



# *FGPS Limited*

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## SeisPos Release Notes

Refer to the [user manual](#) for details of new features.

Date: 17/09/2024

Version: 24.01

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Regression: reinstated plot bookmarks in final report. |

Date: 10/09/2024

Version: 24.00

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Dynamic plot sub-selections now saved.  |
| 2   | Network Adjust | Bugfix: NFH nodes were not being excluded from main network when auto-configuring for OBN Source. |



Date: 06/09/2024

Version: 23.99

| No. | Module  | Description   |
|-----|---------|---|
| 1   | Reports | Added option to select grid or ellipsoid distance calculation for node across/along plots. Using the grid option greatly improves performance when there are a large number of waypoints. |
| 2   | Output  | Inhibit header from file check if output format is P1/11.   |
| 3   | Output  | Corrected source IDs for gun/NFH/gun depth records in P190 when input format is P2/11.  |

Date: 28/08/2024

Version: 23.98

| No. | Module  | Description                           |
|-----|---------|---------------------------------------|
| 1   | Reports | Corrected handling of line selection. |



Date: 23/08/2024

Version: 23.97

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Network Adjust | Reduce SDs for derived observations on stretch sections.                             |
| 2   | P1/11 Output   | Now uses installed ref EPSG DB version in CRS records.                               |
| 3   | P1/11 Output   | Corrected calculation of rx quality stats.   |
| 4   | Output         | Added new option to replace zero depth sensor values with a specified nominal value. |
| 5   | Reports        | Corrected vessel crab and some adjustment plots.                                     |

Date: 25/04/2024

Version: 23.96

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Input   | Improved handling of badly formatted dates in P2/94 E1000 records.   |
| 2   | Output  | Corrected handling of firing source when evaluating source position. |
| 3   | Reports | Gun array plots can now have data filtered on shots fired.           |



Date: 25/04/2024

Version: 23.95

| No. | Module             | Description   |
|-----|--------------------|---|
| 1   | Input              | Improved node sorting in database.  |
| 2   | Database           | Search and Find dialogs can now be opened using CTRL-F and CTRL-R shortcuts respectively, F3 for Find Next. |
| 3   | Network Adjustment | Corrected issue with some time series plots that prevented the adjustment from running.                     |
| 4   | Output             | Added option to filter gun fired events when evaluating source position.                                    |
| 5   | Output             | Bathymetry origin now defaults to "Record Position".  |
| 6   | Output             | SPS line numbers can now have an offset applied, this can be different for each source.                     |

Date: 08/04/2024

Version: 23.94

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Input   | Improved ordering of user defined nodes for P2/11 files.                   |
| 2   | Output  | P1/11 files can now be output in format version 2.0.                       |
| 3   | Reports | Improved handling of waypoints in some cases (affected some source plots). |



Date: 31/01/2024

Version: 23.93

| No. | Module  | Description                                 |
|-----|---------|---|
| 1   | Reports | Removed extra underscore from CSV filename. |

Date: 30/01/2024

Version: 23.92

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Added file naming options, includes custom prefix. |

Date: 26/01/2024

Version: 23.91

| No. | Module | Description  |
|-----|--------|--|
| 1   | Output | Update SPS extended fields for source repeatability to handle unequal array Y offsets. |



Date: 18/01/2024

Version: 23.90

| No. | Module | Description                              |
|-----|--------|--|
| 1   | Output | Improved interpolation of missing shots. |

Date: 12/01/2024

Version: 23.89

| No. | Module      | Description   |
|-----|-------------|---|
| 1   | Application | Main window position now remembered on startup.         |
| 2   | SPS Output  | Corrected JD when project covers two or more year ends. |

Date: 05/01/2024

Version: 23.88

| No. | Module    | Description  |
|-----|-----------|--|
| 1   | Database  | When loading all defaults, now correctly load changes only from tables that are checked. |
| 2   | Utilities | Improved handling of P2/11 concatenation.  |



Date: 20/12/2023

Version: 23.87

| No. | Module | Description   |
|-----|--------|---|
| 1   | NEW    | Disk Usage Monitor: This provides a warning message at the bottom of the main window when a given threshold is reached. The threshold defaults to 95% but can be adjusted as appropriate. |
| 2   | Output | Duplicate shots will now be output if the "ignore duplicate shots" option is not checked.   |

Date: 15/12/2023

Version: 23.86

| No. | Module      | Description  |
|-----|-------------|--|
| 1   | P111 Output | Corrected issue where sometimes position records were written with the incorrect short name. |

Date: 13/12/2023

Version: 23.85

| No. | Module             | Description  |
|-----|--------------------|--|
| 1   | Input              | Improved handling of FPD observations.                                   |
| 2   | Network Adjustment | Improved detection of comparison nodes without sufficient data to solve. |



Date: 29/11/2023

Version: 23.84

| No. | Module | Description  |
|-----|--------|--|
| 1   | Input  | When reading the WGS84 CRS from P2 files, the datum type is now set to "ensemble" as per EPSG v10. |
| 2   | Output | P1/11 outputs now have geodetic records in the recommended order.                                  |

Date: 18/11/2023

Version: 23.83

| No. | Module           | Description   |
|-----|------------------|---|
| 1   | Input            | Updates to reading coordinate frame rotations from P2/94.                                     |
| 2   | Database, Output | New option to specify individual shot point index in Source Fired Event table for SPS output. |

Date: 10/11/2023

Version: 23.82

| No. | Module   | Description                                   |
|-----|----------|---|
| 1   | Database | Updates to Triggerfish P Cable Modifications. |





Date: 09/11/2023

Version: 23.81

| No. | Module | Description  |
|-----|--------|--|
| 1   | Output | Corrected handling of Julian day number in SPS files with hires timestamp. |

Date: 06/11/2023

Version: 23.80

| No. | Module | Description   |
|-----|--------|---|
| 1   | Output | Corrected handling of Julian day number in SPS files. |



Date: 27/10/2023

Version: 23.79

| No. | Module           | Description  |
|-----|------------------|--|
| 1   | Input / Database | Added option to import First Break Picks from a RadEx Pro Pick file.   |
| 2   | Input            | Improved waypoint handling when P2/94 SOL is within other waypoints.   |
| 3   | P2/11 Input      | Improved handling of FPD obs.  |
| 4   | Network Adjust   | Now forces at least two iterations when auto-scale weights is enabled.   |
| 5   | Output           | Allow tidal reductions to be performed when depth from transducer.   |
| 6   | Multiplot        | Now allows saving of data from any number of plots to a single CSV file.   |
| 7   | Report Plots     | Now uses all depth sensors for P Cable streamer depth statistics plot.   |
| 8   | Report Plots     | Improved waypoint handling when P2/94 SOL is within other waypoints (fixes issue with alongline distance calculation). |

Date: 14/10/2023

Version: 23.78

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Network Adjust | Handle field positioning data recorded as geographicals. |



Date: 01/09/2023

Version: 23.77

| No. | Module | Description                                    |
|-----|--------|--|
| 1   | Output | Fixed issue with handling more than 5 sources. |

Date: 30/08/2023

Version: 23.76

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Fixed issue with missing data in gun array separation plots. |

Date: 28/08/2023

Version: 23.75

| No. | Module | Description  |
|-----|--------|--|
| 1   | Output | Fixed crash when clicking Close button after outputting files. |



Date: 24/08/2023

Version: 23.74

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Fixed issue when creating plots if only CSV output selected. |

Date: 21/08/2023

Version: 23.73

| No. | Module | Description  |
|-----|--------|--|
| 1   | Output | Grid NDP now applied to N1 preplot records.                      |
| 2   | Output | Added option to change NDP for depth values in P1/11 R1 records. |

Date: 12/08/2023

Version: 23.72

| No. | Module   | Description   |
|-----|----------|---|
| 1   | QC Nodes | Improved handling of multisource preplot with flip-flops. |
| 2   | Reports  | Improved handling of multisource preplot with flip-flops. |



Date: 11/08/2023

Version: 23.71

| No. | Module   | Description  |
|-----|----------|--|
| 1   | Output   | Added option to derive source position using different methods, some including the use of gun firing data. |
| 2   | Output   | Added option to write point codes from source fired event table to P111 record extension field.            |
| 3   | QC Nodes | Improved handling of multisource preplot with flip-flops.  |
| 4   | Reports  | Improved handling of multisource preplot with flip-flops.  |
| 5   | Reports  | Added option to include line name in CSV files.  |

Date: 01/08/2023

Version: 23.70

| No. | Module          | Description                                  |
|-----|-----------------|--|
| 1   | Network Diagram | Fixed crash when trying to show hint window. |



Date: 01/08/2023

Version: 23.69

| No. | Module          | Description   |
|-----|-----------------|---|
| 1   | Database Module | Fixed crash when loading observation defaults if project contains user defined obs types. |
| 2   | Network Diagram | Improved hint window.   |

Date: 17/07/2023

Version: 23.68

| No. | Module  | Description   |
|-----|---------|---|
| 1   | Reports | Plots and CSV files for precondition can now handle P2 files with only 2 shots. |

Date: 15/06/2023

Version: 23.67

| No. | Module   | Description  |
|-----|----------|--|
| 1   | Projects | There is no longer any limit on the number of lines in a project.  |
| 2   | Input    | FPD data may now be imported from P2/11 files (if "Position Observation Type" is "Internally Computed"). |
| 3   | QC       | The user may now interrupt processing.   |



Date: 15/06/2023

Version: 23.66

| No. | Module  | Description   |
|-----|---------|---|
| 1   | Reports | Shot exception report: when deriving the source sequence, now ignores source ids that appear in less than 10% of shots. |

Date: 24/05/2023

Version: 23.65

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Database       | Update P Cable Triggerfish modifications.                             |
| 2   | Network Adjust | PCable catenary derived observations now use range/bearing (was E/N). |



Date: 06/05/2023

Version: 23.64

| No. | Module                         | Description   |
|-----|--------------------------------|---|
| 1   | Network Adjust                 | Bugfix: access violation computing normalised residuals when no observations available. |
| 2   | Network Adjust                 | Updates to gun array handling to better handle triple array.                            |
| 3   | Database Extract Acoustic Data | Bugfix: was attempting to use bad PRH data.   |
| 4   | Database Extract Acoustic Data | Improved parsing of transponder number from node name.                                  |
| 5   | Output                         | Suppress error message when no bathymetric depth for OBS receiver projects.             |

Date: 02/04/2023

Version: 23.63

| No. | Module       | Description                           |
|-----|--------------|---------------------------------------|
| 1   | Report Plots | Bugfix: bug reading network obs data. |





Date: 15/03/2023

Version: 23.62

| No. | Module     | Description   |
|-----|------------|---|
| 1   | Adjustment | Fixed memory issue with very large lines when adjustment completed. |

Date: 14/03/2023

Version: 23.61

| No. | Module | Description                                    |
|-----|--------|--|
| 1   | Report | Corrected handling of waypoints in node plots. |

Date: 03/03/2023

Version: 23.60

| No. | Module       | Description  |
|-----|--------------|--|
| 1   | General      | Improved handling of waypoints.                                  |
| 2   | Database     | Corrected handling of manual update to header general direction. |
| 3   | P1/11 Output | Gun/NFH depths now rounded to 3dp.                               |
| 4   | Report TA    | Improved filtering by line direction.                            |



Date: 21/02/2023

Version: 23.59

| <b>No.</b> | <b>Module</b> | <b>Description</b>                    |
|------------|---------------|---------------------------------------|
| 1          | Report TA     | Improved filtering by line direction. |

Date: 15/02/2023

Version: 23.58

| <b>No.</b> | <b>Module</b>         | <b>Description</b>   |
|------------|-----------------------|--|
| 1          | Line selection dialog | Added suffix for duplicate lines, corrected filtering by line direction. |



Date: 03/02/2023

Version: 23.57

| No. | Module       | Description  |
|-----|--------------|--|
| 1   | General      | Improved line selection and multiline handling.              |
| 2   | P294 Input   | Nodes now have short names assigned during input.            |
| 3   | Database     | Obs data now stored in SQL database (instead of .dat files). |
| 4   | Database     | Updates to Triggerfish P cable initialisation.               |
| 5   | Precondition | Interpolation now uses timestamps rounded to microseconds.   |

Date: 28/11/2022

Version: 23.56

| No. | Module             | Description   |
|-----|--------------------|---|
| 1   | General EPSG       | Allow WGS 84 CRS with dynamic datum to be identified as an official WGS 84 CRS (e.g. 7663: "WGS 84 (G1674)"). |
| 2   | Database           | When loading defaults, allow matching of obs by ID only.  |
| 3   | Network Adjustment | Bugfix: was not handling gun strings for P2/11 when gun components included.                                  |



Date: 10/11/2022

Version: 23.55

| No. | Module | Description   |
|-----|--------|---|
| 1   | Precon | Bugfix: Was resetting saved streamer rotation, stretch and feather results. |

Date: 02/11/2022

Version: 23.54

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Network Adjust | Bugfix: Some gun nodes not being solved when bad GPS data. |

Date: 25/10/2022

Version: 23.53

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Bugfix: adjustment failing when not all available gyros used. |



Date: 27/09/2022

Version: 23.52

| No. | Module         | Description                          |
|-----|----------------|--------------------------------------|
| 1   | Network Adjust | Bugfix: handling tripoint with RGPS. |

Date: 27/09/2022

Version: 23.51

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Reports        | streamer depth plots now only use depths on active streamer.                     |
| 2   | Reports        | Auto-configured vessel plots now include crab.                                   |
| 3   | Network Adjust | Bugfix: gun array handling when using DGPS/RGPS combination for dynamic offsets. |

Date: 27/07/2022

Version: 23.50

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Use custom name for column in CSV file if modified in GUI. |



Date: 27/07/2022

Version: 23.49

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Vessel plots now take data from one shot before FGSP if available. |

Date: 14/07/2022

Version: 23.48

| No. | Module | Description                                     |
|-----|--------|---|
| 1   | Output | Add option to write SPS supplemental C records. |

Date: 20/06/2022

Version: 23.47

| No. | Module                           | Description   |
|-----|----------------------------------|---|
| 1   | Database                         | Add object ID to default node attributes.                     |
| 2   | Database - Extract Acoustic Data | Transponder ID now taken from all digits at end of node name. |



Date: 28/05/2022

Version: 23.46

| No. | Module       | Description   |
|-----|--------------|---|
| 1   | Report Plots | Bugfix: network observations with angular units were not being unwrapped. |

Date: 19/05/2022

Version: 23.45

| No. | Module | Description  |
|-----|--------|--|
| 1   | Input  | Added project option to use gun serial number when creating gun node name (P211 only); |
| 2   | Output | Don't reset P190 record lists when changing specified IDs.                             |
| 3   | Output | Corrected IDs in spare cols when node name cols not specified.                         |
| 4   | Output | For P1/90, col 19 is now optional when using spare cols 14-16.                         |



Date: 13/05/2022

Version: 23.44

| No. | Module | Description  |
|-----|--------|--|
| 1   | Precon | Improved matching of dither obs to shot time (delta now 1s).   |
| 2   | Output | Corrections to preplot line name handling.   |
| 3   | Output | In P190, gun/NFH and gun depth ids can now be manually determined from the name if written to spare columns. |
| 4   | Output | In P190, hires timestamp was sometimes missing.  |

Date: 11/05/2022

Version: 23.43

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Input / Output | Preplot line name now read from P2/11 input and written to P1/11 output.                            |
| 2   | Output         | Extended SPS: Improved handling of dither values.   |
| 3   | Output         | Extended SPS: Use azimuth from waypoints for source repeatability.                                  |
| 4   | Output         | Extended SPS: Use separate alongline/crossline tolerances for source repeatability when not radial. |





Date: 09/05/2022

Version: 23.42

| No. | Module | Description   |
|-----|--------|---|
| 1   | Output | Extended SPS: Added checkboxes to make all warnings and edits optional; GUI improvements. |
| 2   | Output | Select new parameter set for output after executing "Save As".                            |

Date: 07/05/2022

Version: 23.41

| No. | Module | Description   |
|-----|--------|---|
| 1   | Input  | Bugfix: For P2/11 echosounder obs scale was being set from propagation speed - should be 1. |

Date: 06/05/2022

Version: 23.40

| No. | Module       | Description   |
|-----|--------------|---|
| 1   | Output       | Extended SPS: Added shot year and dither, and option to use average for gun depth and gun pressure. |
| 2   | QC / Reports | Corrected gun depths for CO/scale/speed.  |



Date: 29/04/2022

Version: 23.39

| No. | Module          | Description   |
|-----|-----------------|---|
| 1   | Utilities       | New utility to concatenate P2 files.  |
| 2   | General         | Can now read year as two digits when importing external data (e.g. tide file).  |
| 3   | Online Services | Multiple databases or P2 files can now be selected for compression. Each can now also be automatically uploaded as soon as they are compressed. |
| 4   | QC              | Added depths to gun array plots.  |
| 5   | Report plots    | Added depths to gun array plots.  |

Date: 10/03/2022

Version: 23.38

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Network Adjust | Improved handling and reporting of bad Lat/Lon data.                       |
| 2   | Network Adjust | Can now zoom dynamic plots using mouse wheel + <Shift> and/or <Ctrl> keys. |



Date: 18/02/2022

Version: 23.37

| No. | Module         | Description      |
|-----|----------------|------------------|
| 1   | Network Adjust | Minor bug fixes. |

Date: 10/02/2022

Version: 23.36

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Bugfix: unsolved shots when no data for sub-array comparison nodes. |

Date: 28/01/2022

Version: 23.35

| No. | Module          | Description  |
|-----|-----------------|--|
| 1   | Precondition    | Bugfix: GPS processed data was displayed as raw.           |
| 2   | Network Adjust  | Updates to saving/reading default derived observation SDs. |
| 3   | Online Services | Add project files *.dat and *.log to database archive.     |



Date: 21/01/2022

Version: 23.34

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Streamer derived obs SDs can now be saved as defaults.                            |
| 2   | Bugfix         | Use of Online Services zip function sometimes caused application to hang on exit. |

Date: 12/01/2022

Version: 23.33

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Bugfix: interpolation of angular data when line heading varying either side of north. |



Date: 05/01/2022

Version: 23.32

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Precondition   | Updated tab order for controls in parameter dialog.          |
| 2   | Network Adjust | SP increment now saved to parameter file.                    |
| 3   | Network Adjust | Lower limit of derived obs SDs revised to 0.0001.            |
| 4   | Output         | Bugfix: SPS new year JD reset option not working for hi-res. |

Date: 24/12/2021

Version: 23.31

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Precondition   | Now handles floating point interpolation and extrapolation parameters.        |
| 2   | Network Adjust | SP interval can now be specified, skipped shots interpolated.                 |
| 3   | QC             | Improved obs data handling to prevent out of memory errors in large datasets. |



Date: 17/12/2021

Version: 23.30

| No. | Module       | Description   |
|-----|--------------|---|
| 1   | Output       | Improved P111 'R' record handling in very large output files. |
| 2   | Output       | Improved derivation of streamer num for P190.                 |
| 3   | Final report | Apply derived obs SDs if available.                           |

Date: 13/12/2021

Version: 23.29

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Database       | Bugfix: default obs use status was still loaded when not flagged to be loaded. |
| 2   | Network Adjust | Bugfix: Prevent derived obs SD from being 0.                                   |
| 3   | Output         | Corrected sorting of NFH records.  |



Date: 03/12/2021

Version: 23.28

| No. | Module              | Description   |
|-----|---------------------|---|
| 1   | Precondition        | Bugfix: Sometimes crashed with P cable datasets.  |
| 2   | Output              | Bugfix: Added checks to handled mismatch between streamer and streamer section definitions. |
| 3   | Utilities - Extract | Respect GPS setting when processing P211 files.   |

Date: 29/11/2021

Version: 23.27

| No. | Module | Description   |
|-----|--------|---|
| 1   | Import | Bugfix: Sometimes crashed when generating report with automatic workflow. |

Date: 18/11/2021

Version: 23.26

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Disallow nodes not in network to be used for P cable catenary.            |
| 2   | Network Adjust | Added parameter page for P Cable catenary. See user manual section 9.9.7. |



Date: 12/10/2021

Version: 23.25

| No. | Module   | Description |
|-----|----------|-------------|
| 1   | Internal |             |

Date: 07/10/2021

Version: 23.24

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | P2/11 Input    | Try to decode timestamps even if the OBJREF used to find the TRS appears to be wrong.                    |
| 2   | Network Adjust | Now weights P cable catenary node observation SDs according to distance from nearest end of cross cable. |
| 3   | Output         | NFH and gun depth sensor P1/11 coordinate 3 is now written as object depth below sea level.              |





Date: 04/10/2021

Version: 23.23

| No. | Module               | Description                              |
|-----|----------------------|--|
| 1   | No functional change | Updated release notes for version 23.22. |

Date: 01/10/2021

Version: 23.22

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Input          | Temporary patch for Triggerfish acquisition system - source fired events now created from general events using the "Preplot Line Reference Number" field as the source id. |
| 2   | Network Adjust | Revised derived range obs SDs for P Cable compass.   |
| 3   | Output         | Now continues output skipping unsolved shots and issues warning.   |
| 4   | Output         | Added new options for writing extended SPS fields.   |
| 5   | Reports        | Streamer depth plots were not being updated.   |
| 6   | Reports        | Corrected calculation of vessel speed with short shot intervals.   |



Date: 22/09/2021

Version: 23.21

| No. | Module                          | Description  |
|-----|---------------------------------|--|
| 1   | Precondition,<br>Network Adjust | Bugfix: incorrect handling of P cable for streamer QC plots. |

Date: 21/09/2021

Version: 23.20

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Network Adjust | Revised assignment of P Cable streamer derived range observations. |

Date: 20/09/2021

Version: 23.19

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | Network Adjust | Bugfix: error when solve rotation checked for network with no tailbuoys.                   |
| 2   | Reports        | Deprecated auto plot configuration for sub-array separations (use gun-arrays auto config). |



Date: 19/09/2021

Version: 23.18

| No. | Module | Description  |
|-----|--------|--|
| 1   | Output | Bugfix: gun depth sensor depth in P1/90 was being corrected for sensor Z offset. |

Date: 17/09/2021

Version: 23.17

| No. | Module | Description  |
|-----|--------|--|
| 1   | Input  | Timestamp obs can now be used with Unix timestamps.    |
| 2   | Input  | Perform Triggerfish P Cable modifications after input. |

Date: 11/09/2021

Version: 23.16

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Input          | Added checks for proximity of SVP and magnetic variation data.      |
| 2   | Network Adjust | Bugfix: bug computing streamer heading when only one streamer node. |



Date: 03/09/2021

Version: 23.15

| No. | Module              | Description  |
|-----|---------------------|--|
| 1   | Input / Reports     | Improved source sequence checking.                     |
| 2   | Reports             | Moved node/obs options to main report window.          |
| 3   | Reports             | Time increment exceptions now optional in shot report. |
| 4   | Convert Coordinates | Bugfix: Occasionally failed to compute.                |

Date: 24/08/2021

Version: 23.14

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Network Adjust | Bugfix: array component nodes SMA was not saved when Exclude Co-located Nodes option enabled. |
| 2   | Output P111    | Gun nodes now always output gun depth.  |



Date: 23/08/2021

Version: 23.13

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Project dialog | Regression: Project name was disabled when editing new project. |

Date: 23/08/2021

Version: 23.12

| No. | Module      | Description   |
|-----|-------------|---|
| 1   | Line List   | Added update button, this has the same functionality as the same button in the project edit dialog. |
| 2   | Database    | Bugfix: Creation of sub-array separations nodes for P2/11 was failing for long node names.          |
| 3   | Output P111 | NFH and Gun nodes now output water depth if "record position" selected in bathy.                    |
| 4   | Output P111 | NFH nodes now output as type "Near Field Hydrophone".   |

Date: 19/08/2021

Version: 23.11

| No. | Module | Description   |
|-----|--------|---|
| 1   | Output | Bugfix: Z offset was not being added when depth sensor was less than 2m from gun. |



Date: 18/08/2021

Version: 23.10

| No. | Module | Description  |
|-----|--------|--|
| 1   | Input  | Bugfix: was issuing irrelevant warnings for hires timestamp obs. |

Date: 18/08/2021

Version: 23.09

| No. | Module | Description  |
|-----|--------|--|
| 1   | Input  | Regression: "GPS Time" obs should not be regarded as a hires timestamp obs.                            |
| 2   | Output | Bugfix: Streamer depth nodes were assigned record type "Gun Depthsensor".                              |
| 3   | Output | Bugfix: For P1/11 gun depth sensor nodes were outputting gun depth instead of the actual sensor value. |
| 4   | Output | Improved handling of gun depths for clusters.  |



Date: 13/08/2021

Version: 23.08

| No. | Module   | Description   |
|-----|----------|---|
| 1   | Input    | Timestamp obs with relative time format can now be detected from obs name "Shottime-UTC". |
| 2   | Database | Added new observation type "UTC Seconds ref 1980-01-06", used for microsecond time stamp. |
| 3   | Output   | Hires timestamp can now be taken from obs with relative time format.                      |
| 4   | Output   | Source id now shown in records list for gun/nfh and gun depth nodes.                      |

Date: 11/08/2021

Version: 23.07

| No. | Module       | Description  |
|-----|--------------|--|
| 1   | Precondition | Improved angular observation value unwrapping.       |
| 2   | Report Plots | Bugfix: occasional misreading of configuration file. |



Date: 02/08/2021

Version: 23.06

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Input          | Bugfix: Applying RGPS range/bearing SDs at input causing occasional FP error. |
| 2   | Network Adjust | Bugfix: some nodes not in network were being plotted.                         |

Date: 01/08/2021

Version: 23.05

| No. | Module   | Description                                       |
|-----|----------|---|
| 1   | Database | Display original line after loading all defaults. |





Date: 29/07/2021

Version: 23.04

| No. | Module | Description   |
|-----|--------|---|
| 1   | Output | Improved recognition of ID for node type GUN.                         |
| 2   | Output | Writing of IDs to spare columns in P1/90 now optional.                |
| 3   | Output | T records related to source now have P1/90 source ID field populated. |
| 4   | Output | T record IDs now written to spare columns in P1/90 (optional).        |

Date: 28/04/2021

Version: 23.03

| No. | Module | Description   |
|-----|--------|---|
| 1   | Output | Enable output of gun depth sensors.   |
| 2   | Output | For P1/90, updates for guns, NFH and gun depth sensors. See user manual section 11.3.1.1. |



Date: 16/07/2021

Version: 23.02

| No. | Module         | Description   |
|-----|----------------|---|
| 1   | Database       | Load All Defaults can now be applied to all existing database lines. Refer to section 5.2 if the user manual. |
| 2   | Database       | Save All Defaults now allows selection of tables to save as defaults.   |
| 3   | Network Adjust | Bugfix: was not handling streamers with just one compass.   |
| 4   | Network Adjust | Added support for P cable catenary modeling (acquisition type PCable Catenary).                               |

Date: 26/05/2021

Version: 23.01

| No. | Module      | Description  |
|-----|-------------|--|
| 1   | Input       | Improved EPSG and format checks.                                 |
| 2   | Output P111 | Object attribute records now filtered to match object summaries. |



Date: 12/05/2021

Version: 23.00

| No. | Module   | Description                                      |
|-----|----------|--|
| 1   | All      | New node type OBN RECEIVER, for OBN nodes.       |
| 2   | Database | Short name added to node table.                  |
| 3   | Output   | Handle ouput of SPS R records for OBN Receivers. |

Date: 05/05/2021

Version: 22.99

| No. | Module         | Description  |
|-----|----------------|--|
| 1   | All            | Log times now use 24hr clock.  |
| 2   | Network Adjust | Bugfix: Spikes in external reliabilty in sparse networks.                |
| 3   | Network Adjust | Use short names for derived obs when necessary for report format.        |
| 4   | Reports        | Final report does not report on nodes not solved in the last adjustment. |
| 5   | Reports        | Bugfix: Spurious artifact shown on active source plots.                  |



Date: 14/04/2021

Version: 22.98

| No. | Module   | Description  |
|-----|----------|--|
| 1   | Input    | Bugfix: Manual comparison nodes and obs were being duplicated when also loading default nodes and obs. |
| 2   | Database | Bugfix: Pasting an arithmetical operation was not working with decimal values.                         |

Date: 09/04/2021

Version: 22.97

| No. | Module   | Description   |
|-----|----------|---|
| 1   | Database | Detect existing sub-array separation nodes and obs before creating. |



Date: 30/03/2021

Version: 22.96

| No. | Module            | Description  |
|-----|-------------------|--|
| 1   | Project, Database | New option to assign NFH node types.                         |
| 2   | Database          | Round speed of sound profile data to 3dp.                    |
| 3   | Output            | NFH records now sorted by ID.                                |
| 4   | Output            | Bugfix: NFH record IDs incorrectly displayed in record list. |

Date: 26/03/2021

Version: 22.95

| No. | Module   | Description                     |
|-----|----------|---------------------------------|
| 1   | Database | Added utility to set RGPS SDs.  |
| 2   | Database | Bugfix calculating bearing SDs. |



Date: 25/03/2021

Version: 22.94

| No. | Module  | Description   |
|-----|---------|---|
| 1   | Project | New option to set RGPS SDs, range specified, bearing calculated from range. |
| 2   | Input   | Improved warning messages.  |

Date: 23/03/2021

Version: 22.93

| No. | Module       | Description   |
|-----|--------------|---|
| 1   | Report Plots | Bugfix: Improved file handling for precon reports with active source. |

Date: 23/03/2021

Version: 22.92

| No. | Module   | Description  |
|-----|----------|--|
| 1   | Database | Sub-array separation nodes and observations no longer include acoustics. |
| 2   | Reports  | Bugfix: plots for active source were not clearly displayed.              |



Date: 09/03/2021

Version: 22.91

| No. | Module   | Description   |
|-----|----------|---|
| 1   | Database | Loading observation defaults now matches observations based on non-variable parameters. |
| 2   | Reports  | Bugfix for recent regression: sometimes crashed when creating plots.                    |

Date: 25/02/2021

Version: 22.90

| No. | Module | Description                                   |
|-----|--------|---|
| 1   | Output | Corrected handling of Northings > 10,000,000. |



Date: 24/02/2021

Version: 22.89

| No. | Module   | Description   |
|-----|----------|---|
| 1   | Input    | Suppressed duplicate EPSG warnings.                               |
| 2   | Input    | Suppressed error message about focus when EPSG differences found. |
| 3   | Database | Ensured EPSG integrity status updated after reload from ref DB.   |
| 4   | Output   | Same report file now used for multiple outputs within a line.     |

Date: 19/02/2021

Version: 22.88

| No. | Module           | Description  |
|-----|------------------|--|
| 1   | IMPORTANT UPDATE | EPSG processing has been updated to handle the data model changes in version 10 and later. It is recommended that you download and install the latest EPSG database from the FGPS website. |
| 2   | Input            | P294 reader can now handle up to 10000 USBL obs.   |
| 3   | Multiplot        | Removed misleading overlay key caption.  |
| 4   | Output           | Draft corrections now saved to 2dp.  |
| 5   | Output           | Revised comment records for draft corrections.   |





Date: 21/01/2021

Version: 22.87

| No. | Module  | Description  |
|-----|---------|--|
| 1   | Reports | Bugfix: occasional error when auto-creating gyro comparison plots.         |
| 2   | Reports | Bugfix: sometimes crashed when processing reports for very large datasets. |

Date: 07/01/2021

Version: 22.86

| No. | Module | Description                         |
|-----|--------|-------------------------------------|
| 1   | Output | Limit NFH ids to 2 digits for P190. |

Date: 04/01/2021

Version: 22.85

| No. | Module        | Description   |
|-----|---------------|---|
| 1   | Network Adust | Bugfix: gun string azimuth was undetermined when not using GPS for array azimuth. |