	INTERNSHIP 6 MONTHS **YEAR 2019**
Internship tutors: Joel JEZEGOU joel.jezegou@isae.fr	Internship with ISAE SUPAERO - Toulouse Location: **ISAE SUPAERO - Toulouse** Grant: 3,60 €/hour ⇨ 554,40 €/months (22 days, 7 hours/day)

Title : SAFETY EVALUATION OF DISTRIBUTED PROPULSION INNOVATIVE 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 aircraft and more specifically to the safety evaluation of an advanced aircraft concept, the distributed-propulsion aircraft.

NASA X-57 Maxwell © NASA

The objectives of the internship are :

- To establish a state-of-the-art of existing distributed-propulsion aircraft and related concepts (electrical, wingtip propellers, …) in the normal and light aircraft category (CS23 regulation);
- For a given architecture such as NASA X-57, to perform an evaluation of risks related to this innovative concept;
- To perform an aircraft-level safety evaluation related to this same concept, based on safety methodologies such as SAE ARP4761 or ASTM safety assessment or STPA ;
- To derive airworthiness and operational objectives with regards to EASA CS23 regulation.

NASA Nine passengers Distributed Electric Propulsion Commuter Concept © NASA

The different steps of the work will be:

- Risks analysis for innovative concepts and technologies;
- Aircraft-level safety analysis
- Airworthiness evaluation

REQUIRED SKILLS

Skills : Aircraft architecture, systemic interdisciplinary background, interest in aircraft safety and airworthiness
Soft skills : autonomy, curiosity, innovation