

Internship tutors:
Patrice LABEDAN - Joel JEZEGOU

Internship with ISAE SUPAERO - Toulouse

Location: **ISAE SUPAERO - Toulouse**

Starting Date: between 01/03/2021 and 01/05/2021

Duration : 6 months

Title : Upgrade of IT architecture of PEGASE flight simulator

ISAE-SUPAERO is an institute dedicated to aerospace engineering higher education and research. ISAE-SUPAERO develops a research focused on the future needs of aerospace or high-tech industries.

The ISAE-SUPAERO Department of Aerospace vehicles design and control (DCAS) supports activities related to the design and development of aerospace systems. The DCAS researchers belong to three research groups:

- Aerospace vehicle design
- Decision and Control
- Neuro-ergonomics and human factors

The research groups collaborate on the following topics:

- Design and operation of safer aircraft
- Integrated multidisciplinary design of aircraft
- Advanced space concept.

The intern will be integrated in the Aircraft Design research team of DCAS Department.

PEGASE is a 3-axis-motion flight simulator operated in DCAS department for human factors and flight dynamics experiments. The simulator currently aggregates fully-integrated architecture different code blocks (C, C++, Java, Visual Basic) and FlightGear for visualization. The purpose of the internship is to upgrade the IT architecture of the flight simulator to a modular one to accommodate new capabilities, without regression on the existing functionalities.

The objectives of the internship are :

- To understand the current architecture (aircraft settings, supervision, simulation kernel, simulator motion, controls, cockpit and external visualizations);
- To propose a new modular architecture that can run alternatively to the current one, and that is compatible with JSBSim flight dynamics library and different propulsion/energy modules (developed separately);
- To implement and test the new architecture in the development simulator, and then in the real simulator.



ISAE-SUPAERO PEGASE
Flight Simulator

REQUIRED SKILLS

Skills: Strong interest in programming is required, C, C++, Python, Git, Java, Visual Basic
Software : JSBSim
Soft skills : autonomy, curiosity, innovation, proactive
Interest for aircraft flight and flight simulation is appreciable.

APPLICATION FOR INTERNSHIP

To apply : CV and motivation letter to be send by email to Patrice LABEDAN (patrice.labedan@isae-supero.fr) and Joël JEZEGOU (joel.jezegou@isae-supero.fr) and

For further information: please contact the above mentioned contacts.