



Communication & Qualification Support

imc Test & Measurement

APPLICATION NOTE // By Antonio Perez



Operational Context

Modern defense communication systems operate under high-noise and high-vibration environments where synchronized acquisition and analysis are critical during validation and qualification processes. imc systems support data acquisition and analysis workflows used to evaluate operational performance of communication and hearing-related systems.

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 BUSDAQ



imc CANSASflex

Typical Applications

- Communication system validation support
- Operational acoustic characterization
- Qualification and field testing workflows
- Synchronized communication and operational signal analysis

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
- **BUSDAQ** for autonomous field logging
- **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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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.

Together, these brands provide a comprehensive portfolio of solutions that empower engineers and researchers worldwide to measure, analyze, and improve performance across a wide range of applications. Axiometrix Solutions operates globally through subsidiaries and distributors in more than 40 countries. Learn more at www.axiometrixsolutions.com