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RELEASE NOTES

AARC500 Adaptive Aeromagnetic Real-Time Compensator

Host Firmware Release RMS11029-03-B

These release notes contain important information about the new firmware and how it will affect the performance of instruments in which it is installed. The notes outline functional enhancements, adaptive changes and, if applicable, problem corrections.

Please read this documentation carefully. References to pertinent sections in the product's user's guide are shown in square brackets.

Compatibility:

(D)AARC500 Front End – Requires firmware RMS1877-04-C or later

1. Robustness analysis through cross-calibrations now supported.

   This functionality is included under the *Post-Flight Compensation and Analysis Functions* option in the AARC500.

   The package now includes a function to calculate a useful measure of calibration-solution robustness, the *Cross-Calibration Index* (CCI). The CCI between two calibration flight data sets compares the performance of a solution applied to its 'native' data set, to its performance on a different ('cross') data set. It provides a simple and objective measure of the robustness of a solution. It may be used immediately after the initial calibration flight and FOM box for a survey, as well as periodically to assess how this robustness evolves through time.

   [User's Guide: Section 3.9.2]

2. Advanced frequency-domain analysis functions operating on d-files.

   This functionality is included under the *Post-Flight Compensation and Analysis Functions* option in the AARC500.

   The functions operate on *any* variable in a standard d-file recorded by the system in binary format. The power spectrum density is vital in characterizing magnetic interference sources in complex installations. Coherence analysis between any pair of variables provides important insights into the effectiveness of compensation, residual errors, etc.

   [User's Guide: Section 3.9.3]

3. It is important to make sure the filter for the unit's cooling fan is always clean. The system will now issue a reminder to clean or replace the fan filter after the unit has accumulated a substantial number of operating hours. The warning is issued upon system startup, before the main window appears on the screen.

   Note the user interface will wait until the operator responds to the warning, and will then resume normal operation. The operator is given the choice to reset the alert to 50, 100 or 200 operating hours. See the user's guide for additional information.

   [User's Guide: Section 5.4.2]

4. Access to all the functions included in the *Post-Flight Compensation and Analysis Functions* package is now from a single dialog, conveniently accessible through the 'Others' menu in the toolbar.

   [User's Guide: Section 3.9]

5. A more comprehensive log file, transparent to the user, keeps track of various important system-wide events and measurements such as power-on date/time, accumulated on-time, temperatures at start-up and shut-down, etc.

6. The dialog that reports basic Front End data ('About AARC500 Front End') now includes, if available, auxiliary GPS information: number of satellites in use, HDOP, undulation, and age-of-differential corrections.

   [User's Guide: Section 3.4.6]

7. The system supports an *alternate-boot* sequence that provides a safety mechanism in the event the main boot file is damaged for some reason. The alternate boot (selected by pressing 'Esc' during startup) yields identical functionality as the standard boot. The two are differentiated only by the colour of the background/desktop on the screen (blue for standard, green for alternate).

   [User's Guide: Section 3.2]

8. Enhanced protection to prevent data-file naming conflicts.

   [User's Guide: Section 3.4.2]

9. Minor/cosmetic improvements –

   The OBE (on-board-electronics) compensation *threshold* and *full-scale* parameters are now also shown in units of 'volts'.

   The *hold-off* parameter for the gating of EM signals is now also shown in units of 'seconds'.

   Other cosmetic enhancements to the user interface to improve readability.