

Industrial Agentic AI

Autonomous, Goal-Driven AI for Smarter Manufacturing





ORGANISATION PROFILE



**IRISH
MANUFACTURING
RESEARCH**

- **Personnel & Size:** ~90 experts across AI, robotics, data analytics, manufacturing systems, and sustainability.
- **Services & Areas:** Applied research, testbeds, pilot lines, and consultancy in advanced manufacturing.
- **R&D Expertise:** AI for scheduling, predictive maintenance, energy optimisation, digital twins, and human-centred AI. RAG and fine-tuning of LLMs in our local server.
- **Experience:** Extensive participation in European projects (Horizon Europe, Eureka etc).



PROPOSAL INTRODUCTION (I)

Vision:

Enable European manufacturing systems to become **self-optimising, resilient, and sustainable** through agentic AI.

Motivation:

Current AI is predictive and siloed; decision-making remains manual, reactive, and inefficient.

Industry needs **autonomous, trustworthy AI agents** that collaborate with humans and adapt to dynamic shop floor conditions.

Content:

- Develop a **multi-agent AI architecture** combining planning, reasoning, and optimisation.
- Integrate agents with digital twins, real-time data, and shop-floor systems.
- Validate in industrial pilots (scheduling, predictive maintenance, energy efficiency).

PROPOSAL INTRODUCTION (II)

Expected Outcome:

- A validated **industrial agentic AI platform** ready for adoption.
- Demonstrated improvements in throughput, downtime reduction, and energy use.
- Guidelines for **safe and human-centric deployment**.

Impacts:

- Market competitiveness through adaptive, resilient production.
- Reduced carbon footprint and improved sustainability.
- Strengthened European sovereignty in industrial AI.

Schedule:

- Project start: Q2 2025
- Duration: 25 months



PARTNERS

Current Consortium:

IMR (Coordinator) – expertise in AI strategy, scheduling, testbeds, and industrial validation.

Partner Search:

- Industrial AI developers (agent-based systems, reasoning engines).
- Manufacturing companies for pilot use cases (automotive, medtech, energy-intensive sectors).
- Digital twin providers and system integrators.
- Partners from Europe, with strong industrial networks



CONTACT INFO

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