ARRAY OF ENGINEERS

Accelerating Mission Critical Software to the Warfighter

Array of Engineers (AoE) is a leader in digital engineering specializing in embedded systems for the defense, space, and aerospace industries. Our expertise reduces costs, speeds up timelines, improves test accuracy, and enhances soldier safety.

90% Faster with Greater Efficiency

We specialize in mission-critical hardware and software visualization and implementation for military platform modernization.

- **Accelerated Development:** Accelerate to market 90% faster with greater confidence and cost efficiency, reducing test execution timelines from months to days.
- **Automated Test Controller:** Developed and automated 10,000+ tests on embedded systems for module testing and hardware/software integration testing, improving reliability and reducing timelines by an average 90% across platforms.
- **Life-Cycle Solutions:** Aligned processes, enhanced software compliance and provides expertise in test analysis.
- **ATCG Digital Twin:** ATCG digital twin visualization tool simulates real-world scenarios to anticipate potential issues, test solutions, streamline operations and ensure optimal performance and efficiency in the built environment.

Past Performance

Commercial Aerospace: Decades of DO-178 software product life-cycle support for safety-critical aerospace applications. Developed flight software using model-based development methodologies and applied test automation to meet certification requirements.

Military Ground Vehicle Test Automation: Automated SIL testing for MRAP, EHP, Bradley, and Abrams programs through US Army Ground Vehicle Systems Center (GVSC). Reduced test time from months to days, decreasing efforts from approximately a man-year to man-weeks.

Military Ground Vehicle Robotics Critical Software Assurance: Applied aerospace safety-critical processes and best practices to military ground vehicles to enable safe and effective autonomous and robotic control.

GCIA Compliance Suite: Development of test automation tools to provide compliance validation for Ground Combat System Common Infrastructure Architecture (GCIA) software interfaces to support Army Modular Open Systems Approach (MOSA) initiatives.

Space Robotic Motor Control: Designed, developed, and tested FPGA-based motor control code for the Mission Extension Pod (MEP) Capture Mechanism program for satellite applications.

A Bold, Fresh Approach

Embedded Software Development & Verification

- Embedded software development life-cycle capabilities including requirements, design, implementation, testing, verification & validation in a wide variety of languages, platforms, and operating systems.
- Automated verification testing for hardware & software and development/review of test strategy, test architecture, and test cases for a variety of scenarios.

Firmware and Hardware Capabilities

- Mixed analog and digital PCB design including the use of FPGAs and SoCs.
- Custom low and high-speed IP core development.
- Robust experience using Xilinx, Microsemi, and Altera devices, and PCB development tool suites (Altium, OrCAD, Mentor Graphics).
- Cable harness and mechanical enclosure design.

Test Automation

- Embedded test software, test hardware, and test procedure script development to fully automate test processes, reducing costs and timelines, and enabling continuous integration & continuous deployment pipelines.
- Development of automated test strategies, architectures, and tests for white box and black box testing.

Model-Based System Engineering (MBSE)

- 80 years of collective development and testing across the full MBSE software development cycle, using model-based tools suites such as SCADE and MATLAB/Simulink.

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