

ABOUT THE PROJECT

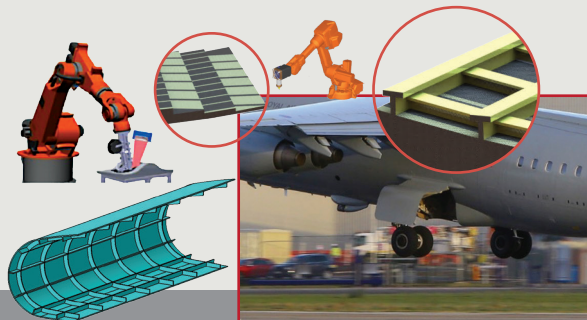
DOMMINIO is an EU funded collaborative research project focused on the development of an innovative data-driven methodology to **design, manufacture, maintain and precertify** multifunctional and intelligent airframe parts.

In the last few decades there has been a transition to the usage of advanced composite materials in the aeronautical industry, due to their **lightweight properties, strength and durability**.

DOMMINIO sets out to develop a cost-effective, flexible and multistage manufacturing system, based on:

- Robotized technologies (ATL, FFF)
- Advanced simulation tools
- On-line process & quality monitoring
- SHM (Structural Health monitoring) methods enabled by real time data-driven fault detection

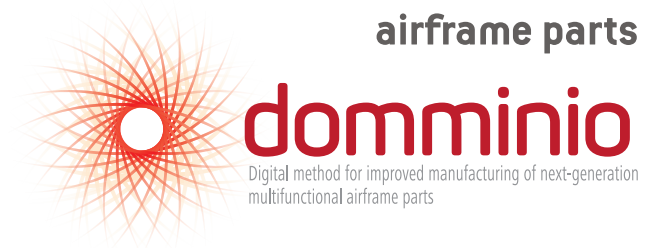
The methodology developed within the DOMMINIO project will be further validated at lab scale, by manufacturing two representative airframe parts as demo cases: i) Wing leading edge prototype and ii) Multifunctional airframe access panel prototype.



OUR TEAM



Digital method for improved
Manufacturing
of next-generation
Multifunctional
airframe parts



CONNECT WITH domminio



*A step closer to cost-effective,
efficient and sustainable
manufacturing of multifunctional
airframe parts*



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101007022.

OBJECTIVES



Enable flexible multistage robotic-based production processes for manufacturing of multifunctional composite airframe parts



Develop novel data-driven pipeline supporting the design, simulation and production planning of multifunctional and intelligent composite airframe components



Create a Quality-by-Design (QbD) manufacturing strategy, based on the development of process control and advanced quality monitoring systems

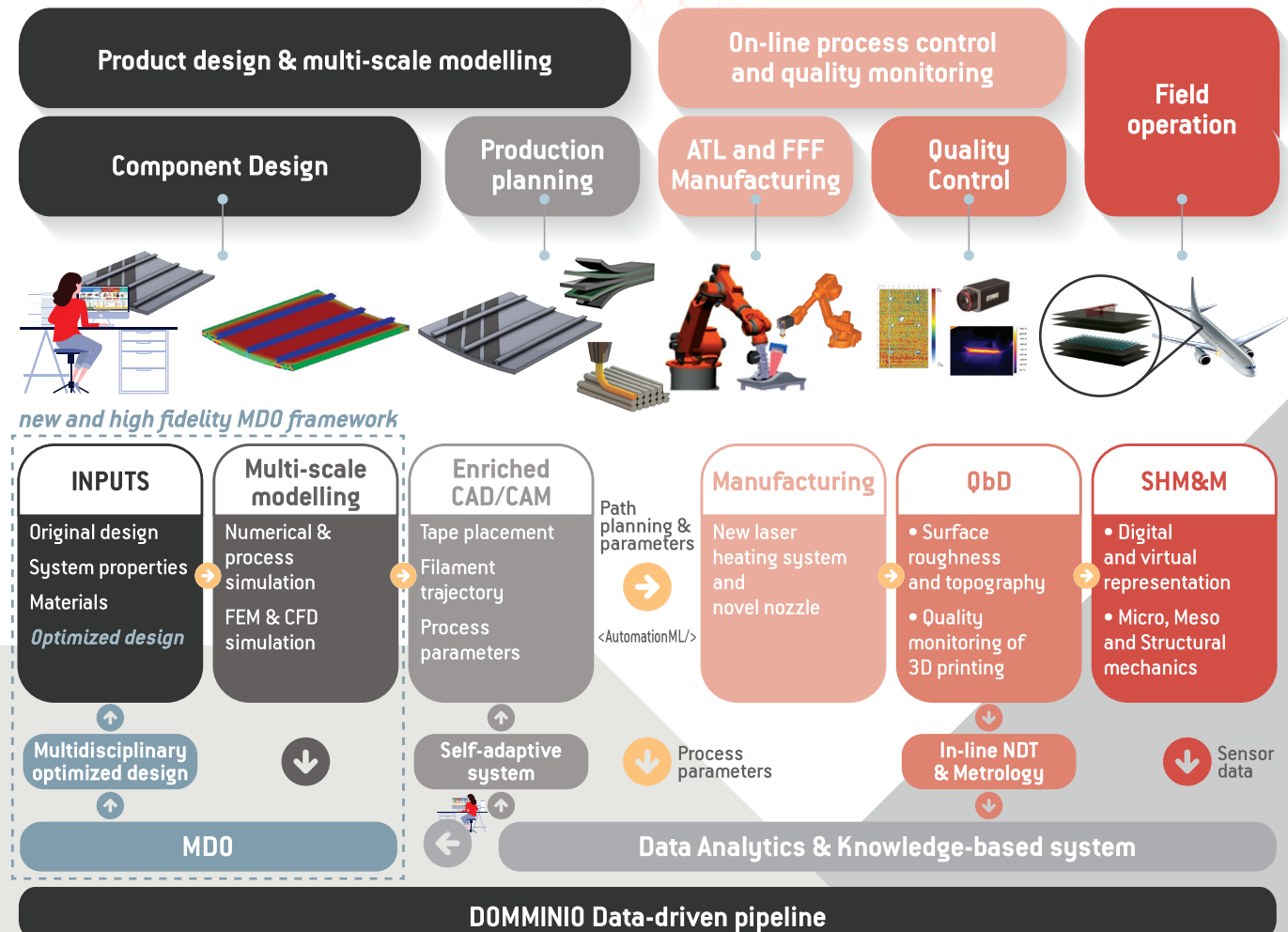


Deliver a new digital-combined-physical driven methodology for Monitoring and Management of the Health of multifunctional airframe parts

Holistic and user friendly software-assisted methodology



DOMMINIO CONCEPT



KEY FEATURES



Cost-Effective



Efficient



Sustainable

- ✓ Savings in time, materials and energy, during manufacturing, usage, maintenance, and recycling stages
- ✓ At least 20% reduction in CO₂ and NO_x emissions
- ✓ Right-first-time and zero-defect manufacturing approaches
- ✓ Standardized design methodology
- ✓ Low buy-to-fly ratio