**AIRBUS Fuel Leak Case Study**

(in no specific order)

* Fuel Lacks discovered AFTER LANDING through VISUAL INSPECTION

→ if detected it becomes **AOG** *(Aircraft Unavailability)*

* Automatic Detection by Aircraft itself is **NOT ACCURATE**
  + Tank sealant degradation.
  + Fuel tank structural damage.
* Goal: **IMPROVE** Automatic Detection by Aircraft WITH DATA ANALYTICS
  + **FUEL LEAK DETECTION MODEL** that detects fuel leaks that are not detected by routine visual Inspection.
* **8** Aircrafts
* **500** flights
* Time series data via sensors
* Already cleaned
* 111 variables

Objectives:   
1. EDA - preliminary Insights

2. Train predictive model that *DETECTS* fuel lacks

3. Analyse model to see MOST RELEVANT VARIABLES

​​The Dataset: **111 variables**

● A/C and flight data:

○ Time, day, month, year and UTC date/time.

○ MSN and Flight number.

○ Flight phase.

○ Altitude, pitch and roll.

● Fuel/Engine system data:

○ Engine status (Running or not).

○ Fuel flow (to each engine)

○ Fuel used (by engines).

○ Fuel on board (“FOB”).

○ Fuel quantity per collector cell and surge tank volume.

○ Pump status (On/Off, normally/abnormally, immersed/not immersed).

○ Leak detection and leak flow.

○ Fuel transfer mode.