



# European Union side events

05/12/2023

## Empowering a Human-Centric Industry for the Twin Transitions

Niki Kousi, Managing Director, EIT Manufacturing CLC Southeast  
- Project THOMAS and Human Robot Collaboration Cluster

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# Effective Industrial HRC Cluster Evolution

- Technology Challenges
  - Human Robot Collaboration
  - Intelligent handling
  - Safety and Perception
  - Artificial Intelligence

• Cluster Coordinator:

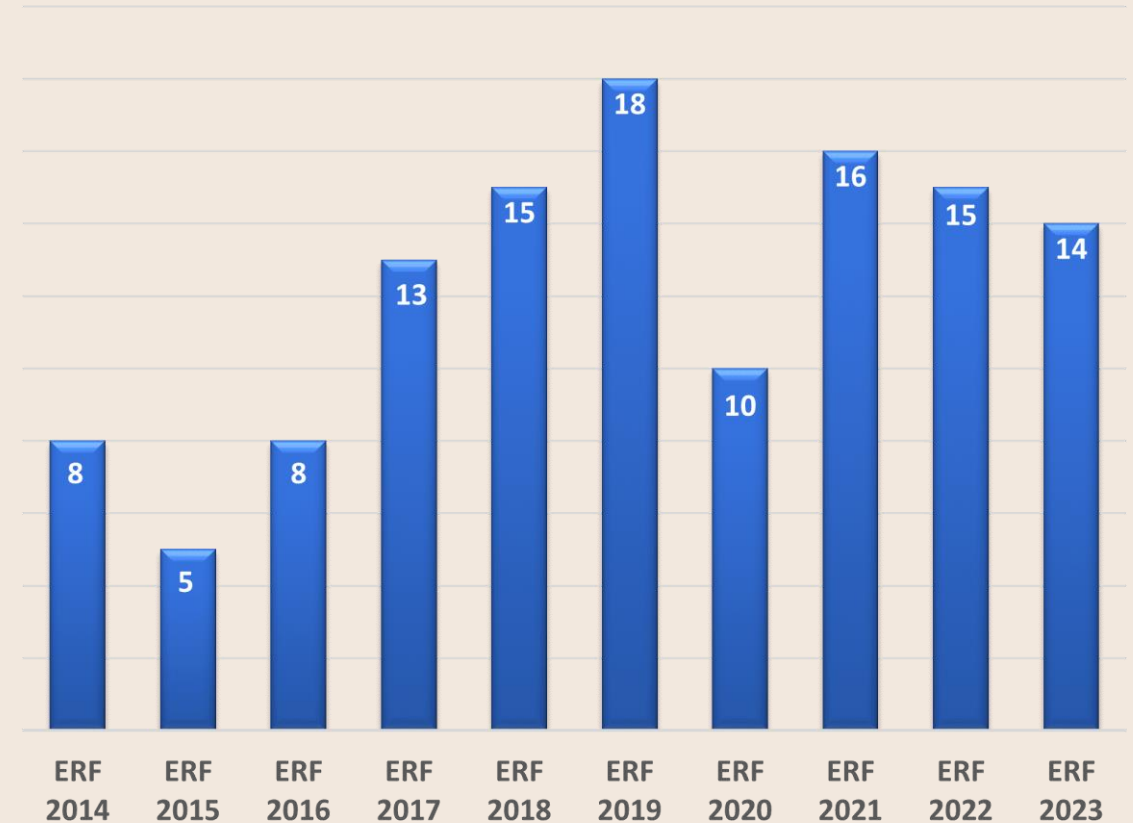


• Website:

<https://www.hybrid-production-systems.eu>



Number of European Funded Projects:



# THOMAS Project Solution



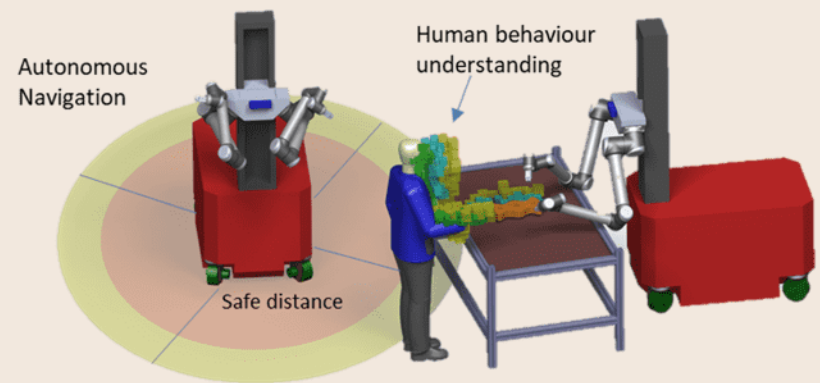
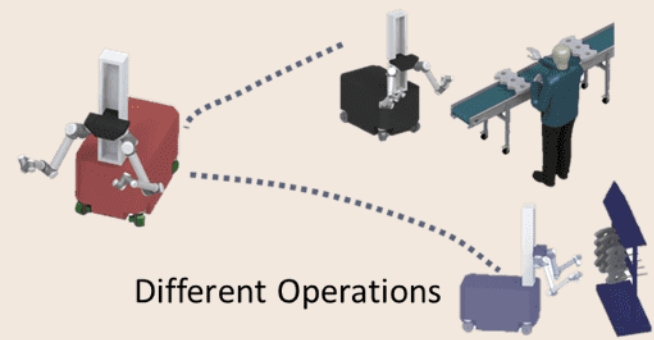
H2020  
GA ID: 723616

## A reconfigurable factory ...

Mobile dual arm robot workers...

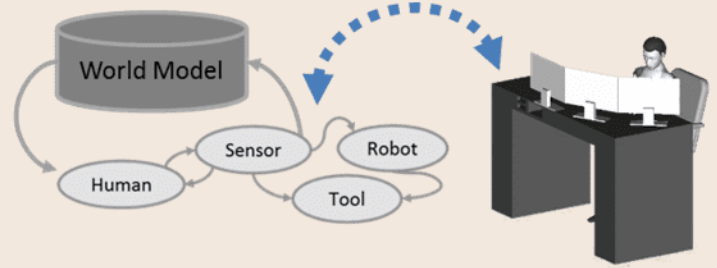
Different workstations

...acting as assistants to humans



## ... enabled by a Smart Robot Control System

Digital Factory



Artificial Intelligence



Dynamic Task Re-organization

Human behaviour understanding

Robot Collision free trajectories



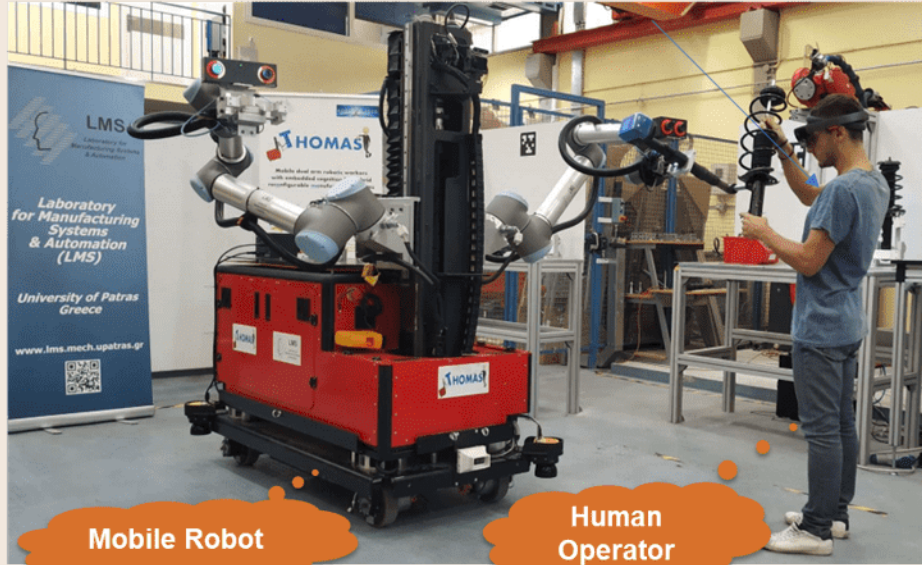
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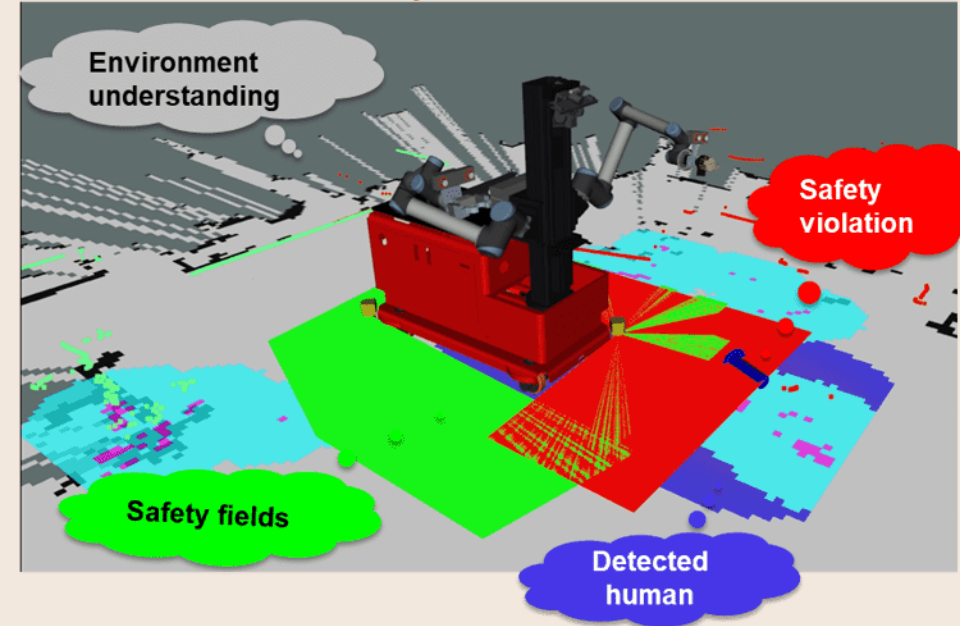
# Fully functional prototype - TRL 6

## Real Factory



## Digital Factory

Real time factory status based on sensors



Reduce of production stoppages

-35%

Increase human ergonomy

Increase the number of models produced in the same system

+50%



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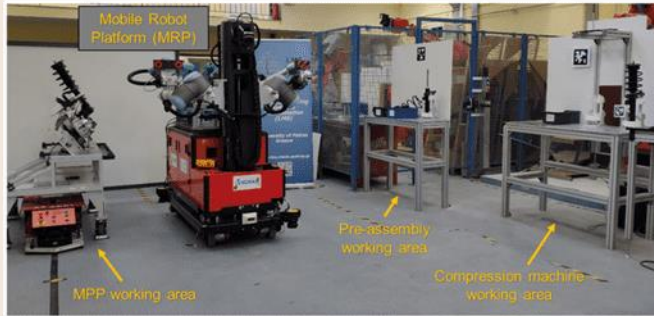
# Validated in two industrial sectors



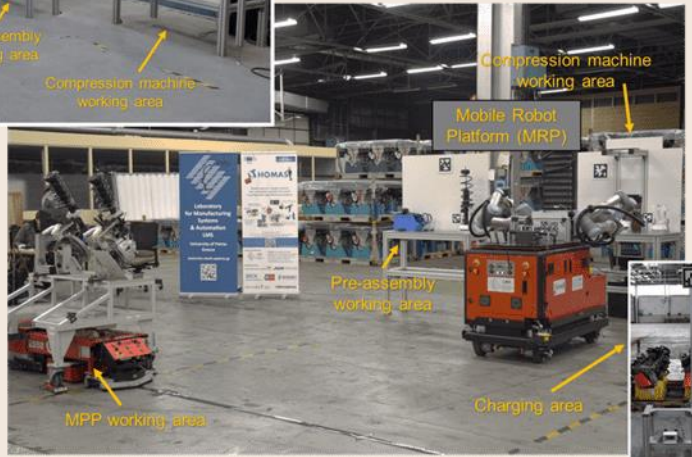
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## Automotive Pilot demonstration and validation



From **LMS** Machine shop, Greece...

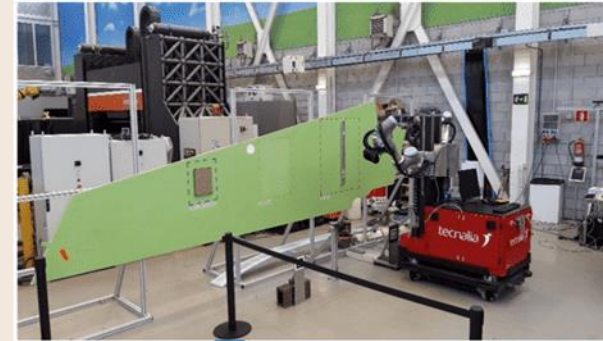


...to **STELLANTIS**  
Mulhouse plant, France



Tested and validated by factory operators

## Aeronautics Pilot demonstration and validation



From **TECNALIA**, Spain...



...to **AERNOVA** plant,  
Spain



Tested and validated by factory operators



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# The example of SHERLOCK



- Development and **deployment** of **human-centric, hybrid** production systems, following the **Industry 5.0 concept**
- 4 **industrially validated** demonstrators
  - Renewable energy
  - Contract manufacturing
  - Machine building
  - Aeronautics
- Demonstrated achievements:
  - ✓ Reduction of **maximum weight** manipulated by the operators
  - ✓ Employment operators with **special restrictions** / elimination non **ergonomic** tasks
  - ✓ Increase of **production system performance**
  - ✓ Reduction of **assembly errors** by operators

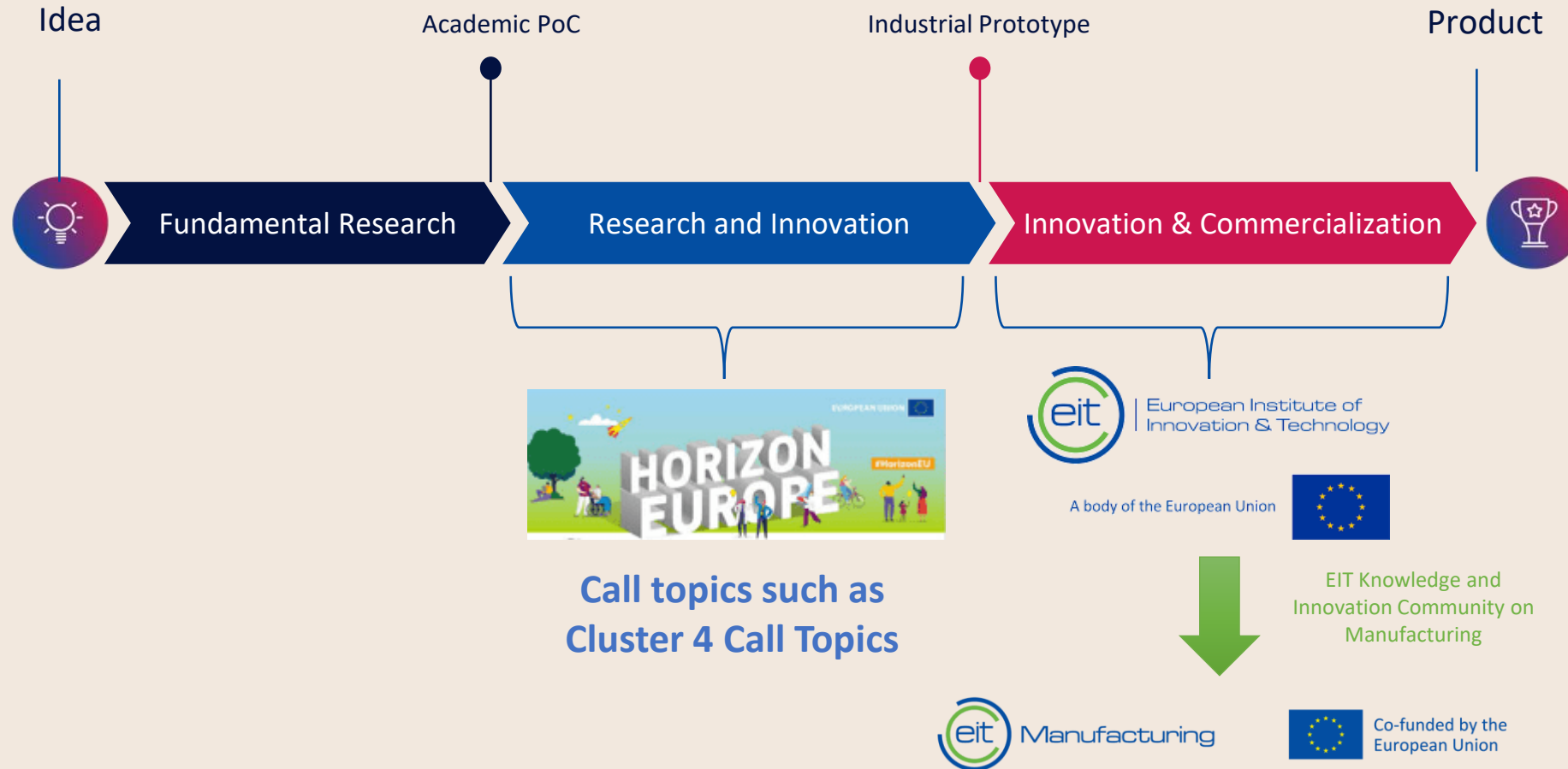
<https://www.sherlock-project.eu>



Awarded with **2<sup>nd</sup> place** for the **EC Industry 5.0 award** → contribution in **sustainability, human-centricity and resilience.**



# What can be the next step ?



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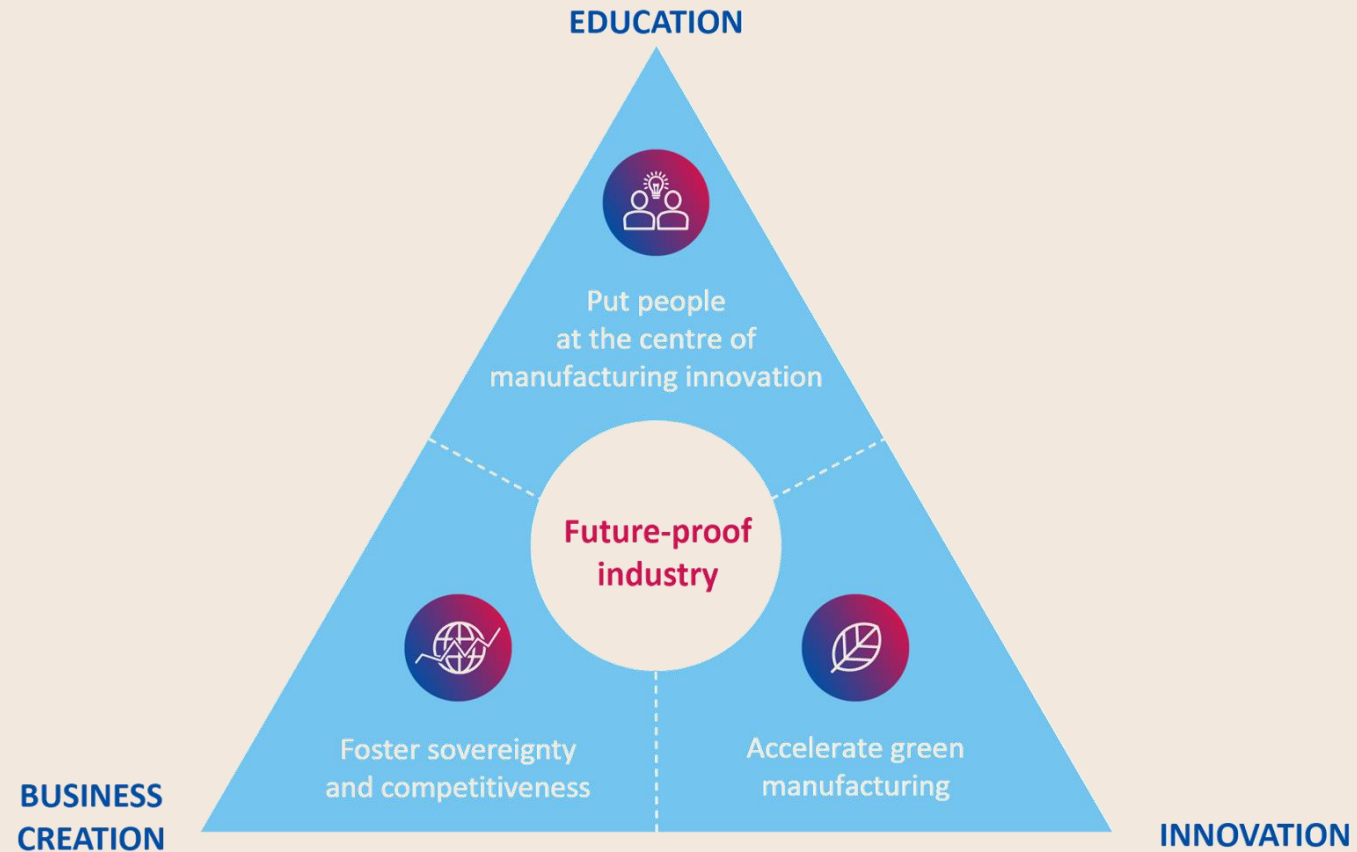
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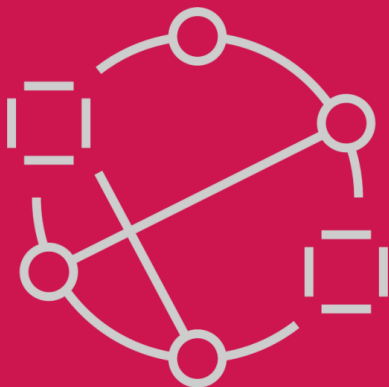


# EIT Manufacturing Strategic Objectives

- 1 Put people at the centre of manufacturing innovation.
- 2 Accelerate green manufacturing.
- 3 Foster sovereignty and competitiveness







# Stimulate innovation and support manufacturing ecosystem by...

## Filling skills gaps

- Creating reskilling and upskilling contents and diffusion on Skills.Move
- 5 International Master programs on the topic of Industry 5.0 in cooperation with leading EU Universities



## Accelerating INNO time-to-market

- 2 open calls per year with a total budget of €10+ million
- Focusing on high impact potential and breakthrough innovations with sufficient maturity (TRL  $\geq 7$ ) and in need of extra push to be launched in the market

## Supporting start-up growth

- Coaching and supporting for start-ups in commercial expansion with BoostUp and RIS BC programmes
- “Connecting the dots” and introducing entrepreneurs to businesses and academia partners



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## Thank you for your attention!



Dr. Niki KOUSI  
Managing Director – EIT MANUFACTURING SOUTH EAST  
[niki.kousi@eitmanufacturing.eu](mailto:niki.kousi@eitmanufacturing.eu)

@EITManufactur  
@EITManufacturing  
eitmanufacturing



AGORA



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