



Software 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, aerial survey, aerial inspection 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 UAV 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 UAS 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 Computer Science 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 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
- Strong documentation and writing skills
- Existing DoD Secret Clearance or be eligible to receive secret clearance.