DMD SOLUTIONS

DMD Aeronautics Engineering S.L.
Carrer Municipi 14
08020, Barcelona
Spain

The Company

DMD Solutions is an aerospace engineering company based in Barcelona (Spain) and Luzern (Switzerland) which provides services and software tools in the fields of RAMS (Reliability, Availability, Maintainability and Safety) for the Aerospace industry.

Established in 2015, we support our clients by providing tailored engineering services, training courses and our RAMS Software Robin™

RAMS field is a fast-growing sector with a limited number of experts and represents a great opportunity for the career of young engineers.

We work in the field of CS-23 and CS-25 (fixed wing aircraft), CS-27 and CS-29 (rotary wing aircraft), CS-LUAS and CS-LURS (Unmanned Aircraft System), CS-VTOL (Vertical Take-off and Landing), UAM (Urban Air Mobility) and ECSS (Space).

What we offer:

We are looking for motivated students who want to approach the RAMS and the regulations fields in an international environment within a long-term multidisciplinary project.

The student will support for 150 hours our design team in the development of the Robin RAMS software by executing one of the project hereafters defined.

We offer flexibility with the working time (i.e. maximum compatibility with student academic calendar) and a 100% remote work placement (the project will be executed through Google Meet).

Prerequisites for this project are:

- English (Mandatory) or Spanish (Optional) C1 language skills
- Strong motivation
- Punctuality
- Programming skills (optional): Python

The open projects are:

1. **Collect and populate Airworthiness data**: The objective of the project is to complete our airworthiness database, which now includes safety requirements for most types of aircraft. The work would consist on populating the database with system (electrical, flight controls…) and safety requirements for several aircraft types: fixed-wing aircraft (Part 23 and 25), helicopters (Part 27 and 29), UAVs (CS-LURS and CS-LUAS).

2. **Functional and performance debugging/testing of newest Robin version**: Robin v1.0 was launched in the market on September 16 of 2020. Since then, some bugs and possible improvements have been identified. However, it is expected that more issues can be found. The aim of this project is to identify bugs, possible improvements (both from the user's experience perspective and from the performance perspective), and desirable new features for the near future.

3. **Thresholds of parameters used in RPA standards**: Robin v1.3/v1.4 is going to include a feature that will alert the user when an RPA parameter is submitted out of range. The goal of this project is to obtain these thresholds (minimum and maximum value) for all the parameters implied in the existing RPA standards (MIL-HDBK-217F, RIAC-HDBK-217Plus, FIDES 2009 and NSWC-11). Some of the thresholds could be directly obtained from the standard formulas, while others require engineering judgment.

4. **Default RPA values depending on industry type**: Robin includes the ability to provide default values for the parameters used in the existing RPA standards (MIL-HDBK-217F, RIAC-HDBK-217Plus, FIDES 2009 and NSWC-11). These default values are currently the same regardless of the industry type (automotive, commercial aircraft, industrial…). However, some parameters depend on the type of industry (i.e. duty cycle). The aim of this project is to identify these types of parameters (and for which standard) and define the associated default values. Some of these types of parameters are clearly defined in some standards, while others require engineering judgment.