

Flight Controls Engineer

This position will design and develop flight or mission-critical onboard software for aircraft, helicopters, ground vehicles, vision systems, situational awareness and collision avoidance systems, see and avoid, redundancy management and UAV GNC and path planning systems. As part of a dynamic, multidisciplinary team, the candidate will participate hands-on in the full software life-cycle, from concept through implementation; integration all the way to flight test.

Responsibilities

- Define, analyze and review software requirements to meet defined and anticipated customer needs and system quality and performance standards.
- Collaborate with other engineering disciplines in planning, design and development of systems to ensure software and hardware performance and compatibility
- Design software architecture and interfaces and implement functionality using a model-based approach
- Design and develop flight or mission-critical onboard software for manned systems
- Software verification and validation including writing Test Cases and Test Procedures.
- Develop, implement, and document data and software application test plans to validate that project deliverables meet quality standards
- Develop flight test cards for software enabled flight tests
- Oversee and support processes and procedures for existing data and reporting activities to support internal and external customer deliverables. Examples of specific deliverables include but are not limited to: recurring reports and analyses; data validation and documentation
- Design, develop, code, test and debug system software
- Interface with hardware design and development
- Support oversight of suppliers who develop a subset of the embedded software or verification test cases and procedures.
- Assess third party and open source software
- Typical software functionality for a manned aerospace includes guidance, navigation & control, mission sequencing, payload control, redundancy and contingency management, uplink and downlink packet encoding and decoding, converting between different serial protocols, hardware-in-the-loop simulation, ground based GUIs, and aircraft subsystem control (i.e., engine, electrical system, fuel system).

Requirements

- BS degree in Physical Science, engineering or applicable engineering or science field
- Four years' experience in a professional environment developing in MATLAB, Simulink control system development with auto code experience. Embedded code experience preferred.
- Experience in developing physics based 6 DOF simulations, preference helicopters
- Drive usage of tools: Matlab/Simulink, C, C++, FORTRAN or Python for cost efficient development and execution of program.
- Ability to predict performance of helicopter simulations
- Experience developing scripts to run batch processes
- Experience doing data post processing from simulation runs
- Familiarity with autonomous guidance, navigation and control
- Experience developing guidance and autonomy algorithms in denied environments
- Must have at least two years of demonstrated, hands-on professional experience in at least one, ideally a combination, of the following areas:
- Model-based design and/or test using the Simulink/Stateflow tool chain.
- Software development in a relevant subject matter area: Aircraft GNC or other robotic system guidance, navigation and control; ground- or airborne mission systems; general aerospace flight control or cockpit avionics systems; ground stations; payload control.
- Development/operations of hardware-in-the-loop simulators, conducting testing and troubleshooting of HW/SW interfaces.
- Open Architecture oriented systems (FACE) applied to complex aerospace or military systems (C2, payload data, etc.)
- Experience in hands-on development and troubleshooting on embedded targets
- Familiarity with software configuration management tools, version control systems, defect tracking tools, and peer review
- Adequate knowledge of reading schematics and data sheets for components. Specific knowledge and understanding of analysis of MIL-HDBK-217
- Existing DoD Secret Clearance or be eligible to receive secret clearance.