# Fusion 2 Release Notes 2.05.02

# Contents

# 2.05.02

## Release Summary

This software release implements a small selection of new features to support customers' operational needs, but primarily focuses on significant improvement to the speed, efficiency, and stability of the software, to improve the user experience and provide more robust communications with attached instruments.

## New Features

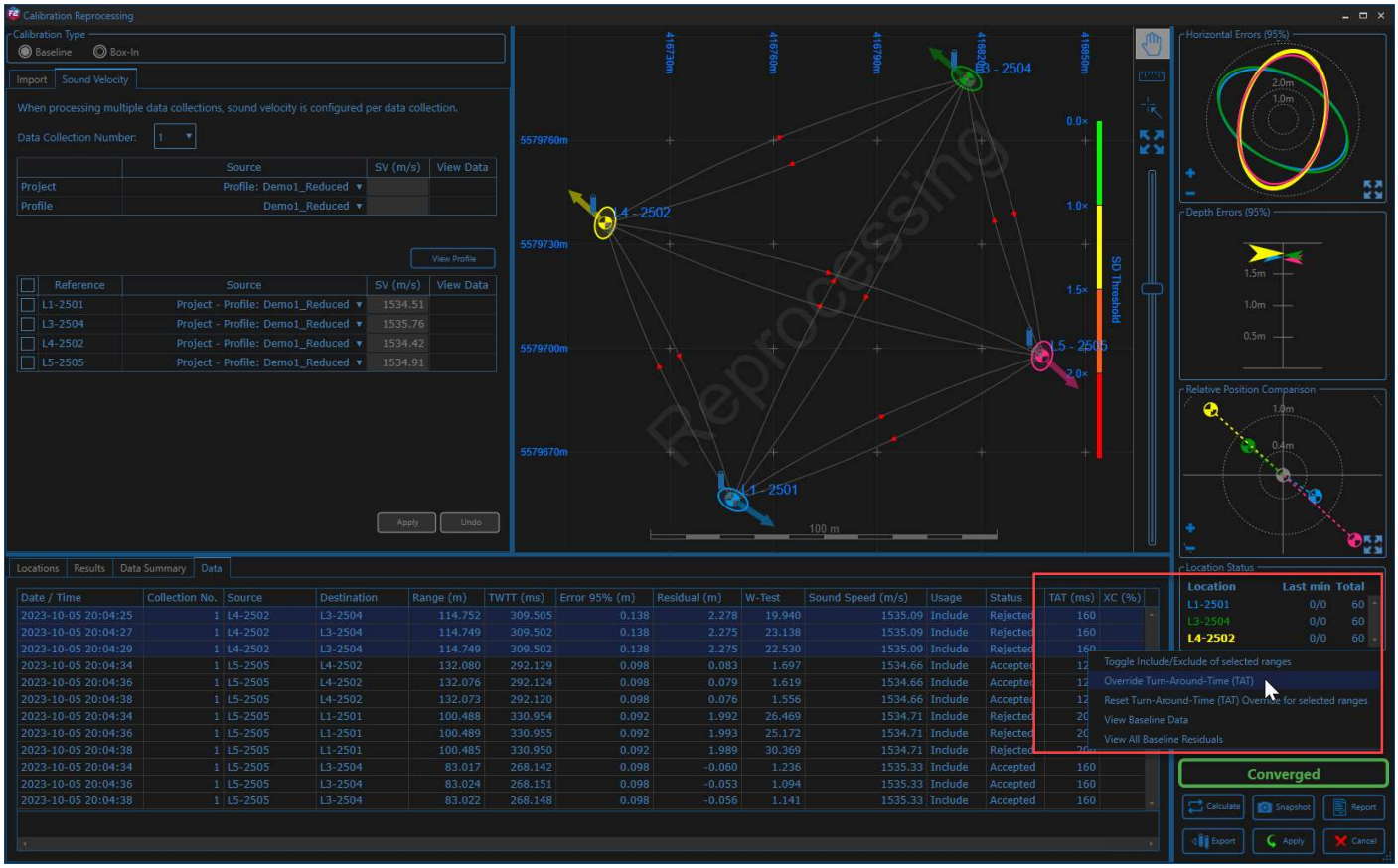
| Ref | Functional Area | Description |
|---|---|---|
| 22858 | Calibration Reprocessing | Implement an Eiva NaviModel compatible export of all baseline calibration data. |
| 35023 | Instrumentation | Show SSB beacon code in USBL instrument data tab. |
| 35025 | Security Key | Update DESKey DK2 drivers to v8.21.24. |
| 35029 | User Interface | Allow control of DVL aiding status for Sprint-Nav via the Navigation Status Display. |
| 35044 | Calibration Reprocessing | Provide ability to edit turn-around-times for baselines. |
| 35045 | Calibration Reprocessing | Provide tabulated historic SV data for available sources. |
| 35047 | Calibration Reprocessing | Provide ability to select different SV source configuration per calibration dataset. |

### 22858 Implement an Eiva NaviModel Compatible Export of All Baseline Calibration Data

When a PDF report of a baseline calibration is generated, either from the Real-Time Calibration tool or the Calibration Reprocessing tool, an XML file is now created and saved in the same directory as the PDF report. This file contains all the necessary information for the baseline calibration to be reprocessed in Eiva's NaviModel software, as a means of comparing Fusion 2's baseline adjustment results with an independent reference.

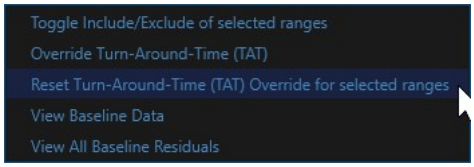
### 35044 Provide Ability to Override Baseline Turn Around Times in Calibration Reprocessing

It is now possible to override turn-around-times associated with baselines if it is known that an incorrect value has been recorded. To do this, select one or more baselines in the **Data** tab in the **Calibration Reprocessing** tool, and right click on the **TAT (ms)** column. Select **Override Turn-Around-Time (TAT)** in the context menu.



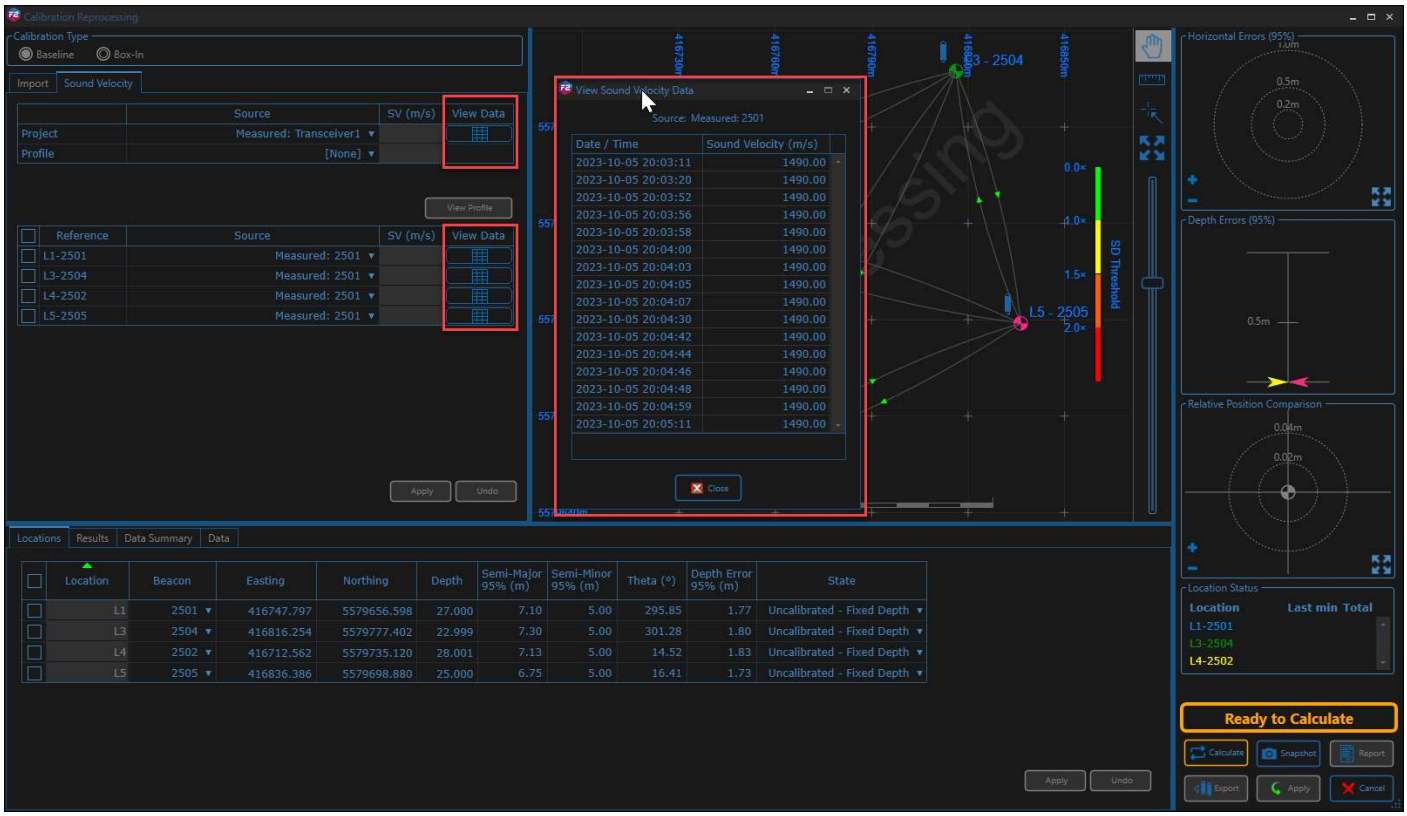

A dialog is shown, where a new value can be set for the selected baseline ranges.

Any changes made via this method can be reset by reselecting the baseline ranges, right clicking on the **TAT (ms)** column, and selecting **Reset Turn-Around-Time (TAT) Override for selected ranges.**



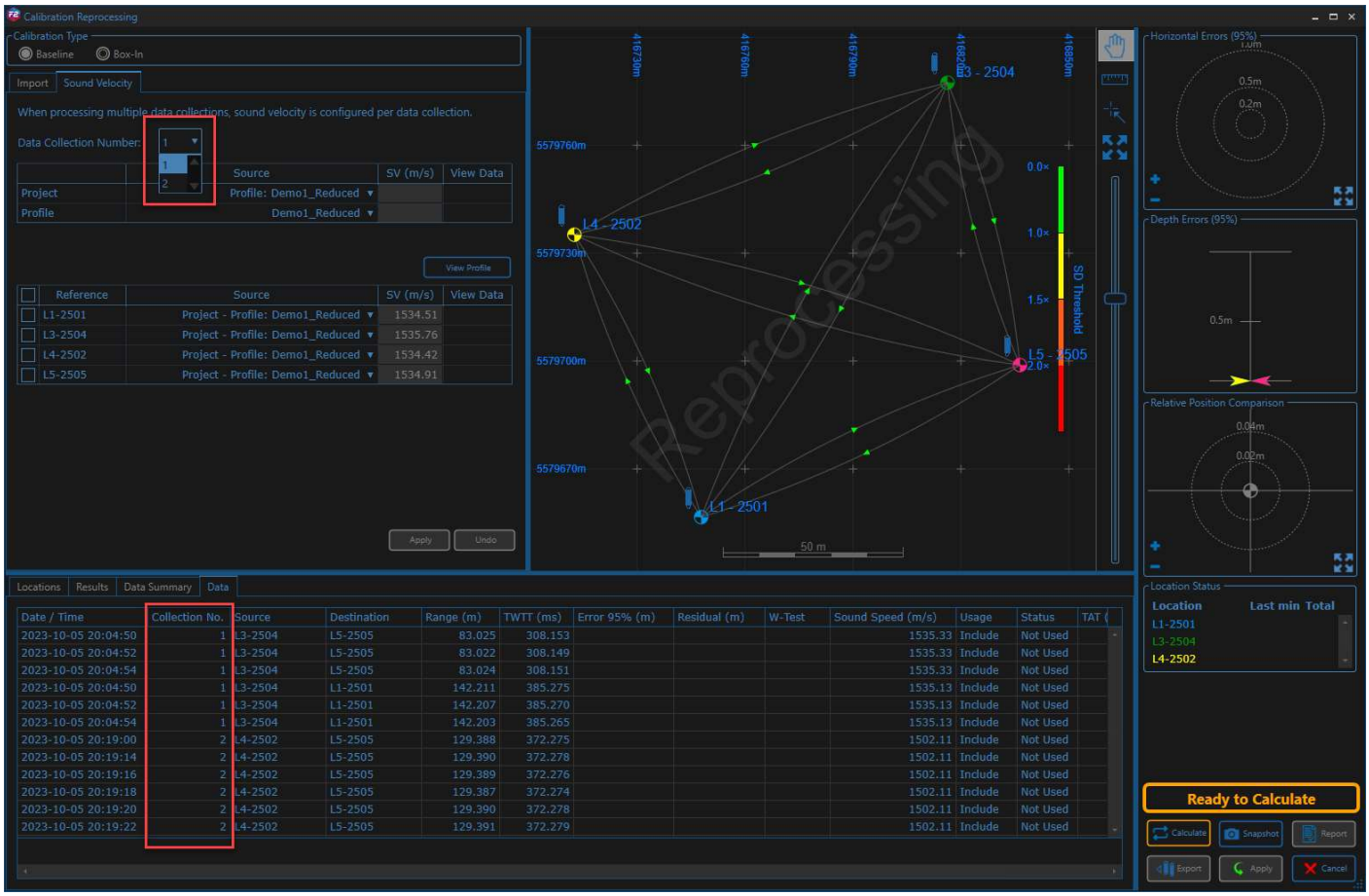

## 35045 Provide Tabulated Historic Sound Velocity Data for Sources During Calibration Reprocessing

While reprocessing calibration data, associated sound velocity can be viewed in a table when available. This information can be viewed from within the Calibration Reprocessing tool by clicking the buttons in the **View Data** column of the tables within the **Sound Velocity** tab.



## 35045 Provide Ability to Select a Different Sound Velocity Source Configuration per Calibration Dataset

While reprocessing calibration datasets consisting of multiple individual collections, it is now possible to configure each collection's sound velocity sources separately. This may be useful when multiple sound velocity profiles are available and are associated with specific calibration datasets. When multiple collections are imported to the Calibration Reprocessing tool, the collection number for each baseline is visible in the **Data** table, and each collection's SV configuration can be edited by selecting its number in the drop-down menu before making changes to the configured sources.



## Bug Fixes

For more details on any of the fixes below please contact Sonardyne customer support.

| Functional Area | Ref | Description |
|---|---|---|
| Average Fix Tool | 35012 | Fix incorrect scaling of position error metrics |
| Alarms | 35021 | Alarm not raised when beacon telemetry fails |
| Box-in Calibration | 35024 | Box-in calibration of location using external Range Input (SSB) fails to start if location already has a beacon assigned to it. |
| Acoustics | 35027 | Remove unnecessary MR commands being sent to beacons with low battery which restricted their further use |
| Calibrations | 35031 | Sound velocity profile missing from calibration snapshot files |
| Data Export | 35032 | Raw Comms data export failing if instruments connected via comms hub |
| Acoustic Instrumentation | 35034 | ROVNav information being overwritten by beacon information while performing beacon telemetry. |
| Telemetry Diagnostics | 35036 | Some acoustic commands becoming stuck in telemetry diagnostics display indefinitely |
| Box-in Calibration Reprocessing | 35038 | Incorrect method of calculating average sound speed for ranges used for sound speed profiles in reprocessing of box-in calibrations. |
| Box-in Calibration Reprocessing | 35039 | Software crash which could occur while reprocessing box-in calibration data if live GNSS being supplied to the system |
| Baseline Calibration Reprocessing | 35041 | Calibration report generation failing if data is manually rejected |
| Calibration Reprocessing | 35043 | Incorrect behaviour of scroll bars in calibration reprocessing tool |
| Calibration Snapshots | 35048 | Some settings not being saved when snapshot of current calibration state taken |
| Baseline Histogram Plots | 35050 | Incorrect plot scaling makes interpretation difficult |
| Calibration Snapshots | 35052 | Progress bar during snapshot generation not showing any progress |
| Instrumentation | 35054 | ROVNav transceiver missing from system setup on software restart |
| Acoustic Instrumentation | 35062 | High CPU usage in some circumstances if beacon ranging fails |
| Instrumentation: Sprint | 35071 | Switching communications from serial to ethernet can cause loss of input configuration |
| Instrumentation: Sprint | 35075 | Instability of communications with Sprint after extended period of operation. |
| User Interface | 35076 | Depth segment of Navigation Status display incorrectly greyed out in some circumstances |
| User Interface | 35082 | User interface unresponsive after extended period of operation if manual command tool left open. |
| User Interface | 35084 | Instrument status lights in system setup page showing incorrect connection status for DVL |
| Communications | 35087 | Communications to DVL connected via LCH lost if LCH power cycled |
| Instrumentation: Sprint | 35090 | Some commands and control of Sprint causing user interface to freeze. |
| Instrumentation: Syrinx | 35091 | Outputs from Syrinx auxiliary port incorrectly cleared by Fusion 2 during configuration |

| Functional Area | Ref | Description |
|---|---|---|
| Instrumentation: iWand | 35095 | Unable to connect to iWand via serial/USB |
| Instrumentation | 35102 | Able to add multiple DVL instruments to a vehicle when only one is supported |
| Security Key | 35107 | Security key read failure preventing software loading |
| User Interface | 35112 | User can move plot series which should be fixed to the axes in aiding diagnostics chart |
| User Interface | 35115 | Instrument status lights in system setup page showing incorrect connection status for some instruments after LCH power cycle |
| Instrumentation | 35118 | Synchronous communication time stamping strategy causing comms buffering on systems under heavy load |
| Security Key | 35119 | Security key read failure causing system instability on long running system |
| Telemetry Diagnostics | 35122 | Some pending actions not shown in acoustic telemetry diagnostics window |
| Baseline Calibration Reprocessing | 35123 | Calibration reprocessing tool showing incorrect SD figure on chart overlay in some circumstances when multiple datasets loaded. |
| Box-in Calibration | 35131 | Box-in calibration failing to compute position for multiple beacon calibrations under some circumstances. |
| User Interface | 35151 | Not possible to scroll list of vehicles/transceivers in SV configuration page. |

**Note: Versions of Fusion 2 after 2.04.00 will not install/run on Windows 7. For more information on Windows 7 please contact Sonardyne customer support, using the details at the end of these release notes.**

# 2.05.01

## Release Summary

This software release provides fixes to issues found in version 2.05.00 of the software.

## Bug Fixes

For more details on any of the fixes below please contact Sonardyne customer support.

| Functional Area | Ref | Description |
|---|---|---|
| Beacon import | 35016 | CSV import fails if it includes beacons which have never been interrogated. |
| Instrumentation / Beacons | 35017 | Tracking fails to start when loading legacy jobs where many beacons have unknown CIS state. |
| Instrumentation / Transceivers | 35018 | Newly added transceivers can assume identity of other transceivers in system if communication with them is not immediately successful. |
| Instrumentation / Ranging | 35022 | Ranging can become slow when receiving more than 15 ranges in one cycle (e.g., during some Fast-LBL structure tracking scenarios). |

**Note: Versions of Fusion 2 after 2.04.00 will not install/run on Windows 7. For more information on Windows 7 please contact Sonardyne customer support, using the details at the end of these release notes.**

# 2.05.00

## Release Summary

This scheduled software release provides new software functionality, improved performance and reliability, addresses issues found in earlier versions of the software and implements usability improvements in line with customer feedback.

Significant new additions and changes include:

- Additional acoustic diagnostics tools
- Expanded database management tools
- Support for external depth sensors with SPRINT-Nav INS instruments
- Additional depth data input formats

## Hardware

The following PC specifications are required as a minimum:

| Component | Specification |
|---|---|
| Processor | Core i7 2.4GHz |
| Memory (RAM) | 8GB |
| Graphics Card | 32-bit colour, minimum 1280 x 1024, Direct-X V10 or later |
| Operating System | Windows 10 x64 |

## Firmware

The following instrument firmware versions are the minimum versions which should be installed in each component for use with this software release. Please note that more recent firmware versions may be available and installed on new equipment, there is no requirement to downgrade these instruments for use with Fusion 2

| Instrument | Firmware Version |
|---|---|
| Navigation Sensor Hub (NSH) | 2.0.3.107 |
| SPRINT Firmware | 3.07.00.2139 |
| Syrinx Firmware | 3.02.40.00 (Rel2_revJ) |
| ROVNav 6+ LBL Transceiver | 3.12.08.09 |
| Compatt 6+ LBL Transponder (CPU) | 3.13.01.03 |
| Compatt 6+ LBL Transponder (DAS) | 2.06N |
| MiniROVNav 6+ | 3.12.02.05 |
| MicroCompatt 6+ | 3.12.02.05 |
| Lodestar Gyro Compatt 6+ (CPU) | 3.12.07.13 |
| Lodestar Gyro Compatt 6+ (Lodestar) | 3.02.01 |

## Software

The following associated software versions have been tested with this release. As a minimum, these versions must be installed when used with this release of Fusion 2:

| Package | Software Version |
|---|---|
| Janus | 1.06.01.14 |

## New Features

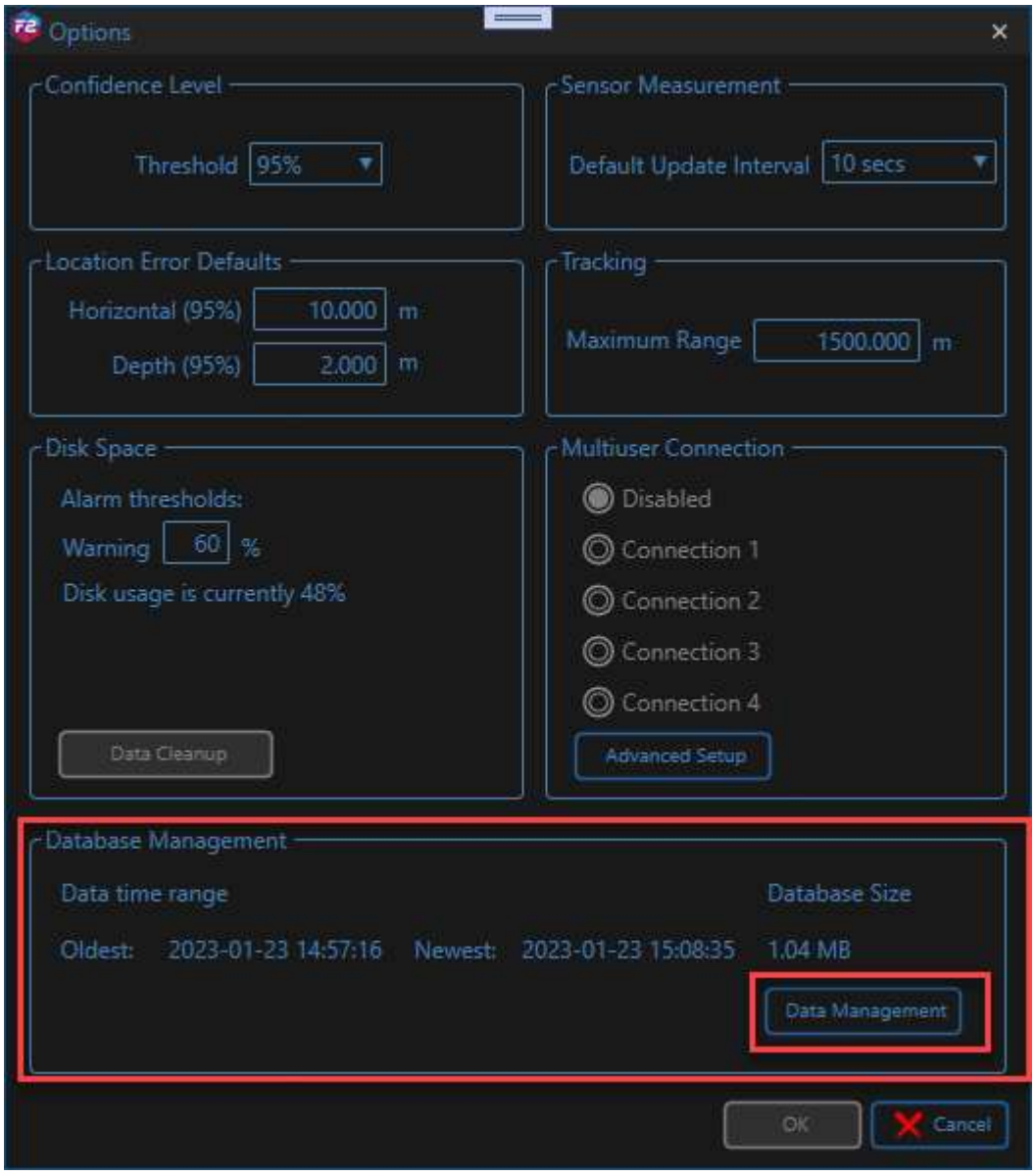
| Ref | Functional Area | Description |
|---|---|---|
| 34845 | Instrumentation | Adds a warning to the use if ZDA time-sync input is detected to be incompatible with current settings |
| 34857 | User Interface | Adds acoustic diagnostics information to ranges in measurements window |
| 34860 | Instrumentation / UI | Add alarm to inform when unable open a com port. |
| 34863 | Instrumentation | Enable system to connect to a SPRINT which has been reset to factory defaults |
| 34868 | Database / Data Logging | Adds expanded tools for database management |
| 34871 | Calibration / UI | Provides a reminder to export data after completion of a calibration. |
| 34874 | User Interface / Acoustics | New range diagnostics tool |
| 34877 | User Interface / Acoustics | New telemetry diagnostics tool |
| 34897 | Instrumentation | Adds decoder for WINSON telegrams providing depth information. |
| 34898 | Instrumentation | Enables logging of new INS diagnostic messages for use in post-processing |
| 34899 | Instrumentation | Updated default values for some INS parameters in SPRINT configuration files. |
| 34900 | Instrumentation | Allow the use of an external depth sensor with a SPRINT-Nav |
| 34927 | Instrumentation | More detailed time-sync information in SPRINT data tab |
| 34992 | Application Start-up | Prevents Fusion2 from being opened if SPRINT software is running to prevent SPRINT instrument configuration conflicts. |

## 34868 Expanded Tools for Database Management

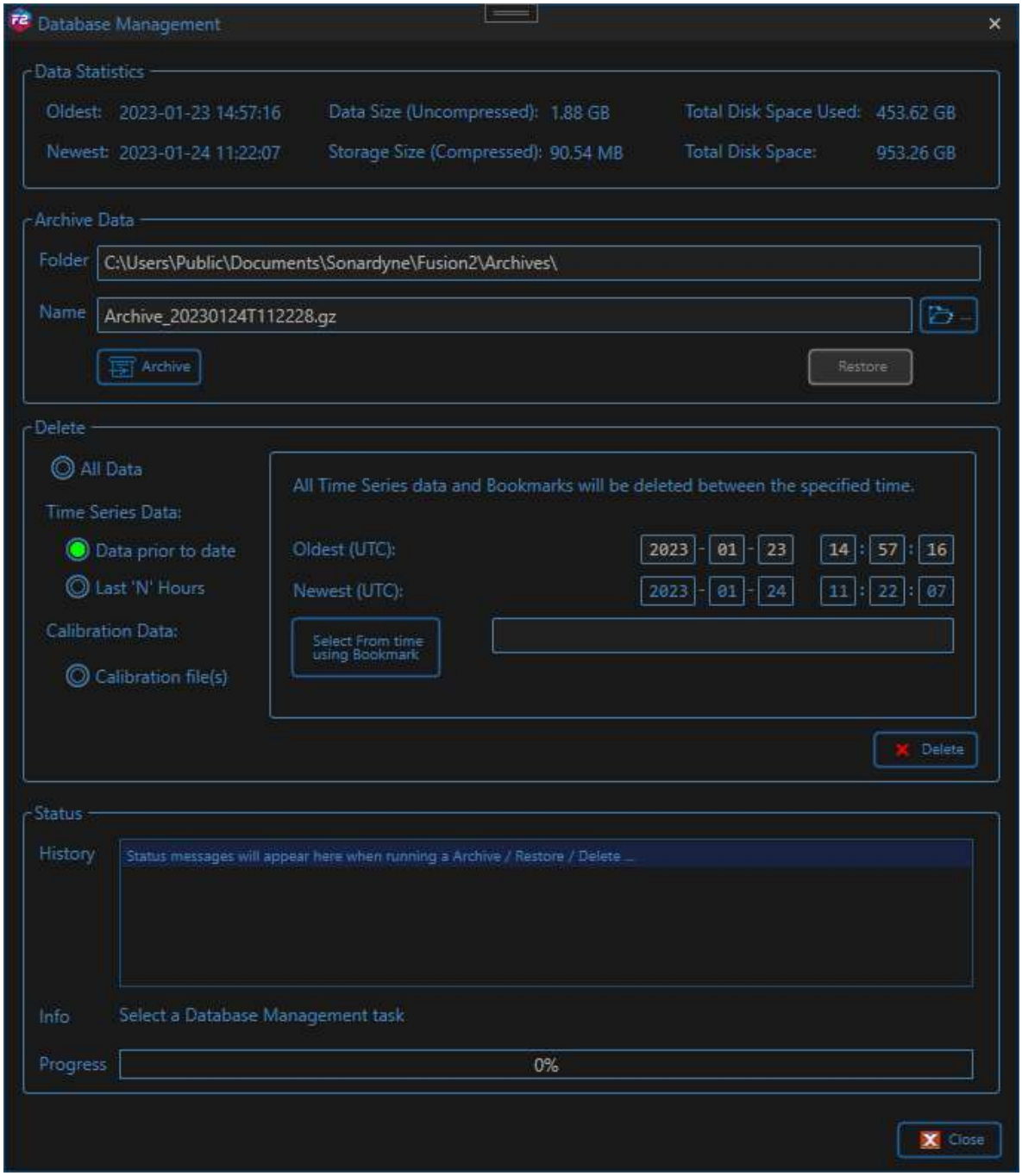
More advanced tools for the management of the MongoDB database to which all Fusion2 data is logged are now provided. The new capabilities allow the user to:

- See in more detail the size and extents of the database
- Archive an entire database for backup or replication purposes.
- Restore an archived database
- Delete all, or selected portions of, the data within the database.

Basic database information can be viewed by opening the **Tools > Options** window. Further information and management tools can be found by clicking on the **Data Management** button as show below.

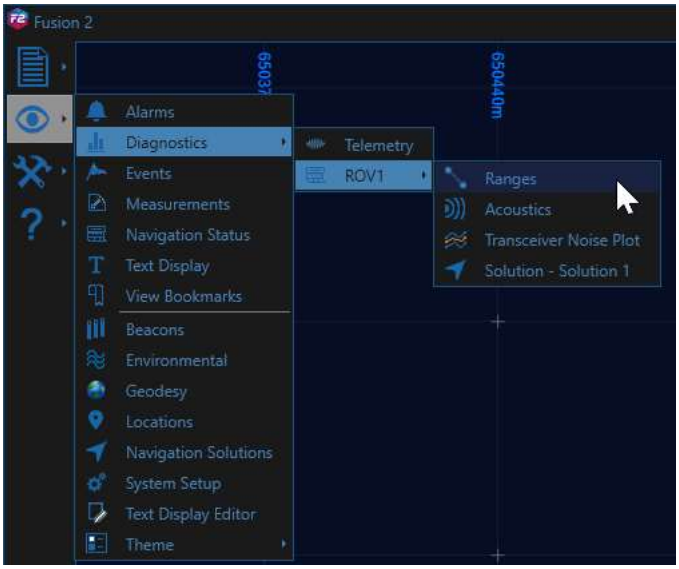


Statistics, archival and deletion options are presented as shown below.

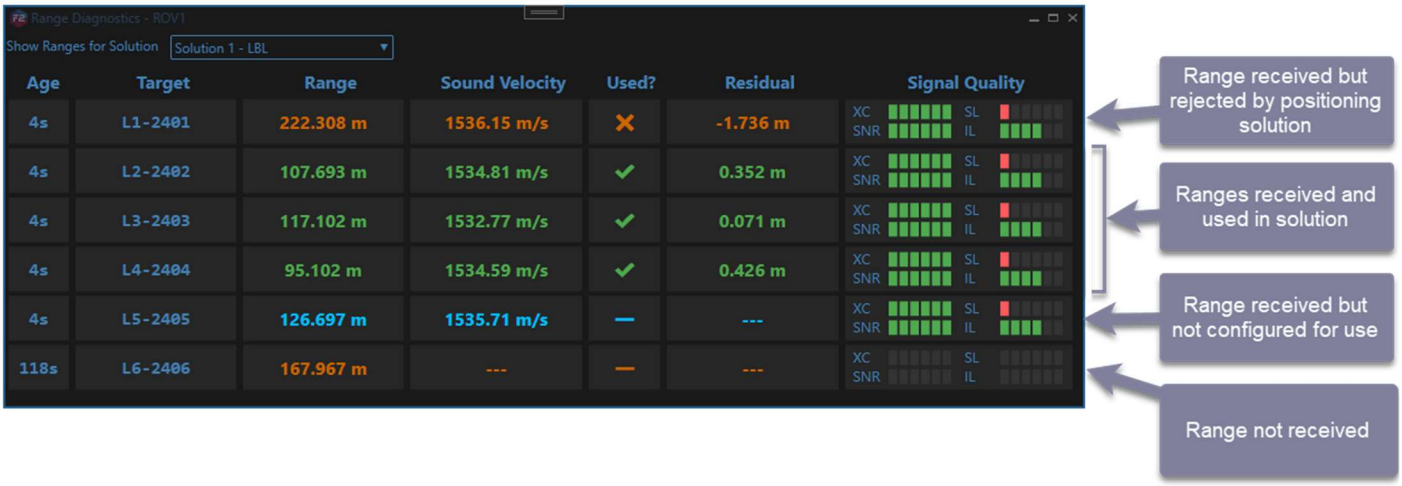


## 34874 New Range Diagnostics Tool

A new range diagnostics tool is available and can be opened via the **View> Diagnostics > (Vehicle) > Ranges** menu item.

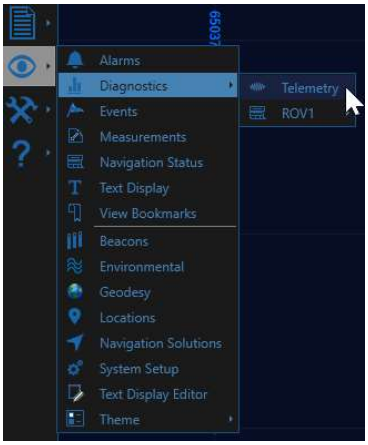



The tool displays information about each acoustic range which is expected to be received by the transceiver on the selected vehicle, and their use in the selected positioning solution. The solution for which information is displayed can be changed using the drop-down menu at the top of the tool window.



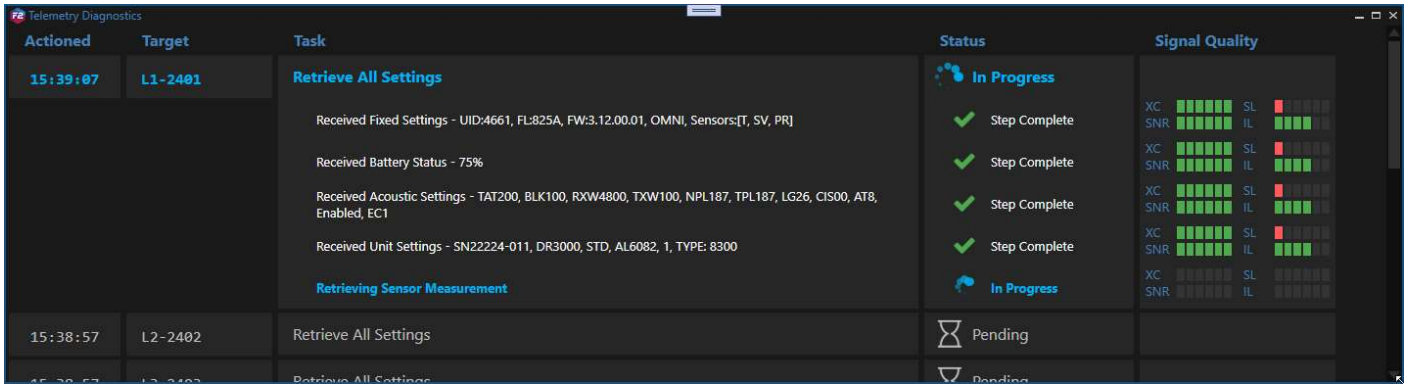
## 34877 New Telemetry Diagnostics Tool

A new telemetry diagnostics tool is available and can be opened via the **View> Diagnostics > Telemetry** menu item.

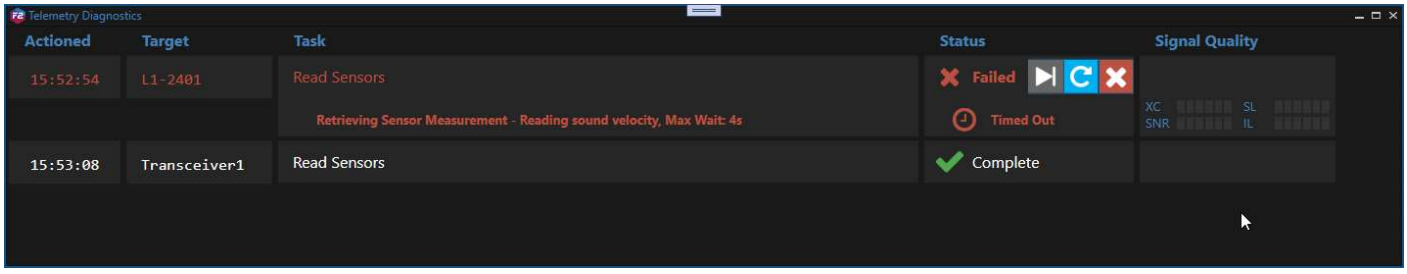



Alternatively, the tool can be opened by clicking on the popup telemetry indicator which appears when telemetry tasks are being carried out.


The tool provides a dynamic overview of all acoustic telemetry tasks as they are queued and actioned, together with their status, the results of the tasks and associated acoustic signal quality information.




If an acoustic telemetry task fails, the user can choose to skip, retry, or cancel the task.

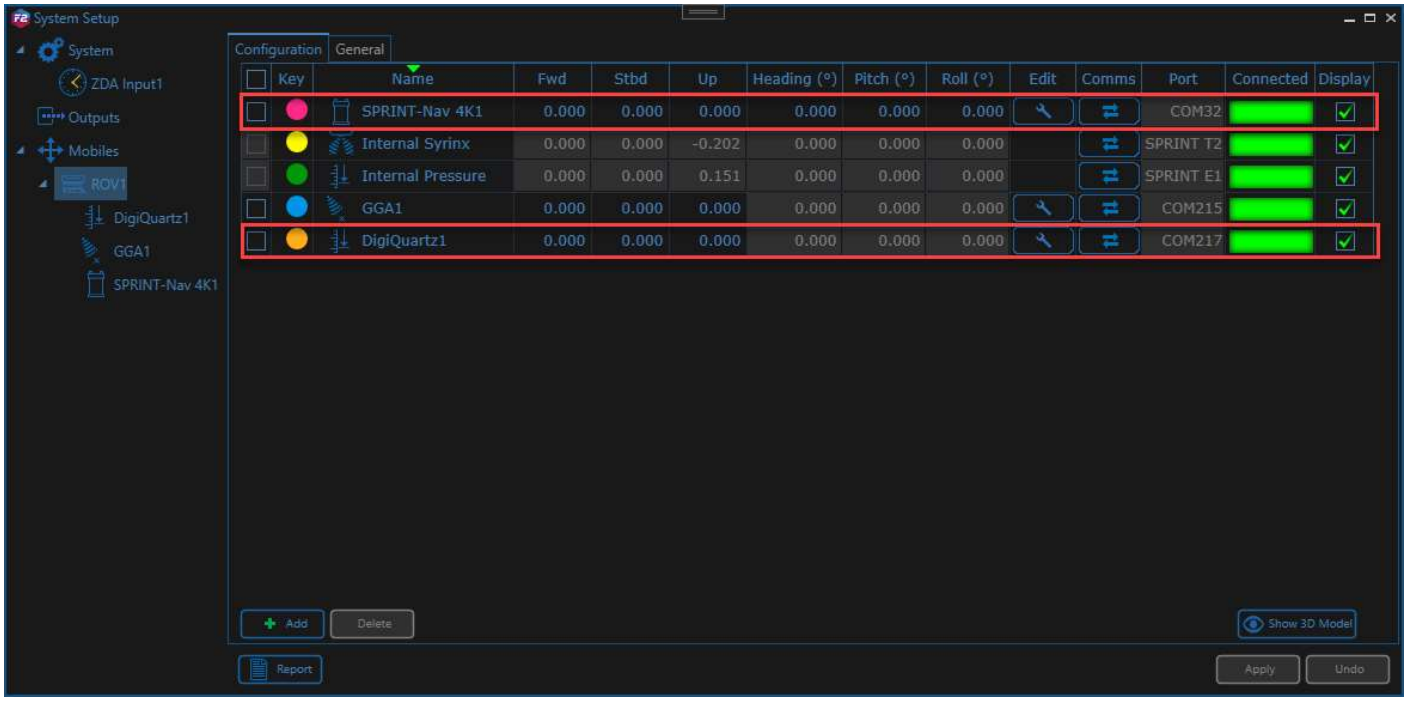


A history of the acoustic telemetry tasks displayed in this tool is automatically recorded to file for further analysis if required. These files can be found in **C:\Users\Public\Documents\Sonardyne\Fusion2\LogFiles\TelemetryDiagnosticsLog**.

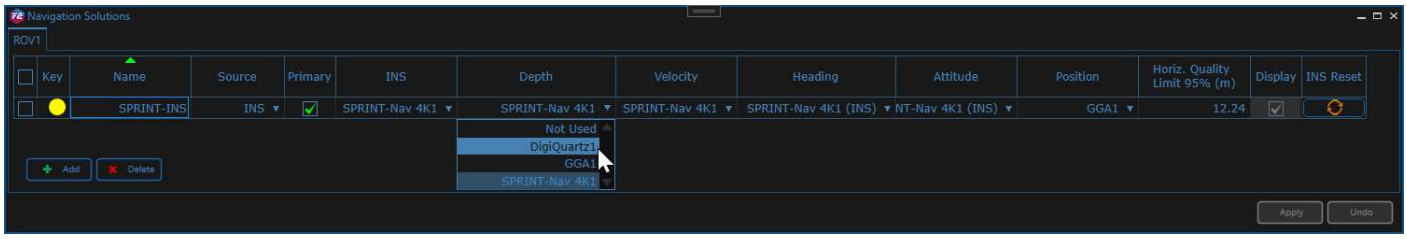
## 34900 Allow the use of an external depth sensor with a SPRINT-Nav

It is now possible to connect an external depth sensor to a Fusion 2 system which is using a SPRINT-Nav and use it for INS depth aiding. This provides an alternative to the built in SPRINT-Nav pressure sensor.

The SPRINT-Nav and external depth sensor should be added to the vehicle via the system setup page in the usual way:

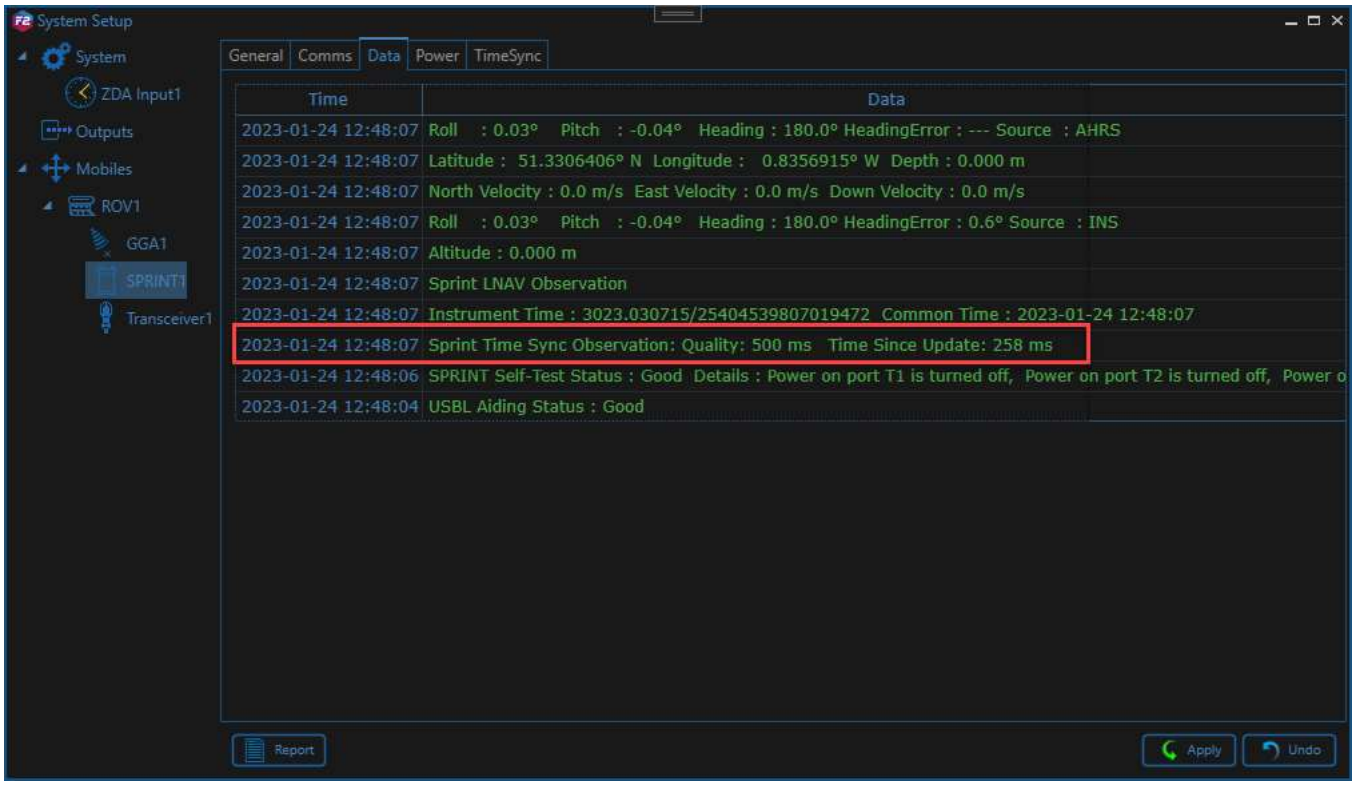



The desired depth sensor should be selected for use in the appropriate solution in the Navigation Solutions configuration window:



## 34927 More Detailed Time-Sync Information in Sprint Data Tab

Information about the estimated SPRINT time synchronisation quality and the time since last update is now shown in the SPRINT data tab:



## Bug Fixes

For more details on any of the fixes below please contact Sonardyne customer support.

| Functional Area | Ref | Description |
|---|---|---|
| Tracking | 34788 | Fixes issue which prevented SV profile being read correctly for some system configurations. |
| User Interface | 34855 | Fixes issue which prevented a manual sound speed being entered for a vehicle. |
| User Interface | 34865 | Several detail fields not being populated for SPRINT and Syrinx instruments, despite successful instrument connection. |
| Security Key | 34848 | Fixes issue which prevented features from multiple security keys being used concurrently. |
| Instrumentation | 34859 | Prevents multiple instruments being added to a communication port when doing so would result in a conflict. |
| Instrumentation | 34862 | Fixes issue which prevented ZDA time-sync being sent to SPRINT instrument |
| Instrumentation | 34864 | Improves stability of SPRINT reconnection procedure after instrument is rebooted |
| Instrumentation | 34872 | Fixes issue with automatic configuration of power pass-through on SPRINT ports for DVL instruments and Transceivers |
| User Interface | 34884 | Improves reliability of power pass-through indicators for Sprint ports. |
| Instrumentation | 34866 | Prevent sending of further commands to SPRINT instrument when a reset or shutdown command has been issued. |
| Instrumentation | 34887 | Remove obsolete and unnecessary commands from SPRINT default configuration files. |
| User Interface | 34888 | Fixes bug which prevented INS heading quality from being plotted on chart |
| Instrumentation | 34901 | Prevents sending of unnecessary multi-user commands by systems which don't require multi-user features. |
| User Interface | 34903 | Fixes issue which prevented alarm being raised when no heading available in LBL positioning solution. |
| Beacon Import | 34904 | Fixes issue which prevented CSV import of beacons when elements of beacon configuration missing. |
| Instrumentation | 34905 | Fixes issue which prevented configuration of some Compatt parameters while tracking enabled. |
| Instrumentation / Tracking | 34906 | Fixes issue which prevented correct use of SV profile during box-in calibration |
| Instrumentation | 34911 | Fixes issue which prevented use of PSONDEP telegram for depth aiding via SPRINT port |
| User Interface | 34915 | Improved wording for missing DVL calibration alarms. |
| User Interface | 34920 | Fixes issue with visual scaling of data in the text-display |
| User Interface | 34931 | Fixes issue preventing correct charting of AHRS data from SPRINT instrument |
| Outputs | 34939 | Fixes issue preventing output of DigiQuartz depth data via SPRINT serial port. |
| User Interface | 34943 | Fixes display of available job files when opening an existing job file. |
| User Interface | 34946 | Fixes issue which caused the DVL status in the Navigation Status display to show good (green) when no data was being received. |

| Functional Area | Ref | Description |
|---|---|---|
| Calibration reprocessing | 34951 | Fixes incompatibility with old versions of CAS2 files produced by Ranger 2 software, which prevented them from being imported for box-in reprocessing in Fusion 2. |
| User Interface | 34954 | Changes time display in average fix tool from 12 to 24 hr format. |
| Instrumentation | 34955 | Fixes issue which caused a failed Compatt configuration command to be repeated indefinitely if ranging was enabled and active. |
| Tracker | 34956 | Fixes issue which could prevent correct remote point to be output for an LBL solution |
| Instrumentation / User Interface | 34957 | Prevents user from changing beacon addresses and/or wakeup tones when ranging is enabled and active. |
| Instrumentation | 34961 | Prevents crash which could occur during retrieval of GyroCompatt status. |
| Instrumentation | 34963 | Fixes issue which prevented beacon configuration to be changed while tracking on a multi-user channel. |
| Instrumentation | 34965 | Fixes issue which could prevent successful INS aiding of SPRINT connected via serial-ethernet device. |
| Instrumentation | 34968 | Corrects rendering of beacon sensor data in measurement display when the beacon reports a sensor error. |
| Instrumentation | 34969 | Fixes issue which prevented reopening of NSH serial ports when the device was rebooted, or the connection was lost and regained. |
| Baseline Calibration Collection | 34977 | Fixes issue which prevents baseline calibration from starting. |
| Alarms | 34988 | Fixes issue in which some alarm fields were left unpopulated |
| Tracking | 34994 | Prevents output of LBL position derived from fewer than 3 ranges. |
| User Interface | 34995 | Corrects information shown in comms viewer when in Observation mode when an output telegram can't be sent. |
| Instrumentation | 34996 | Prevents a resetting transceiver from overwriting the currently configured SV collection settings. |
| Outputs | 34999 | Ensures that the 'not limited' option is presented as the default when configuring an LBL derived output telegram. |
| User Interface | 35000 | Fixes issue which could cause some ranging segments in the navigation status display to show data from previous ranging cycle. |
| Outputs | 35004 | Fixes incorrect timestamp format in GGA output telegram. |

# Contact Information

For further support please contact:

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