ADVANCED FLIGHT CONTROL ALGORITHMS AND IMPLEMENTATION ENGINEER

Company Description

At TECNALIA we want to strengthen our TEA (Tecnalia Electric Aircraft) team, whose mission is to promote the well-being of society through more ecological and safe air transport. For this, we are looking for a researcher oriented to the development of innovative products and R&D projects. The vacant position to be filled belongs to the Aeronautics and Space Business Area of Tecnalia's Industry and Transportation Division, which is actively working on the development of systems to contribute to the development of more electric aircraft architectures. The ideal person will help contribute to a ground-breaking aerospace project that pushes the boundaries of aviation technology.

Information

Deadline: 2021-03-09
Category: Business
Province: Gipuzkoa
Country: Basque Country
City: Donostia - San Sebastián

Company

Tecnalia Research and Innovation

Main functions, requisites & benefits

Main functions

To design and test of Flight Control Systems (FCS) with embedded software and complex hardware. Modifying, developing, and maintaining software layers for safety-critical hardware components of Flight Control System according to aerospace software guidelines. To develop air vehicle flight control laws, flight director, navigation, guidance, and autonomous systems control algorithms. To control System and software design, requirements management, systems specifications, interface management, system safety assessment, verification and validation testing in a desktop simulation environment and systems integration labs, aircraft flight test, and aircraft/system requirements for obtaining a permit to fly. To evaluate generated flight control code and measuring its execution time in the flight control computer. To manage and develop the software for establishing Processor-in-the-Loop, Hardware-in-the-Loop setups for closed-loop testing of the flight control system. To support of safety assessment activities on the flight control system and aircraft level. To manage Control Law design, including gain tuning, stability, and handling qualities analysis.

Requisites

Bachelor's Degree in Physics, Electrical, Aerospace, or Mechanical Engineering with 5 or more years' experience is preferred, or a Master's Degree with 3 or more years of experience will be considered with sufficient software development experience. It Is interesting that the candidate has or is pursuing a doctorate in the Engineering disciplines mentioned above and previous involvement in research projects, projects of the European framework program, as well as advanced knowledge of flight control hardware and software. Experience 2+ years of experience in flight control design and proven experience in a UAV control and guidance design project from concept to flight testing. Profound knowledge of flight mechanics, control, and estimation theories. Experience in embedded programming and hardware integration. Skilled at creating and reviewing technical schematics, logical and functional diagrams, and engineering specifications. Good exposure to PX4 firmware and controller tuning. Experience with Pixhawk-based autopilot architecture. Experience with RTOS and performing code evaluation. Experience with interfacing companion computer with the flight controller. Ability to troubleshoot communications protocol problems using a variety of tools. Experience in RS485, CAN ARINC429, ARINC825 communications, and in regulations applicable to the aeronautical or automotive sector (IEC-SIL, ISO-ASIL, RTCA-D0-254, RTCA-D0-178) is a plus. Experience working with Matlab and Simulink, C++, Phyton.

Benefits

Opportunity to work in a team with great projection and a national leader in the subject, in a multicultural, dynamic, and enriching work environment. Opportunities for professional development, participate in relevant projects through which to respond to the challenges of the future, be able to create a solid professional career. Collaborate with high-level regional, national, and international research groups, especially Europeans. You will have measures to reconcile your personal and professional life.