

## 2024.01 Release Notes

Release notes for the 2024.01 release of the Measurand Software.

Project	Version	Summary
Raw2Data	5.25	Release in 2024.01
SAARecorder	7.97	Release in 2024.01
SAAView	3.07	Release in 2024.01
SAASuite	3.8	Release in 2024.01
DataChecker	1.48	Release in 2024.01
FileGenerator	4.3	Release in 2024.01

Here is a list of changes in the software.

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### Raw2Data 5.25

#### New Features

- Added a check to the processing of the project directory to look for ShapeArrays that do not have enough voltage at the top of the ShapeArray to have a reliable reading. This is done by looking for and analyzing the SAA\_Diagnostics.dat file from the logger. We've updated the calculation for the minimum required voltage for low-power ShapeArray readings to make them less conservative.

*\*Note: with this change, any readings that were previously filtered out using the old calculation could be added back in on the next reset conversion in Raw2Data.*

- The feature to calculate 'Curvature' data for ShapeArrays has been removed. Users will no longer be able to select any data output format that includes curvature for new projects. Additionally, curvature data will be actively removed from existing projects.
- The UI has been updated to eliminate the 'Curvature' option across all projects.
- We have updated Raw2Data to remove the default recommendation of applying cyclical adjustment to vertically installed SAAV instruments in new ShapeArray projects. This change will not affect projects that are already utilizing the cyclical adjustment.

When the cyclical installation method was created, customers noticed that the helical, or "zig-zagged," installed shape of an SAAV inside casing could lead to saw-toothed-shaped artifacts in the unadjusted deformation profile. Although this profile appears jagged, the movement of each of the vertices in the ShapeArray™ instrument are accurately represented within a 0.5 mm resolution per segment. In response to customer feedback cyclical software adjustment was designed to help smooth out the deformation profile by calculating a medial axis (centreline) through the SAAV's helical shape and using changes in the medial axis to

calculate the deformation profile. Once the adjustment was created, most customers applied it, for this reason, Measurand implemented the automatic application of the cyclical adjustment.

Although effective at smoothing out the jaggedness of the deformation profile, the cyclical software adjustment added a dependency on the baseline reading of the data set to calculate the medial axis for subsequent readings consistently. This reliance on the baseline reading creates challenges when the baseline data is lost or removed. Automatic algorithm use can also cause confusion when transferring data management responsibilities between parties. Based on this customer feedback, Measurand has decided to remove the automatic application of the cyclical adjustment from vertically installed SAAV data. The option to enable the cyclical adjustment will remain available in the software; however, the adjustment will no longer be applied by default.

- The processing log has been updated to include the duration of the conversion process. This information will now be displayed in the log after the conversion process is complete, and the exit code will be shown.

#### Fixes

- Resolved issue where SAAV Extend calibration file was only created using files from Calibrations\Arrays folder in SAARecorder if extend files also existed in the project folder.
- Improved user feedback for missing calibration files in SAA Extend products. Users will now be notified of the specific serial numbers and corresponding missing files. This update lets users easily identify and add the necessary file to their computer system.
- Logging in Raw2Data has been improved to reduce time and enable faster conversions with minimal interruptions.
- We resolved an issue where a data file specified in the latest combined file format could not be parsed if it lacked the header.
- This release resolves an issue with alarms not triggering when monitoring ShapeArrays in convergence mode.
- Resolved issue causing magnetometer quiet time selection to use previous roll calibration instead of factory roll values.
- This release fixes a bug that prevented alarm notifications from being sent to multiple recipients for processing.
- We have released an update to our software that introduces the ability for the user to be automatically notified if an alarm level fails to load for one of their ShapeArrays in the project. This update will make it easier for users to identify and address any errors that may be encountered quickly.
- Fixed an issue preventing certain projects from utilizing the ShapeArray calibration file located in the project directory during conversion. Additionally, the application has been enhanced to automatically duplicate the array calibration file to the Measurand project's arrays folder, enabling its usage in magnetometer calibration and convergence installations.
- The application has been updated to resolve two issues. Firstly, super arrays with a constituent array as the first instrument in the project will now be combined correctly. Secondly, all convergence arrays will now have their X data output in meters instead of millimetres as intended.
- Updated the application to prevent concurrent data conversions from failing by no longer writing to the sernum\_log.txt file in the \SAA3D folder.
- Exit code 38 will now be used when the data obtained does not match the contents of the site file. This update provides a more consistent environment by returning the same exit code when a data match cannot be found.
- The processing log for Raw2Data has been updated to include voltage limits for determining good readings based on the ShapeArray's mode.
- We resolved an issue where the conversion process would terminate if any ShapeArrays had all data filtered out while the cyclical adjustment was applied.

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### SAARecorder 7.97

#### New Features

- We've updated the calculation for the minimum required voltage for low-power ShapeArrays to make them less conservative.
- The compression table within the Installation Verification Tool window will work while opening a raw data file captured in the field. The last 5 readings found within the file are used for the verification.
- We have made some updates to our Installation Verification Tool. It now includes a compression history table that displays the amount of compression during installation. The compression table shows the last five captured readings for easy reference, and all compression recordings are saved to a .dat file in the specified location. These changes mean that the installation verification process will require three consecutive readings with less than 1mm of movement between them, to meet the installation requirements.
- The update introduces a change to the ShapeArray, replacing the nominal or expected current with a maximum current. This maximum current represents the highest current that the ShapeArray is anticipated to draw during its normal operation.
- The SAAV Installation Verification dialog now includes clear instructions on performing the installation. This update aims to provide a more user-friendly experience and guide users through installation.

#### Fixes

- The installation verification tool now notifies users when a reading cannot be added to the data file because another application has locked it.
- We fixed an issue where using the "Export to SAAView" option when appending RSA Data to a DAT file deleted the 'magdata' folder.
- The "Create Extend Site File" menu option has been fixed to successfully save a new site file even if one already exists on the computer.
- Updated CRLoopData to include a new output message if attempting to access an unavailable file.
- This release fixes an issue where a ShapeArray would mistakenly select an incorrect calibration file, or present an incorrect selection screen when initializing the ShapeArray. The correct calibration file will now be used based on the segment serial numbers found.
- This release includes an update to the Diagnostics Check window, which improves the accuracy of the expected current calculation by standardizing the formula used. This ensures consistent results across the application for voltage and current measurements.
- Fixed a problem that caused the .rsa file to not create a calibration file on the file system if the file already existed, potentially causing SAAV-Extend ShapeArrays to use the wrong calibration file.
- Enhanced error reporting in the SAAV Installation Verification provides users with more detailed information regarding the specific issue at hand.

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### SAAView 3.07

#### Fixes

- This release fixes a bug that prevented alarm notifications from being sent to multiple recipients for processing.

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### SAASuite 3.8

#### Fixes

- An issue has been resolved in SAASuite where it would automatically download one calibration file when multiple files are present. Now, users will be prompted to select the correct file (for Windows Vista and above), or an error message will be displayed (for Windows XP).

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### DataChecker 1.48

#### New Features

- We've updated the calculation for the minimum required voltage for low-power ShapeArray readings to make them less conservative.

*\*Note: with this change, any readings that were previously filtered out using the old calculation could be added back in on the next reset conversion in Raw2Data.*

#### Fixes

- We have fixed a problem that prevented the application from displaying all of the segments when parsing an enhanced data file from a SAAV Extend. This fix ensures proper functioning of the application.
- Fixed a potential problem that allowed DataChecker to open a SAAV-Extend data file without asking for a site file if the extend calibration file did not exist in the same folder as the data.

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### FileGenerator 4.3

#### New Features

- Generated programs for Campbell Scientific data loggers now support Low-power capable ShapeArrays by putting them into regular power mode before attempting to read them. To ensure compatibility, a SAA232 interface with firmware version 0.01 or higher is required.
- Added full support for the Campbell Scientific CR350 series data logger to generate data logger programs that read ShapeArrays.

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### Have software feedback for us?

Let us know what you think. We would love to hear about your experience with our software.

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