



**Workforce optimisation**  
Improving the performance  
of manufacturing teams



$\Sigma$  smart  
advanced manufacturing

The background image shows a complex industrial manufacturing scene. On the left, there are various metal components and a robotic arm. In the center, a cylindrical part is being processed, with a label that reads 'HEDS-550001' and '0512-A'. On the right, a bright, multi-colored laser or cutting beam is directed at a metal part. The entire scene is overlaid with a semi-transparent green filter.

## ORGANISATION PROFILE

Irish Manufacturing Research is a non-for-profit RTO that helps Irish manufacturing companies to innovate. IMR has more than 120 employees of which 85 are researchers, working in Data Analytics, IIoT, Energy efficiency, Robotics, Circular Economy and Software Engineering.



**IRISH  
MANUFACTURING  
RESEARCH**

# PROPOSAL INTRODUCTION (I)

**Vision:** The convergence of automation, AI, and human labor is crucial. Our aim is to harmonize these elements to enrich manufacturing roles.

- **Challenges in Manufacturing Jobs:**

- Need to make roles more attractive to a diverse workforce.
- Importance of aligning operator allocation with skills, training, and certifications.

- **Our Vision:** Human-Centered AI Platform powered by open-source LLMs.

- Optimizes operator assignments to workstations.
- Aligns resource optimization with individual capabilities.
- Utilizes open-source LLMs to provide personalized experiences for each worker.

- **Goals:**

- Make manufacturing jobs more appealing and sustainable.
- Foster a versatile and motivated workforce through personalized support.

**Motivation:** Boosting performance, well-being, and motivation through personalized interactions. Anticipated benefits include: Increased output and efficiency; Reduced rework and scrap rates.

## PROPOSAL INTRODUCTION (II)

**Expected outcome:** an automated platform to (i) suggest best operator allocation based on quality and output targets to maintain skill level and certification, (ii) make visible where training gaps exist, and (iii) a system that is trusted and progressively improves its performance.

### Impacts:

- **Enhanced team motivation and performance:** Personalized experiences increase job satisfaction and engagement.
- **Improved sustainability KPIs:** Reduction in rework and scrap enhances environmental sustainability.
- **Optimized Skill Management:** Minimizes the effects of workforce availability on production plans; Ensures consistent realization of production goals.

**Schedule:** duration 24 months

## PARTNERS

### **Current Consortium:**

- IMR will perform Data Analytics and User Experience
- An Irish industrial use case (manufacturing multinational)

### **Partner search:**

- Workforce psychology to understand and implement strategies for improved job satisfaction and performance.
- Workforce well-being to integrate health and satisfaction measures into daily workflows.
- Capabilities in ensuring data privacy and compliance with regulations.

## CONTACT INFO



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