28 November 2024, Brussels

Shaping the Future of European Manufacturing:

Growth and Innovation for SMEs

ADMA TranS4MErs Final Event

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Opening Remarks

SYAM NAIR

Senior Programme Manager

Irish Manufacturing Research and ADMA
TranS4MErs Programme Coordinator

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Keynote Address

OLIVER KOZAK

Policy Officer, EISMEA

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

NAVIGATING INDUSTRIAL POLICIES AND THEIR CHALLENGES

SZABOLCS SZEKACS

Policy Officer

Digital Transformation of Industry GROW Unit

TranS4MERs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Navigating Market Needs and its Challenges

Open discussion on market demands and industry standards for manufacturing SMEs

Meet the Panel:

Gash Bhullar, Director, Digital Manufacturing Innovation Hub Wales (DMIW)

Magdalena Jabłońska, CEO, Foundation for Technology Entrepreneurship

Rachel Davies, Director, Digital Manufacturing Innovation Hub Wales (DMIW)

Walter Quadrini, Research Fellow, Politecnico di Milano

Magdalena Jabłońska

The Foundation for Technological Entrepreneurship, focuses on organising acceleration programs connecting startups with all business partners.
Acceleration programs such as MIT - StartSmart CEE supporting technology startups - industry lead collaborations
Proof of Concept (PoC) projects, startup partnerships
Within the eDIH initiative, support in adopting innovations, particularly those related to digitalization.
Ensuring both startups and their business partners can effectively integrate and benefit from innovations.

Understanding the challenges associated with implementing new technologies is essential.....to meet the specific needs of each stakeholder and market

Walter Quadrini

INDUSTRY4.0 lab

Primarily a Controls Engineer, Manages I4.0 laboratory in Polimii, Italy, transitioning towards human-centric manufacturing.
Initially in politics/radios, now looking at the deployment of research outcomes into manufacturing shopfloors
Consultancy activities assessing maturity model towards "digitalization path" and Technology scouting
Explanation of topologies, success stories, jargon busting
Working with suppliers and technology matchmaking

Led EIT Manufacturing funded projects: pushing the needs of SMEs managers in a highly methodological manner

Rae Davies

Digital Manufacturing Innovation Hub DMIW was set up in 2019 with a vision to create an accessible and proactive support network for manufacturing SMEs.
DMIW is an independent, industry-led venture set up to support and strengthen industry in Wales by providing access to technical supply-chain solutions and facilitating the co-creation of innovative technologies to create resilience in the manufacturing industry.

Implementing Digitisation Technologies pragmatically to maximise business profits

Navigating Market Needs and its Challenges

Scene Setting

- *As a business manager I always need to justify expenditure vs returns.*
- *What would attract me to a yet another program of support that claims to give me a competitive edge and improves my profit margin?*
- *Why would I want to engage with a new supplier / consultant that I don't know or who is very new to the market?*
- *What revolutionary approach would you use to attract me to engage with a transformation process which would cause business disruption if not correctly implemented?*
- *How would you minimise the risks to a comfortable level?*

A harsh business viewpoint but I'm with experts who can help discuss these questions!

Navigating Market Needs and its Challenges

General Discussion Points

- *We hear about concepts of parachuting in support – but often we need a more grass roots approach – how do we make this happen?*
- *The SME Marketplace is often so far behind the technology, how do we cover basics to get companies the foundation knowledge they need to receive the more complex solutions?*
- *As a small company, many solutions only offer a very specific answer to specific issues, how do we provide a more holistic approach? Can we get several support agencies to work together for a wider solution?*

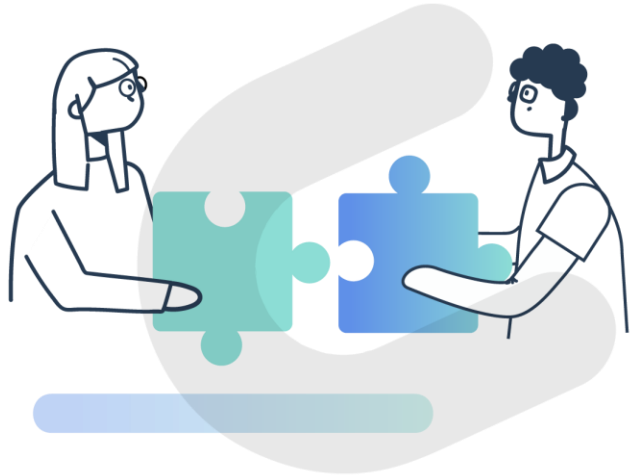
Audience – Please feel free to ask questions and join in with the debate!

Navigating Market Needs and its Challenges

General Discussion Points

- *SME owners tend to go to Technology Providers for advice not to advisors – do we understand the marketplace enough to engage with customers?*
- *Mandatory requirements or legislation drives adoption – how do we capitalise on this or is there a better approach?*

Analogy: Equate business owners and their engineers riding around on bicycles with square wheels and we are trying to convince them to replace the square wheels with round ones but they are too busy to listen!



Have a Question?
It's Your Turn!

Q&A

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Digitalisation of Manufacturing SMEs Challenges and Opportunities

Our panelists – all being TranS4MErs – will share their experiences on how to assists SMEs on their digitalisation journey - to specify goals and KPIs - and give advice on what services may be used to improve processes, introduce technology, and train and support employees.

Merete Nørby
INTERNATIONAL SENIOR CONSULTANT, PH.D - MADE MANUFACTURING ACADEMY OF DENMARK

Alain Dinis
EUROPEAN PROJECT & MARKETING INNOVATION MANAGER, SYSTEMATIC PARIS-REGION

Boel Wadman
RESEARCH MANAGER FOR DEPT MANUFACTURING PROCESSES, RISE

Jiří Janošec
INNOVATION SUPPORT SPECIALIST, TECHNOLOGY CENTRE PRAGUE

Digitalisation of Manufacturing SMEs Challenges and Opportunities

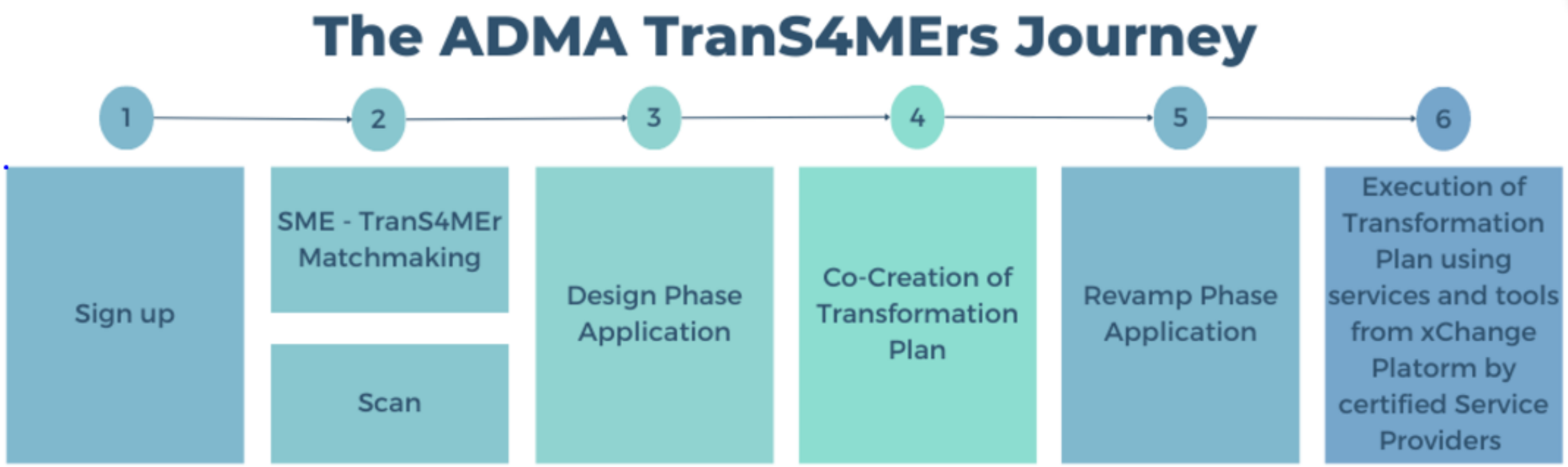
KEY ELEMENTS

SMEs
fill out the scan to identify strength and weaknesses

TranS4MErs
assists SMEs with identifying where to start the journey, to specify goals/KPIs and what services may be used

Service offers
incl. trusted talks, technology implementation, process optimisation, training, etc

The Trans4mation Journey – Key Steps



Digitalisation of Manufacturing SMEs Challenges and Opportunities

1) What did the SMEs find most challenging?

2) When and how did you, as a TranS4MEr, give the best help?

3) What is your biggest learning as a TranS4MEr, and how will you do that in practice?

4) How can the learnings from the TranS4MErs Programme be used in other programs/initiatives that support SMEs – how can it be combined with new tools?

Digitalisation of Manufacturing SMEs Challenges and Opportunities

1. What did the SMEs find most challenging?

'Finding time in a very busy diary'

'Language barriers'

'Registering on the platform'

'Going for so small money'.

'Getting a broader overview in a specific area'

'Realise in time that I have a problem, and I need information to broaden my horizon on this topic'

Afraid of being part of an EU project
not wanting to sign anything - maybe it will cost me money

Digitalisation of Manufacturing SMEs Challenges and Opportunities

2. When and how did you, as a TranS4MEr, give the best help?

'Working with Regional partners'

'Learnt so much from each other'

'Being able give personal recommendation on choice of training providers

'Giving administrative and technical help – or it would have gone wrong'

'Giving an external view'

'SMEs do not have time to take a step back'

SMEs did not have to worry about the administration of the project

Digitalisation of Manufacturing SMEs Challenges and Opportunities

3. What is your biggest learning as a TranS4MEr, and how will you do that in practice?

'Wish for simple & basic services,
not so much the sophisticated ones'

'Good to have the big Service database'

'How to find the SMEs '

'Understand and communicate how to
feel equipped for the future'

Great value of the scan – for many types of companies

Digitalisation of Manufacturing SMEs Challenges and Opportunities

4. How can the learnings from the TranS4MErs Programme be used in other programs and initiatives that support SMEs – how can it be combined with new tools ?

'Use new AI tools to improve analysis'

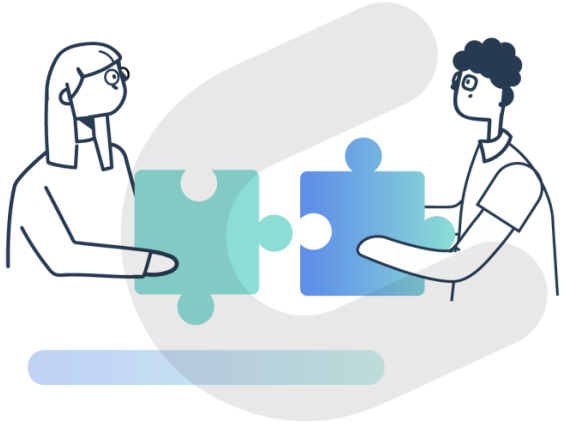
'Service platform a valuable asset'

'Practise of getting more SMEs involved'

'Access to many interesting services for free'

'Digitalisation Scan has enabled us to identify further potential areas'

'Knowing needs of clients'



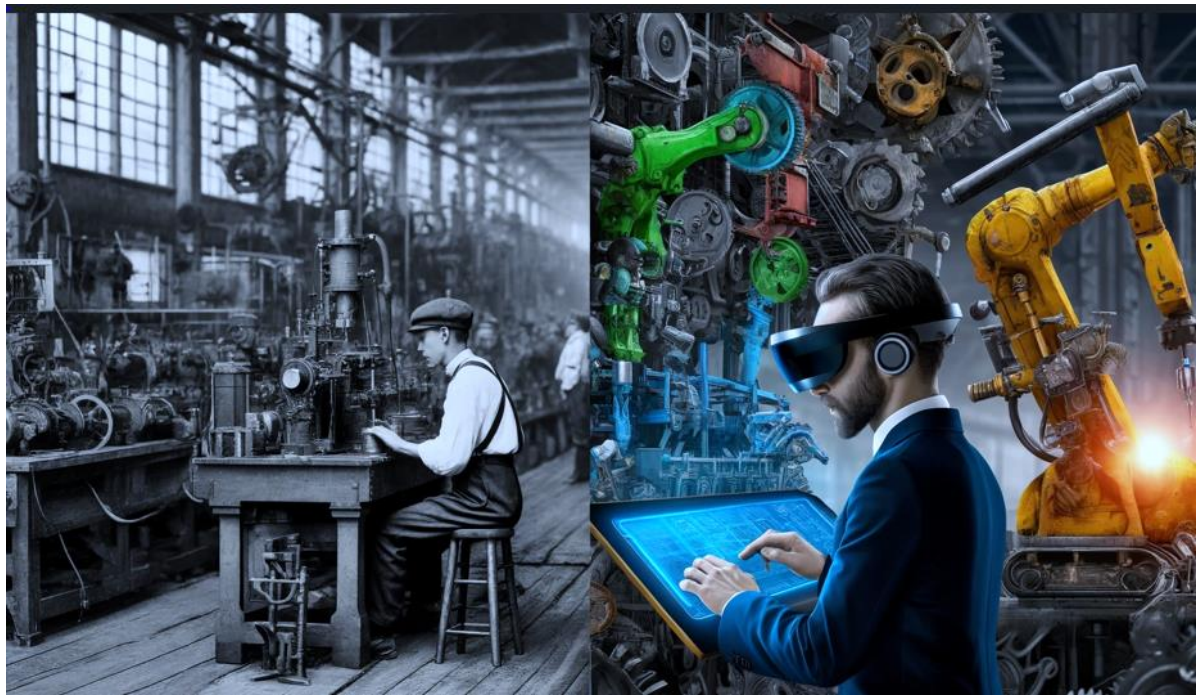
Meeting a number of great people - looking forward to use these new contacts in future work.

Concluding remarks

‘Previously no set services this is a new way of working’

‘Use of coaches – extremely necessary’

‘Service catalogue a great plus’



Will build on these learnings and contacts in up-coming support programmes and activities.

Have a Question?
It's Your Turn!

Q&A

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

28 November 2024, Brussels

Coffee Break & Networking

Take this time to connect!

ADMA TranS4MErs Final Event

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Have a Question?
It's Your Turn!

Q&A

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

EU financial support mechanisms for manufacturing SMEs

Salvatore Amico Roxas
DG GROW, access to finance unit

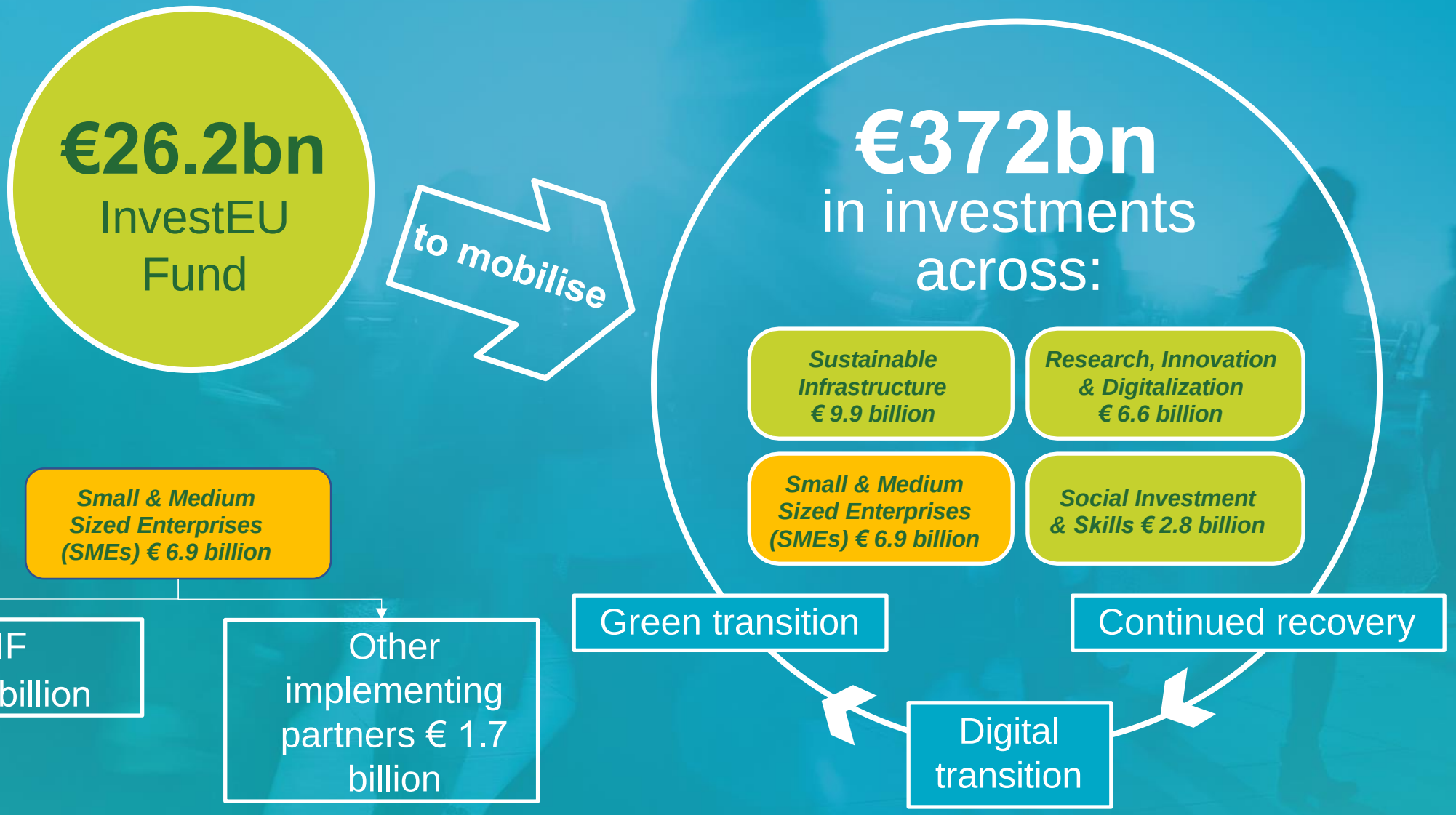
28th November 2024

Financial instruments

European Commission

InvestEU Fund

#InvestEU

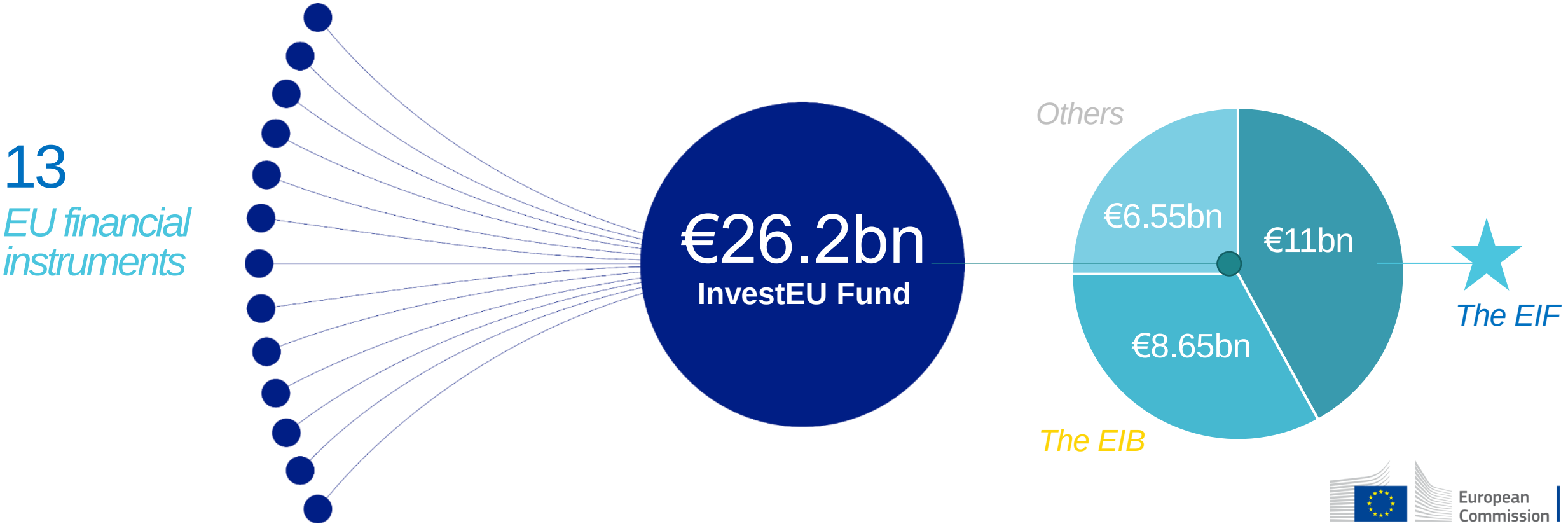


European Commission

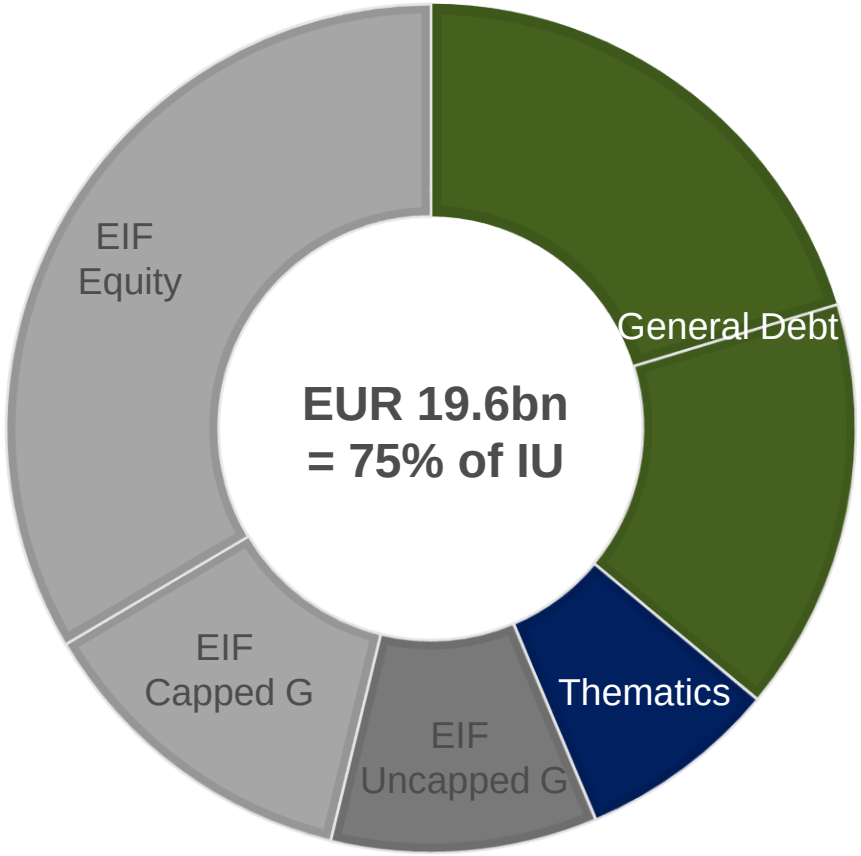
InvestEU Fund solution

Bundles previously disbursed financial instruments under one roof

- Different EU programmes & the European Fund for Strategic Investments (EFSI) combined into 1 instrument



EIB financial product mix



EIB share:
8,65 BEUR

SIW	General Debt PF4EE Green Transition
RIDW	General Debt Thematic Innovation
SISW	General Debt Public Sector

EIB Venture Debt

- It is a loan to an early stage company that provides liquidity to a business for the period between equity funding rounds
- Good complement to equity and particularly interesting since:
  - it is non-dilutive;
  - it provides liquidity (between equity rounds) to the company with long tenure;
  - it provides visibility for next equity round.
- Variable duration, up to 6-7 years

Examples of EIB VD recent operations (THEMATIC GREEN TRANSITION under InvestEU): https://www.eib.org/en/projects/all/20220305

Blending - example

- Catalyst Partnership - Partnership between EIB, EC and Breakthrough Energy
- 5 main priorities:

1) clean hydrogen

2) sustainable aviation fuels

3) direct air capture

4) long-duration energy storage

5) decarbonisation of industry (steel, cement…)

Example of funded project

Ottana CO2 Battery Project – Energy Dome

Headquartered in Milan, Energy Dome has developed the CO2 Battery, a long-duration energy storage technology based on liquified CO_2. The CO2 Battery can provide storage for 10 hours or longer, and more competitively than lithium-ion batteries. With the support of the EU-Catalyst partnership, this project in Sardinia will build its first-of-a-kind, full-scale demonstration CO2 Battery energy storage facility.

Project types

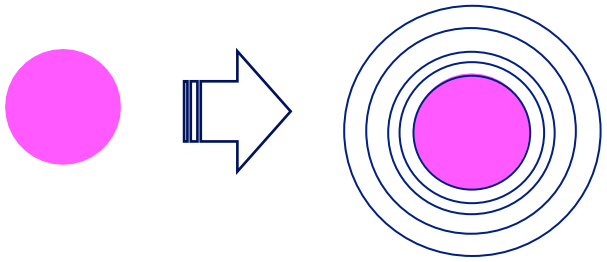
- **Demonstration Projects** – Small projects that de-risk earlier-stage emerging climate technologies (TRL 5-7; Project Size between ~€30M-100M)
- **Large FOAK Projects** – First-of-a-Kind projects focused on emerging climate technology scale-up & market creation (TRL 6+; Project Size between ~€100M-1B)

Funding products

- **Demonstration Projects** – Venture Debt from the EIB and Capex Grant from Catalyst
- **Large FOAK Projects** – Equity from Catalyst combined with Quasi-Equity from EIB both intended for project capex. For certain projects, where the Green Premium is significant, grants for Opex could be considered by Catalyst and EC (using EU budget resources)

The InvestEU value chain & impact - EIF

Resources



€11 bn*
EU guarantee

€21bn
EIF InvestEU-backed financed

Main products

€10.7bn
(Counter) Guarantees

€10.3bn
Equity investments

Indirect Operations

Via a variety of financial intermediaries

- *Banks / non banks*
- *Alternative lenders*
- *Guarantors*
- *NPBIs*

- *VC Funds*
- *PE Funds*
- *Debt Funds*
- *Climate & Infra Funds*

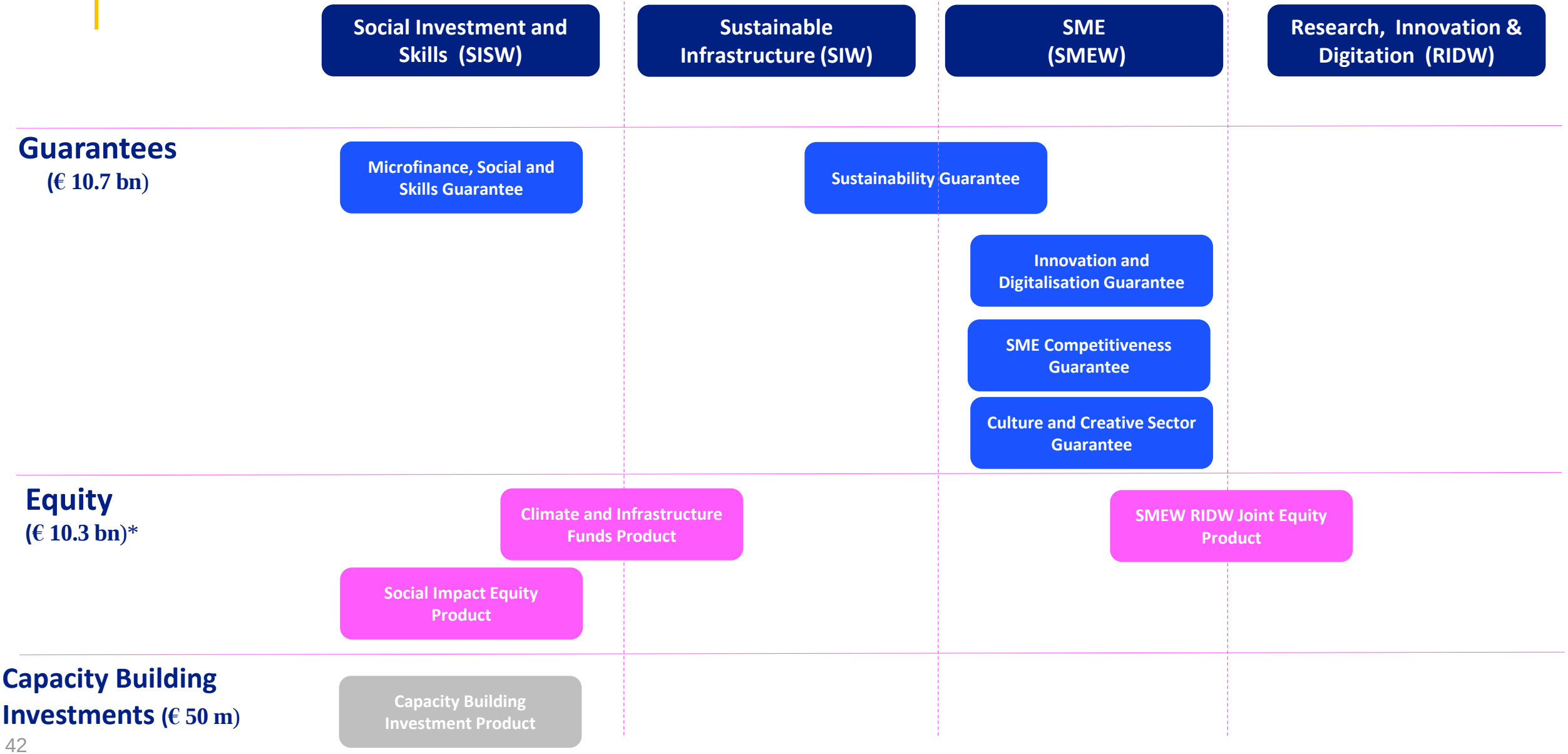
Expected reach & impact

Leverage of public resources to improve access to finance

SMEs, small mid-caps & mid-caps, infrastructure projects & individuals

**including sectorial programmes*

EIF financial product mix



EIF portfolio guarantee products

#InvestEU

Adapted (ex COSME Loan Guarantee Facility

SME Competitiveness

Enterprises perceived as high risk (or lacking collateral) to improve the competitiveness of European enterprises

(including new solvency support)

Adapted (ex InnovFin SME Guarantee Facility)

Innovation & Digitilisation

Innovation and digitalization-driven enterprises to help drive Europe's economic growth and global competitiveness

Continued (ex cultural and Creative Sector Guarantee Facility)

Cultural & Creative Sector

Enterprises to support a thriving, agile and profitable European creative and cultural space, & one which is adaptable to change

NEW

Sustainability

Sustainable enterprises as well as green investments contributing to the green and sustainable transformation of Europe

(Taxonomy inspired!)

European Commission

Equity products*

#InvestEU

*EIF Joint products between SME and RID window, **investment capacity of over € 6 billion**

Capital Market Union support

Promote an integrated European capital market, provide diversification of sources of financing & strengthen solvency of enterprises

Enabling sectors

Support crucial sectors which can sustain the EU as a independant and autonomous economy

Climate & environmental solution

Boost support for R&D upscaling & commercialisation of solutions that contribute to the EU Green Deal

Digital & Cultural and Creative Sector

Strengthen the EU's competitiveness, digital independance strategic autonomy

European Commission

Examples of fund agreements signed

#InvestEU

FORWARD.one Fund II
Quantum computing to biomanufacturing, to semiconductors, or robotics for Evs
Location: Netherlands
IEU Operation: € 15m ES (Semicond)
Target fund size: EUR 100m

Green Generation Fund
First time team investing in disruptive technologies at seed stages to enable breakthroughs in foodtech + greentech
Location: Germany
IEU Operation : € 15m C&ES
Target fund size: EUR 100m

Innova/7
CEE PE investing in buyout LMM in business & finance, TMT, consumer products, manufacturing, healthcare, retail)
Location: Poland
IEU Operation: € 40m CMU-DDF/D&CCS
Target fund size: EUR 350m

Junction Growth Investors
impact-driven companies developing software and/or hardware solutions enabling the energy transition in Benelux, France and Germany
Location: Belgium
IEU Operation : € 16.2m C&ES
Target fund size: EUR 125m

Newion Investments IV
pan-European established team investing in early-stage business software.
Location: Netherlands
IEU Operation : € 25m D&CCS
Target fund size: EUR 125m

Xenon FIDEC
LMM fund focusing on SMEs and Mid-Caps, active in decarbonisation and circular economy sectors in Italy
Location: Luxembourg
IEU Operation : € 30m C&ES
Target fund size: EUR 120m

Shift4Good Fund I
First-time equity fund dedicated to Impact Investing in the smart mobility & circular economy sectors.
Location: France
IEU Operation: € 40m C&ES
Target fund size: EUR 250m

OTB Ventures
Established team investing in CEE early growth, post-product, high-tech start-ups incl. space
Location: Poland
IEU Operation: € 45m D&CCS + ES
Target fund size: EUR 150m

Trind Ventures Fund II
seed-stage venture fund focusing on startups with a consumer or community component.
Location: Estonia
IEU Operation : € 20m D&CCS
Target fund size: EUR 50m

Alteralia III SCA
Established team providing tailored private debt to lower mid-market companies in Spain, Italy and other
Location: Spain
IEU Operation: € 30m CMU-DDF
Target fund size: EUR 250m

eEquity Growth V AB
ESCALAR + "normal commitment" investing in digital growth in Denmark, Finland, Germany, Netherlands; Sweden
Location: Sweden
IEU Operation: € 38m CMU-DDF/D&CCS
Target fund size: EUR 280m

Vsquared Ventures II
disruptive technologies such as space, AI, industrial tech and applying them for commercial use
Location: Germany
IEU Operation: € 19m ES
Target fund size: EUR 165m

How to apply for finance: www.access2finance.eu

Who is eligible for EU funding?

Funding is available for start-ups, entrepreneurs and companies of **any size or sector**.

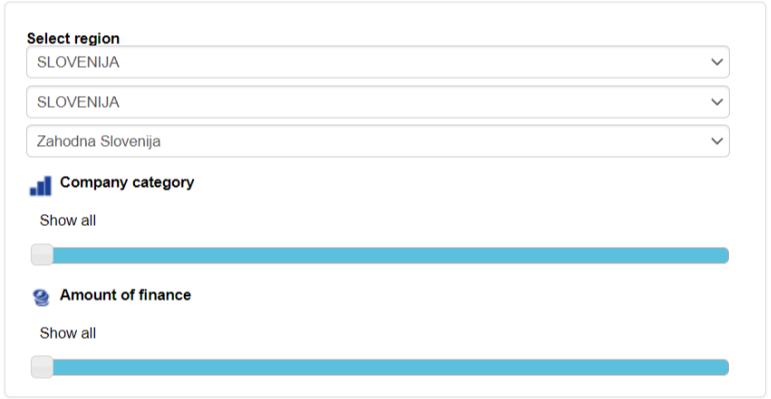
What **type of financing** is available?

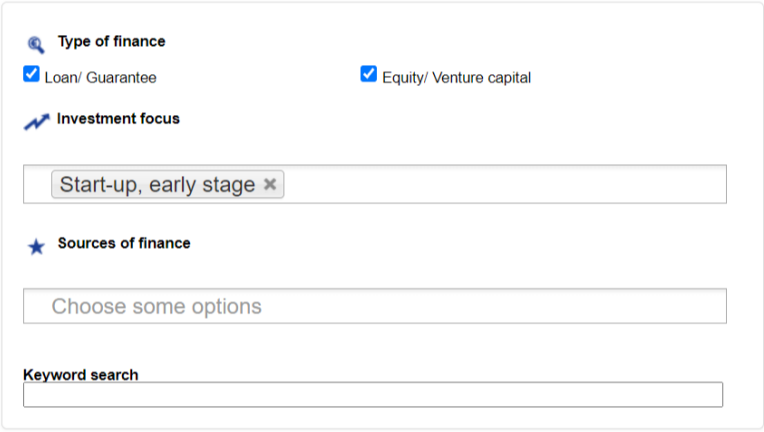
A wide range of financing is available: Loans, guarantees, equity funding and other.

How it **works**

The **decision** to provide EU financing will be **made by the local financial institution** such as banks, guarantee societies or equity investors. Thanks to the EU support the local financial institutions can provide additional financing to businesses.

The exact financing conditions – the amount, duration, interest rates and fees – are determined by these financial institutions. **Contact one of over 1,000 financial institutions** to find out more.



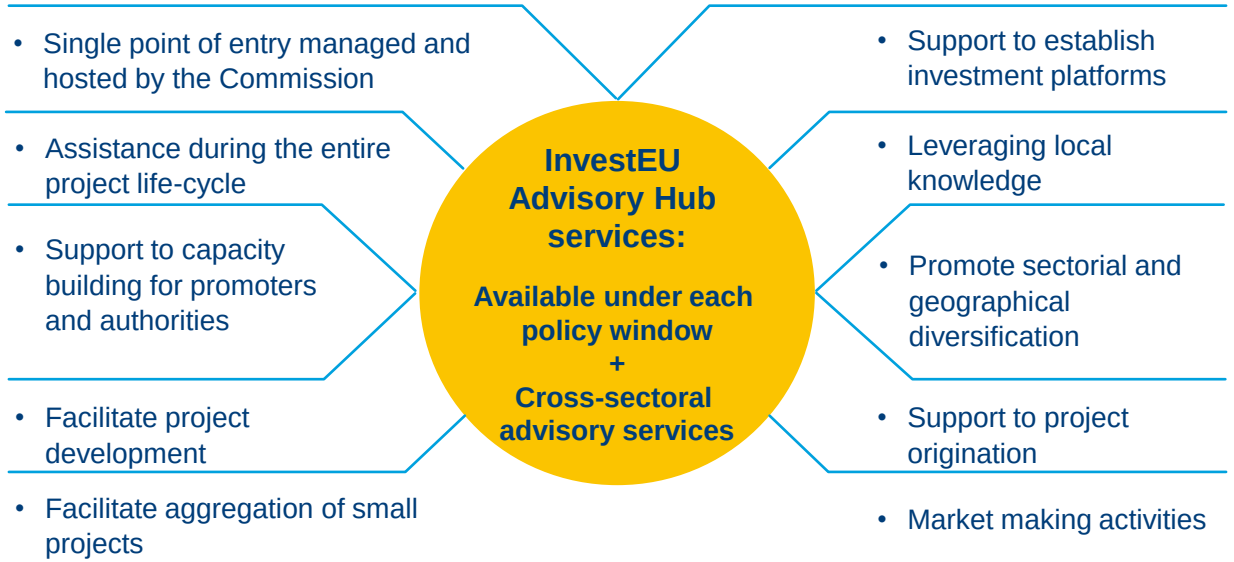


Financial Intermediaries	Region Of Activity	Type Of Finance	Amount Of Finance	Investment Focus	Additional Information	Sources Of Finance
Slovene Enterprise Fund SLOVENSKI PODJETNIŠKI SKLAD		Loan/ Guarantee	< 150.000 €	Covid 19 - EU support, All sectors/ general, Start-up, early stage		COSME, EFSI
Unicredit Banka Slovenija d.d.		Loan/ Guarantee	> 25.000 € < 7.500.000 €	All sectors/ general, Research, development, innovation, Start-up, early stage		InnovFin, EFSI
Oxo Labs		Equity/ Venture capital	< 200.000 €	All sectors/ general, Research, development, innovation, Start-up, early stage, ICT sector	Focus: start-up, ICT	InnovFin, EFSI, EIF

European Commission

InvestEU Advisory Hub implementation

- Provides advisory support for the identification, preparation, development, financial structuring, procuring and implementation of investment projects, or for enhancing the capacity of promoters and financial intermediaries to implement financing and investment operations
- Integrates 12 different advisory initiatives and the EIAH



Grants

STEP - Strategic Technologies for Europe Platform

STEP OBJECTIVES

Supporting the **development or manufacturing** of critical technologies or safeguarding and strengthening their respective **value chains**

Addressing shortages of **labour and skills**

STEP CONDITIONS

Bring an **innovative**, cutting-edge element with significant economic potential to the Single Market

OR

Contribute to **reduce or prevent strategic dependencies** of the Union

STEP SECTORS

(indicative & non-exhaustive) EXAMPLES

Digital and deep tech innovation → Artificial intelligence, quantum technologies, advanced connectivity

NZIA

Clean and resource efficient tech → Carbon capture and storage technologies, heat pumps

Bio tech → Molecular biotechnology, pharmaceuticals, crop biotechnology

CRMA

NZIA: Net-Zero industry Act
CRMA: Critical Raw Materials Act

STEP
Tools

Reprogramming
of EU funding with dedicated calls for STEP sectors.

STEP Seal
Label for high-quality STEP projects supporting them to access funding.

STEP Portal
that consolidates all funding opportunities for STEP sectors financed by the EU.
https://strategic-technologies.europa.eu/index_en

One-Stop Shop
The single-entry point for any contact/question on STEP for industry and managing authorities.

European Commission

STEP

EU programmes supporting STEP

6 PROGRAMMES MANAGED IN DIRECT AND INDIRECT MANAGEMENT[1]

Horizon[2]	EU4 Health
Innovation Fund	European Defence Fund
Digital Europe Prog.	InvestEU[3]

Award of STEP Seal

PROJECTS' **FAST TRACK** TO OTHER FUNDING

5 PROGRAMMES MANAGED IN SHARED MANAGEMENT[4]

European Regional Development Fund	Cohesion Fund
European Social Fund +	Just Transition Fund
Recovery & Resilience Facility[5]	

[1] Direct management: EU funding is managed directly by the Commission; shared management: the European Commission and national authorities jointly manage the funding; indirect management: funding is managed by partner organisations or other authorities inside or outside the EU

[2] European Innovation Council

[3] Managed through the EIB group & other implementing partners – not awarding the Seal

[4] Network of national contact points to oversee the implementation of STEP in each Member State – list to be displayed

[5] Performance based programme managed by the European Commission and implemented by the Member States

State Aids –
Temporary Crisis and Transition Framework

European Commission

Strategic investments for clean technologies

New Section 2.8

First level: schemes – main elements

- ✓ **Fact-based:** Only key sectors affected by IRA that are critical for the transition to net-zero and at risk of being diverted, namely:
  - batteries,
  - solar panels,
  - wind turbines,
  - heat-pumps,
  - electrolysers,
  - carbon capture usage and storage equipment

  } + key components

  } + related critical raw materials

- ✓ **Simple:** Basic option of flexible schemes with intensities and caps
- ✓ **Fair:** Modulation for assisted areas + Bonuses for tax credits, loans and guarantees and SMEs

Strategic investments for clean technologies

New Section 2.8

First level: schemes – aid limits

			Location of the investment		
			Non-assisted areas	*c-Regions*	*a-Regions*
		Max. aid amount per undertaking per MS	EUR 150 Million	EUR 200 Million	EUR 350 Million
Max. aid intensities	*For direct grants*	Large enterprises	15%	20%	35%
		Medium sized enterprises	25%	30%	45%
		Small enterprises[2]	35%	40%	55%
	For tax advantages, loans or guarantees	Large enterprises	20%	25%	40%
		Medium sized enterprises[2]	30%	35%	50%
		Small enterprises[2]	40%	45%	60%

Strategic investments for clean technologies

New Section 2.8

Second level: ad hoc aid

AD-HOC AID POSSIBILITIES	LOCATION OF INVESTMENT	SAFEGUARDS		
Single-EEA country project	▸ 1 Member State ▸ Disadvantaged areas only	Non-disadvantaged areas **cannot receive matching aid** if only one Member State is involved	State-of-the-art production technology from an environmental emissions perspective	Prohibition to relocate investments within the single market
Multi-EEA country projects	▸ At least 3 Member States ▸ a significant part of the capital investment takes place in at least two disadvantaged areas ▸ an important part of such significant investment should take place in an 'a' area	Aid possible also in non-disadvantaged areas, subject to **real ecosystem effects across the EU**		

Applicable aid limit is the lower of:

- Matching aid (amount available in 3rd country)
- Funding gap calculated as delta in NPV between EEA project and counterfactual

European Commission

Summary

- EU Financial instruments (loans, equity, guarantees): one main programme for investment and financing within the EU in the current MFF (InvestEU) – **indirect managed funds**. www.access2finance.eu is the reference website to discover who offers access to those instruments (together with the relevant webpage of each partner).
- Grants: Tender and Funding portal to have access to all relevant EU programmes. Different instruments available in **direct** (i.e. managed directly by the EC) and **shared management** (EC and MS). **STEP** as an attempt to provide a more consistent and integrated view on what is available and provide support to manufacturing.
- State Aids: clarify what MS can do to support companies. TCTF allows for support to investment projects with strategic importance for the transition towards a net-zero economy.

Thanks for the attention!

European Commission

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Have a Question?
It's Your Turn!

Q&A

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

PARTNERSHIP BUILDING SESSION

VISTA, 27TH FLOOR

WORKSHOP SESSION ON SME JOURNEYS AND SUCCESS STORIES

ROOM 26.1, 26TH FLOOR

TranS4MERs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

28 November 2024, Brussels

Enjoy your lunch and connect with peers!

We will be back at 14:00

ADMA TranS4MErs Final Event

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

PARTNERSHIP BUILDING SESSION

VISTA, 27TH FLOOR

WORKSHOP SESSION ON SME JOURNEYS AND SUCCESS STORIES

ROOM 26.1, 26TH FLOOR

TranS4MERs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

PARTNERSHIP BUILDING & NETWORKING

Gloria Bevilacqua

Communication & project manager

Europa Media

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Factory XChange

LCAMP
Learner Centric Advanced Manufacturing Platform

openZDM

AI REDGIO 5.0

greenSME

UNDERPIN

REBOOT SKILLS

MOAPTO

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

Factory XChange

FactoryXChange (FXC)
Shaping the future of European Manufacturing: growth and innovation for SMEs

Presenter: Lise-Ann Sheahan,

Business Development Lead, FactoryxChange

Senior Programme Manager, Irish Manufacturing Research

Partners

IRISH MANUFACTURING RESEARCH · ICHEC Irish Centre for High-end Computing · Insight SFI RESEARCH CENTRE FOR DATA ANALYTICS · TUS · KPMG Future Analytics · Data Value Hub

Funded by

Enterprise Ireland · Funded by the European Union NextGenerationEU

FactoryXChange

Manufacturing digital transformation by embracing ecological, digital and societal challenges.

#XMarksTheSpot

We’re not just tech advocates, we’re tech translators

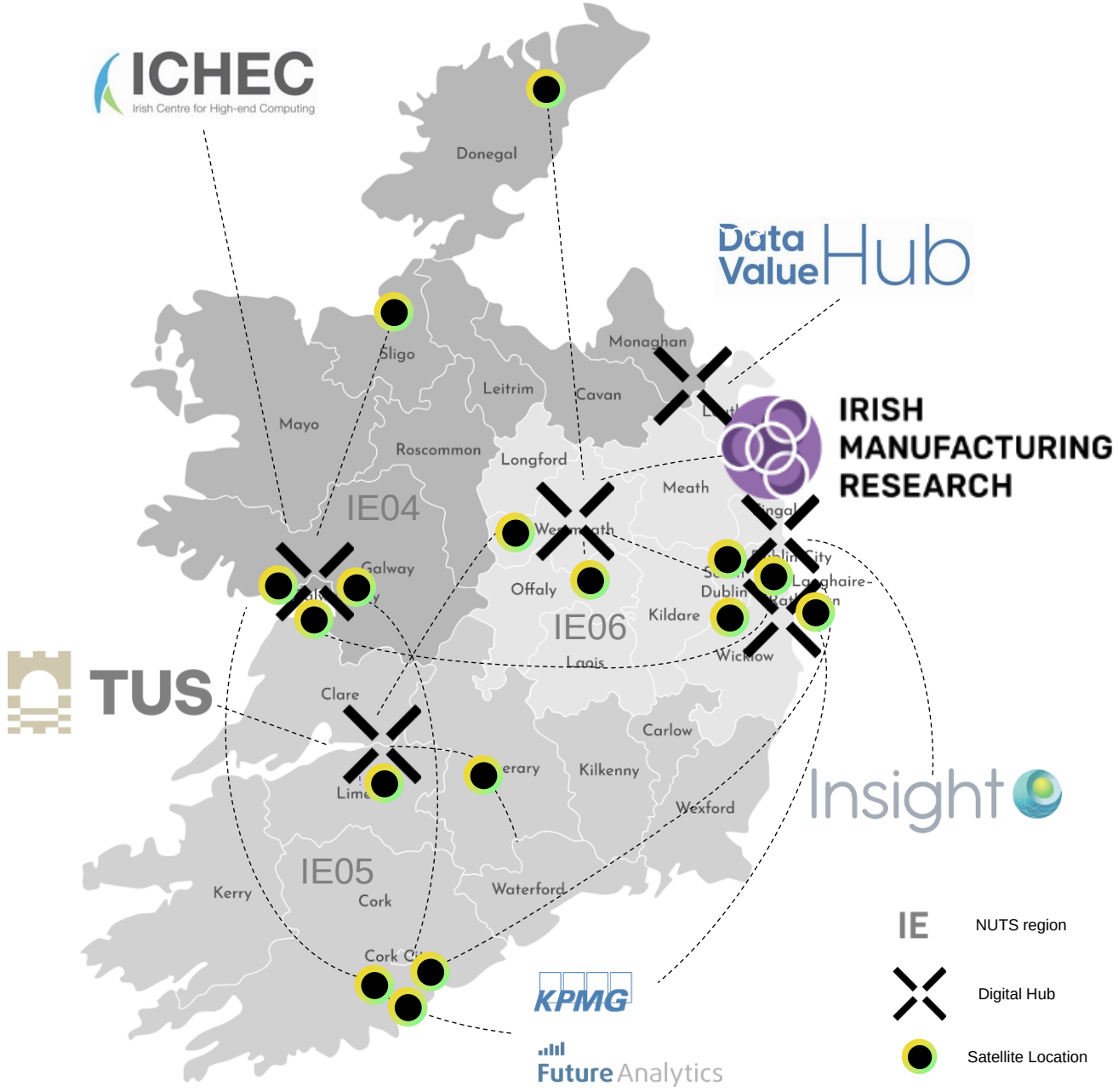
Working hard to connect people to technology in ways that are accessible, actionable and that create real-world impact for good.

Partners

Preparing manufacturers for the future

FactoryXChange enables organisations to access and accelerate their digital transformation.

By connecting with people and our platform, we ignite digital success and innovation for your business.



Factory XChange

Next-level offering

Data and AI value chain

Make smarter decisions using data and AI.

Support to find investment

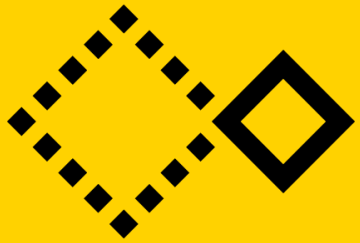
Secure funding to adopt technologies.

Innovative ecosystems and networking

Connect, collaborate, and learn.

Skills and training

Upskill to meet the needs of tomorrow.



Test before invest

Trial new innovations with low risk.

Connect today!

Discounted services

to help at crucial moments in your digital innovation journey.

Tailor-made offering

designed around you… wayfinding, prototyping, learning, innovating…

Timely support

that is on demand and quality assured to minimise investment concerns.

Since October 2023 over 170 clients have booked over €2.9m of services and support on FactoryXChange.ie

Factory XChange

Find support

#XMarksTheSpot

Scan to browse, register and book at factoryxchange.ie

Learner Centric Advanced Manufacturing Platform

AFIL Lombardia

LCAMP Project and the synergies with ADMA TranS4MErs

Brussels, 20 November 2024

Samuel Nazzareno Monaco

AFIL - Lombardy Intelligent Factory Association

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

AFIL'S MISSION

AFIL - Lombardy Intelligent Factory Association:

- is a reference actor for the Lombardy Region for the definition of Research and Innovation policies in the manufacturing sector;
- is in charge of setting up a stable community by connecting companies, universities, research institutions and associations, and favoring cooperation by promoting R&I projects and initiatives;
- supports the development of R&I interregional networks through the participation to National Intelligent Factory Cluster and the connection with different European regions within Vanguard Initiative, European Cluster Collaboration Platform, Four Motors of Europe and Smart Specialisation Platform, as well as through EU projects.

AFIL'S ROLE IN LCAMP PROJECT

AFIL Cluster is partner of both ADMA TranS4MErs (since October 2021) and LCAMP - Learner Centric Advanced Manufacturing Platform for CoVEs (since June 2022).

Within LCAMP project, AFIL is co-leader of Work Package 7. In light of its liaison role between the two initiatives, it is responsible for the adoption and use of ADMA TranS4MErs Methodology by LCAMP partners in order to make scans and create Implementation Plans with companies.

This task is performed with the support from Quantra (also involved as Linked Third Party in ADMA TranS4MErs).

PROJECT CONSORTIUM

The LCAMP consortium is composed of 19 full partners from 10 countries, of which 9 are educational organisations, 7 are industrial companies and 4 are VET and industrial associations. The consortium is also supported by 61 associated partners.

LCAMP

Learner Centric Advanced Manufacturing Platform

The LCAMP project aims to support and empower regional Advanced Manufacturing Centres of Vocational Excellence (CoVE) to become more resilient, innovative and better equipped to train, upskill and reskill young and adult students to successfully face the digital and green transitions.

In the context of LCAMP, activities range from the development of skills and competences to their provision or from to the design of learning pathways, micro-credentials and active methodological approaches, to the articulation of innovation services for SMEs.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

VISION, MISSION AND STRATEGIC GOALS

Learner Centric Advanced Manufacturing Platform

VISION

LCAMP aims at becoming the European reference platform for knowledge, generation and exchange, collaboration and service provision for VET/HVET centres and companies working in the Advanced Manufacturing sector.

MISSION

Collaboration and networking between VET/HVET centres and companies / industrial associations working in the Advanced Manufacturing sector to reduce skills gaps in the industry and to transfer knowledge between VET centres and companies.

STRATEGIC GOALS

- ❑ To create a Trends Observatory for Advanced Manufacturing
- ❑ To develop mechanisms for skills definition, learning paths, microcredentials, …
- ❑ To Set up an Open Innovation Community
- ❑ To run a Collaborative Learning Factory
- ❑ To promote synergies with other EU initiatives
- ❑ To position the platform in Europe
- ❑ To make the platform self-sustainable

TARGET GROUPS

VET CENTRES

INDIVIDUAL LEARNERS, STUDENTS AND LIFE LEARNING LEARNERS (LLL)

SMES, LARGE COMPANIES, INDUSTRIAL ASSOCIATIONS

HOW CAN STAKEHOLDERS BENEFIT FROM LCAMP?

VET CENTRES

- ❑ Join the LCAMP Alliance
- ❑ Join the Collaborative Learning Factory environment. Get support to create your own I4.0 labs
- ❑ Open training material
- ❑ Get support from the LCAMP Open Innovation Community to foster applied research

INDIVIDUAL LEARNERS, STUDENTS AND LIFELONG LEARNING LEARNERS (LLL)

- ❑ Learning pathways
- ❑ Skill assessments
- ❑ Microcredentials
- ❑ Upskilling opportunities
- ❑ (Regional) training catalogues

.

SMES, LARGE COMPANIES, INDUSTRIAL ASSOCIATIONS

- ❑ Link with ADMA TranS4MErs
- ❑ Get support for upskilling actions
- ❑ Technical services and applied research opportunities

LCAMP

Learner centric Advanced Manufacturing Platform

LCAMP will support and empower regional AM CoVEs to become more resilient, innovative, and better equipped to train, upskill, and reskill young and adult students to successfully face the digital and green transitions. LCAMP supports regions grow and be more competitive through their VET systems.

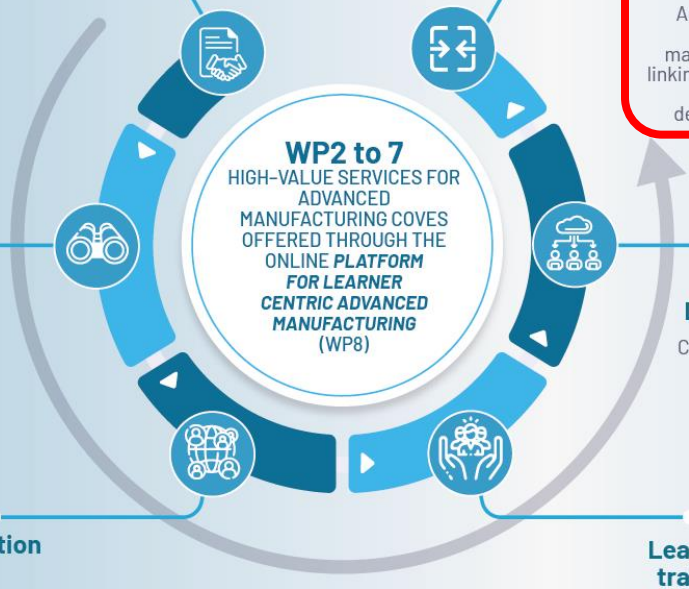
Co-funded by the European Union

WP2
LCAMP Alliance

Alliance of Learner centric Advanced Manufacturing CoVEs

WP7
VET-SME connection

Accelerate the delivery of trainings on advanced manufacturing for SMEs by linking digital transformation journeys with trainings delivery from Vet centres.



WP3
Observatory

Learner centric Advanced Manufacturing Observatory

WP6
Collaborative Learning Factory- CLF

Collaborative Learning Factory for Industry 4.0 technologies' absorption

WP4
Open Innovation Community

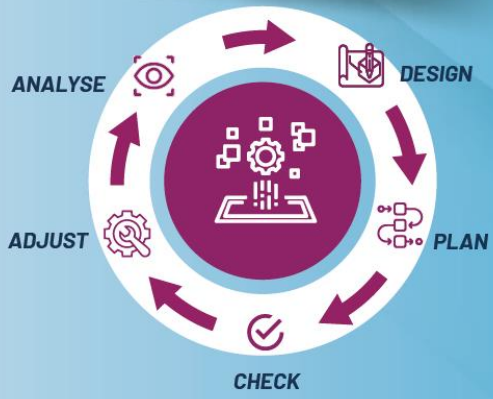
Promote applied research and development projects, mainly between CoVEs and SMEs

WP5
Learner centric training for AM

Learner centric training for Advanced Manufacturing

WP8
PLATFORM for Learner Centric Advanced Manufacturing

THE PERMANENT EUROPEAN PLATFORM OF VOCATIONAL EXCELLENCE FOR ADVANCED MANUFACTURING WILL PROVIDE A ONE-STOP-SHOP SERVICE FOR ACCESSING ALL SERVICES, DATA AND INFORMATION GENERATED BY THE PROJECT.



WP10
Action Plan

Which will ensure the sustainability of the project after the end of the funding

WP1
Project management, quality assurance and risks management

WP9
Dissemination and explotation

* *Wp1 and Wp9 Are transversal and apply to the all wps*

ACTIVITIES AND SINERGIES WITH ADMA TRANS4MERS

LCAMP
Learner Centric Advanced Manufacturing Platform

LCAMP platform for Advanced Manufacturing aims to be a digital one-stop-shop for accessing all services, data and information produced during the life's project:

A Skills and Jobs Observatory on Advanced Manufacturing

Building an observatory on advanced manufacturing tendencies from a VET perspective.

An Open Innovation Community

A community of best practices to articulate applied research actions that underpin the activities of the CoVEs. in cooperation with industry, the Vocational Education and Training sector and regions.

A Learner centric training for Advanced Manufacturing

Developing teaching and learning content on Industry 4.0 -specific qualifications, skills assessment, a database of I4.0 specific courses and micro-credentials, integrated learning pathways tool for LLLs and develop and provide micro-credentials for new and existing Industry 4.0 specific qualifications.

Advanced Manufacturing Learning Factories

Factory labs for Advanced Manufacturing training (in VET).

SME–VET connection

- Adopt ADMA TranS4MErs Methodology to perform scans and create Implementation Plans with companies.
- Create a catalogue of trainings related to the ADMA TranS4MErs framework and offer them to SMEs in all partner countries..
- Develop a support framework for SMEs to accelerate their digital and green transformation.

COOPERATION WITH KEY STAKEHOLDERS

Learner Centric Advanced Manufacturing Platform

ADMA TranS4MErs

Since June 2022, when LCAMP project kicked-off, an ongoing connection exists with the ADMA TranS4MErs initiative to support SMEs to accelerate their digital and green transformation, through the adoption of the ADMA TranS4MErs Methodology

TranS4MErs

LCAMP Alliance

- It will be a network from the Advanced Manufacturing sector ensuring the sustainability of the platform in the form of a Skills Alliance
- It will sign agreements of cooperation with other networks and organisations (regional authorities, national VET/HVET centres, Learning Factories, SMEs active in Advanced Manufacturing, employer associations, ...)

LCAMP ALLIANCE'S MISSION AND GOALS

The LCAMP ALLIANCE aims to bring together stakeholders, such as VET providers, industry stakeholders, Clusters, research centres, Competence Centres, Public Authorities and learners in the Advanced Manufacturing sector.

It will operate with a learner-centric approach, meaning that it prioritises the needs and development of learners putting them at the forefront of its initiatives, in order to:

- ❑ harness talent in Advanced Manufacturing,
- ❑ reduce skill gaps through education and training,
- ❑ promote capacity building and transfer knowledge and expertise among members,
- ❑ build a sustainable future for Advanced Manufacturing.

NEXT STEPS RELATED TO THE LCAMP ALLIANCE

Learner Centric Advanced Manufacturing Platform

1

We want to get to know you!
Contact **EARLALL** at info@lcamp.eu

2

Enjoy the services of the Alliance and **connect with experts and peers**

3

In **2026**, LCAMP is planning to legally register the Alliance. You will be then **invited to present your official membership candidature**

LCAMP 2025 NETWORKING CAMP

Learner Centric Advanced Manufacturing Platform

AGENDA OF THE NETWORKING CAMP

Learner Centric Advanced Manufacturing Platform

Day 1: Tuesday 13 May 2025

Presentations and Interactive Workshops

Overview of Advanced Manufacturing trends

Six interactive workshops:

- ❑ Training in Learning Factories: Hands-on approaches to upskilling.
- ❑ GLOW Organisation (Siemens Energy Project): Exploring sustainability and innovation.
- ❑ Career Horizons: Insights into emerging career opportunities.
- ❑ Mobility Projects: Enhancing global collaboration.
- ❑ Digital Twins: The future of digital transformation.
- ❑ VET/SME Connections: Bridging education and small-to-medium enterprises.

AGENDA OF THE NETWORKING CAMP

Learner Centric Advanced Manufacturing Platform

Day 2: Wednesday 14 May 2025

Industry Visits in Sweden (visit to companies)

- ❑ *Siemens Energy: Discover innovations in energy solutions.*
- ❑ *Visualisation Center: Explore advanced visualization technologies.*
- ❑ *KL-Industri: Learn about industry-leading manufacturing practices.*

Day 3: Thursday 15 May 2025

Educational Insights (visit to a local school)

Samuel Nazzareno Monaco

AFIL - Lombardy Intelligent Factory Association

samuel.monaco@afil.it

www.lcamp.eu

@LCAMP_EU

LCAMP
Learner Centric Advanced Manufacturing Platform for CoVEs

Open Platform for Realizing **Z**ero **D**efects in Cyber Physical **M**anufacturing

Funded by the European Union

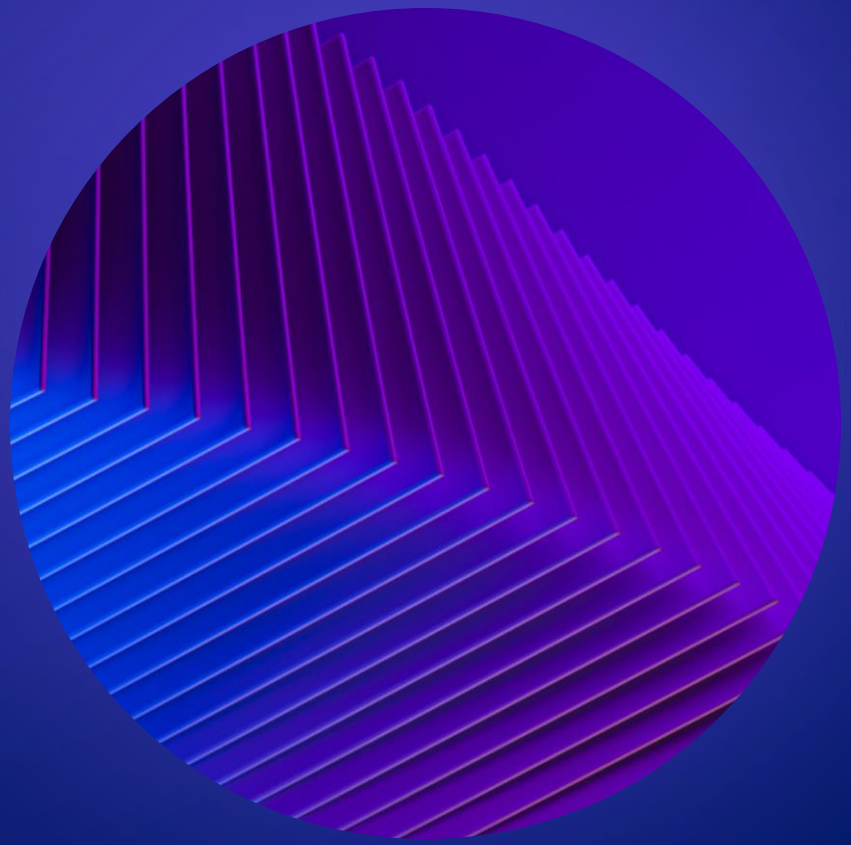
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

openZDM is an initiative funded by the European Commission under the Horizon Europe programme with a goal to provide **an innovative state-of-the-art integrated open platform that will combine advanced ICT solutions and innovative non-destructive testing**, to support production networks' zero-defect processes.

Through **five industrial pilots** in real-life operational conditions the initiative will test and finalise the technological tools and facilitate the adoption of the openZDM solution.

In that way, the project will **enable maximizing efficiency and ROI**, while increasing company's productivity and competitive leverage.

About openZDM



openZDM project addresses the challenge of the manufacturing industry to deliver high-quality products while minimizing waste and energy consumption.

With the aim of enabling zero-defect processes, **openZDM is focusing on the “grand challenge” of sustainable manufacturing** to significantly improve the capacity for cost savings and the production sustainability of cyber-physical production systems.

Sustainable manufacturing challenge

To develop and deploy an **open platform** based on RAMI4.0 and AAS standards.

To develop and deploy **Digital Twins** for online process evaluation and adaptation.

To define **AI-based data-driven** quality assessment approaches.

To develop and integrate **NDIs for zero defects.**

To test and validate the integrated solution **to the five industrial pilot cases.**

As a result, openZDM will develop an online integrated solution for sustainable manufacturing applicable to a large variety of manufacturing industries.

openZDM objectives

Target Area

Integrated platform

openZDM

openZDM integrated solution

Promotion of production **sustainability**

Increasement the **quality control and the flexibility** of an organisation

Increase the capacity for **cost savings** through waste reduction

Improve production quality and **increase efficiency**

Increase productivity and **competitive leverage**

The impact of the openZDM solution

Trough five industrial pilots in **real-life operational conditions**, representing the largest part of the EU's manufacturing sector, geographically, technologically and from their value chain positioning, we will test and finalise the technological tools and facilitate the adoption of the openZDM solution.

VDL Weweler
Trailing arm production process demonstrator

Volkswagen Autoeuropa
Vehicle body shop and final assembly demonstrator

Vidrala
Bottle manufacturing demonstrator

Sonae Arauco Decorative board manufacturing demonstrator

Aptiv
EV battery production demonstrator

openZDM industrial pilot cases

Trailing arm production process demonstrator

This industrial pilot envisages the use of several non-destructive inspection methods and a Digital Twin model of the production process. To keep track of the important production parameters, in real-time, and with the support of AI modules to identify anomalies and adjust the production parameters accordingly.

The proposed approach will allow to adjust the production process to deviations or abnormal patterns ensuring the production of high-quality products while enabling a zero-defect manufacturing process.

VDL Weweler

Vehicle body shop and final assembly demonstrator

This use case will be demonstrated considering the process related with car alignment. The main goal for the demonstrator is that, through the data acquired by Non Contact sensors, data analytic results and the digital twin, the not compliant products will be detected earlier in the production line and therefore reduce the number of products will need to be aligned.

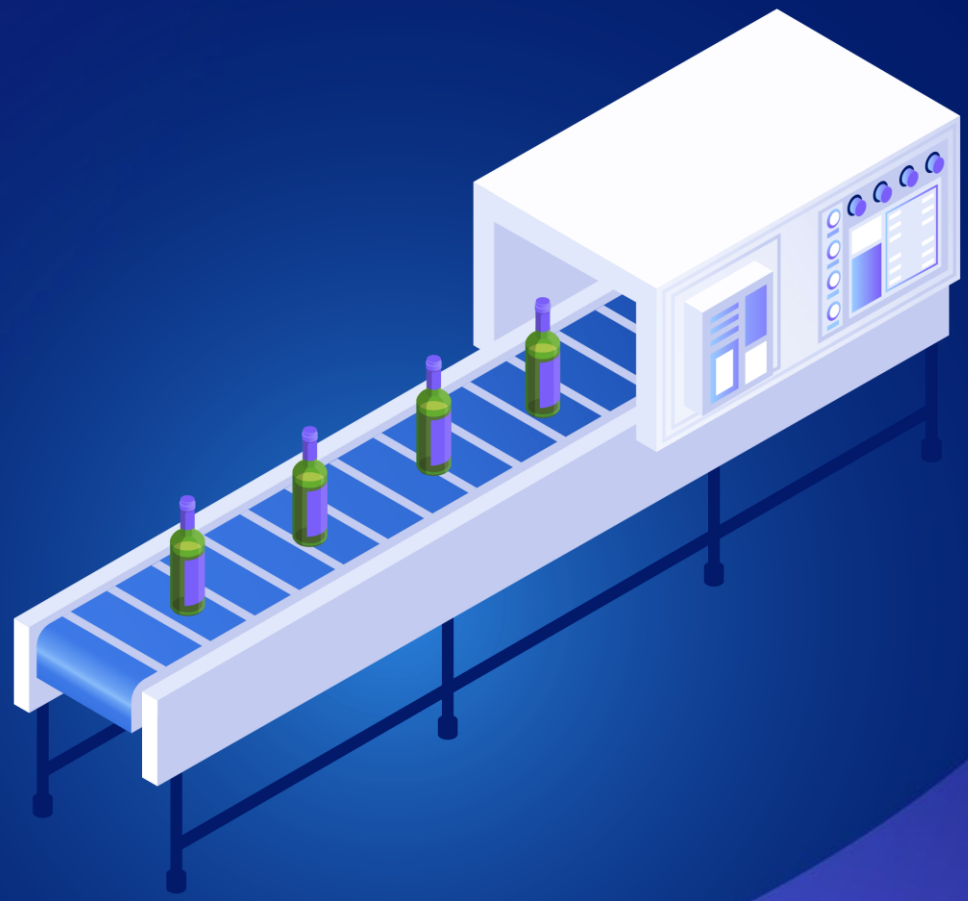
This objective is expected to be achieved by gathering data also from an innovative sensor used by the operators to measure the Gap&Flush in order to correlate and predict process faults and thus allowing real time interventions in order to prevent the defects related to gap and flush and their propagation to down-stream processes.

Volkswagen Autoeuropa

Bottle manufacturing Demonstrator

Glass container manufacturing is an extremely cost-conscious process where a significant amount of products are defective due to limitations in materials involved, energy usage, and process steps driven by simplicity and cost-effectiveness more than by performance.

Thermal imaging of the finished bottle provides a significant amount of raw data, that well used can give insights into both process parameters (temperature) and finished product (thickness). Open ZDM will use this information to improve the process both upstream (gob forming) and downstream (glass distribution).



Vidrala

Decorative surfaced panels manufacturing demonstrator

This use case will be demonstrated at the Linares plant and specifically on the process of decorative panels. The main goal for the demonstrator is the reduction of defects which will consequently increase the throughput and decrease the production costs.

This objective will be achieved by getting the insights on the key parameters that lead to defects and by adjusting these same parameters to the provided recommendations. It will also recommend the machine parameters for the new products.

Sonae Arauco

EV battery production Demonstrator

This use case will develop vision in VIS and IR range for monitoring the laser welding process. In the VIS range, high-speed images of the molten pool can be acquired, and phenomena and geometrical features of the melt pool, keyhole, spatters and plasma plume distribution can be effectively monitored.

In the IR range, it is possible to evaluate the thermal profile of the weld, which is crucial to assess its quality. The vision systems will embody AI-based algorithms for defect detection and process characterization, which running on an edge device, equipped with a powerful GPU.

Aptiv

Stay tuned to the openZDM digital world to follow our journey
and discover the latest insights from the manufacturing ecosystem!

www.openzdm.eu

www.linkedin.com/company/openzdm

www.twitter.com/open_zdm

Stay tuned!

Contact information

If you have any doubts or questions,
please feel free to reach out at:

openzdm@f6s.com

openzdm@lms.mech.upatras.gr

openZDM

Thank you!

Funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

AI REDGIO 5.0

AI REDGIO 5.0

Project overview

Speaker:
Walter Quadrini
Politecnico di Milano

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Health and Digital Executive Agency (HaDEA). Neither the European Union nor HaDEA can be held responsible for them.

Funded by the European Union

01
CONTEXT

background and motivation

AI REDGIO 5.0

AI REDGIO 5.0

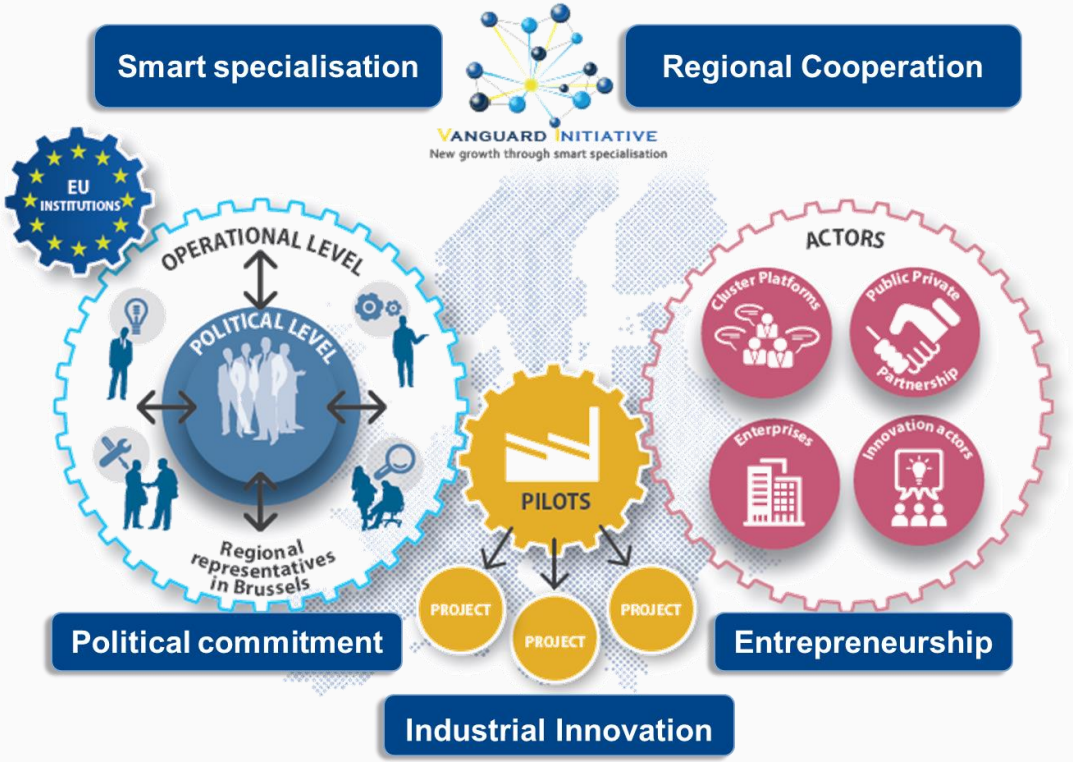
Vanguard Initiative: ESM and AI Pilots

The Vanguard Initiative is a unique alliance that gathers 39 of the most advanced industrial regions in Europe, focused on stimulating industrial innovation and building European value-chains based on complementarities in regional Smart Specialization Strategies.

Its aim is to create a European network of open facilities where companies (including SMEs) can find:

- Innovative technologies
- Multi-disciplinary competences (technology, business, innovation)
- Stimulating cultural environment

To understand, test, set-up and uptake innovative technologies and methods de-risking private investments.



ESM VANGUARD INITIATIVE

Efficient and Sustainable Manufacturing Pilot

ARTIFICIAL INTELLIGENCE VANGUARD INITIATIVE

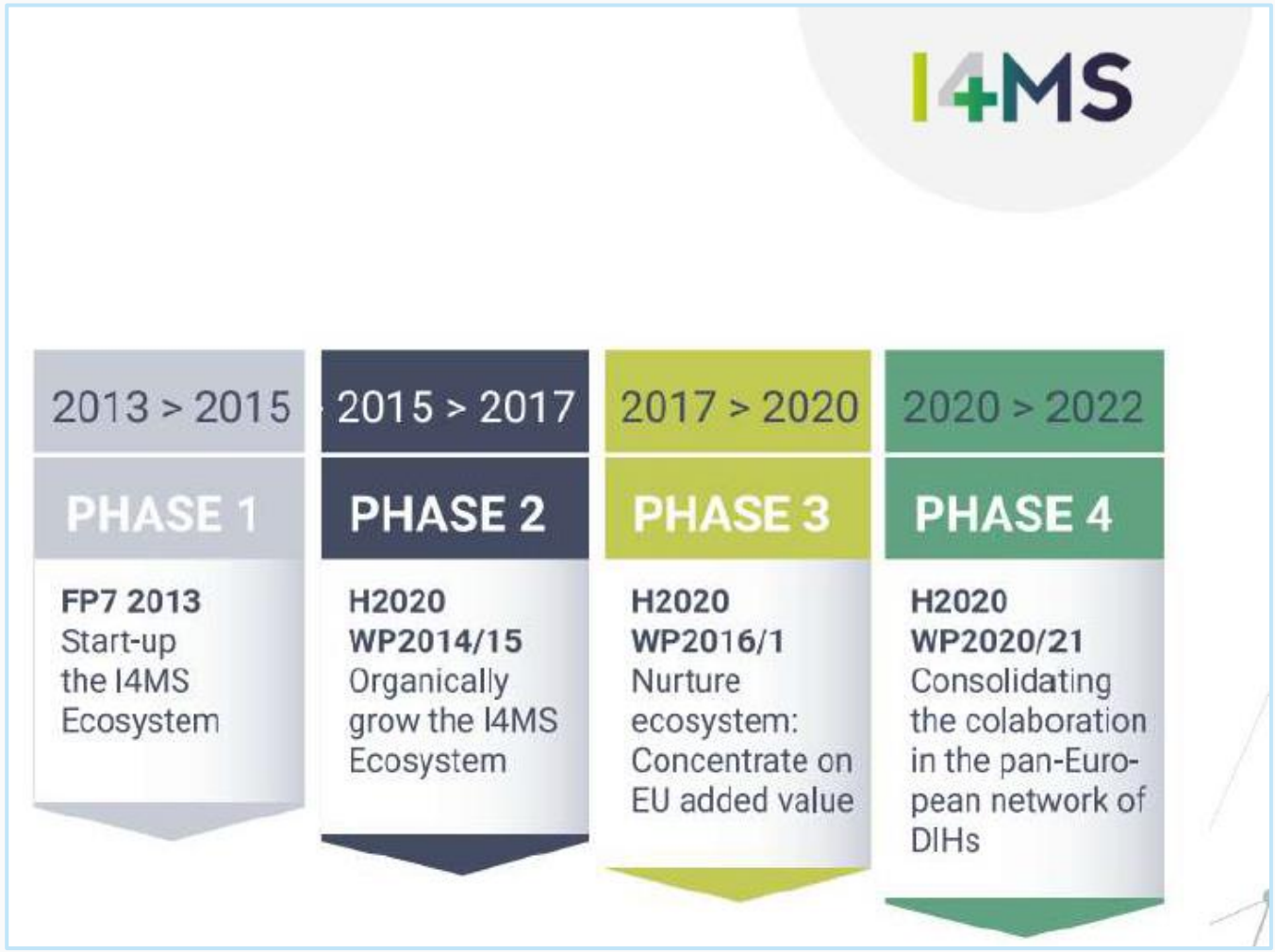
Artificial Intelligence Pilot

I4MS in H2020

I4MS Initiative

What is I4MS?

I4MS (ICT Innovation for manufacturing SMEs) is the initiative promoted by the European Commission to foster the digital innovation of manufacturing **SMEs** in Europe in order to **boost their competitiveness** in the **digital era**.



AI REGIO project

AI REGIO PROJECT

Regions and Digital Innovation Hubs alliance for AI-driven digital transformation of European Manufacturing SMEs

Coordinator: Politecnico di Milano
Duration: 36 months (2020-2023)
EU contribution: € 7 999 207 (total costs € 9 200 080)

WEBSITE

The main AI REGIO objectives are:

- to foster closer cooperation across EU and non-EU countries to make sure innovations can scale.
- to integrate Digital Manufacturing Platforms from previous EU-funded projects into Digital Innovation Hubs offerings.
- to further enhance the network of regional DIHs and SMEs, which will jointly conduct 30 AI-driven application experiments.

THE EUROPEAN DATA STRATEGY

CONNECTED FACTORIES

Open Data Repositories

Data Platforms & Marketplaces

Trusted Data Networks

Smart Autonomous Factories

Product Service Factories

Hyper Connected Factories

AI REGIO

WELD GALAXY

AI REDGIO 5.0

AIDEAS

DIMOFAC

VIMMP
VIRTUAL MATERIALS MARKETPLACE

Circular TwAIn

CIRPASS

AI REDGIO 5.0

MARKET4.0
CONNECT & PRODUCE

AI.SOV

CLARUS

02
AI REDGIO 5.0

Figures and Objectives

AI REDGIO 5.0

AI REDGIO 5.0

AI REDGIO 5.0 figures

AI REDGIO 5.0 PROJECT

Regions and (E)DIHs alliance for AI-at-the-Edge adoption by European Industry 5.0 Manufacturing SMEs

Coordinator: Politecnico di Milano
Duration: 36 months (2023-2025)
EU contribution: € 7 462 614 (total costs € 9 363 060)

43 partners from 18 Countries
15 Vanguard Regions:

- 22 EU leading edge **Regional Representatives**
- 13 EU leading edge **Technology Providers** (10 SMEs Midcaps)
- 7 **Industrial Cases** SMEs or MIDCAPs

@AIREDGIO5.0 @ai_redgio50

AI REDGIO 5.0

Objectives

The overall objective of AI REDGIO 5.0 project is to enable competitive AI-at-the-Edge digital transformation of Industry 5.0 Manufacturing SMEs.

Conceptual framework and reference architecture for AI-at-the-edge Industry 5.0 applications, through the development of methods and tools, maturity assessments, 6ps pathway specification and AI skills

Secure and trustworthy edge-to-cloud continuum data and computational space for highly distributed AI applications

Interoperability by design with the pan-EU AI-on-demand platform and its ecosystem of H2020 and HE innovation actions

Transition from regional DIHs to a network of EDIHs in AI for manufacturing

Test-before-invest experiments in AI Didactic Factories and TEF (Testing and Experimentation Facilities) for SME-driven applications

Support the transition towards sustainability, through the ecosystem development and replication to SMEs

03
(E)DIHs ECOSYSTEM

Methodology

AI REDGIO 5.0

AI REDGIO 5.0

(E)DIH Ecosystem and Collaboration Corridors

Why it is important?

EDIH Catalogue
Direct connection with EDIH4MANU network

The European Digital Innovation Hubs will form part of a large network and **collaborations will be one of the main keys they will have to better support SMEs** and the public sector by taking advantage of the experience and knowledge of other hubs.

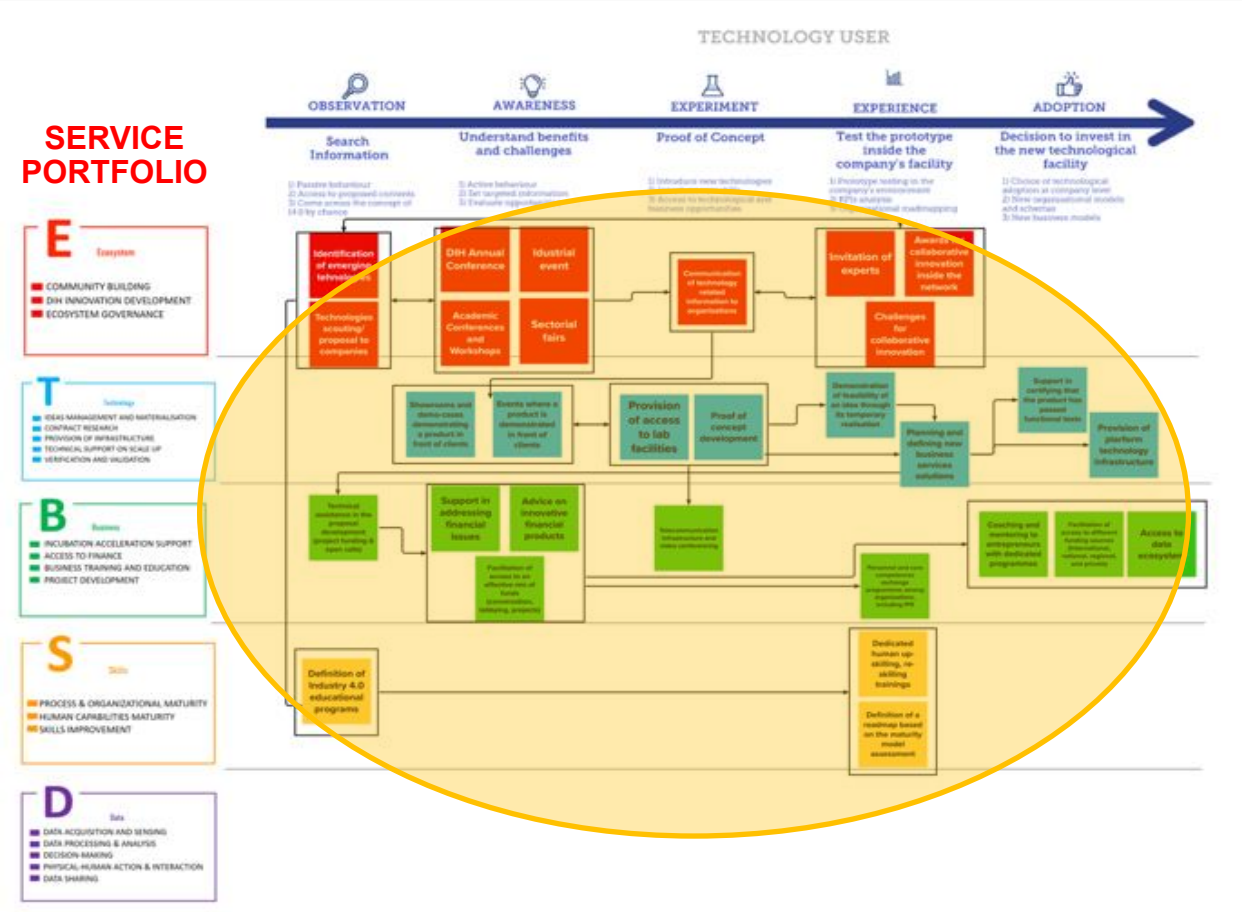
Depending on their characteristics (sector, technology, geographic location), several **EDIHs may work together in a structured way**, in order to jointly develop common services or provide a package of innovative services in a way that aligns with the objectives and needs of the companies. concerned parties.

For this reason, define ways EDIHs can collaborate, is essential to offer the best support to stakeholders.

METHODIH: Main pillars

SERVICE PIPELINES

Tool to match service offering and customer needs



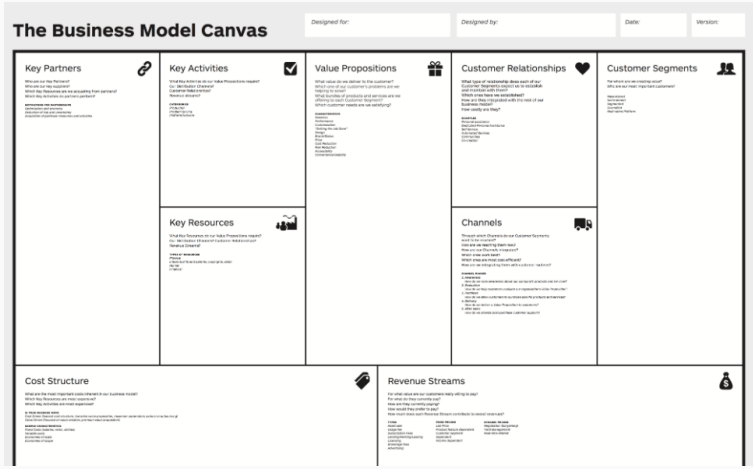
To describe the DIH offering according to a structured framework

CUSTOMER JOURNEYS

To analyse the DIH customer base, to identify main barriers and needs

METHODIH – Methodology for DIHs

Set of methods and frameworks defined to create common standards among DIHs



BUSINESS MODEL

To describe the DIH business, as a multi-stakeholder and no-profit organisation.

DIH4INDUSTRY platform: a useful tool

The **DIH4Industry** marketplace will be enhanced through **AI REDGIO** project with specific **services** and **solutions** for **AI-at-the-edge**.

The **DIH4INDUSTRY** Market Platform

Services, **expertise** and **knowledge exchange** within a network of **Manufacturing Digital Innovation Hubs**.

A single access point for DIH practitioners and policy makers to identify which EC DIHs are active in the Manufacturing domain, where they are located, which experiments they are supporting and which services they are providing for the Digital Transformation of EU Manufacturing Industry.

Ecosystem

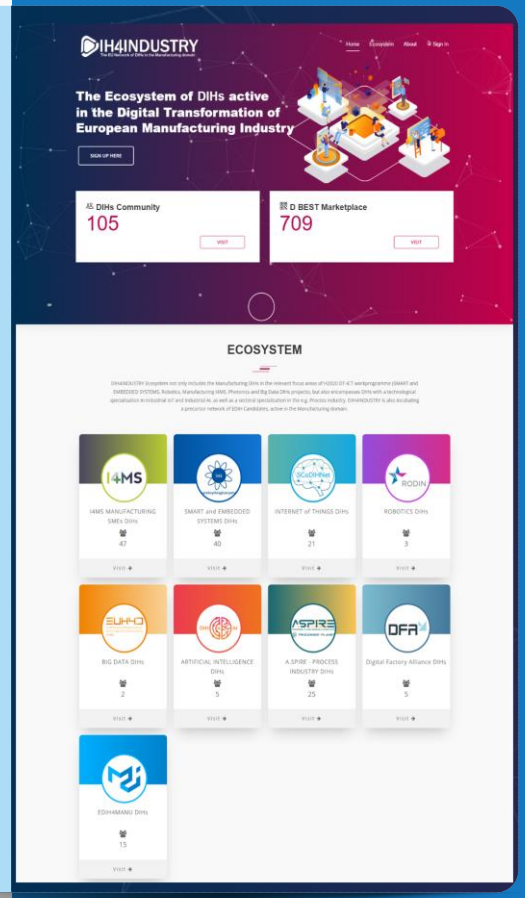
A central hub for all DIHs network focused on Industry 4.0.

Marketplace

A showcase of D-BEST (Data, Business, Ecosystem and technology) services made available by DIHs for their SMEs digitalization support.

Community

A collaborative environment (powered by DIHIWARE) which DIHs may use for fostering the creation of new innovations by forming new projects and supporting the networking among the DIH members.



dih4industry.eu

04
EXPERIMENTS

applications

AI REDGIO 5.0

Industrial demonstration

In order to show and exploit the benefits of applying Artificial Intelligence in Manufacturing, three types of experiments will be conducted:

- **TEchnology and REgulatory SAndboxes (TERESA) experiments in the Didactic Factories** of 14 Regions;
- **SME-driven experiments** in selected 7 Regions by project's partners;
- **20 additional SMEs-driven experiments** as outcome of the 1.2M two waves of **Open Calls**, with a 60k each funding.

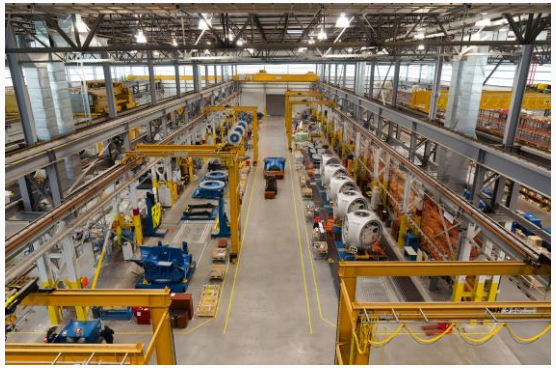
All of them are supervisioned and coordinated by a **common methodology** and by a **shared framework** for defining and measuring **KPI**.

AI REDGIO 5.0

TERESA Experiments

A **Didactic Factory (DF)** offers **training and education** and perform test activities and experimentations, creating awareness and disseminating beneficial effects of the application of innovative digital technologies (i.e. Artificial Intelligence) in manufacturing applications. In AI REDGIO 5.0, the Didactic Factory experiments will focus on **TEchnology and REgulatory SAndboxes (TERESA)**.

A selection of innovative AI applications/tools/services for human-machine interaction will be tested/experimented on a limited scale and in a secure and controlled way, according to the "test before invest" paradigm (**technical sandbox**).



The experiments will involve volunteers to test such solutions in real regulatory conditions in a gradual way before going to the Industrial plants, pursuant to a specific testing plan agreed and monitored by the competent authority (**regulatory sandboxes**). This will allow to better understand the relevant regulatory and ethical issues and to better assess the viability of such innovative tools, in particular in terms of their application of and compliance with regulatory, ethical and supervisory requirements.

AI REDGIO 5.0

POLITECNICO
MILANO 1863

Industry4.0lab

Industry4.0lab @ SOM is implementing a tangible physical entity where the research activity in the innovative manufacturing management and planning approaches can be carried out in conjunction with a practical implementation in a “real-like” environment.

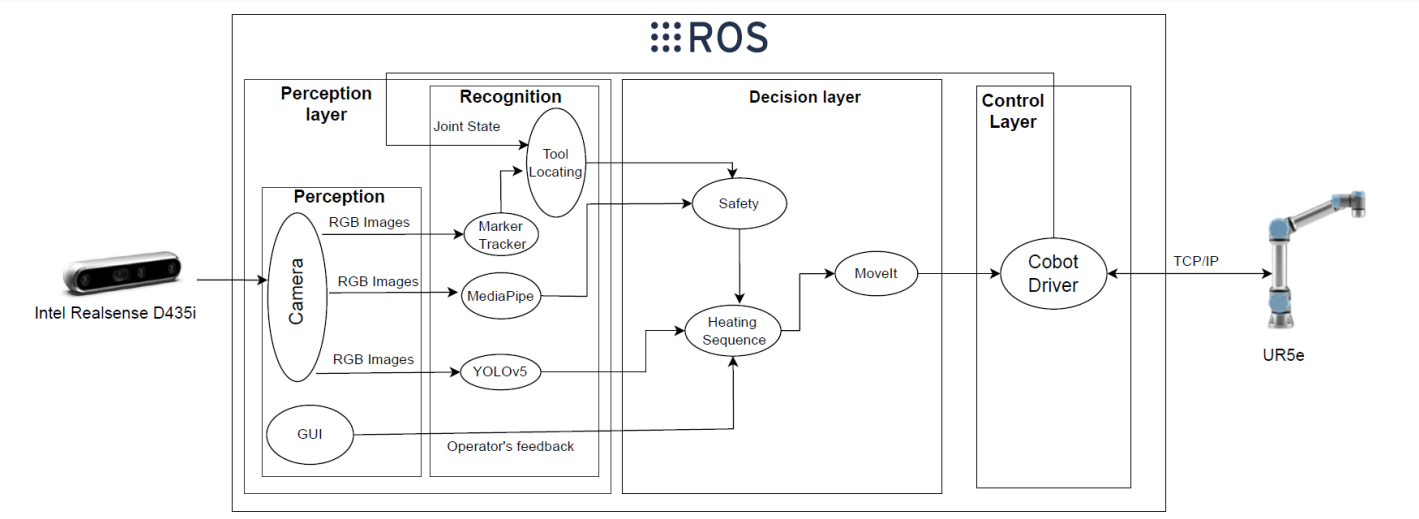
- Assembly line with a robot station
- Cobots
- AGV
- Vision Systems

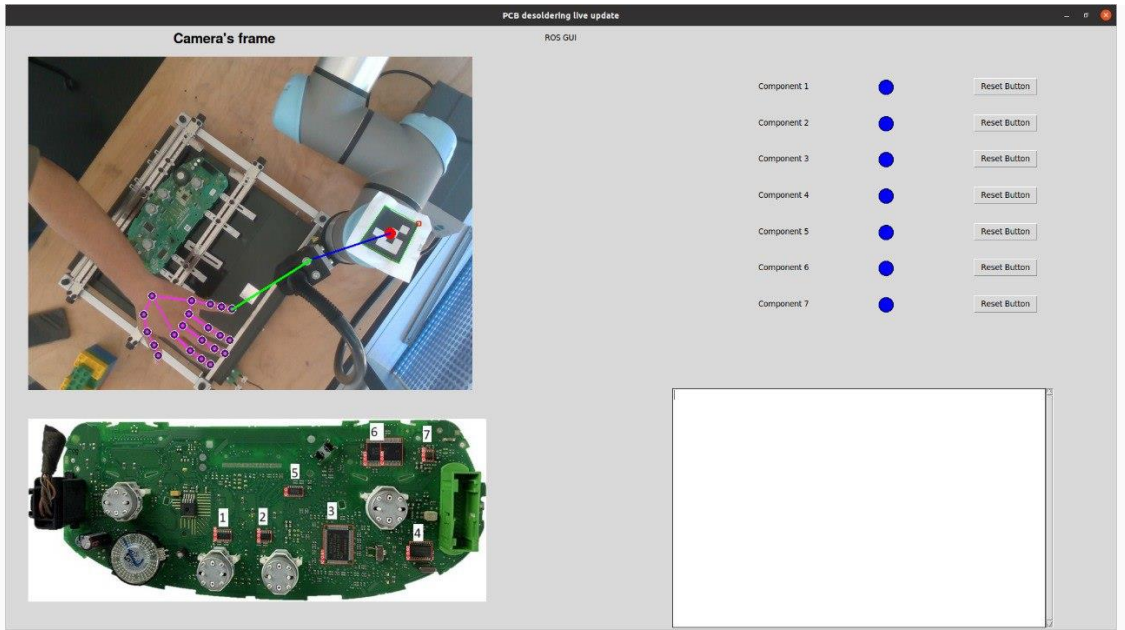
INDUSTRY4.0 lab

Experiment's results

TECHNICAL IMPLEMENTATION

- PCB Object Detection Model has been successfully developed (YOLOv5).
- The MediaPipe Hand Detection algorithm has been integrated in the Intel RealSense D435i Camera
- The Human Safety Zone with respect to Robot heating end-effector has been identified
- A Graphical User Interface (GUI) has been designed enabling operator to supervise the heating task of the cobot providing feedbacks to the cobot in case of need to re-heat a specific component





New roles and Professions (AI & Industry 5.0)

AI-DRIVEN I5.0 DIGITAL TRANSFORMATION METHODS AND TOOLS, MATURITY ASSESSMENT, 6PS SUSTAINABILITY, ECOSYSTEM DEVELOPMENT AND REPLICATION TO SMES

Data/AI Specialists and AI Managers

Strong emphasis on **integrating AI technologies into existing systems**

I5.0 Professionals

Emphasizing **collaboration between workers and AI-driven tools for production enhancement.**

AI Managers

Emphasis on Strategic execution of AI strategies aligned with business objectives

Remote Workers

Need **robust technical and analytical skills**, particularly in using applications to enhance remote capabilities and interpreting data

Plant Workers

focus on leveraging advanced **human-machine interfaces (HMI) and collaborating with cobots** to optimize operations and ensure safety.

05
SOME MONEY (for you)

AI REDGIO 5.0

AI REDGIO 5.0

2° Upcoming Open Call

AI REDGIO 5.0

THANKS

Does anyone have any questions?

walter.quadrini@polimi.it

AI REDGIO 5.0

@ai_redgio50

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Health and Digital Executive Agency (HaDEA). Neither the European Union nor HaDEA can be held responsible for them.

Funded by the European Union

greenSME

Driving manufacturing SME transformation

towards green, digital and social sustainability

Digitalisation of Manufacturing SMEs: Challenges and Opportunities

28 Nov 2024

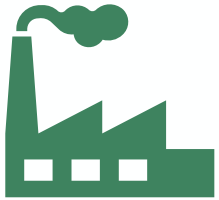
Rita Campos | F6S

Funded by
the European Union

greenSME strengthens manufacturing SMEs’ capacity to adopt advanced technologies and social innovation for sustainability

Target audiences and key messages

Main target audiences



Manufacturing SMEs

Help SMEs become more sustainable by offering them a set of services and the opportunity to be paired with a provider.

Sustainability and Technology Providers

Give them the opportunity to share their technologies and expertise with manufacturing SMEs.

Secondary target audiences:

Research and academia
Clusters and industrial associations
Policy makers
Citizens

Manufacturing SMEs

1. Register on the Hub
2. Self-Assessment Tool
3. Action Plan
4. Match-making
5. Open call (with funding)

2. Expression of Interest
3. Training with accreditation

Sustainability and Technology Providers

Funded by the European Union

greenSME

Results

SUSTAINABILITY ASSESSMENT TOOL

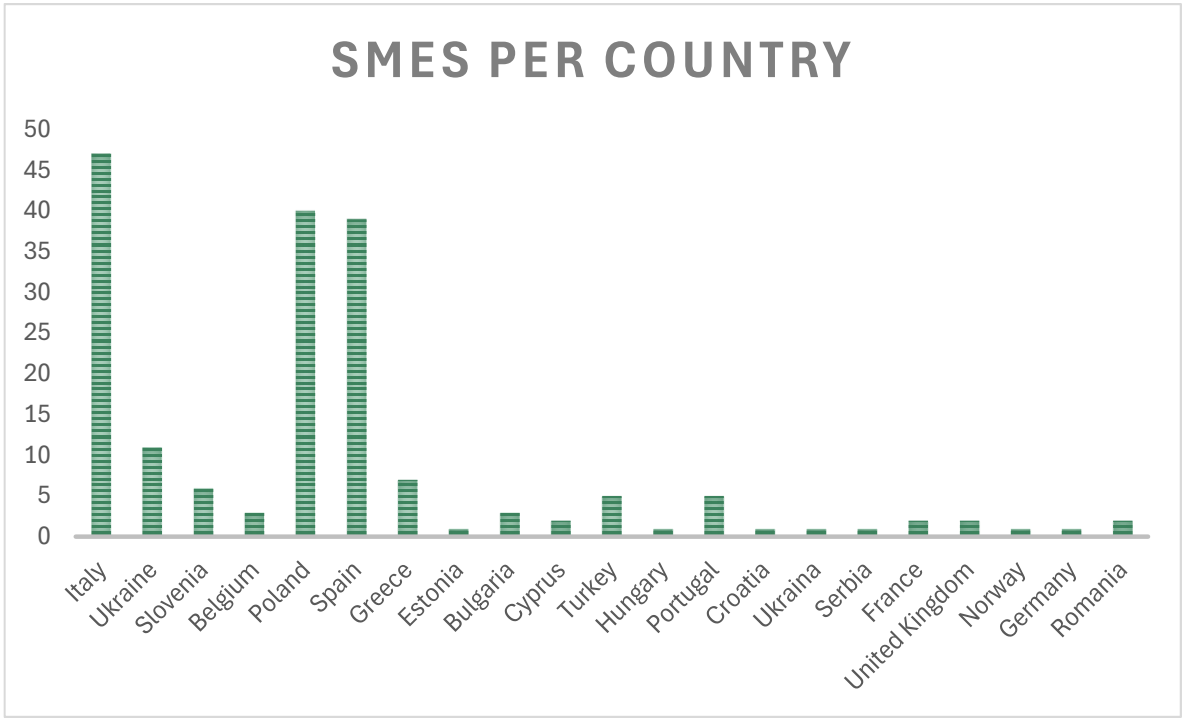
ADVANCED SUSTAINABILITY ACTION PLAN

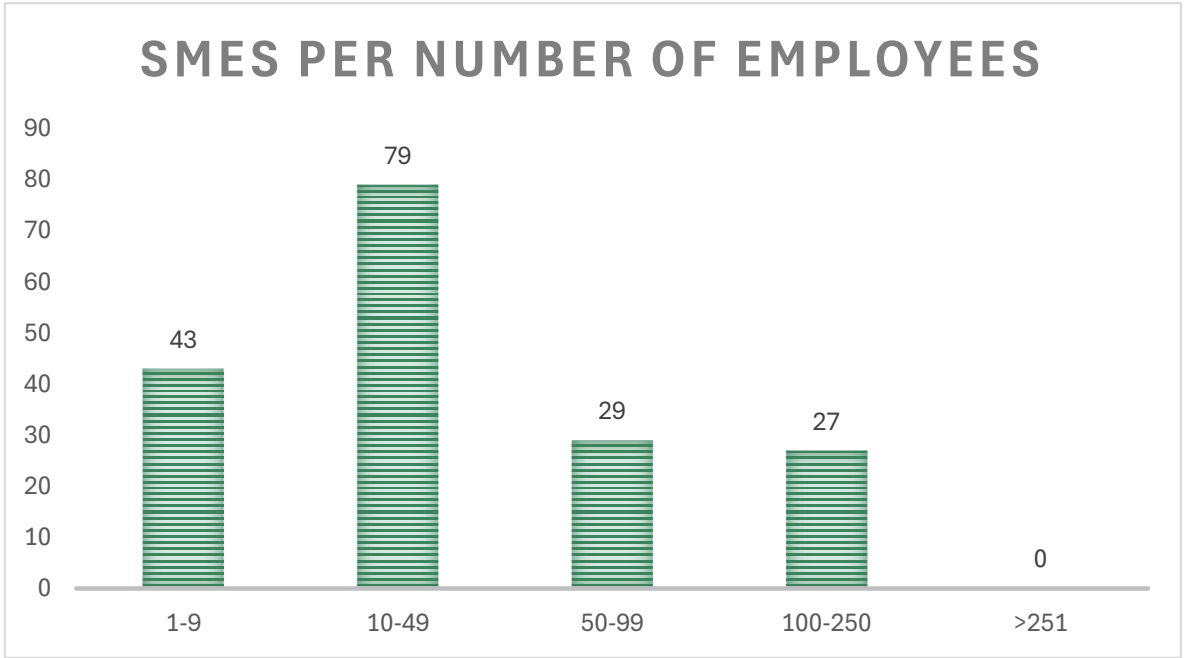
PROVIDERS TRAINING & ACCREDITATION

GREENSME HUB

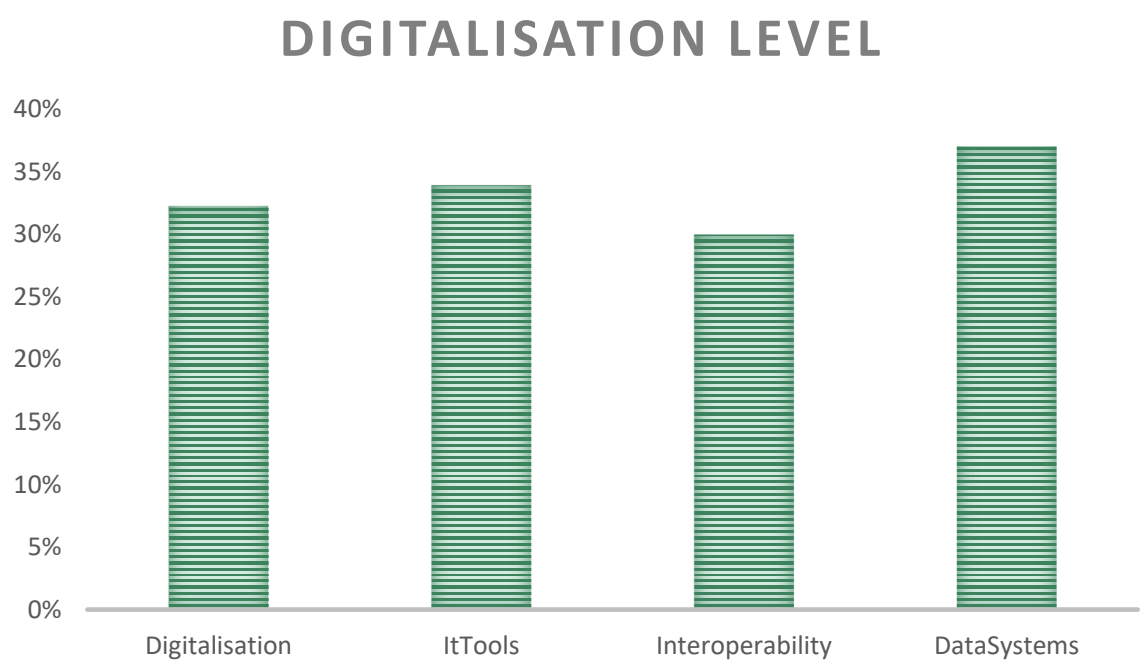

Insights

Characterisation of the companies



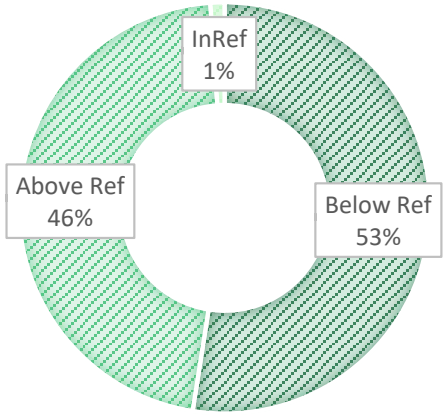


Digitalisation & Sustainability

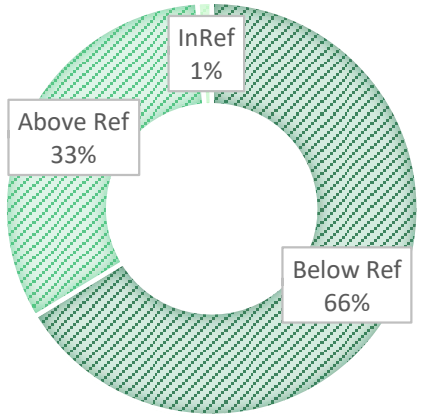


Comparisons

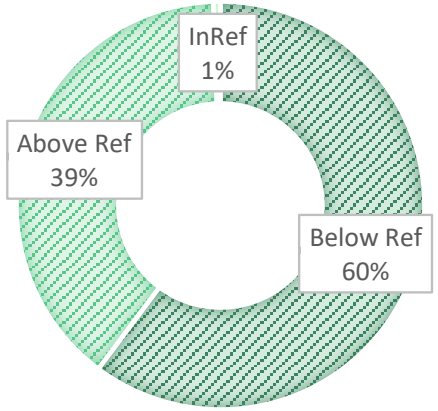
DEVIATION TO REFERENCE: ECONOMIC PILLAR



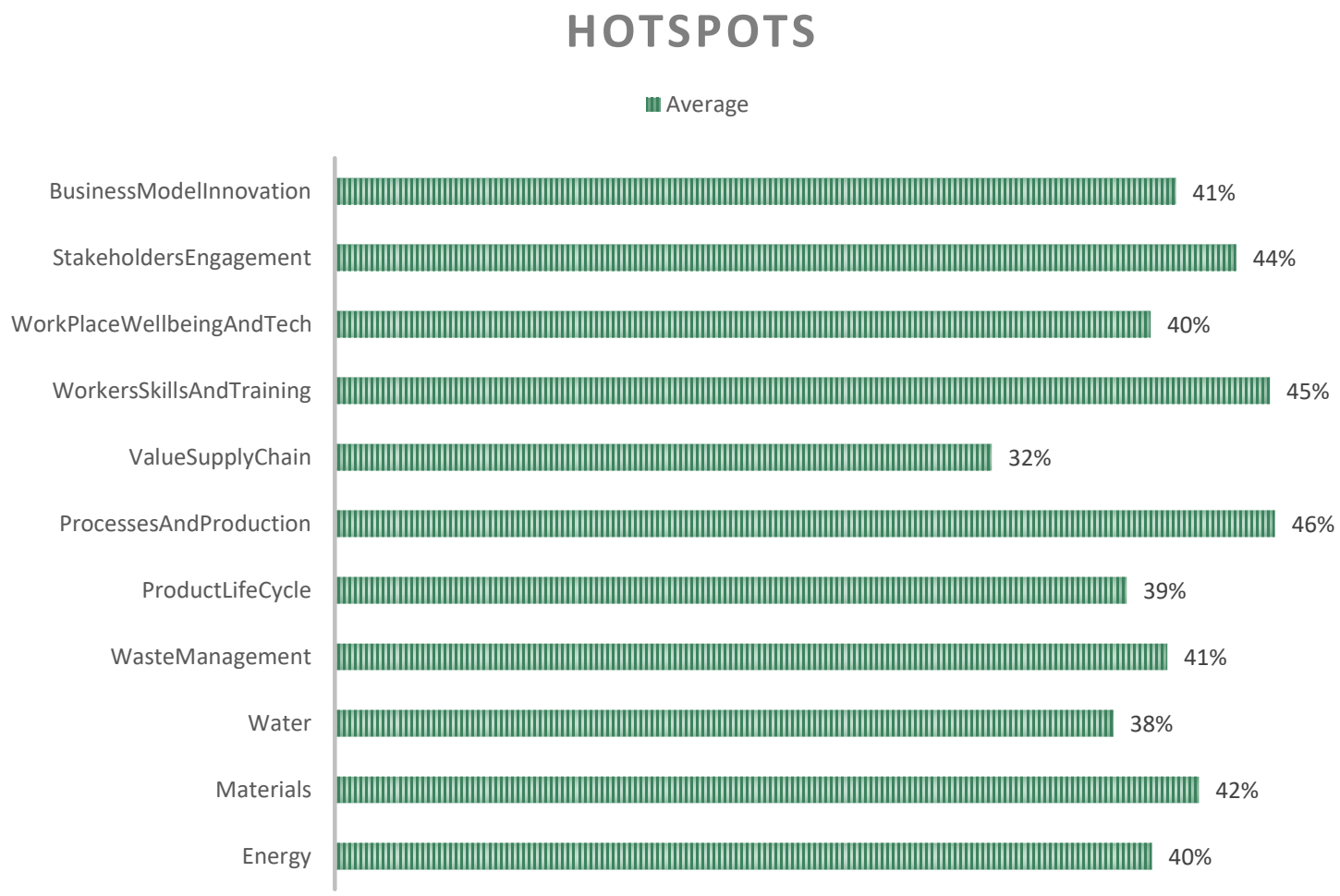
DEVIATION TO REFERENCE: SOCIAL PILLAR



DEVIATION TO REFERENCE: ENVIRONMENTAL PILLAR



Action hotspots



Lessons learned

- **Engagement:** We need to activate local stakeholders to reach manufacturing companies.
- **Proximity:** Manufacturing SMEs want to work with providers they know and trust.
- **Small actions are not small at all:** We have to aim for progress not perfection and allow steady improvement.
- **Effective collaboration:** Bridging the gap between providers and manufacturers and fitting solutions to needs.
- **Company culture:** Change requires engagement and commitment from all levels of the company.


Impact

greenSME in numbers

164 PROVIDERS

178

SUSTAINABILITY ASSESSMENTS

167

ACTION PLANS

85

PROJECTS

Let’s connect!

Rita Campos | rita@f6s.com

UNDERPIN

The Pan-European Data Space for holistic asset management in critical manufacturing industries

SANDRA BORTEK
TIKO PRO, SLOVENIA

Co-funded by the European Union

This project has received funding from the Digital Europe Programme under grant agreement No 101123179.

Tiko Pro

EU funding consultancy company

COMPREHENSIVE SUPPORT FROM APPLICATION TO EXECUTION

Proposal Preparation

- Screening of suitable funding
- Compliance check
- Technical assistance in application preparation and proposal submission

Communication & Dissemination

- Experienced and dedicated team for full support
- Effectively promoting actions to diverse audience
- Creating lasting impact

Project Management

- Execution and monitoring of funded projects
- Stakeholder coordination
- Quality management

Contact us

UNDERPIN

Co-funded by the European Union

Tiko Pro

EU funding consultancy company

SUCCESS AND EXPERTISE ON NATIONAL AND EU LEVEL

94%
success rate

100%
succes
Last 5 applications
DEP & CEF

horizon europe

800
projects
that acquired
co-financing

120 mil
EUR
Total value of all
approved projects

4
Leading CD
work packages

eureka
eurostars

EU4Health
Programme

UNDERPIN

Co-funded by
the European Union


WHAT ARE DATA SPACES?

UNDERPIN

START DATE: DEC 1, 2023
END DATE: NOV 30, 2025
DURATION: 24 MONTHS
PROJECT COORDINATOR: MOTOR OIL HELLAS (MOH)
CONSORTIUM: 11 organisations / 5 EU countries

Co-funded by the European Union

This project has received funding from the Digital Europe Programme under grant agreement No 101123179.

Consortium Partners

MOTOR OIL

SEMANTIC WEB COMPANY

ontotext

TIKOPRO

more energy

WATERMEAON
SUSTAINABLE BLUE INNOVATION

ATHENA
Research & Innovation
Information Technologies

ΧΑΡΟΚΟΠΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ
HAROKOPIO UNIVERSITY

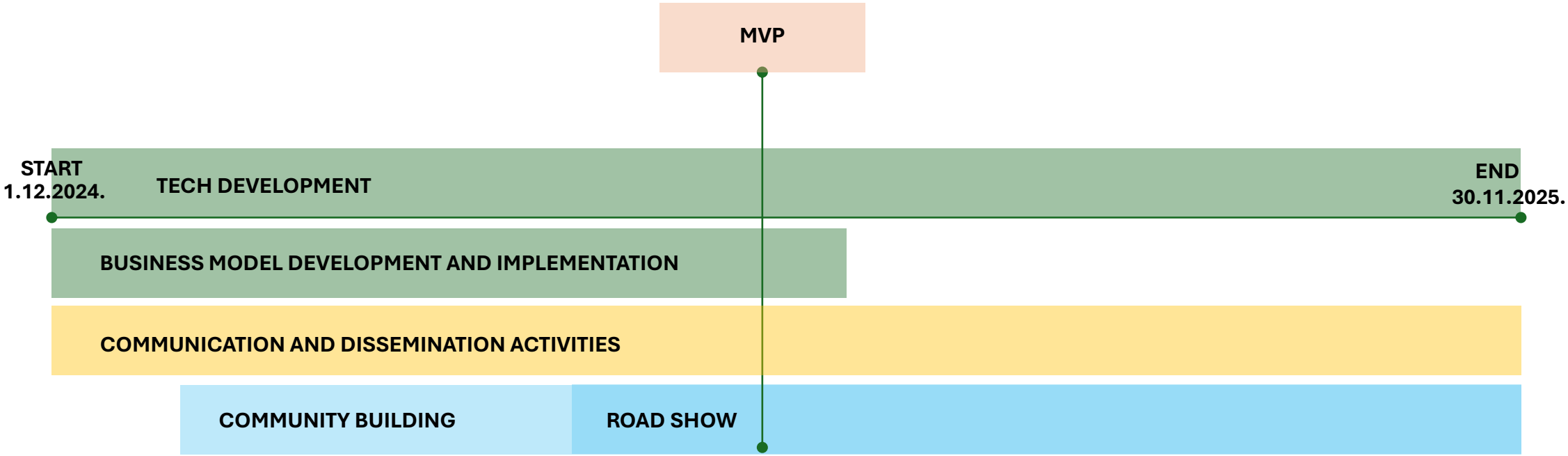
AIT AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY

Innov-acts

SPACE

Co-funded by
the European Union

Road Map


MVP
START
1.12.2024.
TECH DEVELOPMENT
END
30.11.2025.
BUSINESS MODEL DEVELOPMENT AND IMPLEMENTATION
COMMUNICATION AND DISSEMINATION ACTIVITIES
COMMUNITY BUILDING
ROAD SHOW

Manufacturing Industry challenges

- Efficient operations, downtime and cost reduction
- Cost of equipment can account for up to 15-20% of the capital expenditure over their lifecycle
- Degradation leading to unexpected failures

- Data silos and security concerns often hinder effective data utilization
- Cross-organizational data sharing is inactive
- Emergent European data economy

UNDERPIN

Unlocking deep industrial data for trustworthy and reliable value-added services by parties outside a production site.

The European data economy relies on the availability and accessibility of large amounts of data as a basis for further innovation and exponential development of technologies

Co-funded by
the European Union

Creating a state-of-the-art platform that fosters dynamic asset management and predictive/prescriptive maintenance

UNDERPIN Data Space

UNDERPIN

Implementing Industry 4.0 in practical means, in the manufacturing domain and beyond, net-working all components along the value creation chain of production in order to offer value-added services based on data

Co-funded by
the European Union

UNDERPIN

USE CASES

real-world demonstrators validation of benefits for SMEs

UC1 Refineries

To enhance operational efficiency, streamline maintenance processes, and optimize decision-making regarding preventive maintenance

To minimize downtime and its adverse effects on production capabilities by addressing anomalies spanning the entire production chain, not limited to individual components

UC2 Wind Farms

To implement a robust predictive maintenance system for wind turbines by developing an advanced ML model capable of predicting equipment failures and identifying abnormal behavior trends.

To develop an automated data aggregation and processing tool designed to determine the wind turbine's (wt) power curve based on historical data

Co-funded by the European Union

Solution

- compliant to **EU standards, Data acts, IDSA and GAIA-X guidelines** encompassing enterprise-ready infrastructure and tools to accommodate secure and trusted data, improving company operations
- providing cross-organizational and cross-use-case **data sharing and exchanging**
- ensuring **data sovereignty**, with strong focus on the interplay of SMEs and large industry players to improve products and services
- a sustainable business model for the Data Space operator
- develop pre-normative standards

UNDERPIN

Gaining trust through the integration of smart contracting mechanisms that clearly specify the legal frame

Co-funded by
the European Union

UNDERPIN's contribution in data spaces

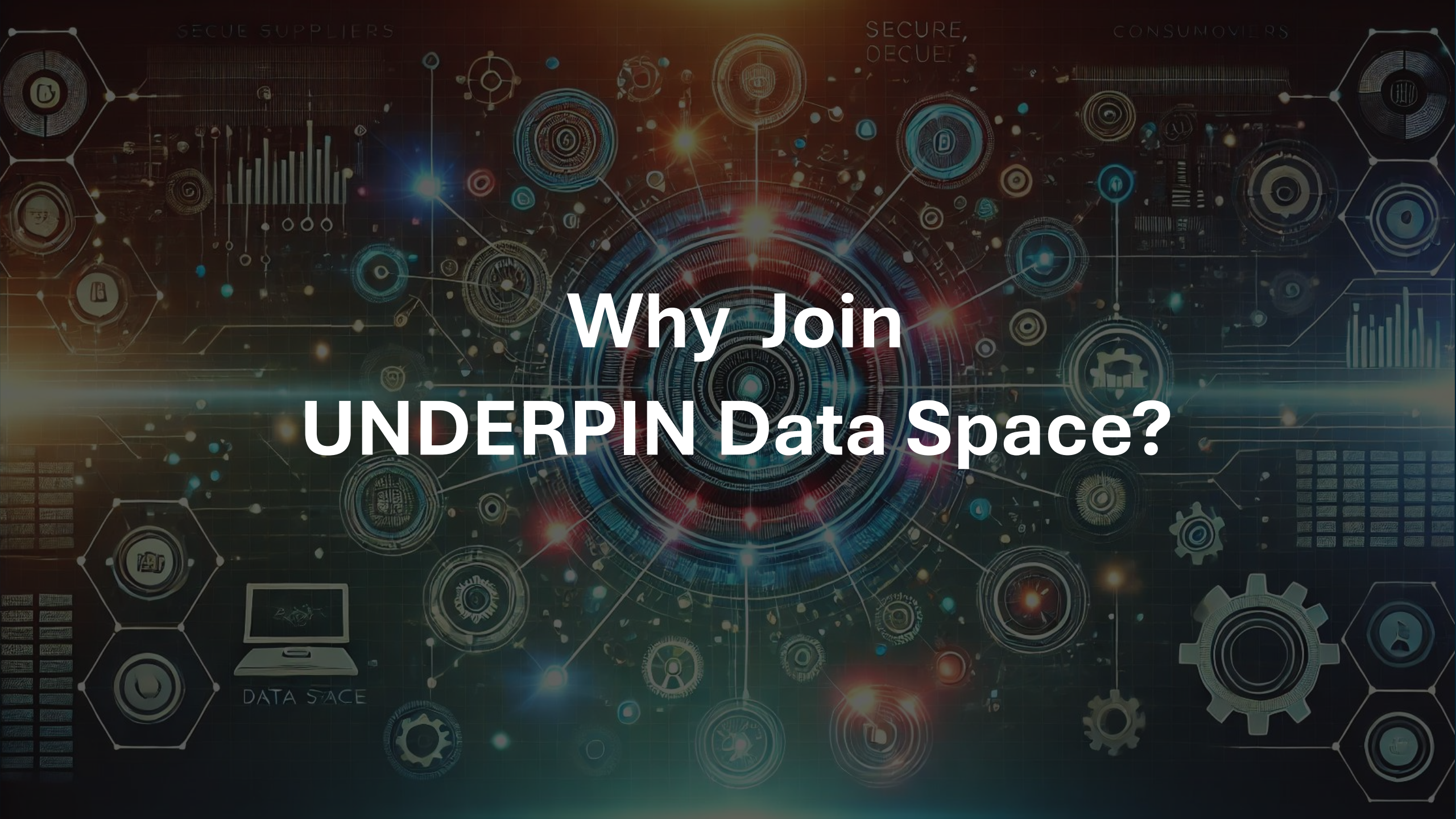
Manufacturing-specific use cases

Interoperability across sectors

Support industry and SMEs

Addresses data scarcity

Advances sustainability


Why Join
UNDERPIN Data Space?

Benefits of Using the UNDERPIN DS

- ensuring higher performance
- better insight on asset critically
- reduced overall downtimes and maintenance costs
- extended machine usage periods
- improved future machine designs, new service models
- improve production line operations, company-internal processes
- increased usability
- enhance business opportunities for industrial data value added services, supporting the transition towards circular economy

JOIN US
IN OUR JOURNEY

www.underpinproject.eu

- **Wanna Be First to Join?**
- **Invitation for SMEs, manufacturing companies, clusters, associations, international networks and initiatives**

Follow us on LinkedIn

DIMECC

REBOOT SKILLS

Upskilling opportunities for the Manufacturing Industry

Clémentine Arpiainen
Disruptive Renewal Scout

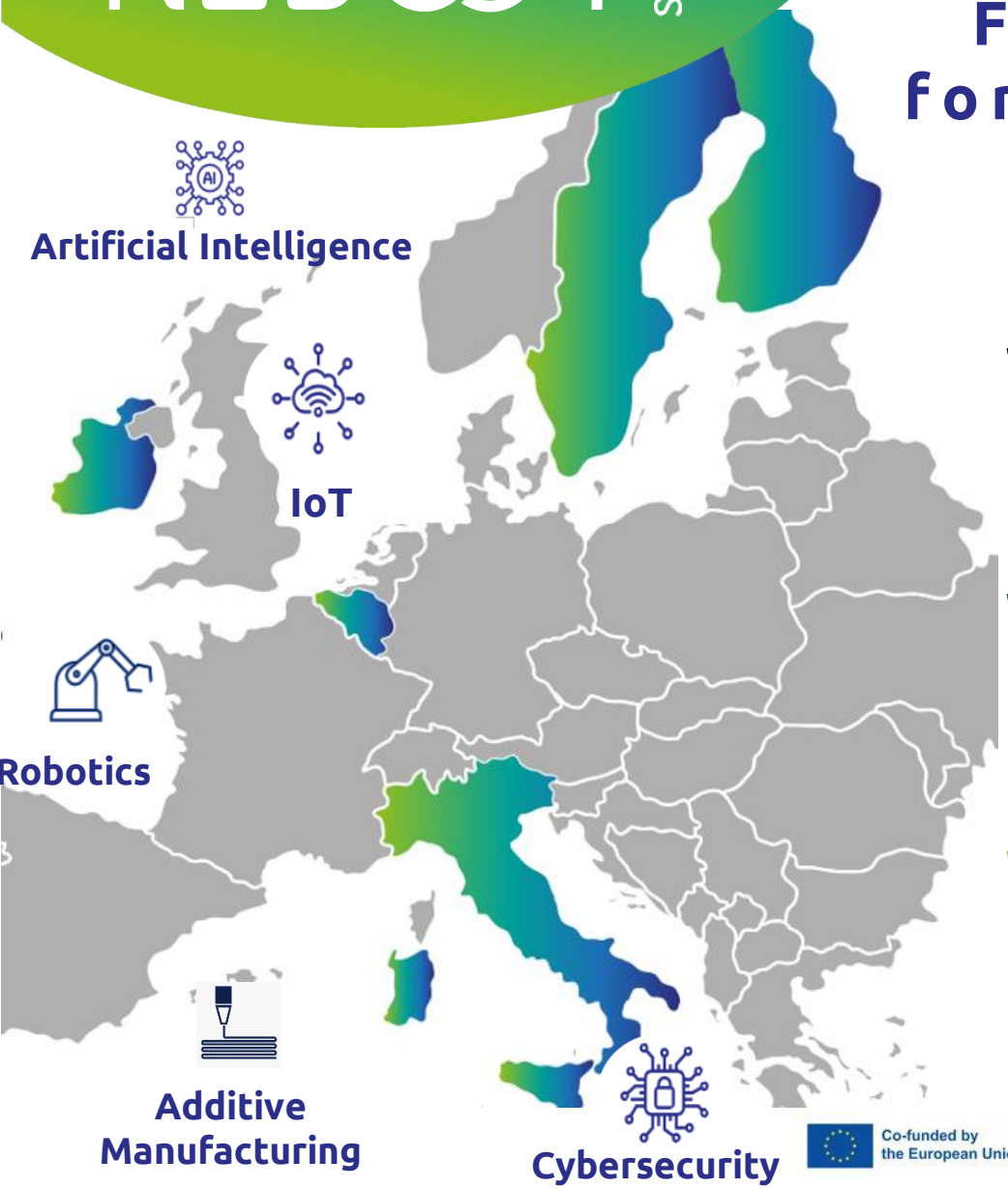
&

Doris Pryjma
Manager, EU Relations & Collaboration

Co-funded by the European Union

REBOOT SKILLS

FULLY FUNDED SHORT TRAININGS for the Manufacturing Industry towards a successful twin transition



WHAT? 25 micro-trainings

- Co-designed *with the industry for the industry*
- In AI, Robotics, IoT, Cybersecurity, Additive Manufacturing

WHO? 8 Partners from 5 EU-countries

- 4 Universities & 4 professional organizations

+ Manufacturing Industry SMEs

WHEN? 1.2023-12.2025

- Co-design phase completed
- Several Trainings Ongoing Online and Face to Face
- Feedback and sustainable model under work

DIMECC
UNIVERSITY OF OULU
FLANDERS MAKE
DRIVING INNOVATION IN MANUFACTURING
KU LEUVEN
Skillnet IRELAND
UNIVERSITY OF LIMERICK | UL@Work
LULEÅ UNIVERSITY OF TECHNOLOGY
MADE Competence Center I4.0
Digital Skills & Jobs Platform

Co-funded by the European Union

Reboot Skills is co-funded by the European Union under GA 101100696. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

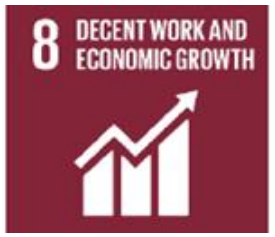
Objectives

Create **a sustainable and collaborative training offering** serving the digitalization needs of SMEs

Facilitate access for **SMEs owners, managers, employees and reskilling talents** to high-class digital trainings easily afforded in a multi-site setting

Increase the number of women and men able **to design, develop and deploy digital solutions in the manufacturing industry**

→ **More than 1000 upskilled professionals**



CODESIGN

DELIVERY

OUTREACH

REBOOT SKILLS

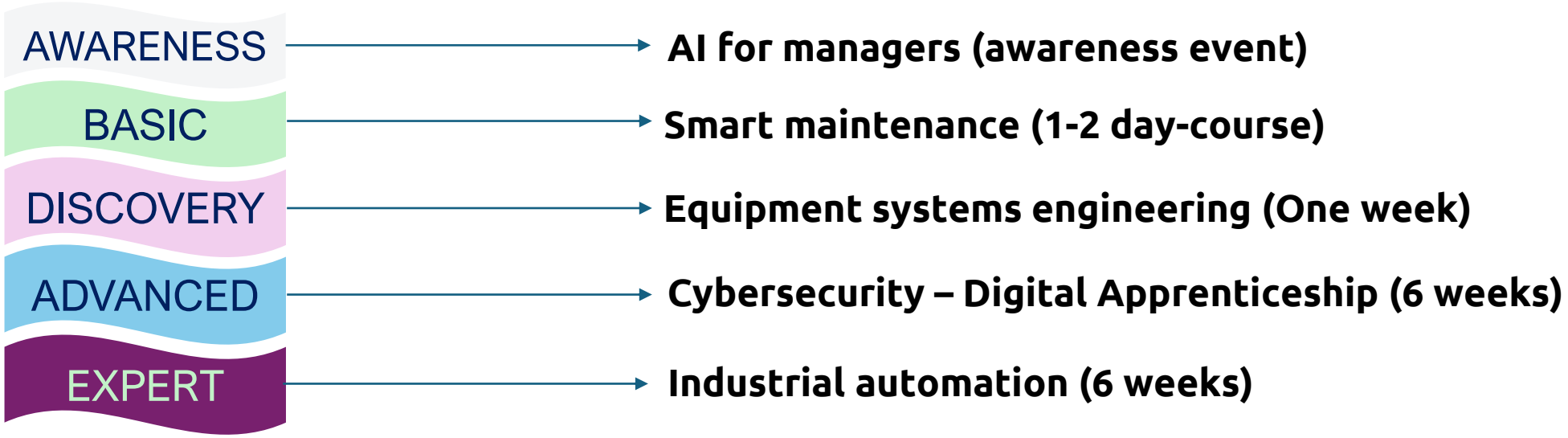
Co-funded by the European Union

Reboot Skills is co-funded by the European Union under GA 101100696. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

Target groups and training types

- For **SMEs owners, managers and employees** willing or in the need to upskill or reskill
- For **job seekers** to acquire advanced digital skills and competences related to digital technologies

1 – 3 DAYS COURSE	INTENSIVE SEMINARS	WORKSHOPS	BLENDED TRAINING



Digital Skills & Jobs Platform
Co-funded by the European Union
Reboot Skills is co-funded by the European Union under GA 101100696. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

Self-paced, short online and fully funded trainings

- 2-3weeks of 4-7hours/week
- For technicians and managers alike
- No previous training requirements

Register here

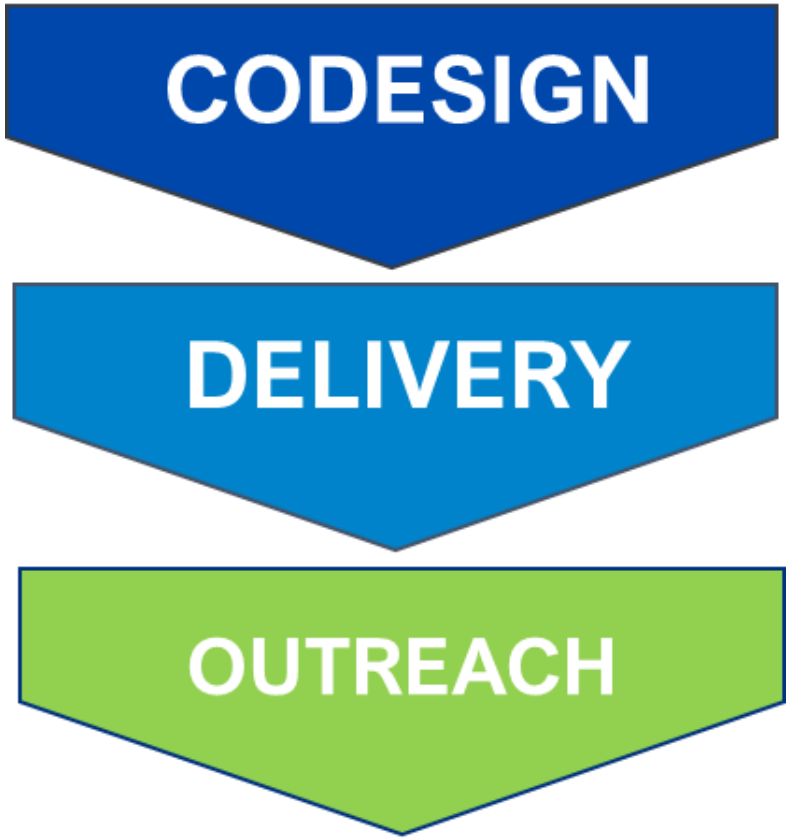
01	**Robotics for all**
02	**Modern Robotics**
03	**AI for Computer Vision**
04	**Advanced Deep Learning: – Foundation module**
05	**Advanced Deep Learning: – Vision module**
06	**Skills in data visualization**
07	**Programming basic skills with Python**
08	**Industrial Autonomization**

REBOOT SKILLS DIMECC

Funded by the European Union

Reboot Skills is funded by the European Union under GA 101100696.

Synergies with ADMA TranS4MErs



- Understanding companies' needs via ADMA TranS4MErs to design tailored and complementary trainings via REBOOT Skills
- Continum in service provision after ADMA TranS4Mers
- Challenge: competition as REBOOT courses did not require a lengthy application process

Thank you!

Contact DIMECC team for more information!

Clémentine Arpiainen
clementine.arpiainen@dimecc.com
+358 40 6603424

Doris Pryjma
doris.pryjma@dimecc.com
+358 40 840 6700

www.dimecc.com
Rebooting manufacturing industry with digitalisation skill development [REBOOT SKILLS] - Dimecc

dimecc_fi

DIMECC Oy
https://www.linkedin.com/company/reboot-skills

Co-funded by the European Union

Reboot Skills is co-funded by the European Union under GA 101100696. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

MODAPTO project

MODULAR MANUFACTURING AND DISTRIBUTED CONTROL VIA INTEROPERABLE DIGITAL TWINS

Funded by
the European Union

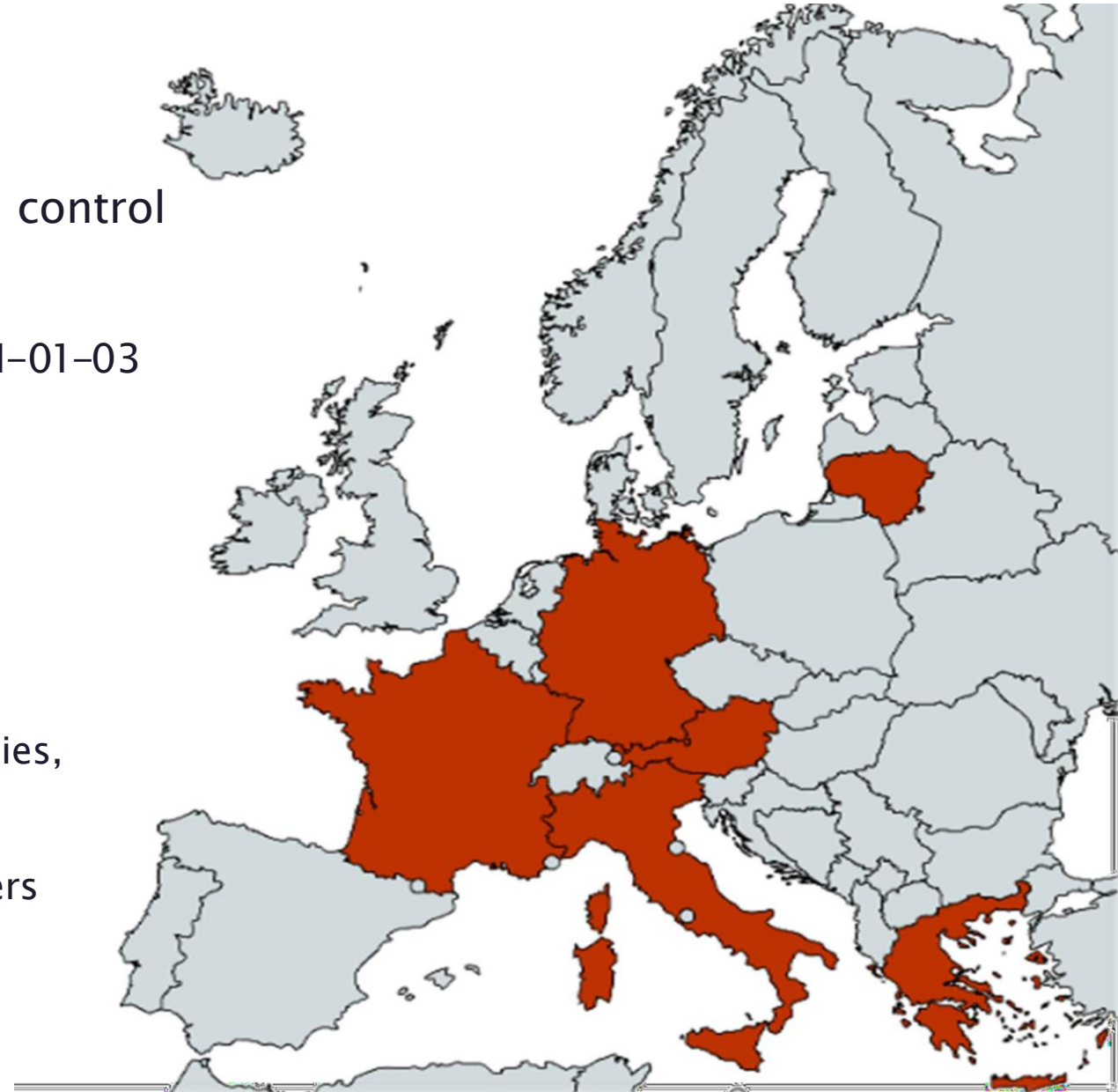
MODAPTO project: Main information

MODAPTO:
Modular manufacturing and distributed control via interoperable digital twins

Topic: HORIZON-CL4-2022-TWIN-TRANSITION-01-03
Starting date: January 2023
Duration: 36 months
Budget: 5,49 M€

- 13 participants from 6 different countries:
  4 Academic partners, 4 Industrial companies,
  4 ICT companies,1 innovation center

- 3 Use Cases involving 4 different manufacturers



CONSORTIUM

meet the team

MOAPTO

ATC
ATHENS TECHNOLOGY CENTER

Fraunhofer IOSB

UNIVERSITÉ DE LORRAINE

UNIVERSITY OF PIRAEUS RESEARCH CENTER

THE E-BUSINESS RESEARCH CENTER
ELTRUN
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

EKS
InTec GmbH

BOC
www.boc-group.com

AEGIS
IT RESEARCH

LIC
LIETUVOS INOVACIJŲ CENTRAS

FFT

SEW USOCOME

CRF

ILTAR ITALBOX

Funded by the European Union

Identified gaps and future challenges

Gaps:

- Manufacturing operations responding to disruptive events on
  - Supply chains
  - Changes in customer/societal demands
- Control & decision-making strategies in factories with varying batch sizes

Challenges

- Common understanding of manufacturers

The end-user problems

RMS research → modularity & scalability (diagnosability, customization, integrability, convertibility)

RMSs: poor industrial adoption

DTs are usually developed as siloed solutions

Approaches for sustainability assessment via DTs tend to focus either on a module-level or are high-level systemic designs

Markets of potential interest

Manufacturing Companies / Factories

Small Medium Enterprises

ICT innovators-companies

Research community or Academia

Exploitation & Industrial uptake

Systematically develop MODAPTO business models to **support** and **incentivise** the **commercialisation of its innovations**

- The global DT market size: USD 5.04 billion in 2020
- Expand at a compound annual growth rate (CAGR) of 42.7% from 2021 to 2028
- ICT sector companies creating and applying Digital Twins
- Industrial companies and SMEs using modular production techniques
  - Motors and gearboxes, Automotive sector
  - Automatic Control, Applied Electronics, Automation and Robotics
- SME engagement is a core aspect of MODAPTO

Identified Exploitable assets

- Modular Production Framework and Toolkit, business models for modular manufacturing
- Methodology for interoperability design and development of production modules
- Predictive maintenance, optimization, and simulation tools and methodologies
- New production module designs with sustainability-aware capabilities
- Training methodologies and material for the modular manufacturing domain

Funded by
the European Union

UC1: FFT

Development of production modules (robots) with novel sustainability capabilities

This pilot will develop enhanced capabilities for robotic systems that are interoperable and extend their capabilities to include sustainability analytics and energy optimization functionalities.

Recent research has focused on reducing energy consumption and emissions, requiring collaboration across the entire value chain, including lifecycle data sharing between companies. Standardized industrial digital twins (DTs) enable this exchange, allowing detailed process analysis for accurate carbon footprint and energy consumption calculations, contributing to lifecycle assessment and eco-balancing of products.

Expected outcome:

- 10% energy reduction
- 5% carbon emission reduction for new production modules
- 3 additional sustainability parameters incorporated

More details: https://modapto.eu/pilots/uc1-fft/

UC2: SEW Usocome

Production reconfiguration and optimization for mass customization

This pilot will materialize the concepts of modularity and re-configurability by developing flexible production lines enabled by the capacity to simulate and optimize operations, while incorporating production module self-awareness capabilities, predictive maintenance needs as well as the human factor which is very crucial in the corresponding setting due to extremely increased customer needs for production customization.

To ensure short delivery times despite customization, it is necessary to assess process convertibility and redesign a modular production system that allows flexible reconfiguration of both individual steps and the overall process. This system will optimize line balancing, personnel allocation, real-time routing, and predictive maintenance, while simulation-based redesign decisions and optimized production scheduling will enhance stability and performance, especially in response to machine failures.

Expected outcome:

- 30% production capacity increase
- 33% reduced production time
- 33% increase in personnel productivity

More details: https://modapto.eu/pilots/uc2-sew/

UC3: STELLANTIS and ILTAR ITALBOX

Transition to modular Press Shop processes utilizing autonomous distributed control

The pilot applies the concept of modularity both in terms of modular, intelligent containers and in terms of flexible, modular logistics' operations in final assembly processes.

In industrial warehouses, human operators assemble components brought Just In Time (JIT) or Just In Sequence (JIS) and use specially configured kits to deliver parts during the assembly process. Autonomous kitting operations are necessary when managing high variability in components, requiring robots equipped with vision systems, flexible grippers, and depalletizing technology to automate kit preparation. The CRF/ILTAR pilot focuses on developing modular, intelligent kit holders that can self-declare their contents, communicate with logistics and robots, and optimize kitting operations while ensuring long-term usability through monitoring and self-awareness.

Expected outcome:

- 25% reduction of disruptions due to supply chain
- 10% cost reduction by increased modularity
- 2% increase in Overall Equipment Effectiveness

More details: https://modapto.eu/pilots/uc3-crf-iltar/

CONTACT us

MODAPTO

modapto.eu

info@modapto.eu

MODAPTO Horizon Europe Project

@MODAPTO_eu

MODAPTO Horizon Europe Project

Funded by
the European Union

28 November 2024, Brussels

Thank you for joining us!

ADMA TranS4MErs Final Event

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866

28 November 2024, Brussels

Networking Reception

Take this time to connect!

ADMA TranS4MErs Final Event

TranS4MErs

This project has received funding from the European Union's H2020-2018-2020 research and innovation programme under grant agreement No 101037866