RUGGED, MODULAR, STANDALONE DATA ACQUISITION SOLUTION

Data acquisition systems are relied upon heavily in the aerospace industry, from the design through to the final production stages. Yet those instruments often introduce many challenges to the testing cycle, due to the need for cumbersome wiring or an inability to function correctly during transportation or following impact.

The Allegro Mercu data acquisition system from Dynatic Solutions eliminates these issues by offering several features that are critical to success in countless common testing processes in the aerospace sector.

The Mercu's modular acquisition slices offer up to 128kHz sampling rate per channel, while also allowing for ample interchangeable input options (IEPE, charge, strain) that can be tailored according to application or project specific demands.

Additionally, the instrument's 2 x 2in chassis is designed to withstand up to 500g, making it optimal for use in tests associated with extreme blast, shock or vibration, as well as minimizing space constraints. The built-in high-capacity lithium battery and 8Gb flash memory, both expandable upon request, complement these features by enabling the Mercu to work as a completely standalone data acquisition system. \\

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NEW SAFER CREW ESCAPE SYSTEM FOR TEST PILOTS

New aircraft development involves rigorous testing – both on the ground and in the air. At the sharp end are test pilots, who routinely take high risks to verify that all the aircraft technology works as intended. Aircraft under test often undergo testing to the extremes of their performance envelope. It is during these critical phases of flight that test pilots are most at risk.

It is essential that test pilots can exit the aircraft quickly and safely during a critical maneuver should control be lost. In traditional escape systems, pilot seats were pulled by cable into the exit position. This was not considered safe enough. A new business jet manufacturer enlisted TEST-FUCHS engineers to design a new crew escape system for use during testing of their aircraft.

The resulting design greatly increases escape safety for test pilots. If a loss of control occurs during a test flight, the pilot's seat is pulled to the ideal escape position with a hydraulic system, enabling easy and rapid exit from the aircraft. Safety devices guarantee that unintentional operation does not occur. Testing has already proved the new system to be more reliable than cable-operated versions.

Other European aircraft manufacturers have shown substantial interest, and TEST-FUCHS has a second contract to design and produce a two-seat retraction system. \\

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EASY DATA LOADING

AIM has introduced a new solution for data loading of airborne computer systems using the ARINC615-3/4 protocol over ARINC429. The baseline is the EasyDLE (data loading engine), which is available as a software library for Windows and Linux operating systems.
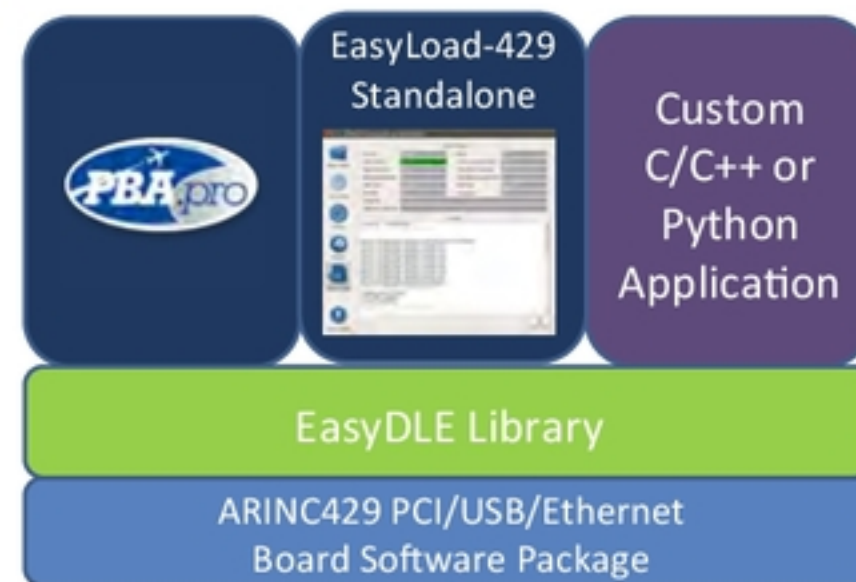
Standard AIM ARINC429 interface devices, which come in a wide variety of form factors, support the EasyDLE library. The library is able to simulate multiple data loader instances at the same time and can handle concurrent load processing on different ARINC615 buses (ARINC429 Tx/Rx pairs).

Each bus can be configured with a unique set of response timeouts for the various protocol handling stages. Users can configure the protocol parameters, such as the number of retries and the timeout values. This provides a high level of flexibility and adaptation of the EasyDLE to match that of any unit to be loaded.

Users are free to write their own loader applications in C/C++ or by using the library's object-oriented Python programming interface.

AIM has extended its PBA.pro databus test and analysis software tool to support the EasyDLE, enabling users to quickly set up, configure and perform 615-3/4 data loading via a GUI. The PBA.pro extension is attached to the PBA.pro ARINC429 component, which also supports engineers in investigating loading failures by capturing, decoding and visualizing the ARINC615 and resulting ARINC429 bus traffic. A standalone 615-3/4 data loader application is also available.

AIM has offices in the UK and the USA and its main design and manufacturing facilities are in Freiburg, Germany. \\

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