

Flight Test Engineering & Flight Test Instrumentation



Extensive testing and analyses are required throughout the life cycle of every aircraft to actively investigate development, modifications, usage monitoring and sustained airworthiness. You can rely on RUAG to provide the resources and support.

Focus on Customer Performance

Structural, functional, operational and performance investigations anchor RUAG Aviation's comprehensive portfolio of capabilities, based on extensive experience with end-to-end Flight Test Instrumentation (FTI) and flight testing of modern fixed-wing and rotary-wing aircraft. Together, we analyse your needs and match your requirements with our complete spectrum of testing and measurement solutions. Our customers can expect precise and thorough examinations focused on their success.



Test Programmes, Types of Measurements and Analyses

- Aircraft data during flight
- Aircraft loads on ground and during flight
- Flight operations & performance analyses
- Avionics and aircraft systems interaction
- Verification of calculations and simulations
- Functional evaluation
- Synchronised measurements
- Degradation of aircraft structure and systems
- Avionics and mechanical error search
- Qualification and certification



**Together
ahead. RUAG**

Flight Test Capabilities

Concept Phase	Flight test specification and planning	Flight Test Instrumentation (FTI) planning	Signal conditioning
Design Phase	Design of sensors and wirings (ARINC, MIL-BUS, analogue, digital)	Implementation of FTI solutions	Flexibility
Integration Phase	Integration into aircraft	Noseboom integration	Calibration and validation of the entire FTI system and Permit to Fly
Ground & Flight Test Phase	Start-up and ground testing	Conducting flight test campaigns and investigations	Data transfer by telemetry and real-time data monitoring
Analysis Phase	Data conversion and storage	Real-time and post-flight data analysis and flight test reports	Post-analysis recommendations
Consulting Service	FTI consulting	Flight test programme consulting	Test programme management



References and Programmes

RUAG successfully conducts extensive flight test programmes for civil and military aviation.

Pilatus PC-12 Aerial Survey Camera Installation Certification (2013)

Verification of the Dornier 228 Performance Extension Programme (2011)

Certification tests of the Electronic Warfare Self-Protection Pod (2011)

Complete test and certification of the Dornier 228 upgrade programme prototype (2010)

Performance tests of the Boeing F/A-18 Hornet Main Landing Gear Shock Absorber (2009)

Performance test of the Dornier 228 five-blade propeller (2009–2010)

Test and certification of the Bell UH-1D Mission Equipment Demonstrator Aircraft (2005–2008)

Vibration tests for the cockpit retrofit of six Bombardier Challenger 601 Business Jets (2006)

Design of a lay angle measurement system for the Bell UH-1D rotor blades and management of a test campaign (2006)

GE F-404 Engine Pressure Measurements for new Radial Flameholder (2005)

Flight Test Instrumentation package development for the Eurocopter Super Puma/Cougar (2001)

Certificates

- EASA Design Organisation Approval EASA.21J.038
- EASA Part 21 Production Organisation
- EASA Part 145 Maintenance & Repair Organisation
- FAR-145 Maintenance & Repair Organisation
- BWB certified Design, Manufacturing & Maintenance Organisation
- High quality standards according to EASA, ISO 9100, NATO AQAP-2110

Principal FTI System

