



Fusion 2 Release Notes 2.05.07

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2.05.07

Release Summary

This software release allows Fusion 2 to successfully convert a position, from a geographic WGS 84 position, to a UTM Zone 30N projected position such as 'ED50 / UTM Zone 30N'.

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 |
|-----|-----------------|-------------|
| | | |
| | | |

Bug Fixes

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

| Ref | Functional Area | Description |
|--------------|-----------------|---|
| 36354, 36448 | Geodesy | Allow successful position conversions from geographic CRS 'WGS 84' to projected CRS 'ED50/UTM Zone 30N' |
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| | | |

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.

2.05.06

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 |

| Ref | Functional Area | Description |
|-----|-----------------|-------------|
| | | |
| | | |
| | | |

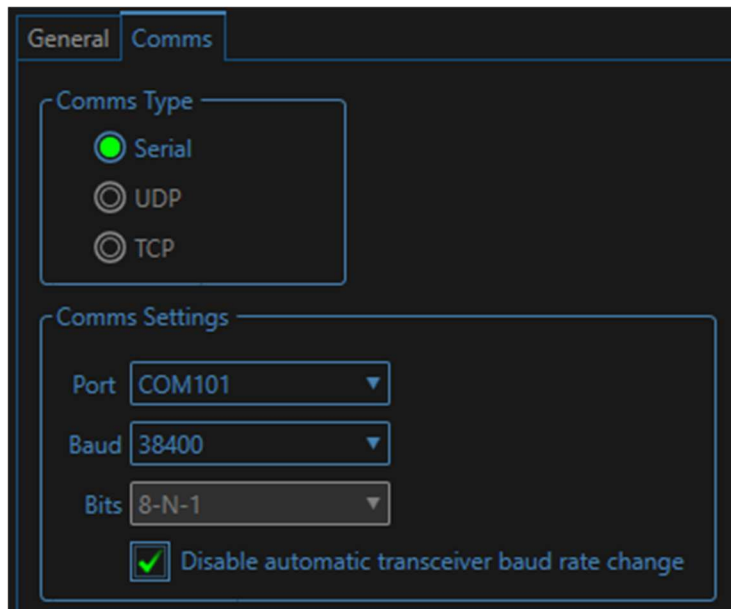
36150 Add control to prevent automatic baud rate changes

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.



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 |

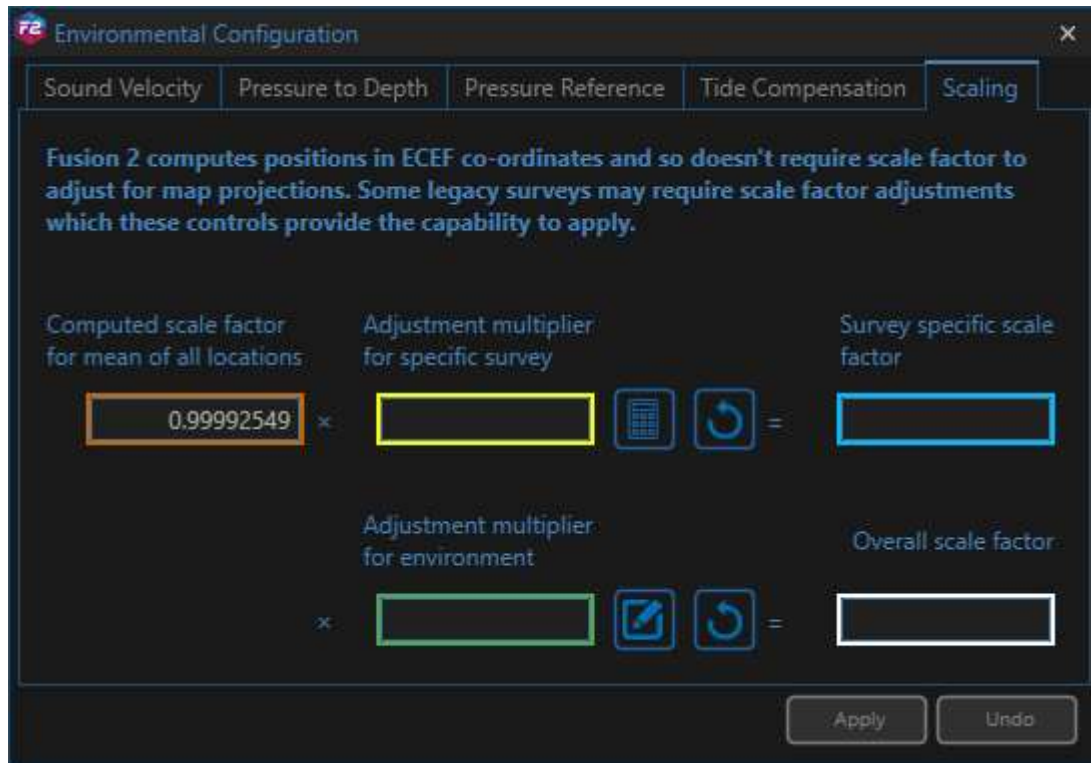
35373 Scale factor display and application

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 |
| 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 DVLDP4PD5 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 |
| 35905,35341,35462,35529,35 | All | Stability and usability (Resource monitor warnings) |

| Ref | Functional Area | Description |
|---|-----------------|-------------|
| 631,35638,35845,35849,35869,35870,35873,35882,35883,35885,35958,35967,35970,35972,35982,35985 | | |

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 |
|-------------------------------------|------------------------|
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| SPRINT Firmware | 3.07.00.2139 |
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| 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 |
|-----|-----------------|-------------|
| | | |

| 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

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| 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.

The screenshot shows the 'Range Test' application window. At the top, there are controls for 'Select the ranges source' (ROV1 - Transceiver1), 'Stop after' (10 measurements), 'Select the ranges destination' (L3-2403), and 'Maximum Range' (1000 m). Below these are 'Start' and 'Clear' buttons, and a 'Collection Complete' status indicator.

| Include | Date / Time | Range | Travel Time | Sound Velocity | Signal Quality |
|-------------------------------------|---------------------|-----------|-------------|----------------|---|
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:50 | 133.650 m | 500.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:51 | 134.392 m | 501.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:52 | 134.392 m | 501.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:53 | 134.392 m | 501.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:54 | 134.392 m | 501.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:55 | 135.135 m | 502.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:56 | 135.135 m | 502.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:57 | 135.135 m | 502.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:58 | 135.878 m | 503.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |
| <input checked="" type="checkbox"/> | 2024-07-29 15:21:59 | 135.878 m | 503.000 ms | 1485.00 m/s | dBV: [Progress Bar] XC: [Progress Bar] SNR: [Progress Bar] IL: [Progress Bar] |

Summary statistics at the bottom: 10/10 Ranges, Average Range: 134.838 m, Standard Deviation: 0.681 m. An 'Export...' button is also visible.

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 |
| 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. |

| Functional Area | Ref | Description |
|-----------------|--|--|
| 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 |
| 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, | Performance and stability improvements (39 changes) |

| Functional Area | Ref | Description |
|-----------------|---|-------------|
| | 35417, 35418, 35421, 35423, 35441, 35446, 35179 | |

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.

2.05.02

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

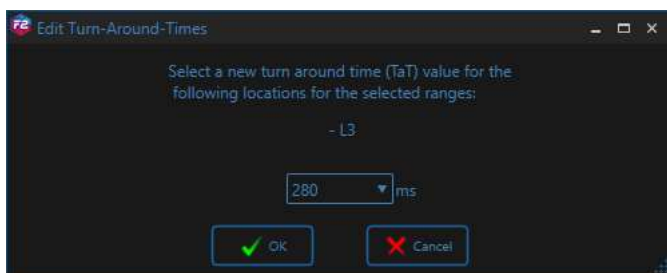
When a PDF report of a baseline calibration is generated, either from the Real-Time Calibration tool or the Calibration Reprocessing tool, an XML file is now created and saved in the same directory as the PDF report. This file contains all the necessary information for the baseline calibration to be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

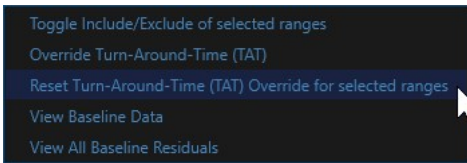
It is now possible to override turn-around-times associated with baselines if it is known that an incorrect value has been recorded. To do this, select one or more baselines in the **Data** tab in the **Calibration Reprocessing** tool, and right click on the **TAT (ms)** column. Select **Override Turn-Around-Time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

| Date / Time | Collection No. | Source | Destination | Range (m) | TWTT (ms) | Error 95% (m) | Residual (m) | W-Test | Sound Speed (m/s) | Usage | Status | TAT (ms) | XC (%) |
|---------------------|----------------|---------|-------------|-----------|-----------|---------------|--------------|--------|-------------------|---------|----------|----------|--------|
| 2023-10-05 20:04:25 | 1 | L4-2502 | L3-2504 | 114.752 | 309.505 | 0.138 | 2.278 | 19.940 | 1535.09 | Include | Rejected | 160 | |
| 2023-10-05 20:04:27 | 1 | L4-2502 | L3-2504 | 114.749 | 309.502 | 0.138 | 2.275 | 23.138 | 1535.09 | Include | Rejected | 160 | |
| 2023-10-05 20:04:29 | 1 | L4-2502 | L3-2504 | 114.749 | 309.502 | 0.138 | 2.275 | 22.530 | 1535.09 | Include | Rejected | 160 | |
| 2023-10-05 20:04:34 | 1 | L5-2505 | L4-2502 | 132.080 | 292.129 | 0.098 | 0.083 | 1.697 | 1534.66 | Include | Accepted | 12 | |
| 2023-10-05 20:04:36 | 1 | L5-2505 | L4-2502 | 132.076 | 292.124 | 0.098 | 0.079 | 1.619 | 1534.66 | Include | Accepted | 12 | |
| 2023-10-05 20:04:38 | 1 | L5-2505 | L4-2502 | 132.073 | 292.120 | 0.098 | 0.076 | 1.556 | 1534.66 | Include | Accepted | 12 | |
| 2023-10-05 20:04:34 | 1 | L5-2505 | L1-2501 | 100.488 | 330.954 | 0.092 | 1.992 | 26.469 | 1534.71 | Include | Rejected | 20 | |
| 2023-10-05 20:04:36 | 1 | L5-2505 | L1-2501 | 100.489 | 330.955 | 0.092 | 1.993 | 25.172 | 1534.71 | Include | Rejected | 20 | |
| 2023-10-05 20:04:38 | 1 | L5-2505 | L1-2501 | 100.485 | 330.950 | 0.092 | 1.989 | 30.369 | 1534.71 | Include | Rejected | 20 | |
| 2023-10-05 20:04:34 | 1 | L5-2505 | L3-2504 | 83.017 | 268.142 | 0.098 | -0.060 | 1.236 | 1535.33 | Include | Accepted | 160 | |
| 2023-10-05 20:04:36 | 1 | L5-2505 | L3-2504 | 83.024 | 268.151 | 0.098 | -0.053 | 1.094 | 1535.33 | Include | Accepted | 160 | |
| 2023-10-05 20:04:38 | 1 | L5-2505 | L3-2504 | 83.022 | 268.148 | 0.098 | -0.056 | 1.141 | 1535.33 | Include | Accepted | 160 | |

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.

The screenshot displays the 'Calibration Reprocessing' software interface. The 'Sound Velocity' tab is active, showing a table of calibration data. A 'View Sound Velocity Data' dialog box is open, displaying a list of sound velocity measurements. The 'Locations' tab at the bottom shows a table of location data.

| Reference | Source | SV (m/s) | View Data |
|-----------|----------------|----------|-------------|
| L1-2501 | Measured: 2501 | | [View Data] |
| L3-2504 | Measured: 2501 | | [View Data] |
| L4-2502 | Measured: 2501 | | [View Data] |
| L5-2505 | Measured: 2501 | | [View Data] |

| Date / Time | Sound Velocity (m/s) |
|---------------------|----------------------|
| 2023-10-05 20:03:11 | 1490.00 |
| 2023-10-05 20:03:20 | 1490.00 |
| 2023-10-05 20:03:52 | 1490.00 |
| 2023-10-05 20:03:56 | 1490.00 |
| 2023-10-05 20:04:00 | 1490.00 |
| 2023-10-05 20:04:03 | 1490.00 |
| 2023-10-05 20:04:05 | 1490.00 |
| 2023-10-05 20:04:07 | 1490.00 |
| 2023-10-05 20:04:30 | 1490.00 |
| 2023-10-05 20:04:42 | 1490.00 |
| 2023-10-05 20:04:44 | 1490.00 |
| 2023-10-05 20:04:46 | 1490.00 |
| 2023-10-05 20:04:48 | 1490.00 |
| 2023-10-05 20:04:59 | 1490.00 |
| 2023-10-05 20:05:11 | 1490.00 |

| Location | Beacon | Easting | Northing | Depth | Semi-Major 95% (m) | Semi-Minor 95% (m) | Theta (°) | Depth Error 95% (m) | State | |
|--------------------------|--------|---------|------------|-------------|--------------------|--------------------|-----------|---------------------|-------|----------------------------|
| <input type="checkbox"/> | L1 | 2501 | 416747.797 | 5579656.598 | 27.000 | 7.10 | 5.00 | 295.85 | 1.77 | Uncalibrated - Fixed Depth |
| <input type="checkbox"/> | L3 | 2504 | 416816.254 | 5579777.402 | 22.999 | 7.30 | 5.00 | 301.28 | 1.80 | Uncalibrated - Fixed Depth |
| <input type="checkbox"/> | L4 | 2502 | 416712.562 | 5579735.120 | 28.001 | 7.13 | 5.00 | 14.52 | 1.83 | Uncalibrated - Fixed Depth |
| <input type="checkbox"/> | L5 | 2505 | 416836.386 | 5579698.880 | 25.000 | 6.75 | 5.00 | 16.41 | 1.73 | Uncalibrated - Fixed Depth |

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.

The screenshot displays the Calibration Reprocessing tool interface. On the left, the 'Data Collection Number' dropdown is set to 1. Below it, a table shows the configuration for each collection:

| Reference | Source | SV (m/s) | View Data |
|----------------------------------|----------------------------------|----------|-----------|
| <input type="checkbox"/> L1-2501 | Project - Profile: Demo1_Reduced | 1534.51 | |
| <input type="checkbox"/> L3-2504 | Project - Profile: Demo1_Reduced | 1535.76 | |
| <input type="checkbox"/> L4-2502 | Project - Profile: Demo1_Reduced | 1534.42 | |
| <input type="checkbox"/> L5-2505 | Project - Profile: Demo1_Reduced | 1534.91 | |

The central map shows a network of points labeled L1-2501, L3-2504, L4-2502, and L5-2505. A color scale on the right indicates the Sound Velocity (SV) threshold, ranging from 0.0x to 2.0x. The bottom table provides detailed data for each collection:

| Date / Time | Collection No. | Source | Destination | Range (m) | TWTT (ms) | Error 95% (m) | Residual (m) | W-Test | Sound Speed (m/s) | Usage | Status | TAT |
|---------------------|----------------|---------|-------------|-----------|-----------|---------------|--------------|--------|-------------------|---------|----------|-----|
| 2023-10-05 20:04:50 | 1 | L3-2504 | L5-2505 | 83.025 | 308.153 | | | | 1535.33 | Include | Not Used | |
| 2023-10-05 20:04:52 | 1 | L3-2504 | L5-2505 | 83.022 | 308.149 | | | | 1535.33 | Include | Not Used | |
| 2023-10-05 20:04:54 | 1 | L3-2504 | L5-2505 | 83.024 | 308.151 | | | | 1535.33 | Include | Not Used | |
| 2023-10-05 20:04:50 | 1 | L3-2504 | L1-2501 | 142.211 | 385.275 | | | | 1535.13 | Include | Not Used | |
| 2023-10-05 20:04:52 | 1 | L3-2504 | L1-2501 | 142.207 | 385.270 | | | | 1535.13 | Include | Not Used | |
| 2023-10-05 20:04:54 | 1 | L3-2504 | L1-2501 | 142.203 | 385.265 | | | | 1535.13 | Include | Not Used | |
| 2023-10-05 20:19:00 | 2 | L4-2502 | L5-2505 | 129.388 | 372.275 | | | | 1502.11 | Include | Not Used | |
| 2023-10-05 20:19:14 | 2 | L4-2502 | L5-2505 | 129.390 | 372.278 | | | | 1502.11 | Include | Not Used | |
| 2023-10-05 20:19:16 | 2 | L4-2502 | L5-2505 | 129.389 | 372.276 | | | | 1502.11 | Include | Not Used | |
| 2023-10-05 20:19:18 | 2 | L4-2502 | L5-2505 | 129.387 | 372.274 | | | | 1502.11 | Include | Not Used | |
| 2023-10-05 20:19:20 | 2 | L4-2502 | L5-2505 | 129.390 | 372.278 | | | | 1502.11 | Include | Not Used | |
| 2023-10-05 20:19:22 | 2 | L4-2502 | L5-2505 | 129.391 | 372.279 | | | | 1502.11 | Include | Not Used | |

On the right side, there are three error analysis panels: Horizontal Errors (95%), Depth Errors (95%), and Relative Position Comparison. The 'Location Status' panel shows the status of the locations: L1-2501 (Not Used), L3-2504 (Not Used), and L4-2502 (Not Used). At the bottom right, there is a 'Ready to Calculate' button and a 'Calculate' button.

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

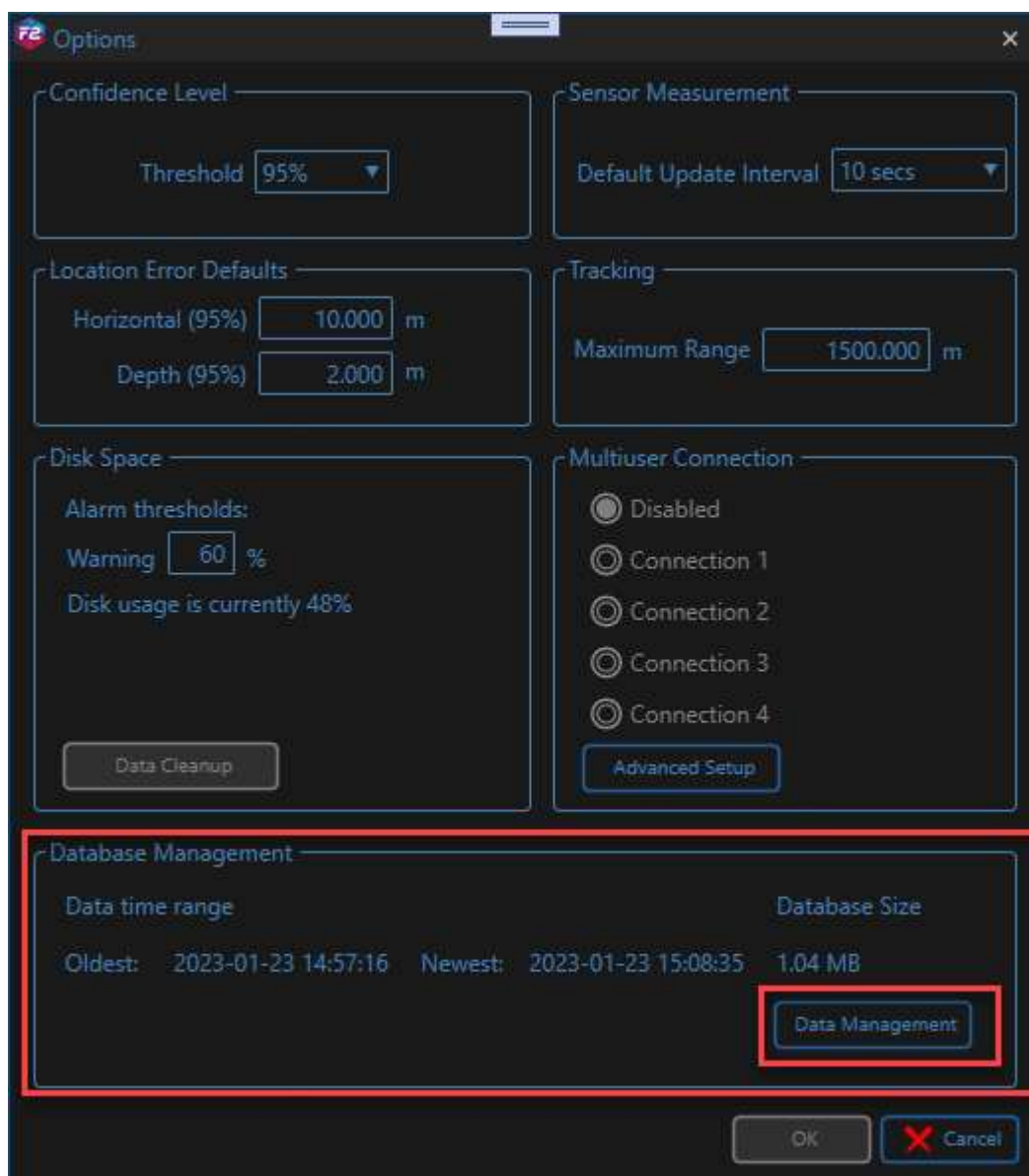
| Ref | Functional Area | Description |
|-------|----------------------------|--|
| 34845 | Instrumentation | Adds a warning to the use if ZDA time-sync input is detected to be incompatible with current settings |
| 34857 | User Interface | Adds acoustic diagnostics information to ranges in measurements 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.

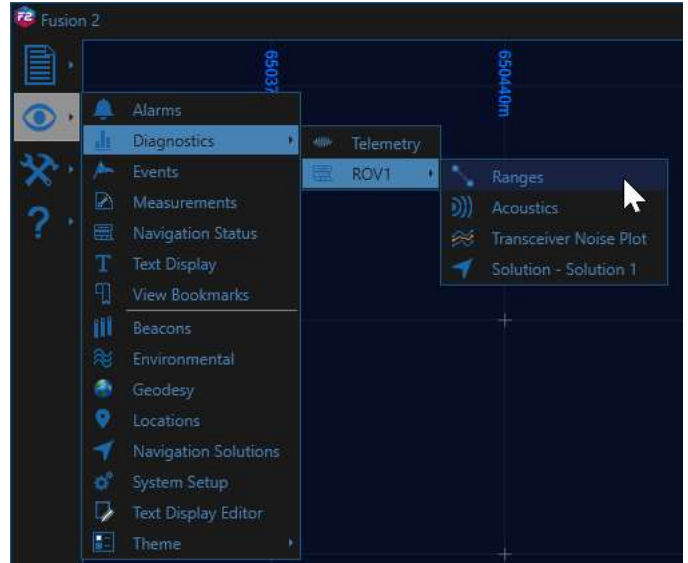
The screenshot shows the 'Database Management' window with the following sections:

- Data Statistics:** Oldest: 2023-01-23 14:57:16, Data Size (Uncompressed): 1.88 GB, Total Disk Space Used: 453.62 GB; Newest: 2023-01-24 11:22:07, Storage Size (Compressed): 90.54 MB, Total Disk Space: 953.26 GB.
- Archive Data:** Folder: C:\Users\Public\Documents\Sonardyne\Fusion2\Archives\; Name: Archive_20230124T112228.gz; Buttons: Archive, Restore.
- Delete:** Radio buttons for All Data, Time Series Data (Data prior to date, Last 'N' Hours), and Calibration Data (Calibration file(s)). A central box contains: 'All Time Series data and Bookmarks will be deleted between the specified time.' with input fields for Oldest (UTC) [2023-01-23 14:57:16] and Newest (UTC) [2023-01-24 11:22:07], and a 'Select From time using Bookmark' button. A 'Delete' button is at the bottom right.
- Status:** History: Status messages will appear here when running a Archive / Restore / Delete ...; Info: Select a Database Management task; Progress: 0%.

Buttons for 'Delete' and 'Close' are visible at the bottom right of the window.

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.

| Age | Target | Range | Sound Velocity | Used? | Residual | Signal Quality |
|------|---------|-----------|----------------|-------|----------|-----------------------------------|
| 4s | L1-2401 | 222.308 m | 1536.15 m/s | ✗ | -1.736 m | XC SNR [100%] SL [100%] IL [100%] |
| 4s | L2-2402 | 107.693 m | 1534.81 m/s | ✓ | 0.352 m | XC SNR [100%] SL [100%] IL [100%] |
| 4s | L3-2403 | 117.102 m | 1532.77 m/s | ✓ | 0.071 m | XC SNR [100%] SL [100%] IL [100%] |
| 4s | L4-2404 | 95.102 m | 1534.59 m/s | ✓ | 0.426 m | XC SNR [100%] SL [100%] IL [100%] |
| 4s | L5-2405 | 126.697 m | 1535.71 m/s | — | --- | XC SNR [100%] SL [100%] IL [100%] |
| 118s | L6-2406 | 167.967 m | --- | — | --- | XC SNR [100%] SL [100%] IL [100%] |

← Range received but rejected by positioning solution

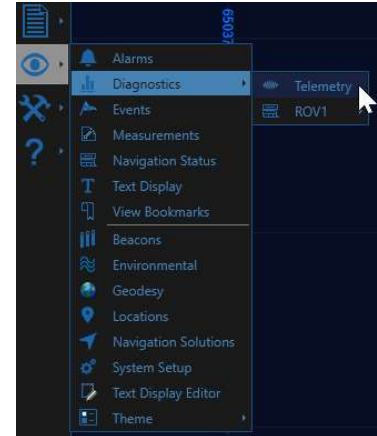
← Ranges received and used in solution

← Range received but not configured for use

← Range not received

34877 New Telemetry Diagnostics Tool

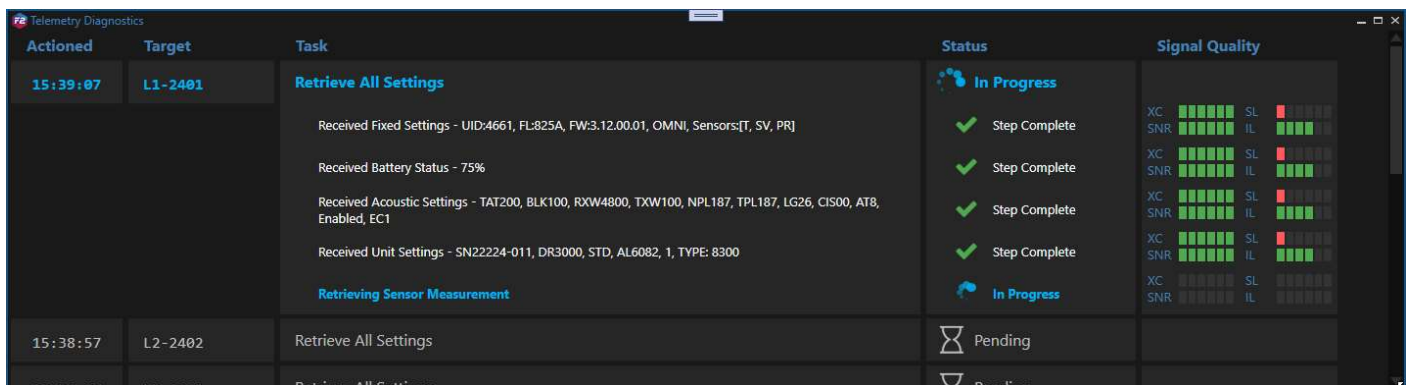
A new telemetry diagnostics tool is available and can be opened via the **View > Diagnostics > Telemetry** menu item.



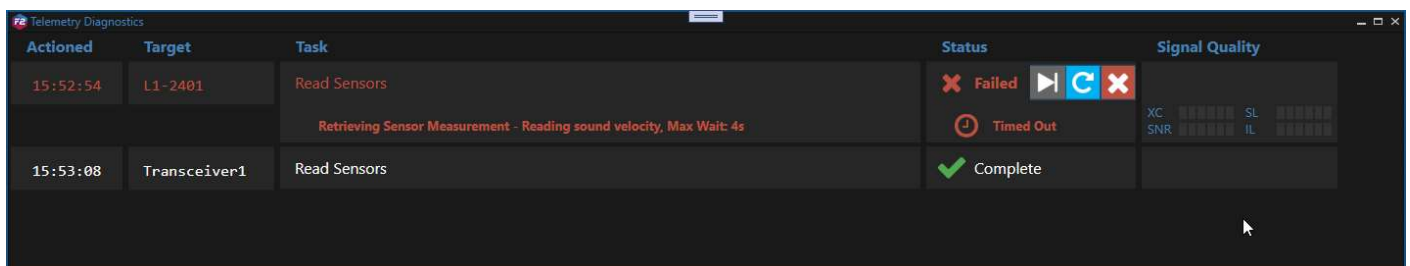
Alternatively, the tool can be opened by clicking on the popup telemetry indicator which appears when telemetry tasks are being carried out.



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.

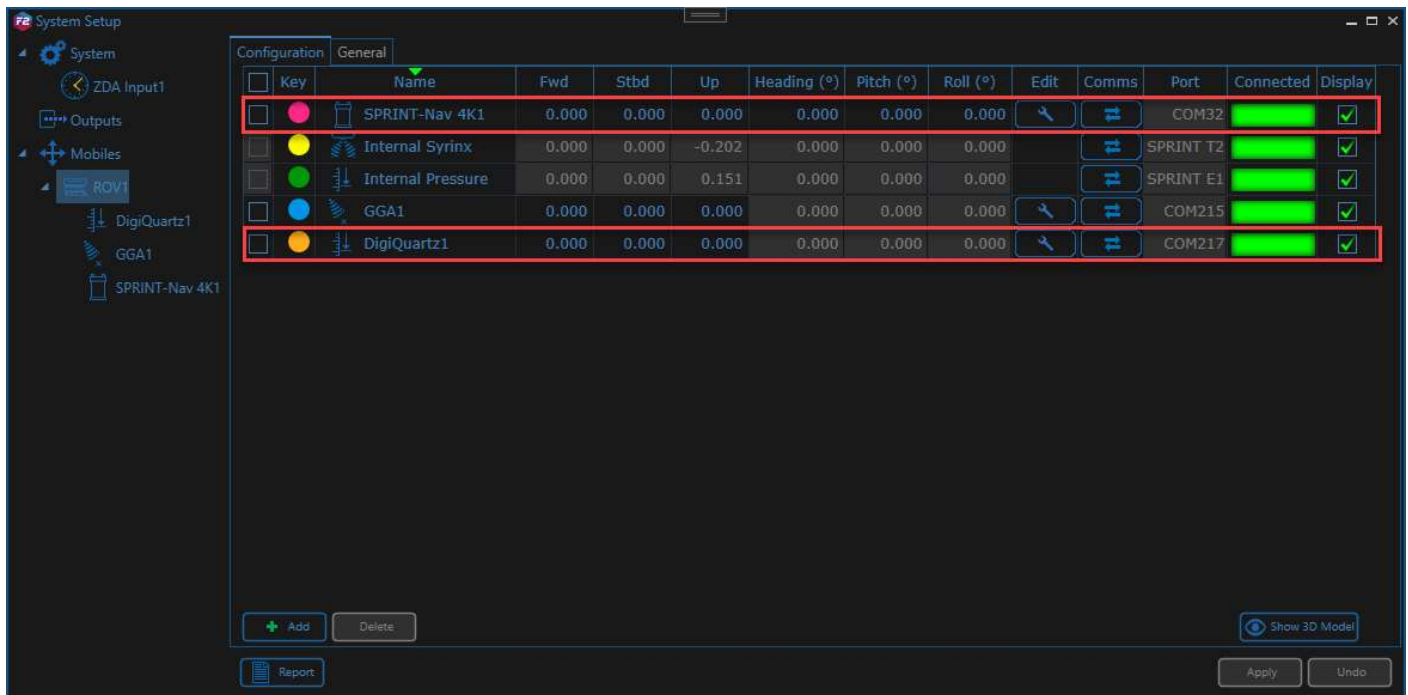


A history of the acoustic telemetry tasks displayed in this tool is automatically recorded to file for further analysis if required. These files can be found in **C:\Users\Public\Documents\Sonardyne\Fusion2\LogFiles\TelemetryDiagnosticsLog**.

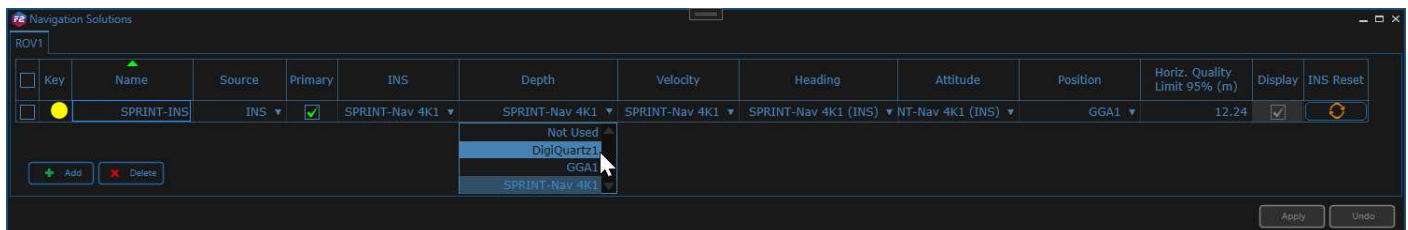
34900 Allow the use of an external depth sensor with a SPRINT-Nav

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:

The screenshot shows the 'System Setup' window with the 'Data' tab selected. The 'SPRINT' component is highlighted in the left sidebar. The data table contains the following entries:

| Time | Data |
|---------------------|--|
| 2023-01-24 12:48:07 | Roll : 0.03° Pitch : -0.04° Heading : 180.0° HeadingError : --- Source : AHRS |
| 2023-01-24 12:48:07 | Latitude : 51.3306406° N Longitude : 0.8356915° W Depth : 0.000 m |
| 2023-01-24 12:48:07 | North Velocity : 0.0 m/s East Velocity : 0.0 m/s Down Velocity : 0.0 m/s |
| 2023-01-24 12:48:07 | Roll : 0.03° Pitch : -0.04° Heading : 180.0° HeadingError : 0.6° Source : INS |
| 2023-01-24 12:48:07 | Altitude : 0.000 m |
| 2023-01-24 12:48:07 | Sprint LNAV Observation |
| 2023-01-24 12:48:07 | Instrument Time : 3023.030715/25404539807019472 Common Time : 2023-01-24 12:48:07 |
| 2023-01-24 12:48:07 | Sprint Time Sync Observation: Quality: 500 ms Time Since Update: 258 ms |
| 2023-01-24 12:48:06 | SPRINT Self-Test Status : Good Details : Power on port T1 is turned off, Power on port T2 is turned off, Power o |
| 2023-01-24 12:48:04 | USBL Aiding Status : Good |

Buttons at the bottom of the window include 'Report', 'Apply', and 'Undo'.

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

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