Czech this…

Aircraft recertification testing with imc measurement systems

Application notes -> Aerospace

LET
Aircraft Industries

Recertification tests at LET-Aircraft Industries

The Czech aircraft manufacturer LET - Aircraft Industries (formerly LET Kunovice) specializes in small passenger aircraft and gliders.

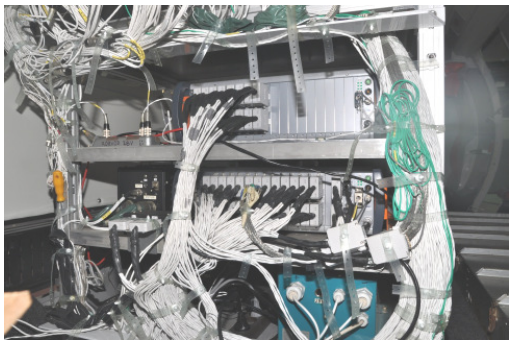
In the aircraft manufacturing business, standing still without progress is a step backwards. In order to fulfill customer requests, offer the most effective products and respond to the need for ever increasing performance parameters, LET constantly works on further modernizing its successful aircraft. Last year, the manufacturer completed certification testing on its L 410 UVP E20 aircraft. In the latest upgrade, more efficient and powerful engines from General Electric (GE M601-E) were installed.

For each model adjustment, that is, after refitting or retrofitting the aircraft for new markets, the manufacturer must undergo recertification. The scope of the recertification tests depends not only on the respective standards and norms, but also on specific customer requirements. For important components, such as the aircraft power units, the requirements are high.

Performance, safety and cold and hot temperature tests are just a few of the above requirements for certification tests that can take up to several years to complete.

LET-Aircraft Industries is using test and measurement systems from imc due to their high flexibility, suitability for extreme climatic conditions, their support of the ARINC bus and because of imc's powerful operating and evaluation software. The imc distributor PCS provides services to the customer on-site.

The test engineers take the majority of the measurements during the flight – here the robustness of the imc measurement systems is ideal, as they are exposed to low ambient temperatures and low air pressure. The test aircraft is not equipped with a pressurized cabin, because it is designed for a flight altitude of about 3000 meters. For acquiring measurement data in a large setup, LET uses two imc CRONOS*compact*-17 devices, which are networked and synchronized.



The ability to interchange imc CRONOS*compact* amplifiers is important for flexible adaption to wide varieties of measurement tasks. The measurement devices are securely installed in the aircraft and the sensors are attached to a customer-specific connector panel equipped with the desired connector types.

The spectrum of measured signals ranges from pressure, temperature and strain gauge, to rotation speed and angle. Through the

ARINC bus interface, most of the aircraft control signals are available.

During the actual test process, an operator follows the course of the test on a connected PC where all signals are available for live monitoring.

However, the test runs are fully controlled on the basis of the signals that are displayed directly to the pilot online. In this setup, the graphical color display is used, which is well suited because of its robustness. For maximum safety and reliability, data storage is fully redundant, thus, saving measurement data both on mass storage onboard the measurement devices, as well as on the connected PC.

For data analysis, the project team uses the signal analysis software imc FAMOS. Productivity gains are obtained through automated data processing and simple preparation of final reports.

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imc Test & Measurement GmbH is a manufacturer and solution provider of productive test and measurement systems. imc implements metrological solutions for research, development, service and production. imc has particular expertise in the design and production of turnkey electric motor test benches. Precisely outfitted sensor and telemetry systems complement our customer applications.

Our customers from the fields of automotive engineering, mechanical engineering, railway, aerospace and energy use imc measurement devices, software solutions and test stands to validate prototypes, optimize products, monitor processes and gain insights from measurement data. As a solution provider, imc offers their customers an attractive and comprehensive range of services. These include project consulting, contracted measurements, data evaluation, specialist deployment, customer-specific software development and system integration. imc consistently pursues its claim of providing services for “productive testing”.

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