



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

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## AIRCRAFT DESIGN

*The use of innovative methods and tools for new air vehicles and cabin interiors design provides benefits in terms of reduced lead time and increased performance.*

Research in Aircraft design covers the preliminary design of new aircraft configurations and the design and simulation of innovative human machine interfaces in the cockpit and in the cabin interior environments.

The research of the University of Bologna covers a wide range of issues:

- Virtual and Augmented Reality for interactive visualization of virtual large scale mock-ups
- Human Centered Design for cabins and cockpits
- Study of New Configurations: analytical methods to estimate the impact of the newly conceived configurations
- Cockpit interface design: Virtual Prototyping of Innovative Cockpit Interfaces
- Propeller design: design and testing of preliminary propellers
- Aircraft piston and Wankel engine design and automotive conversions: design of new engines and the conversion of automotive engines to aircrafts and helicopters

## HIGHLIGHTS

### **V-Lab (Virtual Reality and Simulation Lab)**

Established in 2001, V-Lab is equipped with Virtual Reality, Reverse Engineering and Rapid Prototyping facilities. It includes a CAVE (Cave Automatic Virtual Environment).

The University of Bologna is member of Clean Sky 2 Joint Undertaking as member of the CASTLE (**C**abin **S**ystems **d**esign **T**oward **p**assenger **w**ell**b**eing) **C**ore **P**artner **C**onsortium.

The University of Bologna participated to [RAISE](#) - **Reliable Aircraft electrical Insulation System sElection, Clean Sky 2**. The project comprehends the analysis and the experimental assessment of state-of-the-art insulation materials and systems used in aircraft applications.