



PROJECT

pAlramid

AI-based testing pyramid towards virtual certification of next-gen composite aerostructures

The pAlramid project aims to transform aerostructure design, development, and certification by harnessing AI-driven virtual testing. This innovative approach replaces costly, time-intensive physical tests with a cutting-edge digital framework of high-fidelity virtual tools.



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101192736.

13

PARTNERS

7

COUNTRIES

€5M

TOTAL BUDGET

4

YEARS



IN ONE CLICK

Coordinator	Programme	Period
IKERLAN	Horizon Europe	2024 - 2028
Sector	Web	
Aerospace	https://pairamid.eu/	

01 Challenge

The aerospace industry faces substantial challenges in certifying composite aerostructures, a process that relies on extensive physical testing under the traditional pyramidal framework. This sequential, resource-intensive approach hampers innovation, increases costs, and extends time-to-market for new designs. Additionally, current methods fail to provide insights into the interactions between testing levels, limiting the ability to predict and adapt to changes in materials or processes. To achieve Europe's ambitious climate-neutral aviation targets, a more efficient and sustainable certification process is urgently needed.

02 Solution

pAlramid aims to streamline aerostructure design, development, and certification by introducing an AI-powered digital framework that integrates virtual testing across all levels of the certification pyramid using high-fidelity simulations and data-driven insights.

The project also advances sustainable thermoset and thermoplastic composites, along with innovative Liquid Resin Infusion (LRI) and Fused Deposition Modelling (FDM) manufacturing processes.

03 Impacts

By project's end, pAlramid will deliver a comprehensive solution to enhance efficiency, safety, and sustainability in aerostructure certification and production, driving progress towards Europe's climate-neutral aviation goals.