Title: AIRWORTHINESS & CERTIFICATION OF INNOVATIVE DISTRIBUTED ELECTRICAL PROPULSION AIRCRAFT

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 internship is related to the multidisciplinary design of innovative CS-23 aircraft architectures, as part of research chair ISAAR (Innovative Solutions for Aircraft Architectures & Regulation). The intern will be integrated in the Aircraft Design research team of DCAS Department.

The final purpose of the internship is to elaborate a draft certification program for distributed electrical propulsion (DEP) aeroplane such as NASA X-57 through detailed examination of technological innovations brought into this architecture and gap analysis with current airworthiness requirements.

The objectives of the internship are:

- To draft a certification basis and a certification program for a DEP generic aircraft, based on EASA CS23 Amdt 5 and FAA FAR25 Amdt 64;
- To conduct a gap analysis between drafted program and existing certification requirements, regulatory/guidance material and standards;
- To propose actions to fill the identified gaps.

The project will require a strong aeronautical engineering analysis of DEP aircraft configuration, with numerous available documents (NASA, research papers, safety analysis, …).
The airworthiness and certification study will be based on available EASA CS23 / FAA FAR23, ASTM standards. It will also carefully consider EASA technical requirements for certification of Vertical Take-Off and Landing aircraft (VTOL) and the first technical documents issued to demonstrate safety of those vehicles.

**REQUIRED SKILLS**

Skills: Aircraft architecture, Aviation safety & Airworthiness, Certification process, Systemic interdisciplinary background,
Soft skills: autonomy, curiosity, innovation, efficient reporting

**APPLICATION FOR INTERNSHIP**

To apply: CV and motivation letter to be send by email to Joël JEZEGOU (joel.jezegou@isae.fr)

For further information: please contact Joël JEZEGOU (joel.jezegou@isae.fr)