### **Problem statement**

**Aircraft Sustainability Platform**

Develop a platform or solution that connects aircraft manufacturers, airlines, and recycling facilities to facilitate the repurposing and recycling of end-of-life aircraft components.

**Overview**

The aviation industry is a significant contributor to global greenhouse gas emissions and is under increasing pressure to reduce its environmental impact. One area where significant progress can be made is in the recycling and repurposing of end-of-life aircraft components. However, this process can be complex and requires coordination between multiple stakeholders.

The objective of this challenge is to develop a web platform or solution that connects aircraft manufacturers, airlines, and recycling facilities to facilitate the repurposing and recycling of end-of-life aircraft components. The solution should promote the circular economy by reducing waste and promoting sustainability in the aviation industry.

**Requirements**

The platform should :

* Include a database of aircraft parts that includes information on their material composition, age, and condition etc.
* Allow manufacturers and airlines to buy/identify components that are nearing the end of their useful life and arrange for their repurposing or recycling.
* Allow recycling facilities to identify sources of recycled materials, including both metals and non-metallic materials such as composites and plastics.

A dashboard for the circular economy models for aircraft materials should provide a clear and concise overview of the key metrics and data related to the recycling and repurposing of end-of-life aircraft components.

Here are some potential elements that could be included in the dashboard:

Overview of the recycled and repurposed materials: This could include charts and graphs showing the percentage of materials that are being recycled or repurposed, as well as a breakdown of the types of materials being processed.

Environmental impact metrics: To show the positive impact of recycling and repurposing, the dashboard could display metrics such as the reduction in CO2 emissions, water usage, and landfill waste as a result of these efforts.

Performance metrics: To track the success of the circular economy models, the dashboard could include metrics related to efficiency, such as the percentage of materials that are processed correctly and the turnaround time for processing materials.

### **Tech stack**

Team can choose any language or framework to develop the application.

### **Restriction**

* Use the latest open source technologies.
* Use of proprietary technologies will not be considered .

### **Submission format**

* Source code in any GIT version control system.
* Details about Tech Stack used and in the README.md file in the code
* Design diagram of the solution.
* Cloud - for hosting and data (preferable)

### **Evaluation Criteria:**

* Platform should meet the requirements and be fully functional for the users and effective in connecting customers to facilitate the repurposing and recycling of end-of-life aircraft components.
* Platform should have authentication and authorization for customers like:
  + Aircraft Manufacturers
  + Airline
  + Recycling facilities.
* Data Ingestion: Platform should be able to handle data ingestion from the given datasets.
* Performance and scalability.
* Creativity and innovation.
* Clarity and quality of the presentation or demonstration.

### **Resources**

* Aircraft Parts data:[**Database**](https://docs.google.com/spreadsheets/d/1W5WkSr2hXilQZ-noBdht__Kgyih4HByH/edit?usp=sharing&ouid=102947026814946429906&rtpof=true&sd=true)

**NOTE**: Evaluation will start on 13th of May at **10 AM**. There will be **3 to 4 rounds** of evaluation throughout the event and the team is expected to be present for the evaluation in the respective table throughout the event