 Bug fixes

- 1) Compatibility issue with Windows XP has been resolved (involved: GetTickCount64).
- 2) BITE pages will not report BITE issues when they are for Service personal only. Once the SeaBat UI application is set into Service mode these BITE issues will be shown.

10.6 4.0.0.6 (16-08-2012)

10.6.1 Bug fixes

- 1) Removed LockWindowUpdate calls; they block window updates in other applications, resulting in flickering.

10.7 4.0.0.5 (13-08-2012)

10.7.1 Bug fixes

- 1) TT 9014: Fixed setting swath steering angle to minimum and maximum. In wide mode the min/max values are -2.5/+2.5. These are rounded down/up to -3/+3.
- 2) TT 9052: Don't scroll BITE details list to the top every time it is updated.
- 3) TT 9060: When the slider for the Angle is changed and then on Default is clicked sometime the first time the slider does not react. The value itself jumps to the default value (140) but the slider not. Sometimes the slider jumps also to the default value of 140 but jumps directly back to 139 while the value stays on 140. This has now been fixed.
- 4) TT 7079: The max range shown for 200 kHz is 400 meter, but it is adjustable up to 750 meter. The static text controls are now updated when the frequency changes.
- 5) TT 9102: There is a possibility to click on a block in the BITE block diagram. This works fine unless the BITE block diagram scroll bar has been used. The orientation of the blocks (when you click on them) does not follow. Fixed mouse clicking in scrolled BITE schema.
- 6) TT 9138: The Pulse Type is now disabled when the SUI is acting as a Slave or Master. In normal mode the pulse type can still be changed.

- 7) TT 9150: When in the xml for the 400kHz the max power is changed it is not visible in the control pane of the SUI. When it is done for the 200kHz the right max power is visible. The selection of the power value is now linked to the frequency selection.
- 8) TT 9156: Adaptive Gates do not show on New UI 4.0.0.4. Fixed. Also affected: adaptive gate window percentage, adaptive gate search limits, and gain mode (TVG/Fixed).
- 9) TT 9181: Normalization does not work when SUI is loaded after Legacy UI. This has now been fixed (in the 7kCenter).
- 10) Configuration panes: Don't change value on first click of scrollbar property.
- 11) Pulse length scroll bar had a step size of 2 instead of being logarithmic. This has now been fixed.
- 12) Fixed jumping of scrollbar when setting manual sound velocity.
- 13) Support ping rate ratio from sonar configuration for step size other than one.
- 14) Enabling or disabling tracker did not work the first time. This has now been fixed.
- 15) Fixed wrong frequency in SUI when 7kCenter was restarted while SUI was running.

10.7.2 New features

- 1) TT 9006 & TT 9049: Normalization is now shown by means of a modal dialog which blocks the UI during the normalization.
- 2) TT 9100: Roll Stab format NMEA \$PASHR is now available.
- 3) Display 7k event messages in alert window.
- 4) Added levmar license info to the about dialog of the SeaBat UI app.

10.7.3 Modified features

- 1) TT 9022: The flex mode licensing has been adjusted so the 8125 Hybrid also properly handles flex mode licensing.
- 2) TT 9071: Limited scrollbar update rate to 5 times per second for all sliders which can be used to set a 7kCenter parameter.
- 3) TT 9099: Entering values for sonar gates now works like in wedge. When a gate comes too close to another it will change that value too.
- 4) Absolute gates option will not be shown when tracker is enabled.
- 5) Removed redundant BITE error alert.
- 6) Internal: source code cleanup.
- 7) Internal: source code restructuring.
- 8) Internal: stability improvements have been made.

10.8 4.0.0.4 (06-07-2012)

10.8.1 Bug fixes

- 1) TT 9087: When replaying 7k log data, the SeaBat UI shows horizontal black lines. To fix the problem the SeaBat UI Snippet computation now only uses beam quality 3 (brightness and 42ollinearity bits set).
- 2) Sometimes the Hardware pane does not show all available frequencies at all times. This has now been fixed.
- 3) The Beam Mode licensed feature option has been improved to properly work with all sonar types.
- 4) Internal: source code cleanup.

- 5) Internal: source code restructuring.
- 6) Internal: stability improvements have been made.

10.8.2 New features

- 1) TT 9064: Multi frequency sonars: the Hardware pane now expands parts of the tree based on the frequency selected. And it collapses parts of the non-selected frequency(ies).
- 2) Control pane: adjust text above Gain scrollbar depending on Fixed checkbox.
- 3) Using full screen for a view does now not hide the floating panes; these will stay visible while all docked views will be hidden during the full screen state of the application.
- 4) Implemented the NMEA \$PASHR motion string as an option for the roll stab.

10.8.3 Modified features

- 1) TT 9087: SeaBat UI will reset to default coverage when switching beam modes.
- 2) SeaBatUI.ini file (and SeaBatUISlave.ini) is not installed by the installer anymore. It will be generated on the fly on an as-needed basis.
- 3) Dutch translation of the SeaBat UI has been completed.
- 4) Operator's manual has been updated.

10.8.4 7k IO Module

10.8.4.1 Bug fixes

- 1) TT 9804: All sound velocity drivers have been set to 10Hz input rate.
- 2) TT 8950: Time stamping of 7k IO Module has never been wrong; message display did not always display all the messages. See 7k IO Module technical bulletin.

10.8.4.2 New features

- 1) The 7k IO Module now comes with a technical bulletin "Technical Bulletin – Time Synchronization in 7k IO Module.pdf" which explains in great detail the inner workings of the 7k IO Module version before 3.7.x.x and the version 3.7.x.x onwards. The document is located in the manuals subfolder and can be accessed by the Documentation shortcut in the Windows Start Menu.

10.9 4.0.0.3 (20-06-2012)

10.9.1 Bug fixes

- 1) TT 9079: Control pane: 200Khz max range is wrong on the slider. This has now been fixed.
- 2) TT 9086: Snippets view will only process beams with co-linearity and brightness bits set (quality 3).
- 3) Finalized the implementation of the Load Factory Parameters option in the SeaBat UI (to be found in the Application Settings dialog).
- 4) Converted string literals to resource strings to get a better translated application.
- 5) Checking of Flex Mode license now has been fixed.

10.9.2 New features

- 1) Support running SeaBat UI of both master and slave on one system. The first SeaBat UI instance controls the local 7kCenter and 7k IO Module, while the second instance controls the slave 7kCenter and 7k IO module. The slave UI has separate settings (ini file and registry).

10.9.3 Modified features

- 1) Dutch translation of the UI has been completed.

- 2) Cosmetic textual improvements have been made.
- 3) SeaBat UI lay-out changes are now stored at registry location
 - a. "HKEY_CURRENT_USER\Software\Reson\SeaBat UI" or
 - b. "HKEY_CURRENT_USER\Software\Reson\Seabat UI Slave"

10.9.4 7k IO Module

10.9.4.1 Modified features

- 1) The Obsolete driver folder (subfolder of the General folder) is now installed in the SeaBat UI and 7k IO Module application folder. This can be used to use legacy drivers which customers might have in use in current projects.

10.10 4.0.0.2 (14-06-2012)

10.10.1 Bug fixes

- 1) TT 9024, TT 9059, TT 9077: LED's in the application toolbar now properly update their color when the corresponding data changes state.
- 2) TT 9030: 400 Khz and 396 Khz is now normalized to 400 Khz.
- 3) TT 9044: Don't set coverage to small angle at startup.
- 4) TT 9050: Detect view – removed obsolete annotation type item from Display pane.
- 5) TT 9051: Service page: date and time of last BITE message is reformatted.
- 6) TT 9056: AVI and Snapshot files now have UTC dates instead of localized dates.
- 7) TT 9060: Fixed head tilt for sonar wedge image.
- 8) TT 9065: Fixed manual setting of gate values, which sometimes didn't work at all.
- 9) TT 9070: Implemented separate minimum pulse length for FM.
- 10) License Information dialog will be more user when no license information is available.
- 11) Service status page: show "no errors" or "no bite data" depending on bite data (instead of "no bite data" only).
- 12) Cosmetically improved the Service pages.
- 13) Internal: source code cleanup.
- 14) Internal: source code restructuring.
- 15) Internal: performance improvements have been made.
- 16) Internal: stability improvements have been made.
- 17) Implemented a more robust way of getting the current sonar settings. This will benefit all functionalities in which that is needed (frequency switch, projector selection, ...).
- 18) Implemented a more robust way to get the available frequencies for the connected sonar.
- 19) Made processing of 7028 snippet data more efficient.
- 20) Optimized license check for frequencies in SeaBat UI.
- 21) Reset to default coverage when switching beam modes.
- 22) Push other gate out of the way when gates come too close together while dragging.

10.10.2 Modified features

- 1) Dutch translation of the UI has been completed.

10.10.3 7k IO Module

10.10.3.1 Bug fixes

- 1) SetTimeService service was not properly connected to the 7k IO Module. This has now been fixed. Thus the computer clock will now be synchronized properly.
- 2) Internal: source code cleanup.
- 3) Internal: performance improvements have been made.
- 4) Internal: stability improvements have been made.

10.11 4.0.0.1 (04-06-2012)

10.11.1 Bug fixes

- 1) TT 9000: Selection of beam mode is kind of difficult; this has now been fixed due to the Advanced pane layout change (9009).
- 2) TT 9009: Advanced Control pane slider controls are now placed horizontally.
- 3) TT 9011: Swath angle does not jump back to the minimum value due to gate changes.
- 4) TT 9016: The views in the SeaBat UI froze unexpected for a couple of seconds. This has now been fixed.
- 5) TT 9018: Handling of network ports for devices used in the 7k IO Module has been enhanced.
- 6) TT 9019: Removed button like behavior of the LED's in the application toolbar.
- 7) TT 9025: Communication to the 7kCenter has been bug fixed (after a frequency switch the sonar controls still behave as expected).
- 8) TT 9026: The names of external sensors used in the 7k IO Module are now also used in the 7k IO Module Settings pane.
- 9) TT 9028 : Internal source code restructuring.
- 10) TT 9048: Roll stabilization in the Hardware Settings pane is greyed out while roll stab is enabled. This has now been fixed.
- 11) TT 9055: Hardware Settings pane typos have been corrected.
- 12) TT 9066: Normalization checkbox will now stay unchecked when selected.
- 13) TT 9067: Sound Velocity Filter combobox is now aligned with Sound Velocity slider in Advanced Control pane.
- 14) Main Control pane typo has been corrected.
- 15) Improved Message pane behavior when accepting alarms.
- 16) Internal: performance improvements have been made.
- 17) Internal: stability improvements have been made.
- 18) Internal: design improvements have been made.
- 19) Internal: source code clean-up.
- 20) Internal: display visualization performance management has been added.
- 21) Internal: removed unnecessary computations from Sonar devices.

10.11.2 Modified features

- 1) Dutch translation of the UI has been completed.
- 2) Operator's manual has been updated.

10.11.3 7k IO Module

10.11.3.1 Bug fixes

- 1) The 7k IO Module has been improved internally to work properly with both the SeaBat UI and the legacy UI.
- 2) Internal: performance improvements have been made.
- 3) Internal: stability improvements have been made.
- 4) Internal: design improvements have been made.

10.12 4.0.0.0 (24-05-2012)

10.12.1 Initial release SeaBat UI

- 1) The graphical user interface needs to provide the operator with sufficient information to correctly operate the system, provide displays to allow quality control of the data and provide information on system status and error checking. The SeaBat UI gives the user optimum processing power and brings a fresh new feel to the user without losing the critical information the operator needs to correctly and optimally use the system.
- 2) Please refer to chapter References for detailed information on the features in this initial release of the SeaBat UI.

10.12.2 7k IO Module

- 1) The 7k IO Module has been renewed. A new official release has not been made (will not be made). This does **not** mean that the SeaBat UI cannot work with the previously released version (3.7.0.14). The SeaBat UI just utilizes the new features of the new 7k IO Module version. The release notes document for previously released version (3.7.0.14) has been embedded in this installer for information completeness.
- 2) The new 7k IO Module has been integrated in the SeaBat UI installer. This is to limit the size of the total 7k software installer. Installer features of the previously released 7k IO Module installer (3.7.0.14) are mimicked by the SeaBat UI installer. Please use the new integrated 7k IO Module in combination with the SeaBat UI.

10.12.2.1 New features

- 1) 7k IO Module status output message added (for usage in the SeaBat UI Service pages).
- 2) The 7k IO Module now has a feature which enables filtering of sensor groups. This means only the valid sensor groups will be shown to the operator.

10.12.2.2 Bug fixes

- 1) The 7k IO Module now saves leap seconds.
- 2) Generic stability improvements.
- 3) Performance improvements.
- 4) Generic design improvements.

11 AMENDMENT RECORD SHEET

Rev	Date	Reason for change	Revised by
0	24-05-2012	First version of this document.	H. Stoelinga
1	04-06-2012	Bug fix release: (small) issues fixed.	H. Stoelinga
2	13-06-2012	Bug fix release: toolbar LED behavior, 396 vs. 400 kHz, ...	H. Stoelinga
3	20-06-2012	Bug fix release: master / slave usage, reset sonar settings,	H. Stoelinga
4	06-07-2012	Bug fix release: (small) issues fixed	H. Stoelinga
5	13-08-2012	Bug fix release: (small) issues fixed.	H. Stoelinga
6	16-08-2012	Bug fix release: removed flickering of other applications when SeaBat UI is active.	H. Stoelinga
7	13-09-2012	Bug fix release: BITE and Window XP related.	H. Stoelinga
8	18-10-2012	Bug fix release: (small) issues fixed.	H. Stoelinga
9	09-01-2013	Bug fix release: (small) issues fixed.	H. Stoelinga
10	30-01-2013	Bug fix release: (small) issues fixed.	M. Hartog
11	24-06-2013	Major new release 4.1.0.0	H. M. Stoelinga
12	03-07-2013	Version 4.1.0.1	H. M. Stoelinga
13	04-07-2013	Version 4.1.0.2	H. M. Stoelinga
14	14-08-2013	Version 4.1.0.3; major release; also small issues fixed.	H. M. Stoelinga
15	19-08-2013	Version 4.1.0.4; small issues fixed.	H. M. Stoelinga
16	22-08-2013	Version 4.1.0.5; several small and big issues fixed.	H. M. Stoelinga
17	20-12-2013	Version 4.1.0.6; several small issues fixed.	H. M. Stoelinga
18	15-01-2014	Version 4.1.0.7; several small issues fixed.	H. M. Stoelinga
19	22-05-2014	Version 4.2.0.0; several issues fixed, added and modified.	D.M. Nieland
20	03-06-2014	Version 4.2.0.1; (small) issues fixed and modified.	D.M. Nieland
21	11-06-2014	Version 4.2.0.2; (small) issues fixed and modified.	D.M. Nieland
22	18-06-2014	Version 4.2.0.3; several issues fixed.	D.M. Nieland
23	08-10-2014	Version 4.2.0.4; two issues fixed.	D.M. Nieland
24	30-10-2014	Version 4.2.0.5; several issues fixed, added and modified.	D.M. Nieland
25	12-02-2014	Version 4.2.0.6; several issues fixed, added and modified.	D.M. Nieland
26	19-02-2015	Version 4.2.0.7; one issue fixed.	D.M. Nieland
27	12-03-2015	Version 4.2.0.8; several issues fixed, added and modified.	D.M. Nieland
28	26-03-2015	Version 4.2.0.9; modified and added features	D.M. Nieland
29	26-05-2015	Version 4.2.0.10; (small) issues fixed and modified	D.M. Nieland

30	24-06-2015	Version 4.2.0.11; several issues fixed, added and modified.	D.M. Nieland
31	24-06-2015	Version 4.2.0.12; several issues fixed, added and modified.	H. Stoelinga
32	30-06-2015	Version 4.2.0.13; (small) issues fixed and modified	D.M. Nieland
33	13-11-2015	Version 4.2.0.14; several issues fixed, added and modified.	D.M. Nieland
34	23-11-2015	Version 4.2.0.15; two issues fixed.	D.M. Nieland
35	28-01-2016	Version 4.2.0.16; (small) issues fixed and modified	D.M. Nieland
36	22-03-2016	Version 4.2.0.17; issues modified.	D.M. Nieland
37	06-04-2016	Version 4.2.0.18; installer issue fixed	D.M. Nieland
38	18-05-2016	Version 4.2.0.19; one issue fixed.	D.M. Nieland
39	26-05-2016	Version 4.2.0.20; issues modified.	D.M. Nieland
40	15-12-2016	Version 5.0.0.0; 64 bit version release, several issues fixed and modified.	D.M. Nieland
41	06-01-2017	Version 5.0.0.1; one issue fixed.	D.M. Nieland
42	24-01-2017	Version 5.0.0.2; several issues fixed.	D.M. Nieland
43	28-02-2017	Version 5.0.0.3; several issues fixed and modified.	D.M. Nieland
44	23-03-2017	Version 5.0.0.4; two issues fixed.	D.M. Nieland
45	04-05-2017	Version 5.0.0.5; several issues fixed and added.	D.M. Nieland
46	22-05-2017	Version 5.0.0.6; one fix and one added feature.	D.M. Nieland
47	22-06-2017	Version 5.0.0.7; two fixes and one added feature.	D.M. Nieland
48	17-07-2017	Version 4.0.0.11: Special release, added support CWC	D.M. Nieland
49	29-11-2017	Version 5.0.0.8; several issues fixed and added.	D.M. Nieland
50	21-12-2017	Version 5.0.0.9; several issues fixed and added.	D.M. Nieland
51	19-03-2018	Version 5.0.0.10; several issues fixed and added.	D.M. Nieland
52	01-05-2018	Version 5.0.0.11; one fix.	D.M. Nieland
53	27-05-2018	Version 5.0.0.12 Released with 7k Center version 6.3.0.13	H. M. Stoelinga
54	14-02-2019	Version 5.0.0.13; several issues fixed and added.	A.L. van Valkenhoef
55	14-03-2019	Version 5.0.0.14 Released with 7k Center version 6.3.0.14	A.L. van Valkenhoef
56	24-04-2019	Version 5.0.0.15; several issues fixed and added.	A.L. van Valkenhoef
57	02-10-2019	Version 5.0.0.16; several issues fixed and added.	A.L. van Valkenhoef
58	24-10-2019	Version 5.0.0.17; several issues fixed and added.	A.L. van Valkenhoef
59	14-07-2020	Version 5.0.0.18; several issues fixed and added.	H.G. Stuijbergen
60	06-04-2021	Version 5.0.0.19 One issue fixed and added.	H.G. Stuijbergen
61	26-05-2021	Version 5.1.0.0: several issues fixed and added. Support of HydroSweep sonar systems added.	A.L. van Valkenhoef

62	30-09-2021	Version 5.2.0.0: several issues fixed and added. Support of T51 sonar systems added.	H.G. Stuifbergen
63	06-10-2021	Version 5.2.1.0: modification to record 3001.	H.G. Stuifbergen
64	01-11-2021	Version 5.2.1.1: issue fixed.	A.L. van Valkenhoef
65	01-11-2022	Version 5.2.1.4: Several issues fixed and added.	A.L. van Valkenhoef
66	10-05-2023	Version 5.3.2.0: Several issues fixed and added.	A.L. van Valkenhoef
67	25-10-2023	Version 5.4.0.0: Several issues fixed and added.	A.L. van Valkenhoef
68	13-12-2023	Version 5.5.1.0: Several issues fixed and added.	A.L. van Valkenhoef

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