GERALD R WILLIAMS

PhD | PMP | SOFTWARE VERIFICATION AND VALIDATION LEADER

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

Global software V&V leader specializing in embedded systems, test automation, and model-based verification across aerospace, mobility, and electrical products. Builds reusable HIL infrastructure and leads distributed engineering teams. Results include thousands of automatically generated test cases, an estimated $3 million in avoided outsourcing costs, and test systems adopted across multiple sites.

CORE EXPERTISE

Global V&V strategy • Embedded software and firmware • Test automation • HIL and MIL testing • Model-based development • Qualification testing • Test infrastructure • Reporting metrics • Cross-site team leadership

PROFESSIONAL EXPERIENCE

EATON | 2011–Present

Senior Manager, Global Software Validation and Verification

Direct global embedded software and firmware V&V across aerospace, vehicle, truck, e-Mobility, and electrical businesses, with teams in Brazil, England, India, the Czech Republic, and the United States.

- Integrated the electrical sector product line into the V&V span of control in 2024 and incorporated automated x-in-the-loop testing and reporting metrics.
- Developed the electrical division's first high- and low-voltage automated HIL systems for Automatic Transfer Switch testing, saving tens of thousands of dollars in initial costs.
- Led an AI effort to extract signal names from MATLAB models, laying the foundation for automated test scripts.

Selected accomplishments across prior Eaton leadership roles

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

- Designed and deployed a HIL test stand for vehicle and e-Mobility applications that was adopted across multiple locations.
- Modernized Performance & Evaluation Test Stands using FPGAs, motor simulators, RTOS integration, and MATLAB models with NI LabVIEW hardware for MIL and HIL testing.
- Redesigned the CORE test stand with FPGA, MATLAB/Simulink, and LabVIEW technologies to support automated LRU, software, systems, and integration testing.
- Led a global Software Center of Excellence with 55 direct and indirect employees; introduced agile and model-based development processes.
- Led investigations resolving aircraft steering, hydraulic motor control, and fuel-gauging issues; resolved one critical executive-jet issue in less than 30 days, avoiding contractual penalties.

EARLIER EXPERIENCE

ENSCO INC.

Director, Midwest Region | Earlier technical and program leadership roles

Held director, site manager, lead technical engineer, and program manager roles delivering embedded software, qualification artifacts, and automated test capabilities for aerospace programs.

- Created an automated test environment generating thousands of test cases, saving an estimated $3 million in outsourcing costs.
- Directed systems engineers developing DO-178 / DO-254 embedded software and artifacts for Formal Qualification Testing.
- Led F-35 270V Electro-Hydrostatic Actuation System engineering and the STOVL flight-code transition from Hamilton Sundstrand to Moog.
- Led Boeing 787 electrical-system embedded software engineering in Simulink; supported F-35 FADEC work involving more than 800 MATLAB/Simulink flight-code models.
- Initiated and achieved AS9100 and CMM/CMMI certifications; established an avionics modeling and simulation Center of Excellence.

ADDITIONAL LEADERSHIP

U.S. Air Force simulation software and satellite engineering leadership, including a 30-person software team and training systems used by more than 200 satellite operators annually. Earlier U.S. Marine Corps electronics and radar experience. Columbia College adjunct professor in computer and software engineering; named Instructor of the Year.

TECHNICAL AND PROFESSIONAL SKILLS

Test and simulation: Hardware-in-the-loop (HIL), model-in-the-loop (MIL), xIL automation, FPGA test stands, MATLAB, Simulink, NI LabVIEW, dSPACE.

Software and workflow: Python, C, C++, SCADE, Jama, DOORS, Jira, Bitbucket; model-based development, systems integration, qualification artifacts.

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