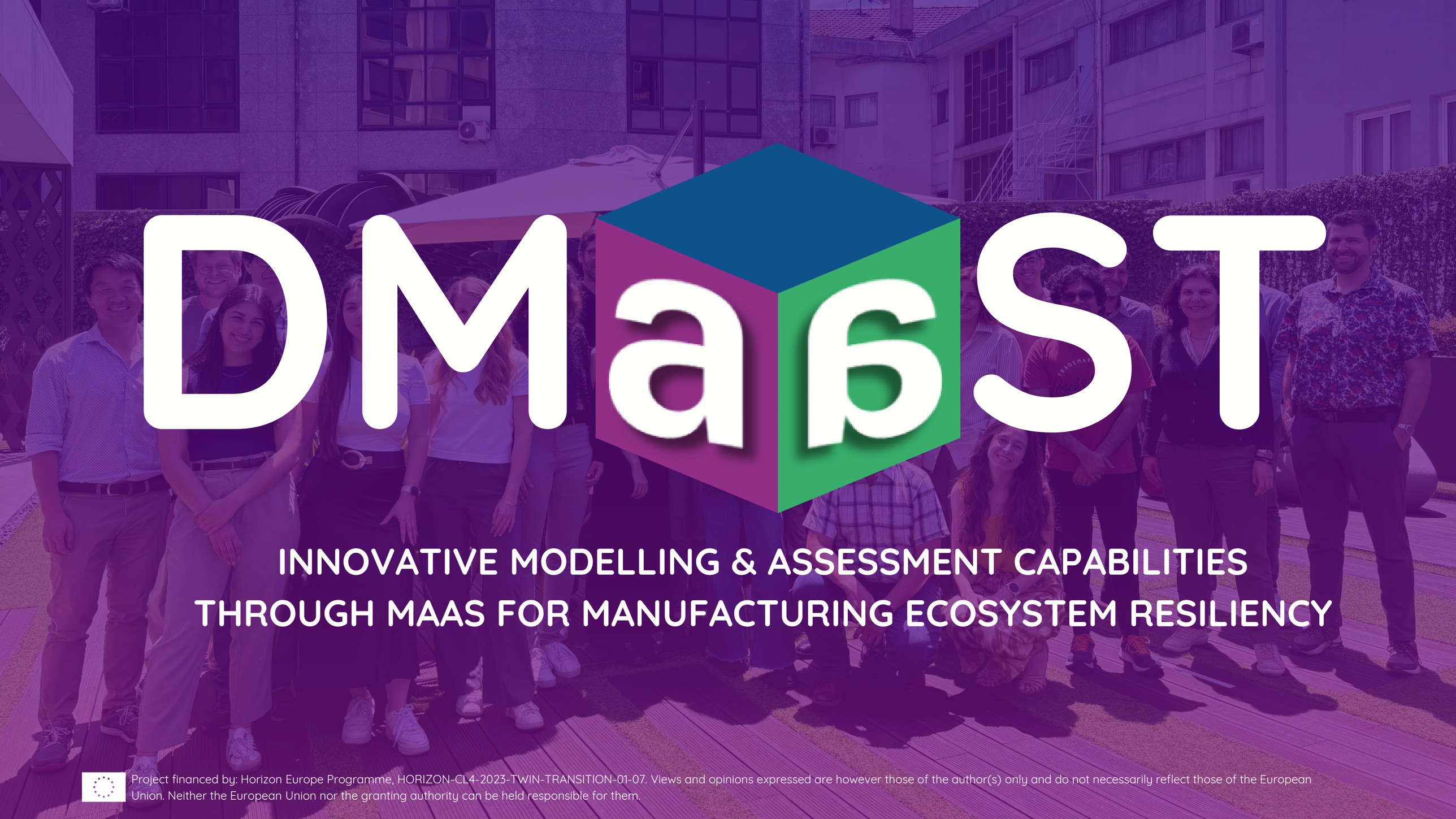


INNOVATIVE MODELLING & ASSESSMENT CAPABILITIES THROUGH MAAS FOR MANUFACTURING ECOSYSTEM RESILIENCY

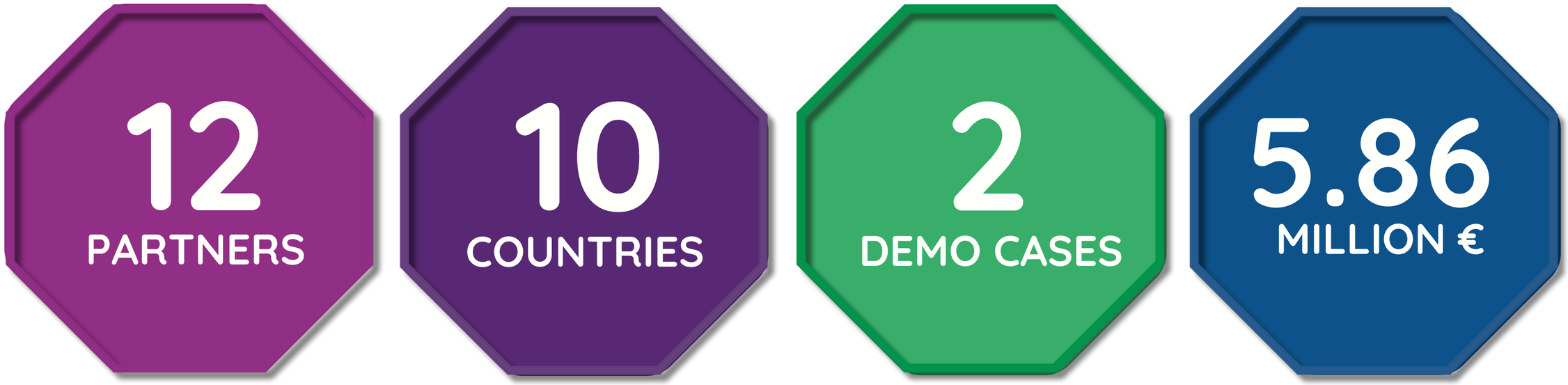
Project financed by: Horizon Europe Programme, HORIZON-CL4-2023-TWIN-TRANSITION-01-07. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

What is DMaaST?

DMaaST, is a Horizon Europe project developing a smart digital platform to help manufacturers become more resilient, efficient, and sustainable using AI, digital twins, and data-driven tools.

Main objective: To reinforce manufacturing vale-networks resiliency.

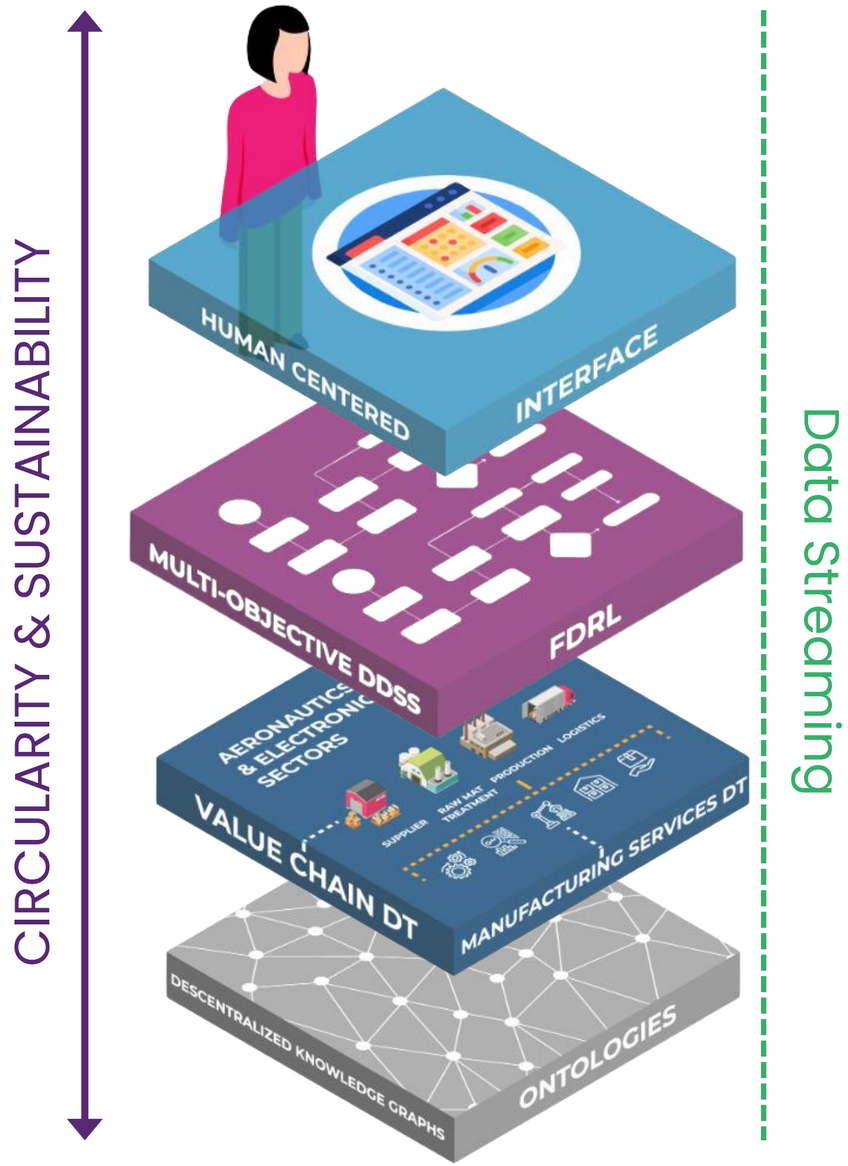
DMaaST is composed of...



Funded by
the European Union

Our Four-Layer Innovation

Our mission is achieved through a Smart Manufacturing Platform (SMAP) composed of 4 layers each designed to address specific challenges within the manufacturing ecosystem.



Smart Manufacturing Assessment Platform (SMAP) for MaaS

DECENTRALISED KNOWLEDGE GRAPH (DKG)

DMaaST uses DKG to enhance data interoperability, exploitation, and understanding across organizations. Standard-based ontologies enable seamless data integration and secure, real-time sharing through blockchain-based pipelines.

CIRCULARITY & SUSTAINABILITY

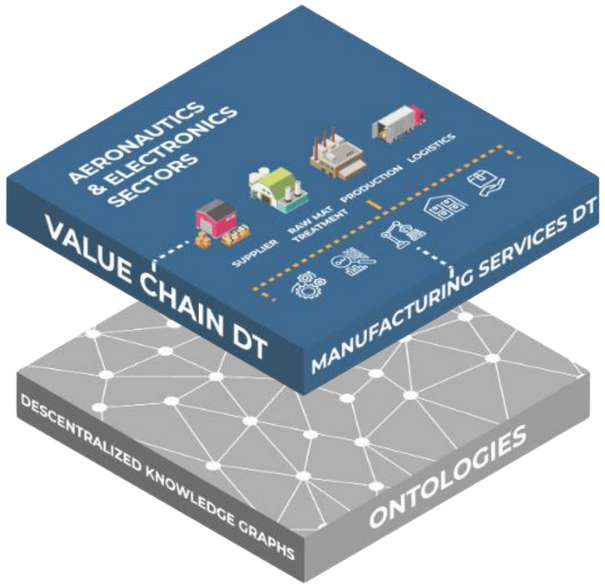
Data Streaming

Smart Manufacturing Assessment Platform (SMAP) for MaaS

COGNITIVE DIGITAL TWINS (CDT)

We use CDT to model manufacturing ecosystems in disrupted sectors like aeronautics and electronics, enhancing process reliability and helping industries anticipate and mitigate unforeseen events.

CIRCULARITY & SUSTAINABILITY

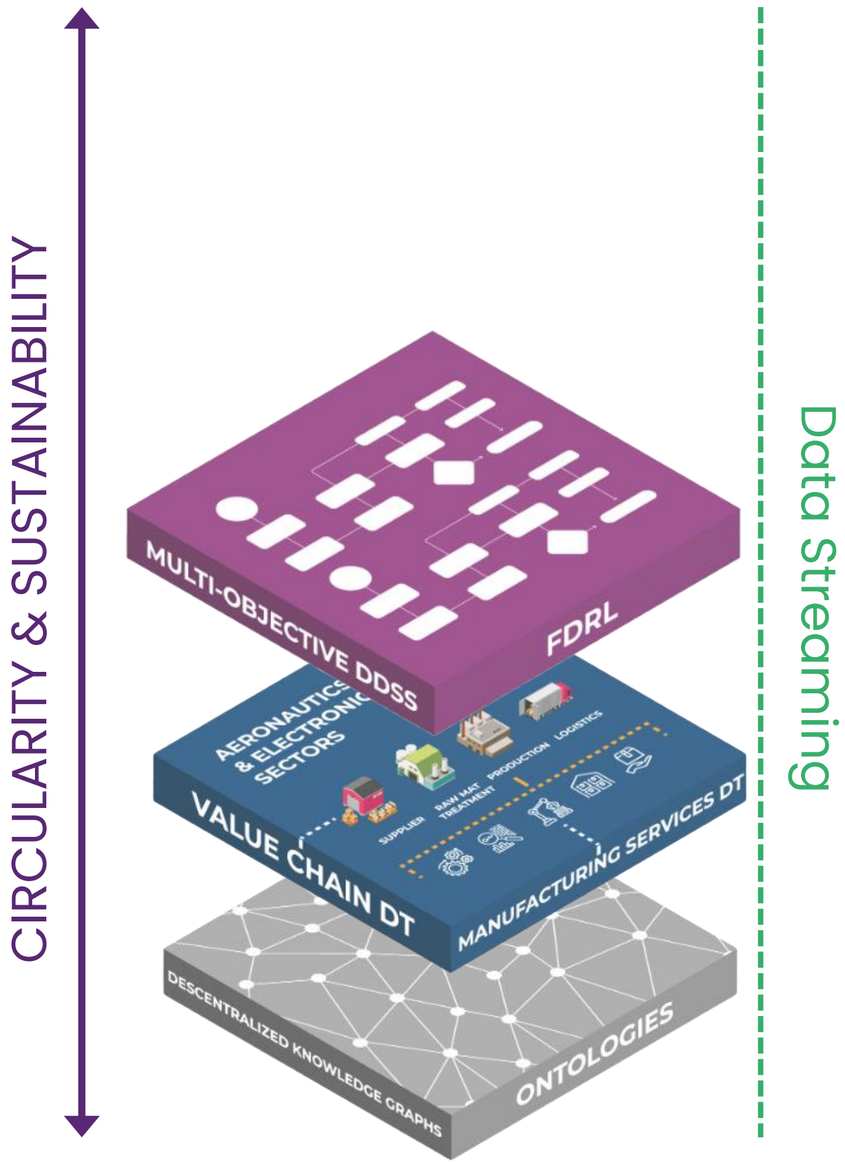


Data Streaming

Smart Manufacturing Assessment Platform (SMAP) for MaaS

MULTI-OBJECTIVE DISTRIBUTED DECISION SUPPORT SYSTEM (MO-DDSS)

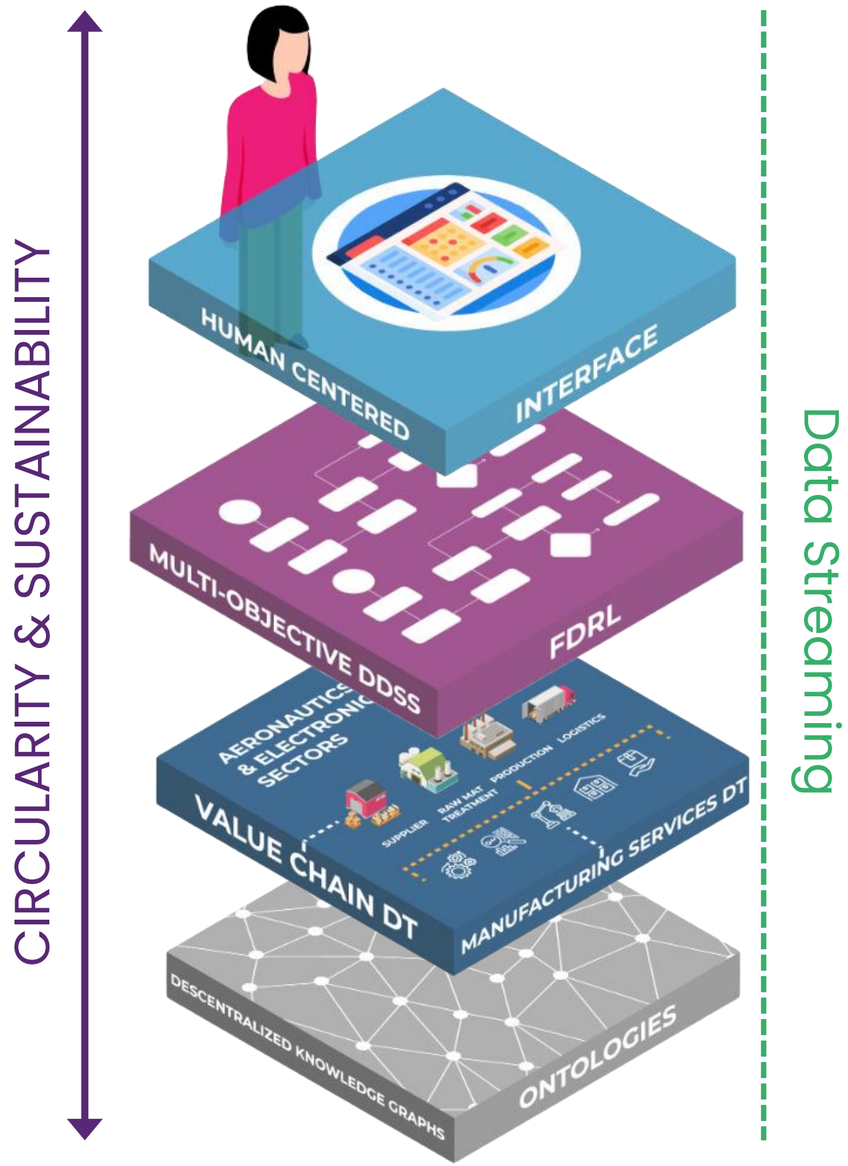
Our self-adaptable MO-DDSS helps industries efficiently address threats while optimizing production across logistics, customer satisfaction, and business performance, ensuring resilient outputs even under suboptimal conditions.



Smart Manufacturing Assessment Platform (SMAP) for MaaS

HUMAN CENTERED INTERFACES

A human-centered approach will be used to create an easy-to-use platform with clear, concise interfaces it will allow users to select optimisation targets, monitor system performance, and receive alerts when needed. Additionally, DMaaST technologies aim to enable more sustainable production by incorporating a sustainability assessment module that ensures traceability and supports sustainable practices such as the Digital Product Passport.



2 Demo Cases

Aeronautics

Phase 1 — Reception, preparation of raw material

Phase 2 — Machining on Computer Numerically Controlled machine

Phase 3 — Inspection of manufactured parts

Phase 4 — Component assembly operation

Phase 5 — Operation of marking and identification of parts

Phase 6 — Surface treatment operation

Phase 7 — Visual control

Shipping

Storage

JFB SYSTÈME

SUPPLIER

RAW MAT TREATMENT

PRODUCTION

LOGISTICS

Electronics

Phase 1

- Programming & functional verification
- Milling & packaging
- Through-hole technology
- Surface-mounted technology

kamstrup

4 FACTORIES

Phase 2

- Mounting PCBs & measuring tubes into the meter housing
- Additional mounting & sealing
- Functional verification/certification
- Customer configuration

- Mounting PCBs into the meter housing
- Functional verification/certification
- Customer configuration

Packaging & Shipping

Phase 3

DMa6ST

JPB Key Figures

3 sites: France *(HQ & plant)*, Poland *(plant)*, USA *(sales)*

200 employees, 10% in R&D

15 international patents

85% of international sales

30% yearly growth rate since 2009

80% of automated machines

+ 5.000.000 flying parts: **100%** safe | **0** loosening
270.000 parts produced per year

They trust us:

SAFRAN AIRCRAFT ENGINES
AIRBUS HELICOPTERS
VOLVO AERO
GE
ROLLS ROYCE
Parc Astérix PARIS
MTU Aero Engines
ITP Aero
MITSUBISHI HEAVY INDUSTRIES
Pratt & Whitney An RTX Business

Our patrners:

GIFAS
La FRENCH FAB
bpifrance EXCELLENCE
Vitrine INDUSTRIE DU FUTUR L'EXCELLENCE DE LA FRENCH FAB
FRANCE RELANCE

Our solutions: 2 families

My assembly is **loosening**
- It must stay tight
- It must be fast & easy to assemble/disassemble

My assembly needs to **be checked**
- The check is periodic
- The check must be recorded

MECHANICAL solutions
Self-locking

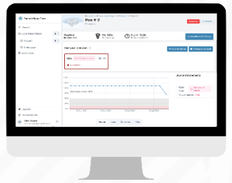
. **It must stay in place** whatever the conditions
. **Easy** to tighten/untighten for a quick maintenance




ELECTONIC solutions
Monitor tightening/ **traceability**

. Hard-to-reach bolts: save **time** & **cost**
. **Automatic** checks & records



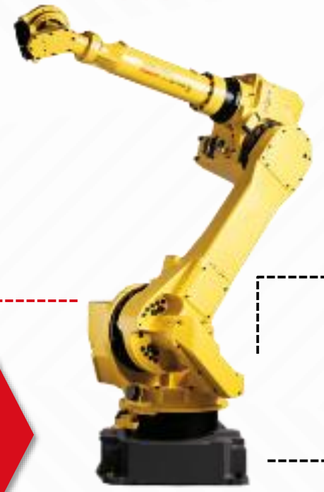



Our automated factory

6 dual-spindle /
dual-turret machining centers

*For **machining** and **deburring***

Robot 2



1

Vision Control

Robot 2 carries out the planned checks and ensures traceability. Everything is recorded in our system.

2

3D Control

3

End marking
Integrated traceability

JPB in DMaaST - Role

Provide available data regarding production — from raw material supply to manufacturing and final product delivery to customers.

JPB in DMaaST - Challenges

- Deliver robust and reliable data to feed the digital twin, allowing us to have an efficient and scalable tool.

- Integrate new tools and technologies into our production line to capture all necessary data (ex : energy consumption, IIoT …)

- Involve all end users of the digital twin (operators and managers) from the earliest stages of its design to guarantee full comprehension of the system and maximize its effectiveness and adoption

JPB in DMaaST - Expectations

- Gain a comprehensive view of all associated flows to enable a global analysis of **line performance**, empowering **operators and managers** to make **data-driven** decisions. **Enhance efficiency**, collaboration, and overall company management for **continuous improvement**.

- Accelerate our digitalization and automation process to maintain our competitive advantage and leadership position, fully embrace **Industry 4.0**, and become a European model of an innovative SME

THANK YOU!

https://dmaast.eu

DMaaST EU Project

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Co-funded by
the European Union