

AIRCRAFT OEM

Aerospace (Commercial Aircraft)

TASK

HW & SW Development
V&V and Certification

KEY TOOLS & TECHNOLOGIES

Debugger, REMA, LTSPICE, TINA,
Altium, SolidWorks

KEY DATA

Team Size: 10 FTEs
Time: 24 months



ALTEN TECHNOLOGY

CRASH DETECTION UNIT

OVERVIEW

CDU, a centralized unit responsible for identifying the emergency landing scenario and sending this information to the other Avionics system in eVTOL.

Scope: Development of certifiable crash detection unit, Certified for FAA, EASA.

PROJECT DETAILS

- The CDU is a standalone LRU hosting acceleration and shock sensors, some electronics to interpret these sensors and a communication gateway to transmit the crash detection signal to the Avionics system in eVTOL.
- The CDU also has the capability to provide power to the internal indication of its activation to the flight crew and ground personnel. The CDU is intended to provide the capability to disconnect the batteries from Energy Storage System (ESS) in case of a Survivable Emergency Landing (SEL).
- The System supports following interfaces
 - > Acceleration (G) sensor
 - > CAN interface with IESUs
 - > 10 minutes holdup power (0.5W) for emergency isolation indication
 - > 2 channel redundant system with channel isolation in both Physical and electrical domains
- The hardware is certified as per DO-254 Level-A & AMC20-152A
- Software and algorithm for crash detection
- Complete V&V certification activities for the software as per DO-178C DAL A



Power Specifications

Power Input: 28V DC, 1 nos
Voltage Range: 18V to 32.2V
Hold Up: 50 m/sec for Digital and Sensor supply, 10 mins for isolation indication

IO Specifications

CAN: 2 nos
Indication: 1 nos

Certification Specifications

Environmental
EMI/EMC
SW
HW

DO -160G
DO-160G
DO-178C Level A
DO-254 Level A