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RELEASE NOTES

DAARC500 DAS & Adaptive Aeromagnetic Real-Time Compensator

Host Firmware Release RMS1936-02-F

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 include information about enhancements, adaptive changes, and corrections to known problems. Please read this documentation carefully.

When a new revision of the user's guide for the product to which this firmware applies, accompanies the firmware release, references to the pertinent sections are shown in square brackets.

Compatibility:

(D)AARC500 Front End –   Requires firmware RMS1877-03-E or later

1. The *Record* button on the main window is now protected against accidental activation. The approach used is the same one that has always been used to protect the *Adapt* button: as a minimum, access-level 2 is required to be able to activate the button.

   [User's Guide, Section 3.3]

2. A "global" error indicator has been added on the main window of the user interface.

   The indicator is clearly visible, normally blank, when active bright red.

   The error indicator will go ON in response to either a severe error condition detected by the Host processor (e.g., failure to successfully initialize some hardware, failure to communicate with the Front End, etc.), or when any error/warning condition has been reported by the Front End.

   Once the error indicator comes ON, it will remain ON until the system is re-started.

   The main purpose of the indicator is to provide a similar function to that of the red ERROR LED on the unit's front panel, for a pilot/operator who can not view the unit. Under such conditions, the pilot/operator typically views the user interface on a "remote" screen mounted somewhere within his field of vision. (This could be a screen/monitor connected at J18, or a Windows device controlling the DAARC500 via the Ethernet port.)

   [User's Guide, Section 3.3]

3.   The new firmware allows systems including the GPS Receiver Option, to record and monitor the *GPS quality indicator* (per NMEA's GGA standard), in addition to GPS time and position information.

The quality indicator can be monitored in real-time, together with GPS time and position, in the *monitor GPS inputs* window.

In order to maintain the size of recorded data packets unchanged, the quality indicator is recorded embedded in the field used to record the altitude. The data exporting software provided by RMS Instruments takes care of separating the two variables.

[User's Guide, Section 3.4.11, Tables 2.4b, 3.2b, Appendix I.2]

4.   The range for various parameters involved in the configuration of serial I/O (DAS) functions, has been expanded from the basic ASCII range (0–127), to the full byte-sized range, 0–255.

5.   New formats supported for the definition of serial (SR), and Ethernet TCP/IP (ET) variables:

–   *float*: This is interpreted as a single-precision (4-byte) floating-point number (per IEEE 754). The *length* parameter is automatically forced to '4'. The *offset* and the option selecting *MSB-first/LSB-first* are taken into consideration. The option selecting *signed/unsigned* is ignored.

–   *double*: This is interpreted as a double-precision (8-byte) floating-point number (per IEEE 754). The *length* parameter is automatically forced to '8'. The *offset* and the option selecting *MSB-first/LSB-first* are taken into consideration. The option selecting signed/unsigned is ignored.

[User's Guide, Section 3.4.8]

6.   The new firmware allows definition of engineering units for the monitoring of analog signals. With this, operators can view signals in their "natural" units (e.g., 'feet', rather than 'millivolts', for a channel monitoring an altimeter).

The window for numerical monitoring of analog inputs now shows the values scaled in engineering units. Similarly, the scaling of analog channels in the real-time graphic display is now also in terms of the engineering units.

The engineering units can be defined individually for each channel, using a linear relationship. Factory defaults are such that the default presentation of the values remains in millivolts, so that users accustomed to this scaling will not be affected.

Note that the use of engineering units does not have an effect on the manner in which analog data are recorded.

[User's Guide, Section 3.4.6]

7.   SR and ET variables can now be defined based on comma or space delimiters. This allows specification of SR and ET variables in ASCII data packets that may have variable length. The new *format type* is denoted 'd-ASCII'.

[User's Guide, Sections 3.4.8, 3.4.10]

8.   The *test serial input data function* now starts by transmitting out any data enabled in the *miscellaneous characters* fields of data output packets. These could be needed as trigger(s) to request data from various devices.

[User's Guide, Section 3.4.7.2]

9.   The firmware is now protected against possible problems resulting from invalid parameter combinations in the definition of serial data output packets, when entered while in one of the run modes.

10.   Streamlined/improved the validation stage in the definition of SR and ET variables, and that of serial blocks for transmission in data output packets. Also, this is now more clearly documented in the user's guide.

[User's Guide, Tables 3.5, 3.6]