



AXIOMETRIX
SOLUTIONS



Air Platforms – Flight Test & Structural Dynamics

imc Test & Measurement

APPLICATION NOTE // By Antonio Perez

Operational Context

Modern aerospace defense platforms operate under rapidly changing aerodynamic, structural, acoustic, and thermal conditions. Flight testing requires synchronized acquisition across multiple physical domains to validate aircraft behavior, structural integrity, and operational reliability under real mission profiles.

Engineering Challenges

- Capturing synchronized multi-domain measurement data
- Operating under harsh environmental conditions
- Supporting long-duration and transient testing
- Maintaining high data integrity and synchronization

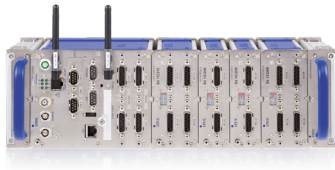
Measurement Strategy

imc systems provide synchronized and distributed acquisition architectures supporting vibration, strain, pressure, acoustic, and operational measurements. The focus is on reliable acquisition, synchronization, validation, and advanced post-processing workflows.

Software & Data Analysis

- imc STUDIO for acquisition, visualization, and triggering
- imc FAMOS for FFT, fatigue, transient, and correlation analysis
- Automated synchronization and reporting workflows

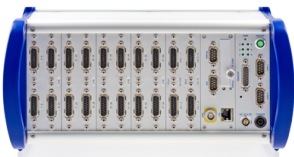




imc CRONOSflex



imc ARGUSfit



imc SPARTAN



imc CANSASflex

Typical Applications

- Flight Test Instrumentation (FTI)
- Aircraft structural vibration analysis
- Landing gear validation
- UAV performance validation
- Cockpit vibration characterization

Customer Value

imc systems provide scalable and reliable acquisition architectures supporting defense validation, durability analysis, qualification testing, and operational measurement workflows while improving data quality, synchronization, and engineering confidence.

Recommended Solution Configuration

Based on the application requirements and environmental conditions, Axiometrix recommends a tailored measurement solution combining high-precision microphones, signal conditioning, and analysis systems to ensure reliable, repeatable, and standards-compliant results in demanding defense environments.

Typical imc Hardware Architecture solutions may include:

- **CRONOSflex** for high-performance synchronized DAQ
- **ARGUSfit** for onboard and mobile acquisition
- **SPARTAN** for portable and rugged flight test acquisition
- **CANSASflex** for distributed sensor integration
- Integration with **accelerometers, strain gauges, pressure sensors, and CAN signals**

For more information or application-specific recommendations, please contact our team of specialists.

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About Axiometrix Solutions

Axiometrix Solutions is a global leader in advanced test and measurement solutions, supporting customers across aerospace, automotive, defense, audio, and electronics industries. With a strong focus on precision, reliability, and innovation, Axiometrix delivers technologies that enable accurate measurement and analysis in even the most demanding environments.

Axiometrix Solutions brings together three world-class brands:

- **GRAS Sound & Vibration** – Specialists in high-precision measurement microphones and acoustic solutions, trusted for their accuracy, durability, and repeatability.
- **imc Test & Measurement** – Experts in intelligent data acquisition systems and real-time analysis for mechanical and mechatronic testing.
- **Audio Precision** – The industry standard in audio analyzers and electroacoustic test solutions.

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