



# Embedded Systems Design

TURN-KEY PRODUCT DEVELOPMENT PARTNER

Aversan Inc. is a global engineering firm providing turn-key product development across a wide range of safety-certifiable and mission-critical platforms. Aversan provides complete embedded systems development support:

- **Requirements Definition** done by experienced systems engineers ensures the project is defined correctly from the beginning.
- Compliance experts with **experience designing to meet regulatory standards**, generate the necessary planning and compliance artifacts.
- **Size, Weight and Power (SWaP) optimized embedded system design** to meet challenging requirements.
- Cutting edge **hardware-in-the-loop test platforms and test automation IP** ensures development stays on-schedule and on budget.
- Long-term product support & DFM provided through **world-class manufacturing partners**.

Aversan complies with the following Aerospace certification standards and regulations:

✓ CGP

✓ ITAR

✓ AS9100C

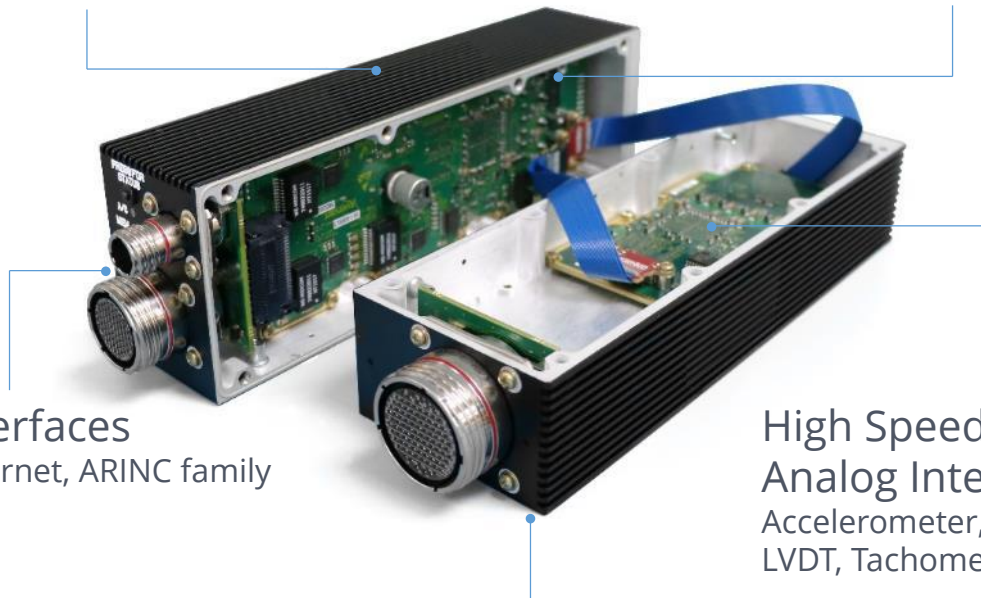
✓ ISO 9001:2008

## Safety-Certifiable and Mission-Critical Systems

Ruggedized Design

Meets Thermal, Vibration, and Shock Requirements

Low EMI & High Efficiency  
Power Supply



Digital Interfaces

CANbus, Ethernet, ARINC family

High Speed, High Fidelity  
Analog Interfaces

Accelerometer, Position Sensor,  
LVDT, Tachometer

Small Form Factor

SWaP optimized designs using SoC technology

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## Project Spotlight

### Specialized Data Acquisition System

Aversan delivered a turn-key product development for a Specialized Data Acquisition system. Main accomplishments:

- Developed low noise analog interfaces for accelerometers, tachometers and blade trackers
- Aversan developed custom FPGA designs, including a high-bandwidth I/O capture engine, critical to meeting customer's sensor throughput requirements
- Designed and qualified to meet harsh environmental and EMI conditions for commercial and military applications
- Supports a multitude of commercial and military bus protocols including CAN, Gigabit Ethernet, USB, RS232/422/485, ARINC429, ARINC717, and MIL-STD-1553
- Power supply designed to meet MIL-STD-704, with built-in fault monitoring, hold-up capacity during power interrupts, and Power-over-Ethernet capabilities

Aversan performed mechanical, hardware and software design & analysis, and manages prototyping, production, qualification and warranty issues, while working with a world-class manufacturing partner. In addition, generated the plans and artifacts for hardware and software certification. Aversan continues to serve as the single point of contact for this program.

### Hardware-in-the-loop System Integration Lab

Aversan developed and built a System Integration Lab (SIL) for an air pressure and temperature control system. The facility is a closed-loop control test platform, integrating actual controller hardware with plant models as if they were deployed on the target platform. By using hardware-in-the-loop testing and accurate simulation models, the SIL raised more internal problem reports than the legacy test methods, with a 95% legitimacy rate.

### Software Defined Radio Network

Aversan developed the Software Defined Radio (SDR) network for rail signaling, which included fail-over coverage implementation. Aversan improved the overall network throughput from 1Mps to 40Mps.

To learn more about these and other projects contact  
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