



DOMMINIO PROJECT

Digital method for improved manufacturing of next-generation multifunctional airframe parts


CIRCULAR AVIATION FOR GREEN GROWTH

EU GREEN WEEK 2021 PARTNER EVENT



ZERO #EUGreenWeek POLLUTION
for healthier people and planet



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006952



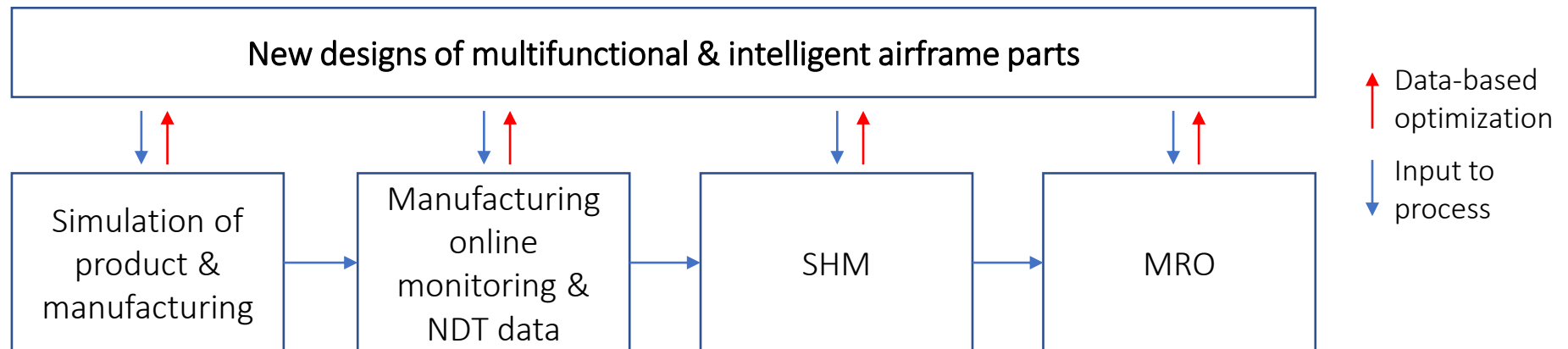
BACKGROUND AND CONCEPT

Advance the design, production and field operation of multifunctional and intelligent airframe parts

Emphasis on efficient, cost-effective and ecological manufacturing, maintenance and recycling

DOMMINIO

Digital method for improved manufacturing of next-generation multifunctional airframe parts



DOMMINIO TECHNOLOGY

MATERIALS AND SENSORS

THERMOPLASTICS FOR IN-SITU CONSOLIDAT.
High temperature thermoplastic tapes

MULTIFUNCTIONAL (SHM & DISASSEMBLY)
Continuous CNT fibre reinforced filaments

Magnetic nanoparticle reinforced filaments

FLEXIBLE MANUFACTURING
Combining AFP and FFF



ADAPTIVE MANUFACTURING

ONLINE MONITORING
Laser assisted AFP

FFF nozzle with improved thermal and pressure management

Inline non-contact ultrasound NDT

REAL-TIME CONTROL
Cognitive system for self-adjustment of process parameters



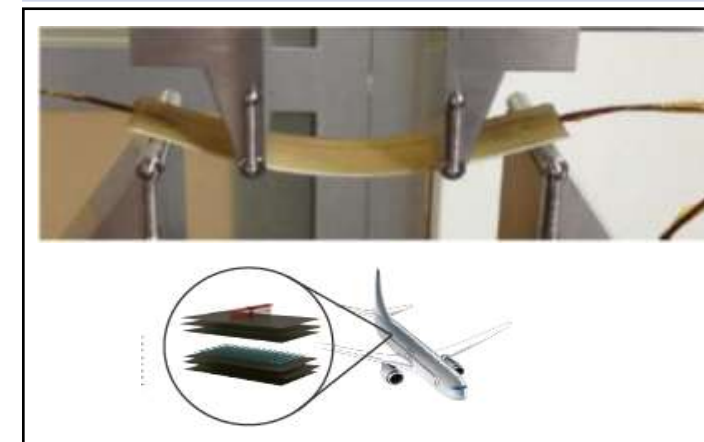
DIGITAL THREAD

DESIGN AND PRODUCTION PLANNING
AFP and FFF numerical simulation

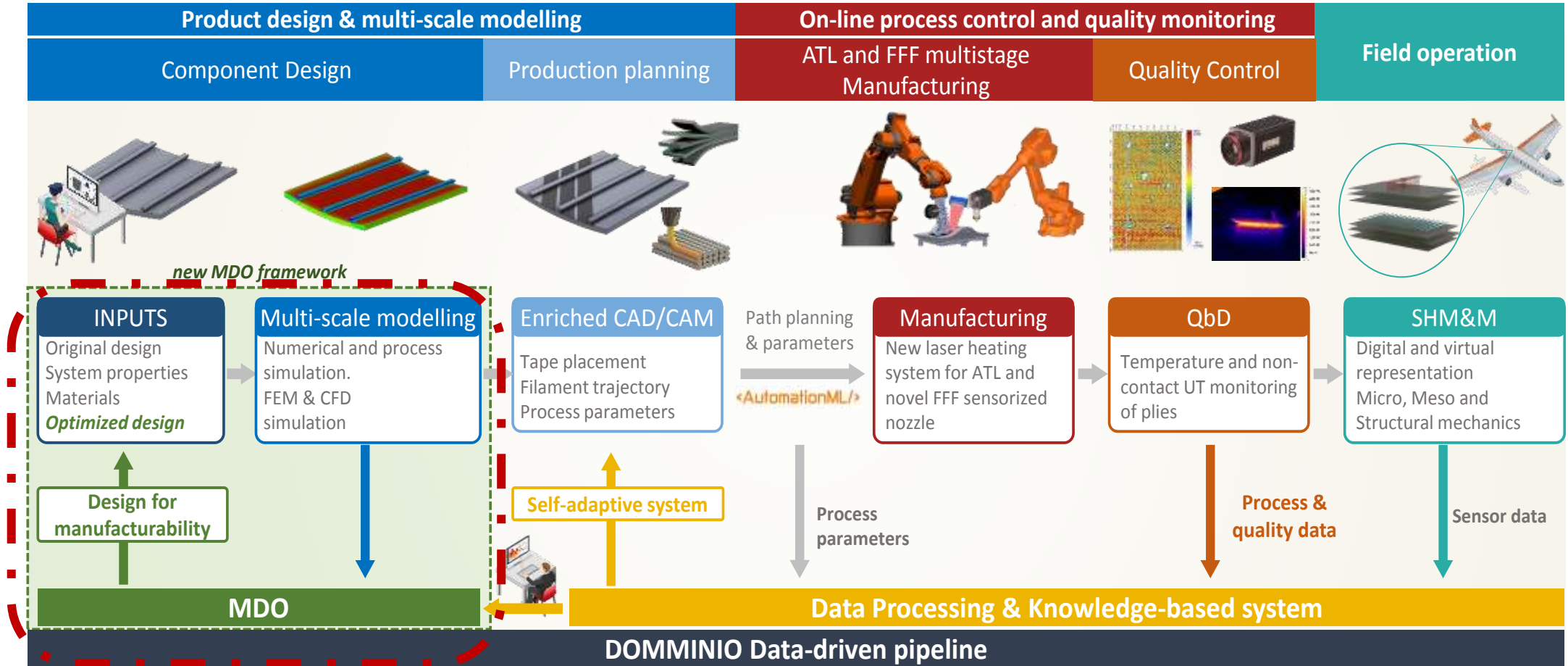
Data interoperability and knowledge base

Design for manufacturability

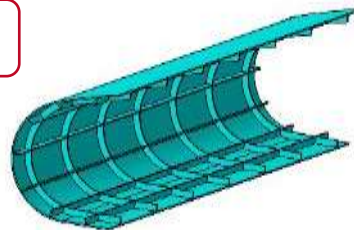
SHM AND MRO
Strain sensor based on CCNT-fibres
Digital Twin based on multiscale modelling



DOMMINIO MDO – DESIGN FOR MANUFACTURING



Multifunctional leading edge



Access door panel



DOMMINIO CONSORTIUM



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Thank you

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