Rapid reconfigurability as a resilience response

Presenter name	Date
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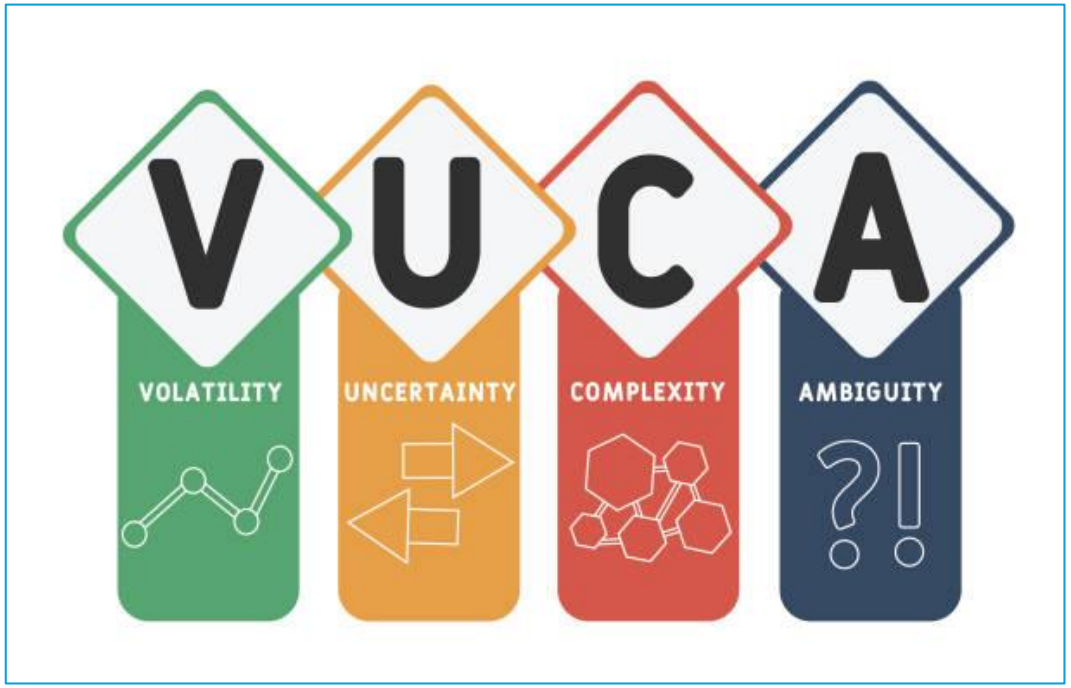
VUCA for industry: supply chain and market volatility

***Volatility*. Scale up or scale down** in production capacity

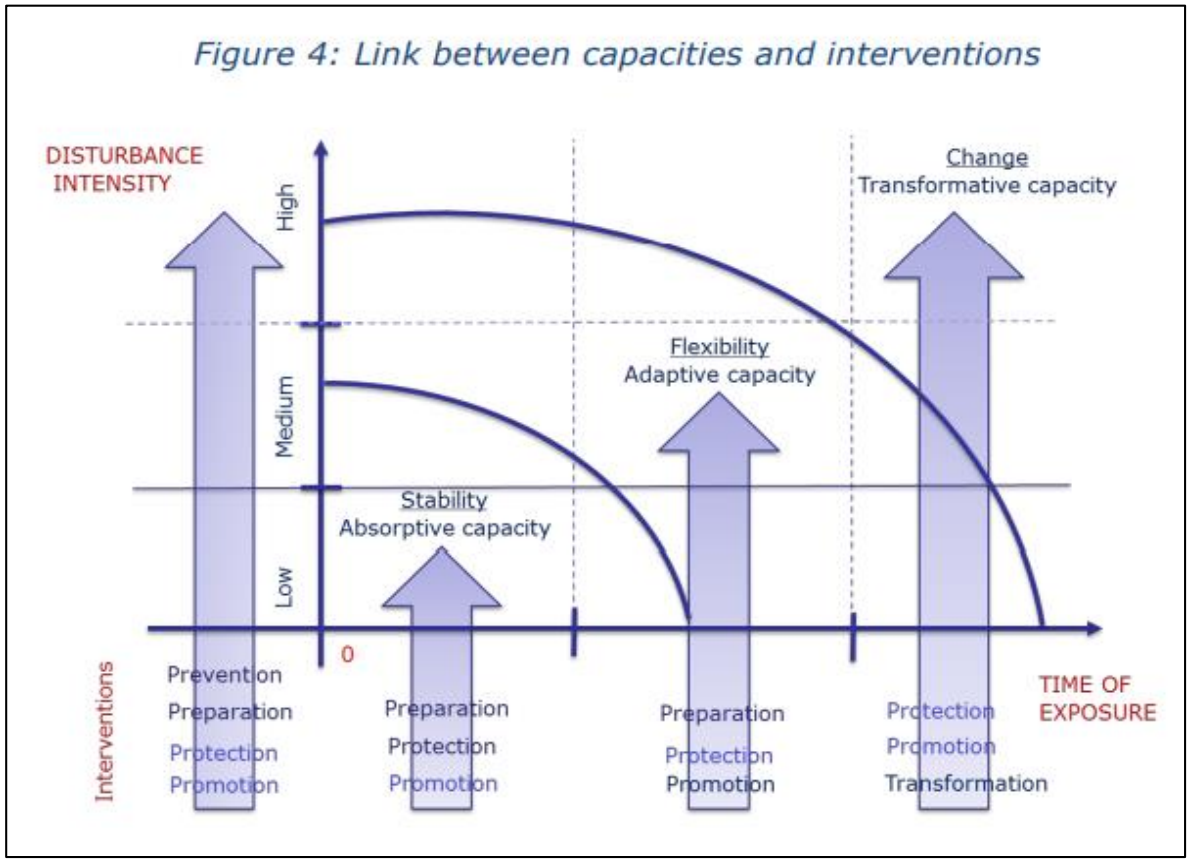
***Uncertainty*. Introduction of new suppliers** (material, semi-product or machinery) in the manufacturing value chain, regulatory uncertainty

***Complexity*.** Reconfiguration of production to accommodate **multiple product variants**

***Ambiguity*.** Reconfiguration of production to address an **unprecedented event** (e.g. societal or political changes, new regulations).



Resilience as a policy –and strategic objective

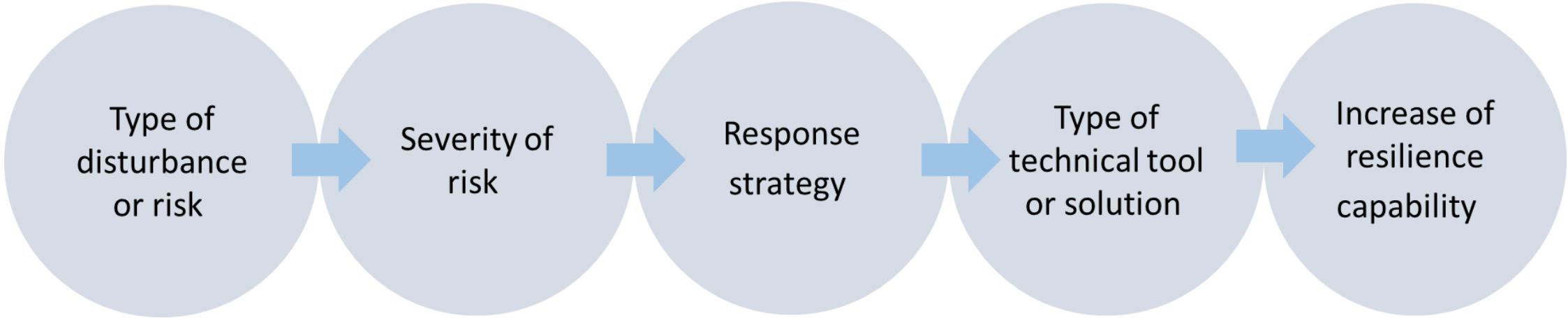


Source: Manca A; Benczur ; Giovannini E. Building a Scientific Narrative Towards a More Resilient EU Society Part 1: a Conceptual Framework . EUR 28548 EN. Luxembourg (Luxembourg): Publications Office of the European Union; 2017. JRC106265

- 'the ability not only to withstand and cope with challenges but also to undergo transitions, in a sustainable, fair, and democratic manner'

- Upgradable and robust manufacturing systems and plants are necessary for flexible, responsive and resilient manufacturing

Improving Reconfigurability Capabilities as a form of resilience



Supply chain disruption in virgin plastics	*No new supplies for more than half a year or at a very high price*	*Increase percentage of recycled local material*	*Change production line settings via qual prediction and DT to monitor process*	*Faster adaptability to meet demands*

Pilot Line Reconfigurability Challenges

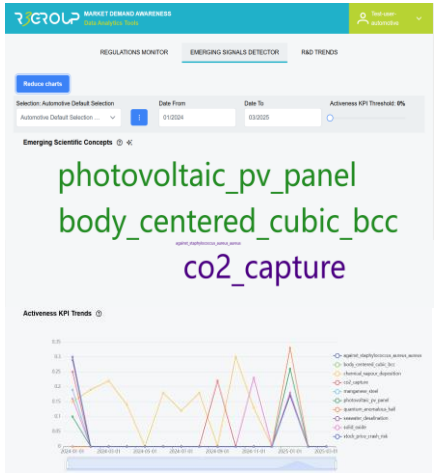
	GLN	Gestamp	HALCOR Evolving Beyond Copper	GORENJE ORODJARNA, d.o.o. Hisense EUROPE	Katty Fashion
Market	Plastics converter	Aluminium / Steel parts	Copper tubing	Custom manufacturing tools	Custom womens wear
Resilience/ VUCA	Regulatory landscape	Volatile demand	Material pricing, tariffs	Volatile demand	Regulation, reputation
Reconfig strategy	Adapt injection process for various materials, change mould for different product variants	Reconfigurable laser head for the manufacturing of a different product reference	Optimisation of cutting process, early quality prediction	Tool monitoring and optimised planning	Optimised material- and operator planning, digital workflow

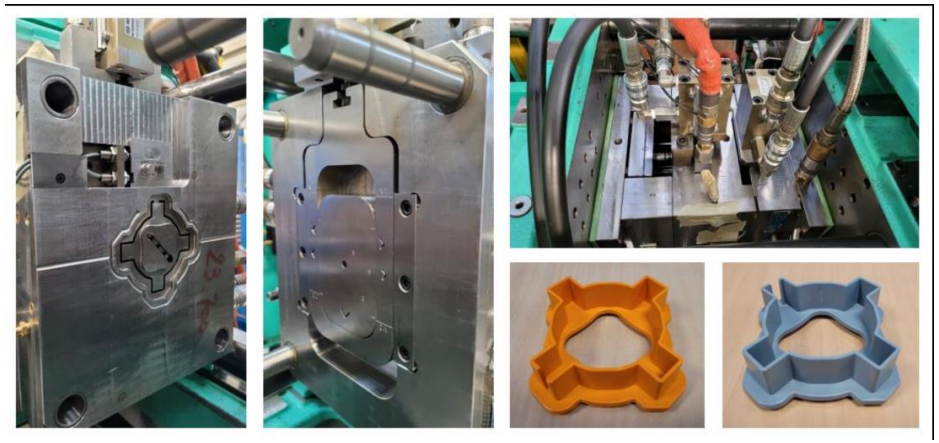
R3GROUP

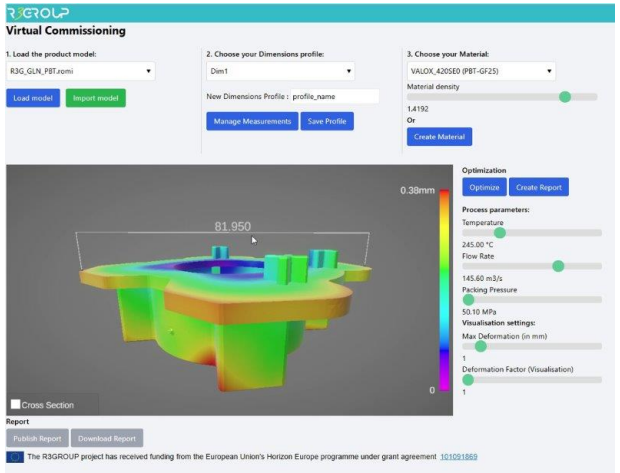
Tech development stack

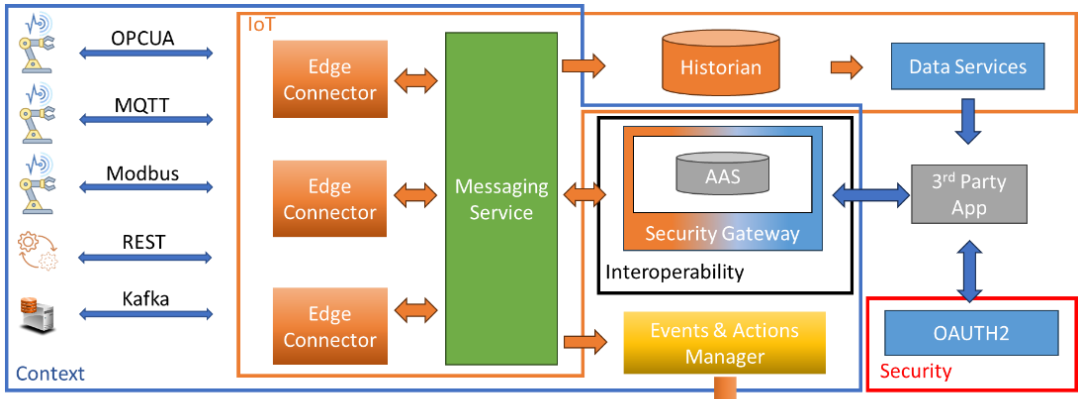
1. Knowledge and analysis tools to better anticipate shocks
2. Tools to design reconfigurability
3. Shopfloor reconfigurability solutions
4. Digital thread via AAS





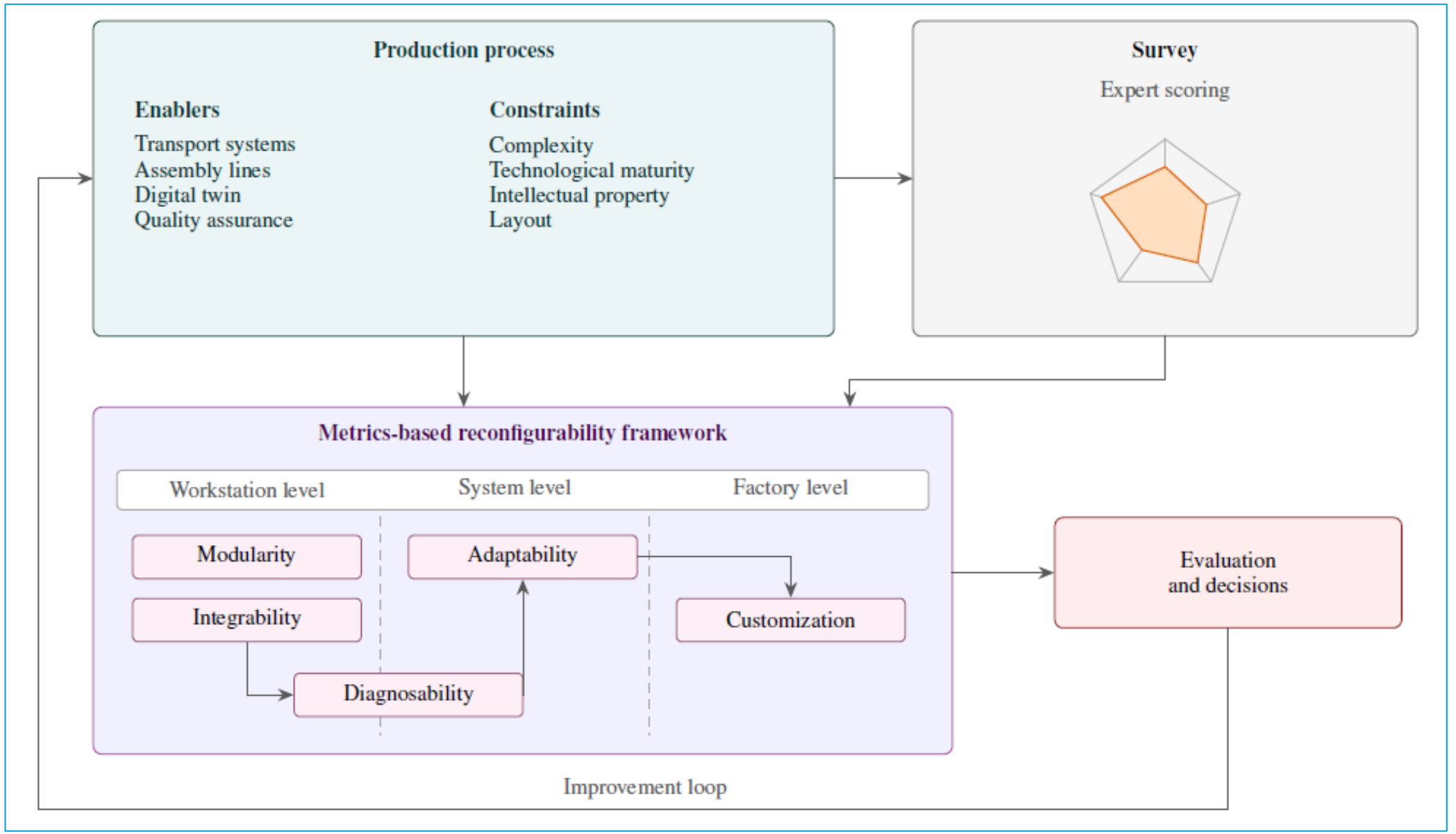








Measuring the impact via our reconfigurability framework



Outcomes and Next steps

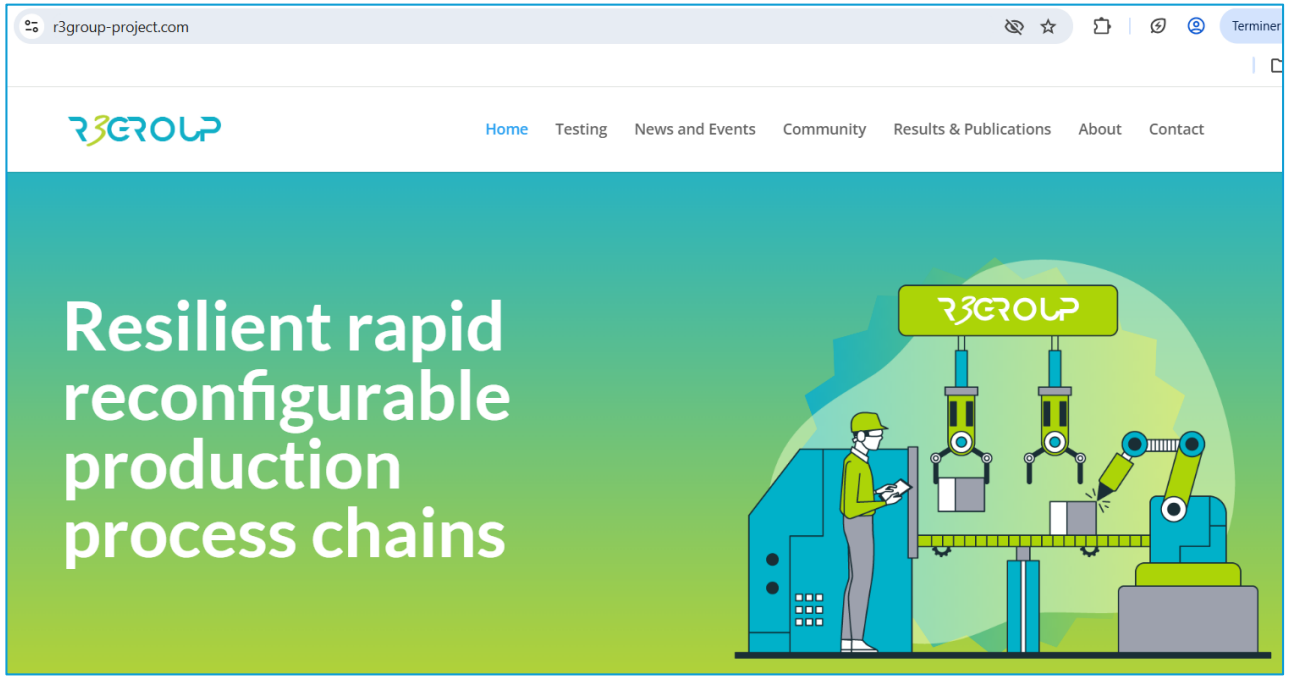
- Set of tools for detecting and respnding to VUCA risks via reconfigurability
- An underlying digital architecture and many AAS models
- Next: From solutions to finding next investments for development

PILOT	HEADLINE RESULT
GLN Plast & GLN Molds Injection moulding · Portugal	Reconfiguration 16 h → 30 min · +16.9% OEE
Hisense Europe – Gorenje Orodjarna Toolmaking · Slovenia	−11% ramp-up time · −10% reconfiguration time
Halcor Copper tubes · Greece	−20% reconfiguration time · ≈20% less scrap*
Gestamp Automotive chassis · Spain	Operational reconfigurable laser cell
Katty Fashion Womenswear · Romania	−35% reconfiguration time (target)**

Tech pitches and investment talks today at 14.00

1. PNO (news and weak signal tracking)
2. FILL (virtual commissioning)
3. AMVALOR (ROM and adaptive interfaces)
4. CASP (Indirect Machine Monitoring)
5. EDW (presence sensor)
6. AVE (AI-based quality control station)
7. M2F (environmental impact assessment tool)
8. NETCOMPANY (AAS platform and digital thread)
9. GESTAMP (reconfigurable laser head)

Website and Contact



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