

DIDEAROT: Digital Design strategies to certify and mAnufacture Robust cOmposite sTructures

Description

New certified designs for aircraft structures are critical for the upcoming changes in the conception of aircraft architectures. Various breakthrough designs and new strategies for better use of material and integration of functions in aircraft are required. They range from regional electrical mobility solutions to increase aspect ratio wings that will bring higher structure flexibility. Digital conception and simulation must play an ever-bigger role in reaching a certified design that includes production scenarios before complete manufacturing.

The DIDEAROT project aims at bringing a digital centrepiece approach that could integrate the move to more digital designs in the aircraft industry. It will cover the robust optimization of composite structures focused on digital predictions of two key aspects in its lifetime:

- (i) Manufacturing of large-scale composite panels and
- (ii) dynamic and impact loads occurring at high speed or repeated loads over time can lead to critical certification conditions.

DIDEAROT partners will pursue the objective of scalability and representativity of results in the design process through appropriate Machine Learning surrogates and high-fidelity simulations, benefiting from High-Performance Computing.

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