Fusion 2 Release Notes 2.05.06

Contents

2.05.06

Release Summary

This software release provides the option to prevent Fusion 2 from changing the baud rate of a transceiver in situations where the connection doesn't support dynamic baud rate changes.

Hardware

The following PC specifications are required as a minimum:

Component	Specification
Processor	Core i7 2.4GHz
System Firmware	UEFI (for Unified Extensible Firmware Interface, a modern version of the PC BIOS) and Secure Boot capable. Secure Boot can only be enabled with UEFI and this article helps you understand potential options to change settings to make this possible.
TPM	Trusted Platform Module (TPM) version 2.0.
Graphics Card	32-bit colour, minimum 1280 x 1024. Compatible with DirectX 12 or later with WDDM 2.0 driver.
Memory (RAM)	8GB
Storage (SSD/HDD)	Minimum 256GB, recommended 512GB to support data storage
Operating System	Windows 10 x64, Windows 11

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	3.13.00.07
Compatt 6+ LBL Transponder (CPU)	3.13.01.03
Compatt 6+ LBL Transponder (DAS)	2.06N
MiniROVNav 6+	3.13.01.03
MicroCompatt 6+	3.13.01.03
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

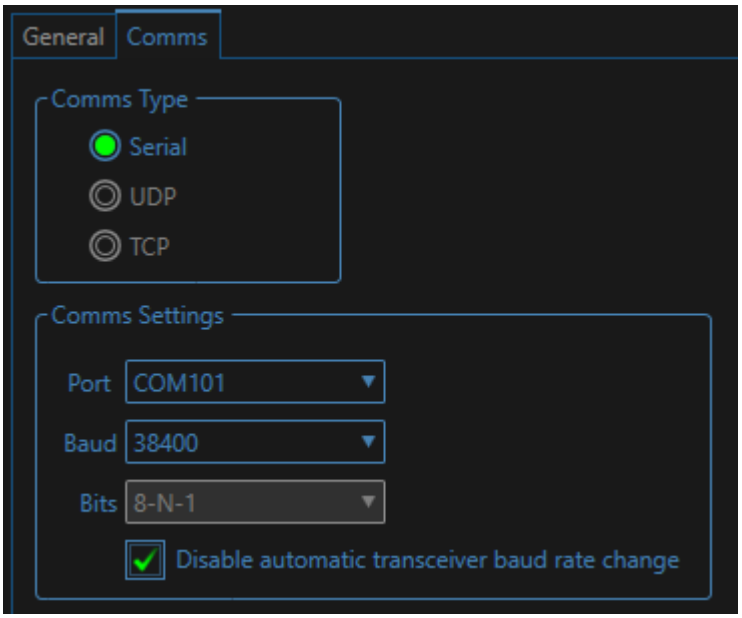
Ref	Functional Area	Description
36150,35142, 36151	Instruments	Add control to prevent automatic baud rate changes

36150 Add control to prevent automatic baud rate changes

Note

Fusion 2 can only reset a transceiver by briefly changing its baud rate to 9600, sending a break sequence before restoring the baud rate that the transceiver is configured to use. Disabling the ability to change baud rate will require the transceiver to be reset manually by cycling its power.

Some multiplexors, and serial hubs do not support dynamic baud rate changing, and this can cause connection problems to transceiver if Fusion2 attempts to reset the transceiver to restore it to a known condition. This new option controls whether, or not Fusion 2 will change the baud rate of the transceiver.



Bug Fixes

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

Ref	Functional Area	Description

Known Issues

Ref	Functional Area	Description
35986	Tracking	Slow memory accumulation during prolonged (24Hr+) structure tracking

Note: Versions of Fusion 2 after 2.04.00 do 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.

2.05.05

Release Summary

This software release provides the ability to scale baselines and ranges for compatibility with historical surveys. It also provides LNAVUTC output reports, and many performance and reliability improvements, addressing issues found in earlier versions of the software following customer feedback.

Hardware

The following PC specifications are required as a minimum:

Component	Specification
Processor	Core i7 2.4GHz
System Firmware	UEFI (for Unified Extensible Firmware Interface, a modern version of the PC BIOS) and Secure Boot capable. Secure Boot can only be enabled with UEFI and this article helps you understand potential options to change settings to make this possible.
TPM	Trusted Platform Module (TPM) version 2.0.
Graphics Card	32-bit colour, minimum 1280 x 1024. Compatible with DirectX 12 or later with WDDM 2.0 driver.
Memory (RAM)	8GB
Storage (SSD/HDD)	Minimum 256GB, recommended 512GB to support data storage
Operating System	Windows 10 x64, Windows 11

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	3.13.00.07
Compatt 6+ LBL Transponder (CPU)	3.13.01.03
Compatt 6+ LBL Transponder (DAS)	2.06N
MiniROVNav 6+	3.13.01.03
MicroCompatt 6+	3.13.01.03
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

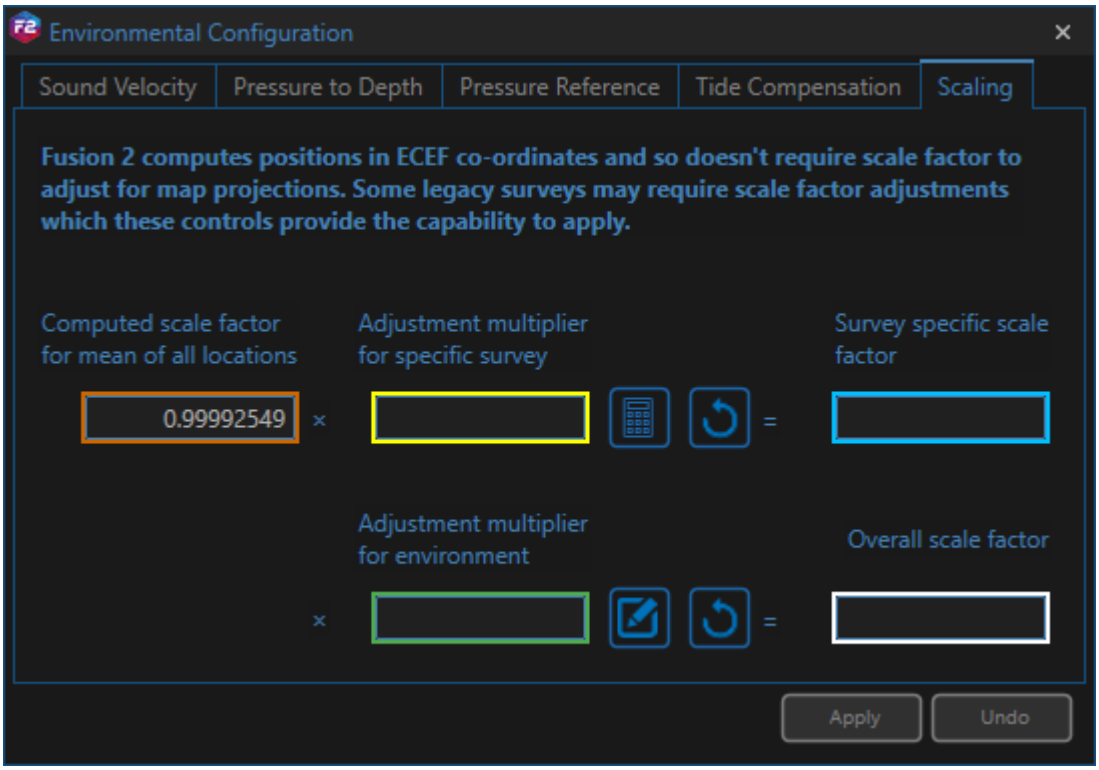
Ref	Functional Area	Description
35373,35902, 35828,35832, 35836,35890, 35987	Calibration	Scale factor display and application
35863,35865	Calibration	Collect all baselines from one beacon before moving to next
35574	Calibration	Prompt user to generate snapshot (f2lz) from a calibration
35575	Calibration	Box-in report to show engine settings
35592	Calibration	Box-in reprocessing tool to show vessel track
36011	Calibration	Correct transceiver positions in box-in XML report
35302	Environment	Change the default update rate for SV when beacon is selected as SV sensor
35295	Instruments	Add the ability to output Client and Server TCP outputs
35850	Instruments	Ensure only TCP Server output is offered from Gen3 SPRINT
35837	Instruments	GGA Decode: Allow alphanumeric StationID
35488, 35582	Instruments	Add support for LNAVUTC output
35650,35835, 35812,35834, 35864,35933	All	Stability, security and usability improvements

35373 Scale factor display and application

Note

Fusion 2 does not require scaling. Altering these values will cause all ranges and baselines to be scaled. Only apply a scale factor if specifically required by the survey.

Fusion2 computes positions using Earth-centred, Earth-fixed (ECEF) co-ordinates, and so only uses UTM coordinates for display and user input purposes. As such it does not use a projection scale-factor. Sometimes when tying new Locations into an existing array, it is necessary to adjust the scaling of baseline and range observations to make new measurements fit the existing calibrated co-ordinates. The **Scaling** tab allows the operator to view what the equivalent projection and elevation scale-factor is at the centre of the array, and at the average depth. They can then calculate an 'Adjustment multiplier for specific survey' that will be used to scale measured ranges to achieve a required effective 'Survey specific scale-factor'. In addition, the tab provides an 'Adjustment multiplier for environment' which can be used to correct bias in sound speed.



35863 Collect all baselines from one beacon before moving to next

The baseline collection order has been modified to collect all baselines from a single beacon before moving on to the next beacon. This allows for the vehicle collecting the baseline telemetry to be moved during the collection to optimise the acoustic link and improve the telemetry.

35574 Prompt user to generate snapshot (f2lz) from a calibration

Force operator to decide whether a calibration snapshot is required to support calibration reprocessing.

35575 Box-in report to show engine settings

Add the configured box-in engine settings in calibration report.

35592 Box-in reprocessing tool to show vessel track

Show the approximate vessel track that was sailed during box-in data collection when reprocessing the calibration.

35302 Change the default update rate for SV when beacon is selected as SV sensor

When using measured sound speed from a beacon, set the default update period to 10 minutes.

35295 Add the ability to output Client and Server TCP outputs

All output connections to be served by either Fusion 2, or a remote source.

35850 Ensure only TCP Server output is offered from Gen3 SPRINT

When using a SPRINT as the source of an output telegram the TCP connection the SPRINT has to be the server.

35837 GGA Decode: Allow alphanumeric StationID

Relax syntax on NMEA 0187 GGA telegram decode to allow the StationID to be alpha-numeric to allow modern receivers to indicate the type of solution.

35488 Add support for LNAVUTC output

Provide an interface to allow the SPRINT LNAVUTC output to be configured.

Bug Fixes

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

Ref	Functional Area	Description
35647	Calibration	Cannot reprocess baseline cal where beacons are moved between collections
35559	Calibration	Duplication of locations in reprocessing tool
35560	Calibration	Box in export failure to load
35563	Calibration	Box in snapshot report not created correctly
35569	Calibration	Custom geodesy not pulled through in snapshot files
35590	Calibration	Calibration not processing due to time drift
35649	Calibration	Store a Job Observation for the complete job at the end of a baseline calibration snapshot
35660	Calibration	Survey doesn't re-load after re-processing
35842	Calibration	Box in does not generate a report
35848	Calibration	Baseline Calibration Diagnostics locations all orange
35866, 35553	Calibration	Automatic CIS enabling on Boxin not working
35889	Calibration	Please apply the same formatting and sorting to Locations column in calibration results as happens in Locations table.
35892, 35893	Calibration	Baseline Calibration Report Not Generated
35931	Calibration	Calibration planning window spawning and not releasing threads
35957	Calibration	Calibration reprocessing does not complete on the attached file
35385	Calibration	Incorrect projected CRS code in xml reports
36011	Calibration	Correct transceiver positions in boxin XML report
35461,35973	Environment	Sound velocity not calculated if ROV depth outside profile range
35345	Instruments	Auto telemetry setting uses first Transceiver
35215	Instruments	Limit TPL power level if battery is Alkaline (Implement TB17-003)
35878	Instruments	Send wake up tone on any user instigated telemetry
35460	Instruments	Fusion 2 not setting ROVNav SPL level?
35867	Instruments	Output Telegram: Comms source reverts to PC after selecting SPRINT until Application restart
35887	Instruments	Comms coming through after F2 restart on disabled vehicle
35962	Instruments	Missing factory calibration alarm raised incorrectly

Ref	Functional Area	Description
35955	Instruments	Time source configuration not saved
35202	Instruments	[SN] SSB setting kept after deleting - if GGA is then added the aiding is rejected
35912	Instruments	Generic DVL baud rate isn't saved and therefore incorrect after resetting the SPRINT
35956	Instruments	log message not saved to SPRINT configuration file - OINSCOR
35976	Instruments	Output not configured (TSS1) - due to DVLPD4PD5 being set on OP command
35909	Instruments	No output when selecting to output a PRDDIGIQ M to a serial port
35487	User Interface	Enabled showing greyed out
35662	User Interface	Reply option is blank for a beacon in table
35840	User Interface	Disable does not persist with close and reopen
35847	User Interface	Unable to assign beacons in the locations table
35937	User Interface	External solution depth red on nav status
35942	User Interface	Text display for GNSS data doesn't show correctly
35905,35341, 35462,35529, 35631,35638, 35845,35849, 35869,35870, 35873,35882, 35883,35885, 35958,35967, 35970,35972, 35982,35985	All	Stability and usability (Resource monitor warnings)

Known Issues

Ref	Functional Area	Description
35986	Tracking	Slow memory accumulation during prolonged (24Hr+) structure tracking

Note: Versions of Fusion 2 after 2.04.00 do 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.

2.05.04

Release Summary

This software release provides improved performance and reliability, addressing an issue found in earlier versions of the software following customer feedback.

Hardware

The following PC specifications are required as a minimum:

Component	Specification
Processor	Core i7 2.4GHz
System Firmware	UEFI (for Unified Extensible Firmware Interface, a modern version of the PC BIOS) and Secure Boot capable. Secure Boot can only be enabled with UEFI and this article helps you understand potential options to change settings to make this possible.
TPM	Trusted Platform Module (TPM) version 2.0.
Graphics Card	32-bit colour, minimum 1280 x 1024. Compatible with DirectX 12 or later with WDDM 2.0 driver.
Memory (RAM)	8GB
Storage (SSD/HDD)	Minimum 256GB, recommended 512GB to support data storage
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+	3.12.08.09
MicroCompatt 6+	3.13.01.03
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

Bug Fixes

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

Functional Area	Ref	Description
Stability	35548	Error disposing of EM1000, EM3000 and PRDKELBIN telegrams

Known Issues

Ref	Functional Area	Description
35437	Calibration	Screen glitch – popup box now fully populated
35438	Stability	SharpDX exception on Fusion 2 shutdown
35442	Alarms	ZDA alarm every minute
35443	Sensors	Depth offset of external aiding source changed to internal sensor offset
35444	Solutions	Unable to select different depth source for external solution
35413	Sensors	SPRINT loops while trying to change ports.

Note: Versions of Fusion 2 after 2.04.00 do 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.

2.05.03

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:

- Addition of range test tool that facilitates tuning power and gain
- Changes to reduce the number of Alarms that get raised
- Bug fixes, plus performance and stability improvements

Hardware

The following PC specifications are required as a minimum:

Component	Specification
Processor	Core i7 2.4GHz
System Firmware	UEFI (for Unified Extensible Firmware Interface, a modern version of the PC BIOS) and Secure Boot capable. Secure Boot can only be enabled with UEFI and this article helps you understand potential options to change settings to make this possible.
TPM	Trusted Platform Module (TPM) version 2.0.
Graphics Card	32-bit colour, minimum 1280 x 1024. Compatible with DirectX 12 or later with WDDM 2.0 driver.
Memory (RAM)	8GB
Storage (SSD/HDD)	Minimum 256GB, recommended 512GB to support data storage
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+	3.12.08.09
MicroCompatt 6+	3.13.01.03
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:

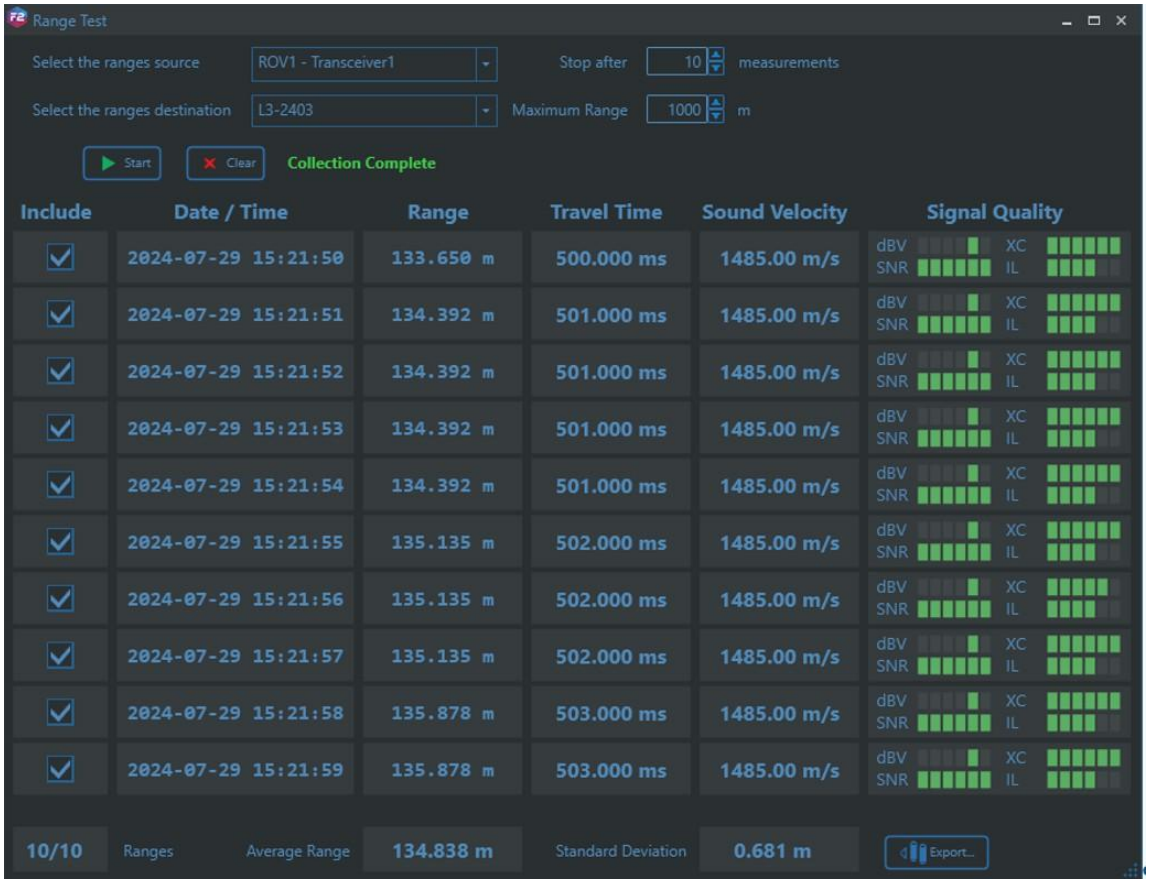
Package	Software Version
Janus	1.06.01.14

New Features

Ref	Functional Area	Description
35147	Ranging	Created a Range Test tool
35159	Tracking	Allow multiple GNSS devices (one per vehicle)

35147 Create a Range Test tool

This tool allows ranges between a transceiver and a beacon, or between 2 beacons to be collected a given number of times. The tool will display the arithmetic mean, and standard deviation of the received ranges,



but also shows the received signal metrics which can be useful for tuning the required gain, and power level to achieve stable ranging.

Refer to the operator's manual for details of how to tune the received signal quality metrics.

Bug Fixes

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

Functional Area	Ref	Description
Alarms	35059	New alarm when SPRINT connection quality is poor
Alarms	35192	When using two dongles (for INS and LBL packs), if one expired, the user was not notified
Alarms	35230	Clarified alarm when SV input is in error
Alarms	35309	Clear vehicle alarms when it is disabled.
Alarms	35318	Add an alarm when IMU not working.
Alarms	35332	Only raise a 'Not configured to 6+' alarm on a device that is positively reports that it is not 6+.
Alarms	35335	Raise an alarm if the connected transceiver is not set to 38400
Alarms	35358	Only raise critical 'battery low alarm' with beacons
Beacons	35215	Limit TPL if battery is alkaline, and less than 50% remaining
Calibration	35161	Incorrect SV from profile displayed during Box-In calibration.
Calibration	35208	Real Time Calibration: Corrected histogram not populating when viewing baseline
Calibration	35212	Calibration Reprocessing: Stopped raising duplicate warning messages when importing data
Calibration	35217	Corrected issue that could cause Live Calibration and Post Processing result difference
Calibration	35337	Calibration Reprocessing: Load multiple Baseline snapshots.
Outputs	35242	Output configured on a different TCP port than requested
Outputs	35247	CRP offset was not being applied to outputs
Outputs	35253	Output list port options were blank
Outputs	35267	Can now redirect configured sprint output message from one socket to another
Outputs	35274	Output message wasn't being added to SPRINT ethernet port
Outputs	35298	Output reports not set after selecting the required configuration and no output observed
Ranging	35245	Corrected ZDA time sync issue that caused LBL ranging failure.
Ranging	35316	Ensure that AT and EC not set to 0 while tracking
Ranging	35360	Allow raw comms export in LBL only setup with no SV
Ranging	35387	Prevent array beacon error state stopping ROV tracking
Ranging	35392	Only send 'Wake up' tone after 'Activity Time' expires
Security	35190	Corrected inconsistent baseline options
Security	35227	Updated F2 Installer Licensing Tool prerequisite
Sensors	35164	Protect SPRINT NAV aiding sensor settings on port switch

Functional Area	Ref	Description
Sensors	35218	Prevent port snoop on UART 4 (DVL) causing data overload
Sensors	35219	SPRINTNav pressure data was not sent to the unit until you added position data
Sensors	35220	DVL settings weren't reset correctly or configured on connection with SPRINTNav
Sensors	35226	Corrected SPRINTNav pressure status light seen on connection
Sensors	35228	Removed spurious 'Corrupted data' message for not connected/disabled SPRINT.
Sensors	35232	SYS SAVE FLASH timeout corrected.
Sensors	35233	Commands held off during UART break command
Sensors	35234	SPRINT Zero: Not Populating Information
Sensors	35236	Config file wasn't being sent down to SPRINT
Sensors	35255	Configure time system when you switch SPRINT from serial to Ethernet connection
Sensors	35264	DVL output is now being correctly removed from log list
Sensors	35265	Correct PD4 DVL log output message
Sensors	35266	Improved SPRINTNAV connection state monitoring
Sensors	35379	Prevented UI refresh reverting edited UDP address when making changes
Sensors	35410	SPRINTNav Power Pass UI corrected.
Sensors	35277	Corrected SPRINTNav lever arms and offsets persistence
Sensors	35413	Corrected logic so that incoming beacon sound speed is used when selected
Sensors	35436	Force beacon sound speed to be used when selected.
Telemetry	35199	Measurement configuration options were not turning off reliably.
Telemetry	35225	Stop measurement collection attempts continue indefinitely on uncontactable beacon
Telemetry	35393	Commands were sometimes sent from wrong transceiver
Telemetry	35428	Discovery should pick the next available transceiver
UI	35157	Correct missing unit conversions
UI	35171	Shortening a location name was not recognised as a change - now allows 'Apply'
UI	35194	Average Fix Tool: Change 'Run' button to 'Start'
UI	35216	Geodesy details were not showing in summary
UI	35221	LEDs on rov with SPRINTNav didn't represent the situation
UI	35222	Display Heading in both Geographic, and Projected display modes

Functional Area	Ref	Description
UI	35229	Navigation status display was showing acoustic items which were not selected for ranging
UI	35235	Corrected bug producing aiding charts in leap years.
UI	35270	Selecting an output port for 1pps+ZDA didn't fit on the form
UI	35272	Wrong Nav status was displayed when vehicle disabled
UI	35320	Corrected UI internal offset to match SPRINTNav
UI	35356	Noise plots from difference RovNavs were showing the same data.
UI	35361	Navigation status display was missing when multiple solutions active
All areas	35162, 35165, 35170, 35174, 35189, 35195, 35203, 35209, 35210, 35224, 35237, 35240, 35244, 35248, 35258, 35260, 35262, 35263, 35268, 35269, 35273, 35278, 35279, 35280, 35281, 35293, 35304, 35324, 35330, 35331, 35359, 35396, 35416, 35417, 35418, 35421, 35423, 35441, 35446, 35179	Performance and stability improvements (39 changes)

Known Issues

Ref	Functional Area	Description
35437	Calibration	Screen glitch – popup box now fully populated
35438	Stability	SharpDX exception on Fusion 2 shutdown
35442	Alarms	ZDA alarm every minute
35443	Sensors	Depth offset of external aiding source changed to internal sensor offset

Ref	Functional Area	Description
35444	Solutions	Unable to select different depth source for external solution
35413	Sensors	SPRINT loops while trying to change ports.

Note: Versions of Fusion 2 after 2.04.00 do 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.

2.05.02

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

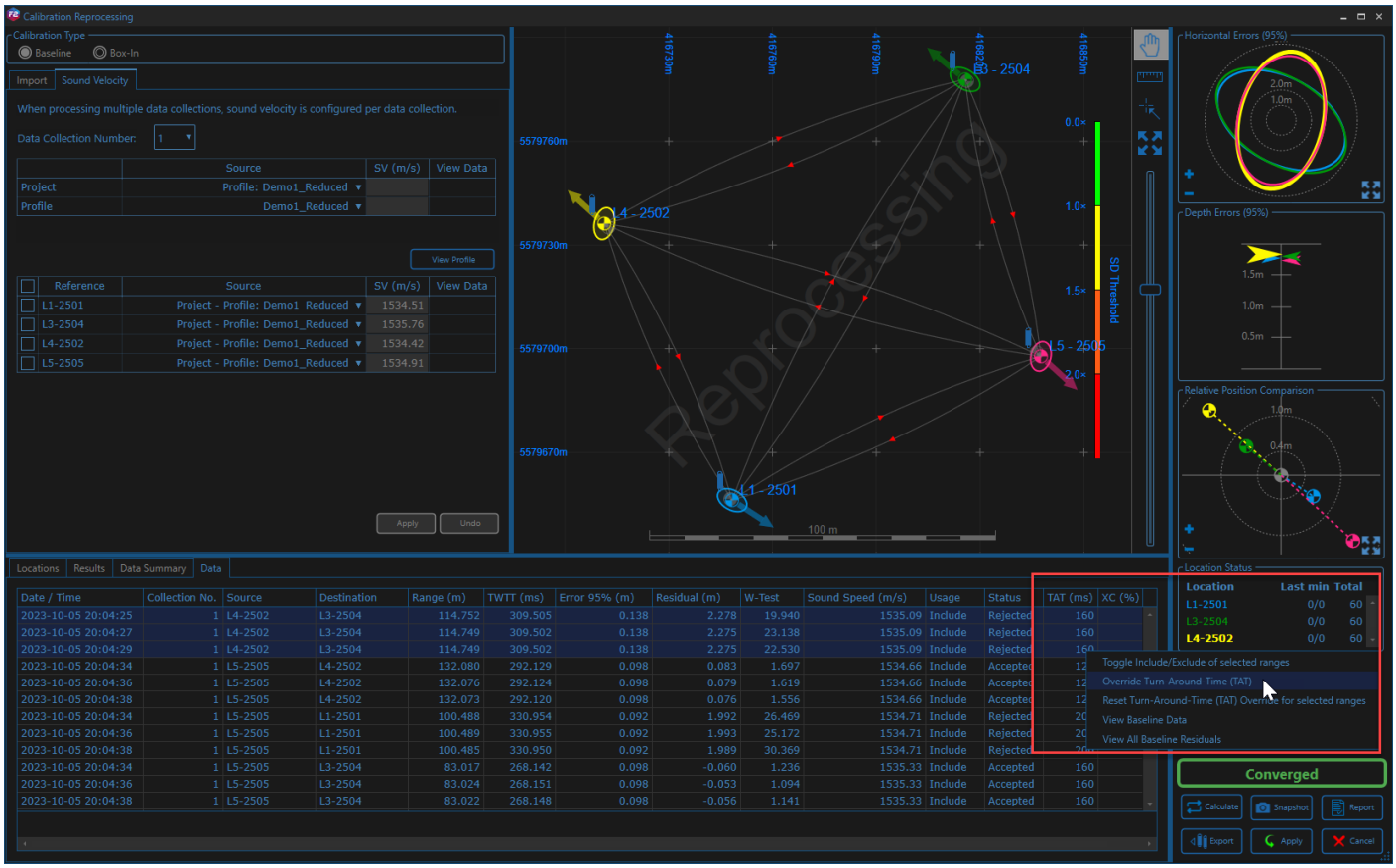
Ref	Functional Area	Description
22858	Calibration Reprocessing	Implement an Eiva NaviModel compatible export of all baseline calibration data.
35023	Instrumentation	Show SSB beacon code in USBL instrument data tab.
35025	Security Key	Update DESKey DK2 drivers to v8.21.24.
35029	User Interface	Allow control 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

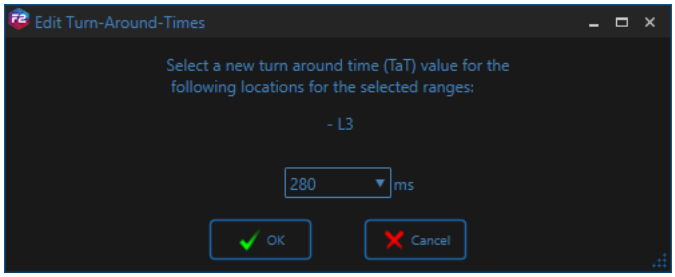
When a PDF report of a baseline calibration is generated, either from the Real-Time Calibration tool or the Calibration Reprocessing tool, an XML file is now created and saved in the same directory as the PDF report. This file contains all the necessary information for the baseline calibration to be 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

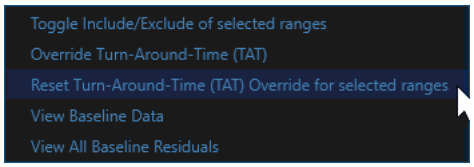
It is now possible to override turn-around-times associated with baselines if it is known that an incorrect value has been recorded. To do this, select one or more baselines in the **Data** tab in the **Calibration Reprocessing** tool, and right click on the **TAT (ms)** column. Select **Override Turn-Around-Time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



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

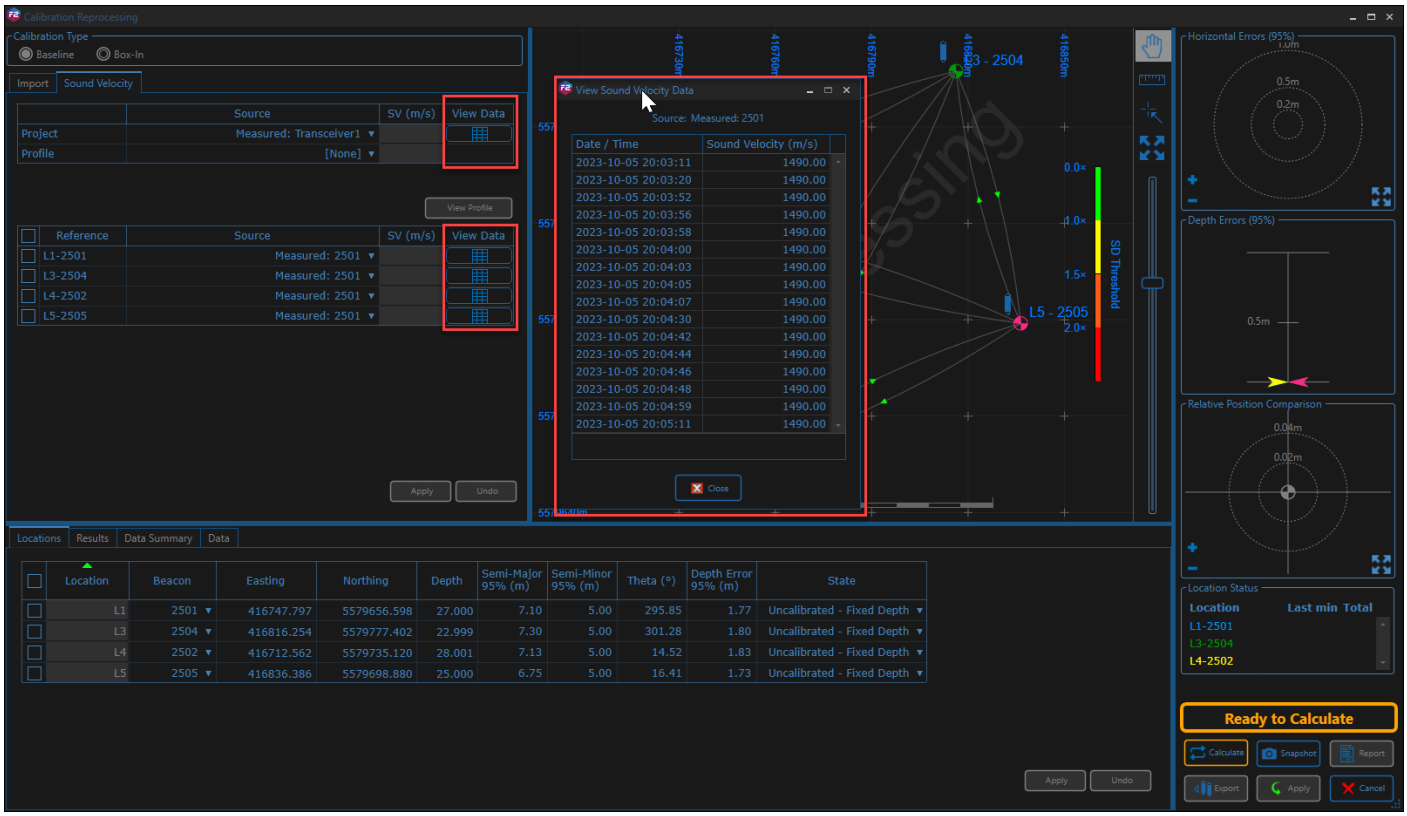


Any changes made via this method can be reset by reselecting the baseline ranges, right clicking on the **TAT (ms)** column, and selecting **Reset Turn-Around-Time (TAT) Override for selected ranges.**



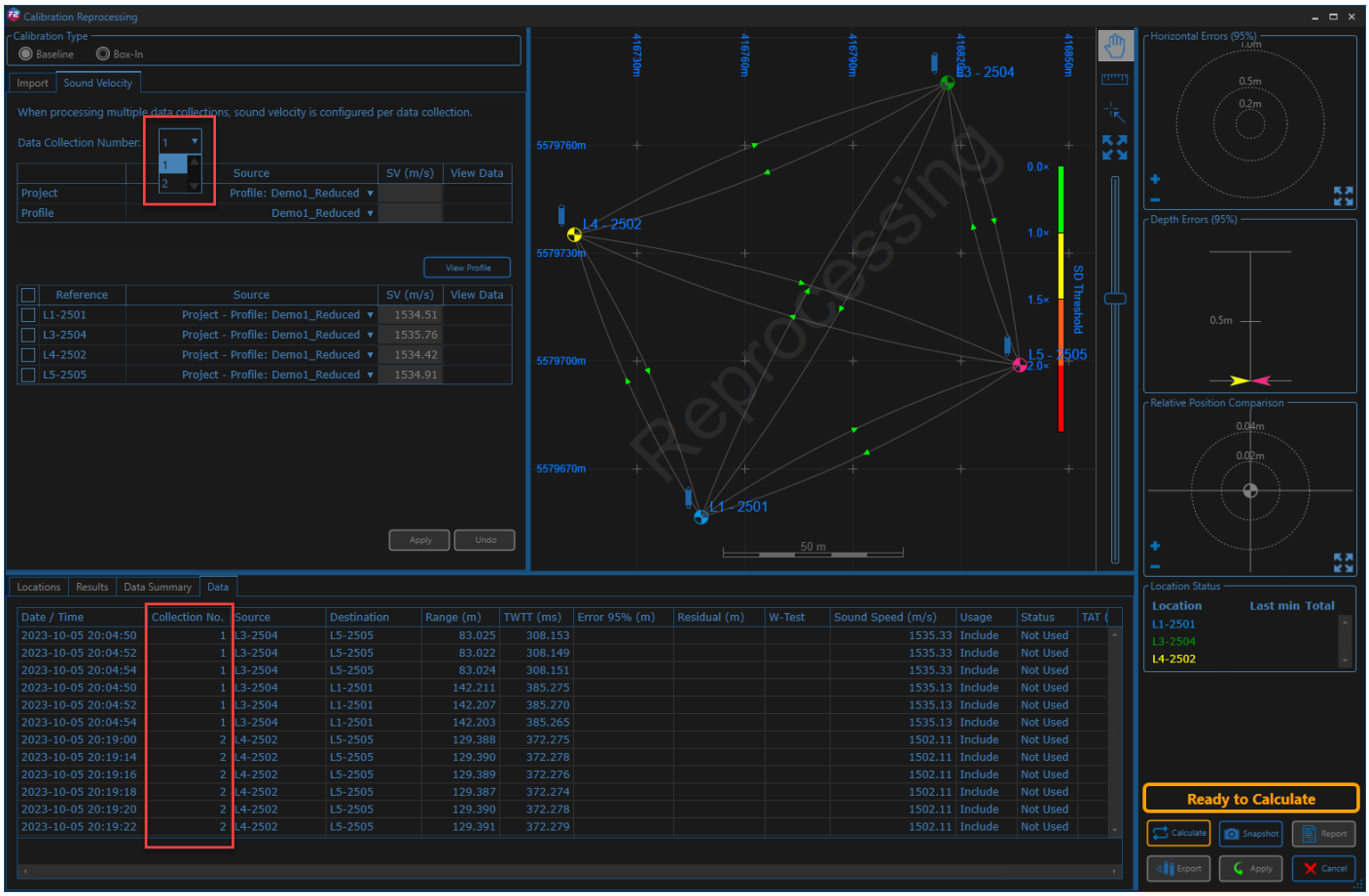
35045 Provide Tabulated Historic Sound Velocity Data for Sources During Calibration Reprocessing

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

Functional Area	Ref	Description
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
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

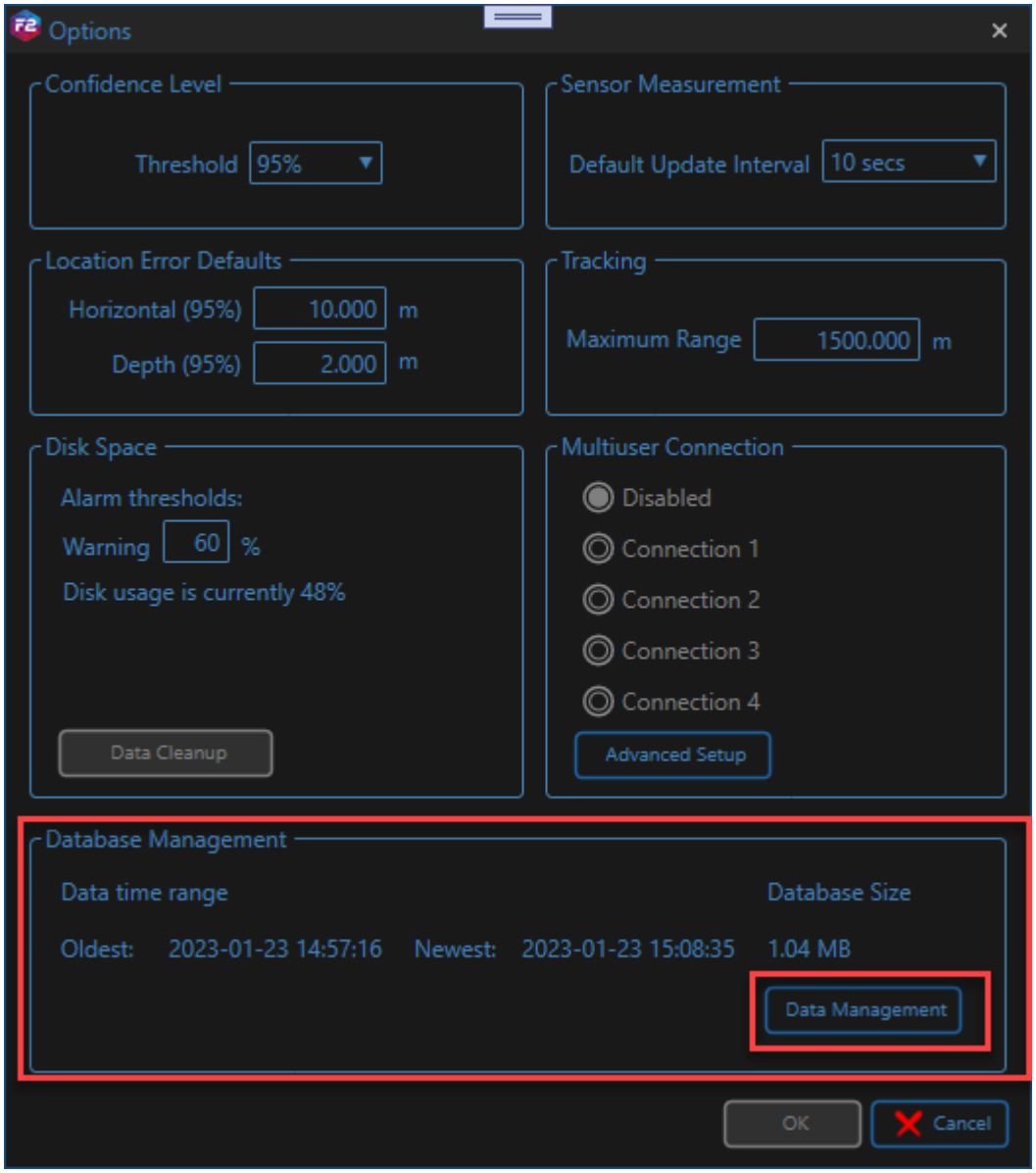
Ref	Functional Area	Description
34897	Instrumentation	Adds decoder for WINSON telegrams providing depth information.
34898	Instrumentation	Enables logging of new INS diagnostic messages for use in post-processing
34899	Instrumentation	Updated default values for some INS parameters in SPRINT configuration 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

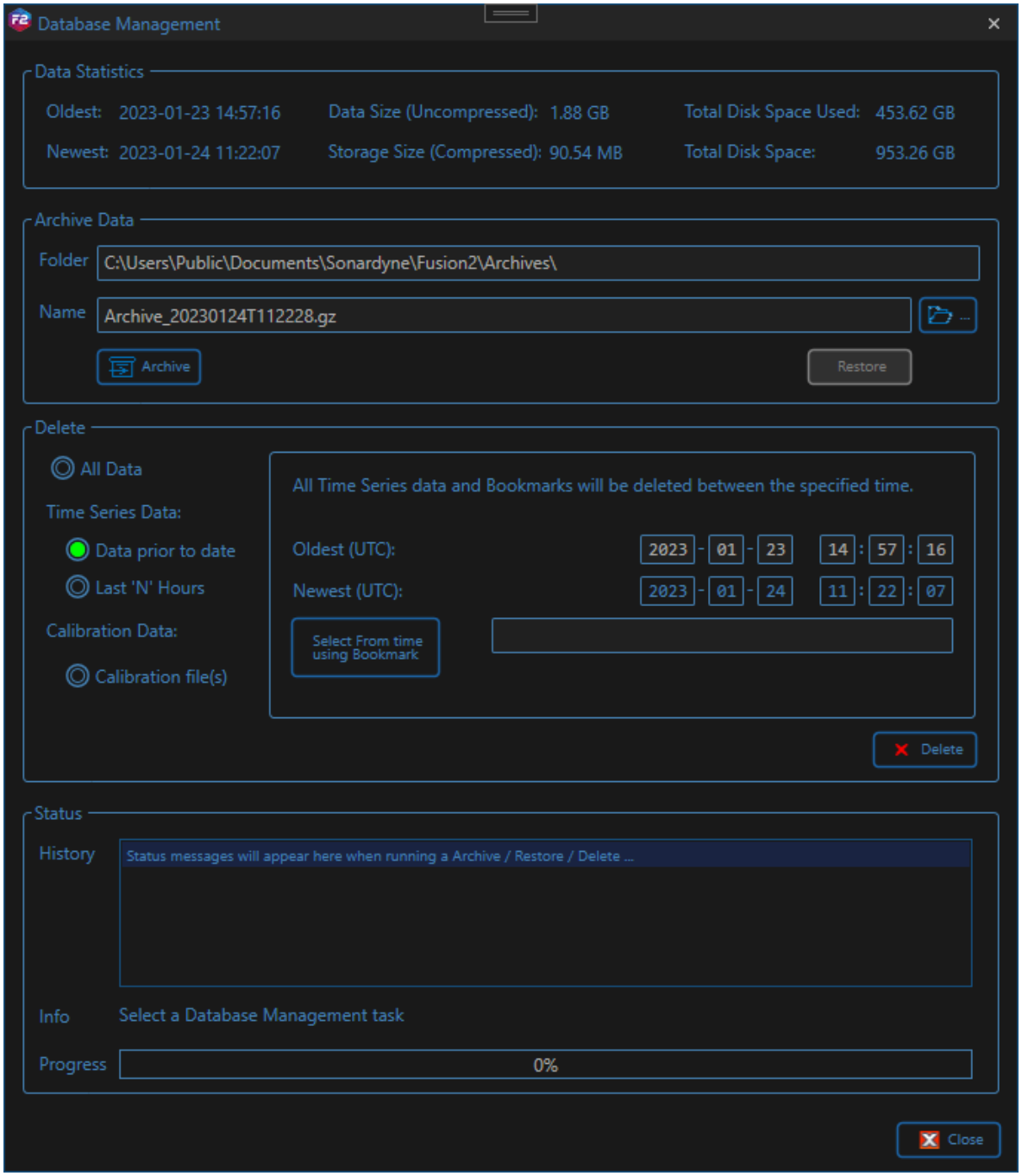
More advanced tools for the management of the MongoDB database to which all Fusion2 data is logged are now provided. The new capabilities allow the user to:

- 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.

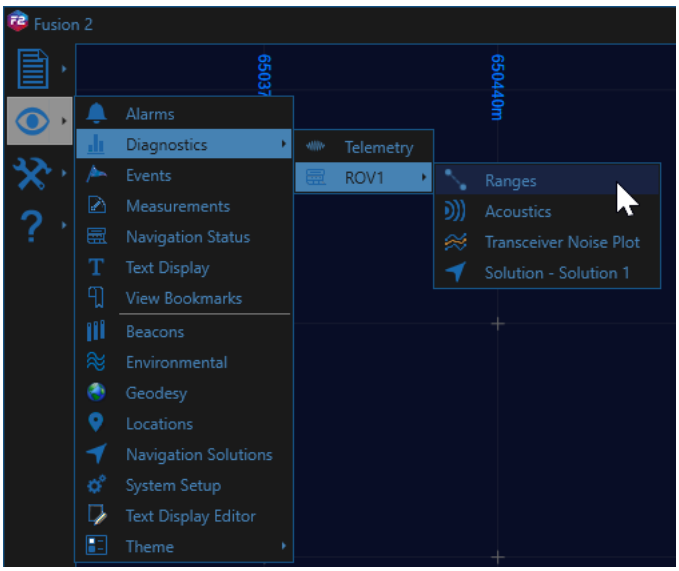

Options
Confidence Level
Threshold 95%
Sensor Measurement
Default Update Interval 10 secs
Location Error Defaults
Horizontal (95%) 10.000 m
Depth (95%) 2.000 m
Tracking
Maximum Range 1500.000 m
Disk Space
Alarm thresholds:
Warning 60 %
Disk usage is currently 48%
Data Cleanup
Multiuser Connection
Disabled
Connection 1
Connection 2
Connection 3
Connection 4
Advanced Setup
Database Management
Data time range
Database Size
Oldest: 2023-01-23 14:57:16 Newest: 2023-01-23 15:08:35 1.04 MB
Data Management
OK
Cancel

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

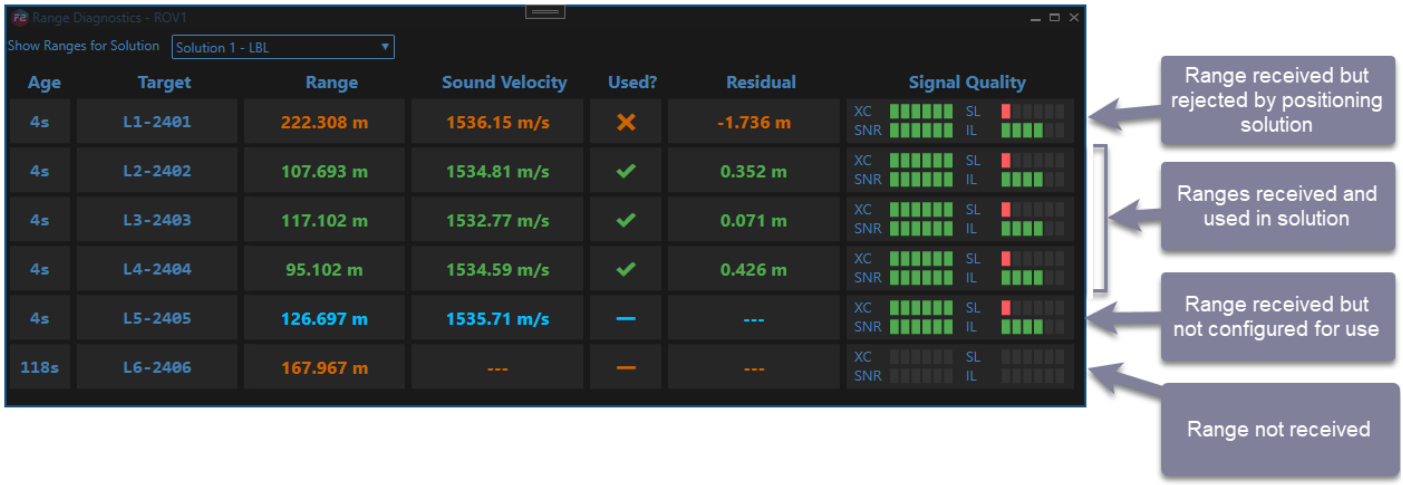


34874 New Range Diagnostics Tool

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

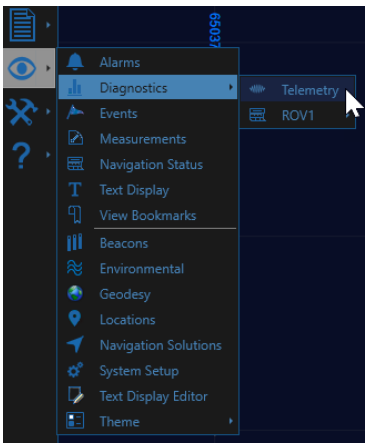


The tool displays information about each acoustic range which is expected to be received by the transceiver on the selected vehicle, and their use in the selected positioning solution. The solution for which information is displayed can be changed using the drop-down menu at the top of the tool window.



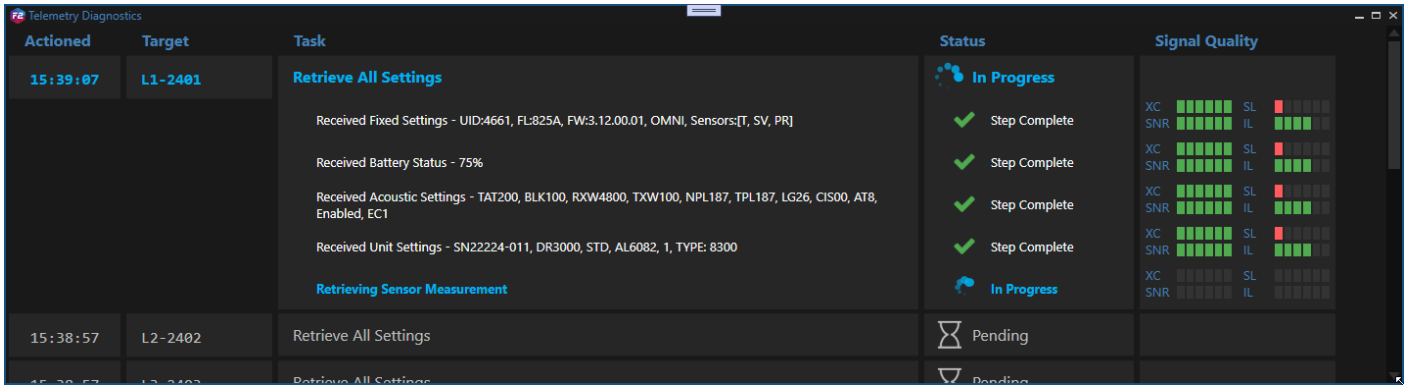
34877 New Telemetry Diagnostics Tool

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

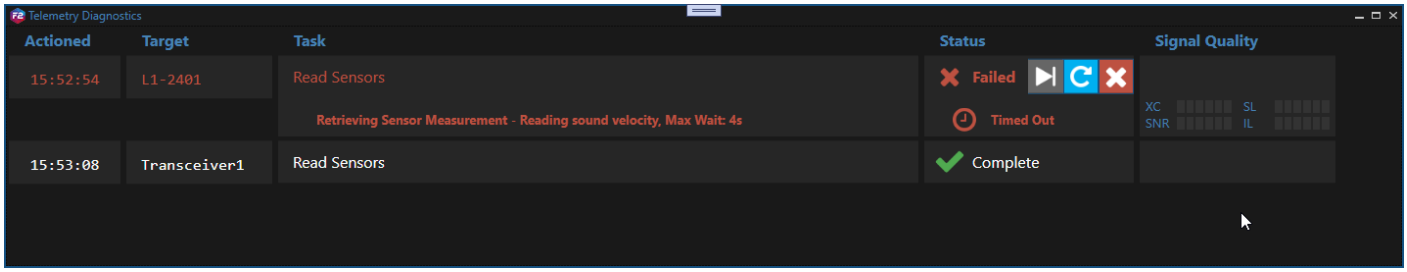


Alternatively, the tool can be opened by clicking on the popup telemetry indicator which appears when telemetry tasks are being carried out.

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.

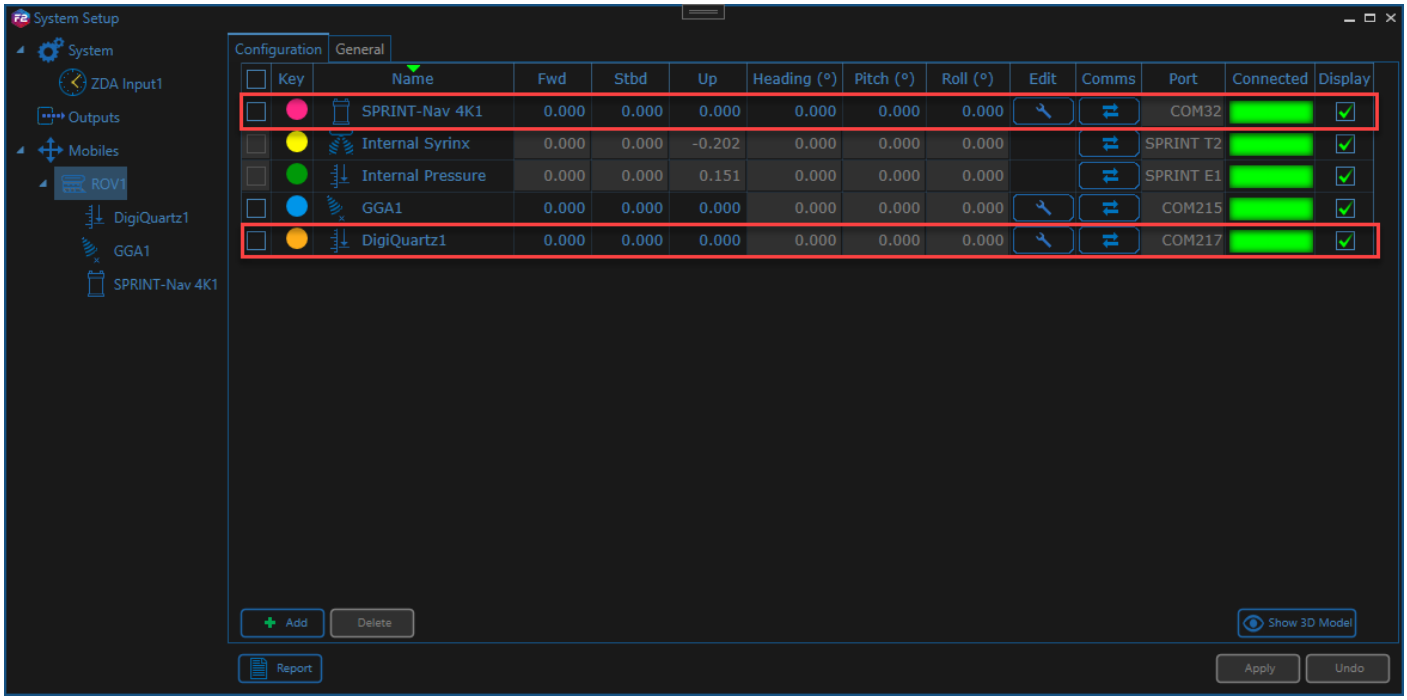


A history of the acoustic telemetry tasks displayed in this tool is automatically recorded to file for further analysis if required. These files can be found in **C:\Users\Public\Documents\Sonardyne\Fusion2\LogFiles\TelemetryDiagnosticsLog**.

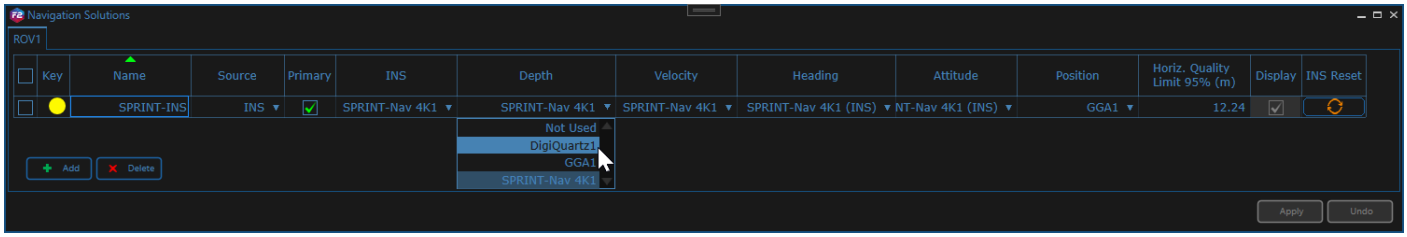
34900 Allow the use of an external depth sensor with a SPRINT-Nav

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:

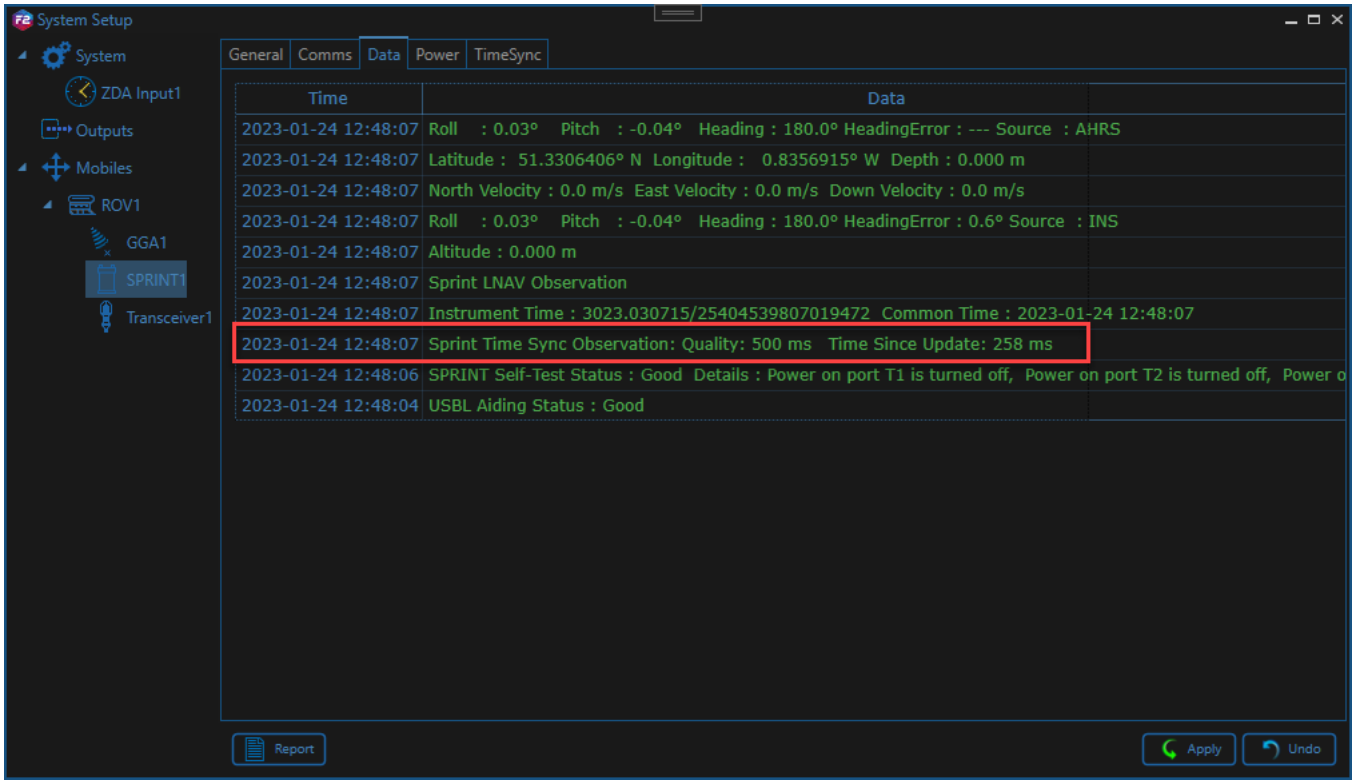


The desired depth sensor should be selected for use in the appropriate solution in the Navigation Solutions configuration window:



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.

Functional Area	Ref	Description
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.
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.

Functional Area	Ref	Description
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:

24/7 Emergency Helpline

T. +44 (0) 1252 877600

Email Support

support@sonardyne.com

Website

www.sonardyne.com