GERALD R WILLIAMS

PhD | PMP | CHIEF ENGINEER

321-522-7997 | Astro@DrAstro.com | www.DrAstro.com

Chief engineer with multidisciplinary leadership across embedded software, FPGA firmware, electronics, controls, and safety-critical aerospace systems. Resolves complex integration problems, develops reusable test infrastructure, and guides global teams through demanding program milestones. Technical background spans flight controls, actuation, fuel systems, power distribution, and vehicle electrification.

CORE EXPERTISE

Technical leadership • Systems integration • Embedded software and FPGA firmware • Model-based development • Real-time systems • MIL and HIL simulation • Root-cause investigation • Aerospace qualification • Engineering mentoring

PROFESSIONAL EXPERIENCE

EATON | 2011–Present

Senior Manager, Global Software Validation and Verification

Lead global verification and validation for embedded software and firmware across aerospace, mobility, and electrical products; coordinate engineering teams across the Americas, Europe, and India.

- Developed the electrical division's first automated high- and low-voltage HIL systems for Automatic Transfer Switch testing, saving tens of thousands of dollars in initial costs.
- Led AI-assisted extraction of signal names from MATLAB models as a foundation for automated test scripts; incorporated automated x-in-the-loop testing and reporting metrics.

Selected accomplishments across prior Eaton leadership roles

Senior Chief Engineer, Industrial Sector SWEC; Senior Manager and Manager, Software CoE; Chief Engineer, Embedded Systems CoE

- Directed systems, electrical, FPGA firmware, software, mechanical, verification, and test-equipment engineering for aerospace and vehicle programs, including Safety of Flight documentation.
- Integrated a sync controller across Wisconsin, Michigan, and Canada for Thrust Reversal and High Lift programs, delivering on schedule despite constrained resources.
- Upgraded Performance & Evaluation Test Stands with FPGAs, motor simulators, and RTOS integration, combining MATLAB models with NI LabVIEW hardware for MIL and HIL testing.
- Designed and deployed a vehicle and e-Mobility HIL test stand adopted at multiple locations; redesigned the CORE test stand around FPGA, MATLAB/Simulink, and LabVIEW technologies.
- Resolved nose-wheel steering, hydraulic motor control, and fuel-gauging integration issues for Piaggio, Dassault, and Gulfstream, avoiding contractual penalties and restoring customer relationships.
- Supported CR929 Integrated Modular Avionics and real-time airborne computing networks as a subject matter expert; introduced agile and model-based development processes.

EARLIER EXPERIENCE

ENSCO INC.

Director, Midwest Region | Earlier technical and program leadership roles

Held regional director, site manager, lead technical engineer, and program manager roles supporting avionics, electrical systems, modeling, simulation, and real-time applications.

- Led engineering for the F-35 270V Electro-Hydrostatic Actuation System, coordinating development with Parker, Moog, and Hamilton Sundstrand/Collins Aerospace.
- Directed development of DO-178 / DO-254 embedded software and Formal Qualification Testing artifacts; led the F-35 STOVL flight-code transition from Hamilton Sundstrand to Moog.
- Served as lead engineer for Boeing 787 electrical-system embedded software in Simulink, including bus power and generator control units.
- Supported General Electric's F-35 Full Authority Digital Engine Controller work involving more than 800 MATLAB/Simulink flight-code models.
- Created an automated test environment generating thousands of test cases, saving an estimated $3 million in outsourcing costs.

ADDITIONAL LEADERSHIP

U.S. Air Force satellite engineering and simulation leadership, including real-time telemetry analysis and launch operations. Earlier U.S. Marine Corps electronics and radar troubleshooting and instruction. Columbia College adjunct professor in computer and software engineering; named Instructor of the Year.

TECHNICAL AND PROFESSIONAL SKILLS

Development and simulation: C, C++, Python, MATLAB, Simulink, NI LabVIEW, dSPACE, SCADE; FPGA-based test systems and real-time operating systems.

Engineering workflow: Jama, Jira, Bitbucket, DOORS; systems integration, model-based development, technical investigations, qualification testing.

Standards: DO-160, DO-178, DO-254, DO-330–333, ARP4754, ASPICE, ISO 26262, IEC 61508.

EDUCATION AND CREDENTIALS

PhD, Computer Systems | Nova Southeastern University

MS, Software Engineering | University of Central Florida

MA, Business | Webster University

BS, Computer Engineering | University of Memphis

Project Management Professional (PMP) • Design for Six Sigma (DFSS) Black Belt