

# European Digital Innovation Hubs (EDIHs) and Testing & Experimentation Facilities (TEFs)

Lucilla SIOLI, Director  
Artificial Intelligence & Digital Industry  
DG CONNECT, European Commission

# European Digital Innovation Hubs in a nutshell

## TARGET

European Digital Innovation Hubs (EDIHs) are **demand-driven** one-stop shops supporting **companies (especially SMEs) and public sector organisations** in their digitalisation journey, for free or at a discounted price

## FUNDING

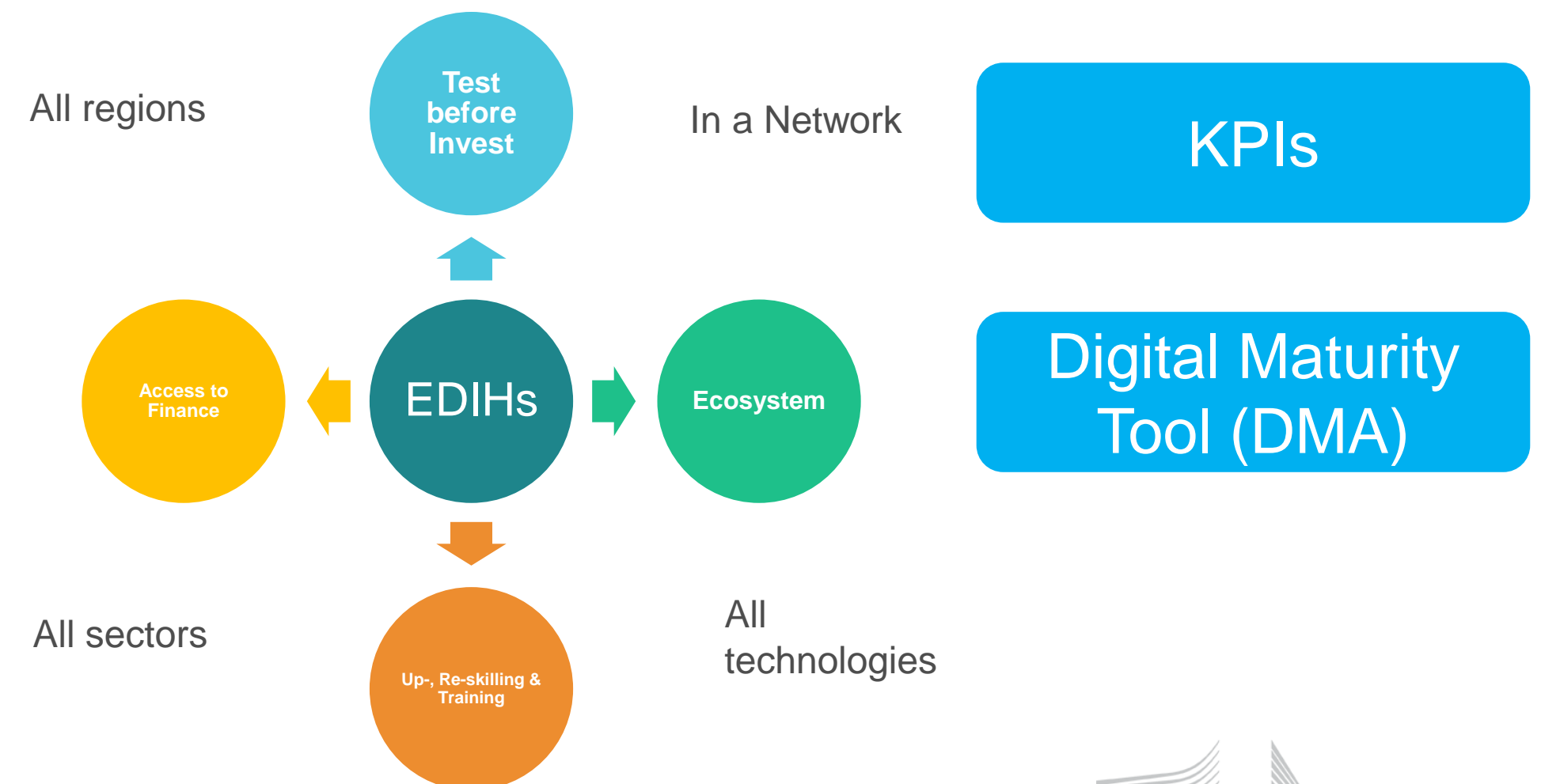
EDIHs are **funded 50% by DIGITAL** and 50% by national, regional or local resources

## COMPOSITION

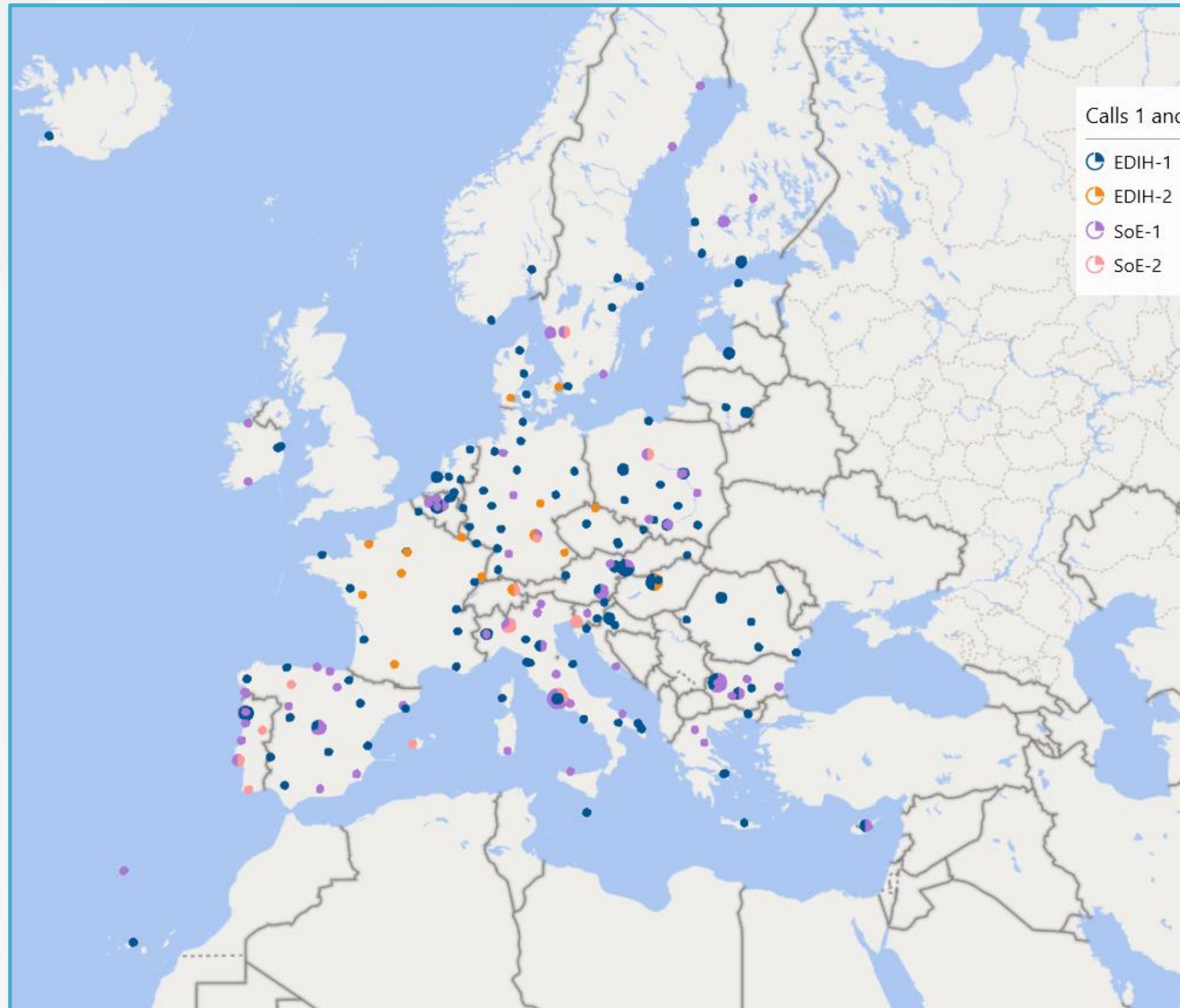
Typical **participants of EDIHs** are **practitioners in digital technologies**, hosted by research and tech organisations, technical universities, innovation clusters, accelerators/incubators, private companies, etc

## SERVICES

- EDIHs offer support for digital transformation adapted to **local needs** and based on their area of **specialisation**
- They build regional ecosystems of users and suppliers, strengthening local **innovation** environment



# A Unique EDIH Deployment



- 200+ EDIHs to meet the demand of SMEs and public organisations with digitalisation services
  - 151 EDIHs funded by DIGITAL
  - 40...60 Seal of Excellence EDIHs
  - Work at the regional level, with access to the support of a pan-European network
- EU27, Norway, Iceland, Liechtenstein
- Altogether, huge portfolio of technology competences and a coverage of most economic activity sectors

Catalogue: <https://ec.europa.eu/edih>

# Testing and Experimentation Facilities (TEFs)

- Support the deployment and uptake of **trustworthy AI** and support the **implementation** of the AI Act
- Support **European innovators** to with testing and validation services
- Support TEFs as **world-class reference technology infrastructures** at EU level **addressing gaps in the value chain**, from the lab, to the market

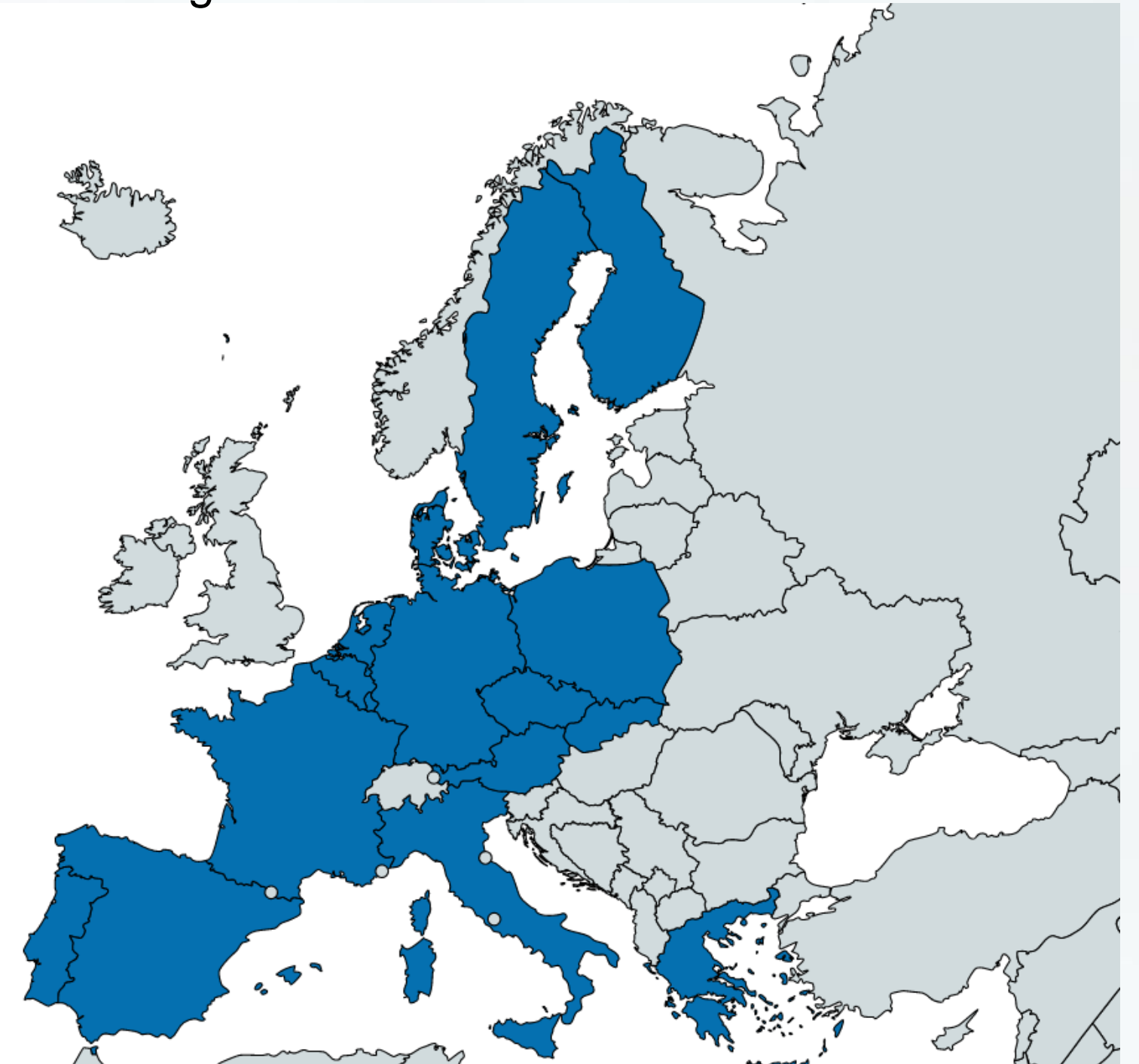


# TEFs: A strategic investment in Trustworthy AI

- **220M€** co-investment with MS under DEP
- 4 TEFs comprise **128 partners** in **16 Member States**
- Common EU resource

Member State coverage of sectorial TEFs

■ Sectorial AI TEFs

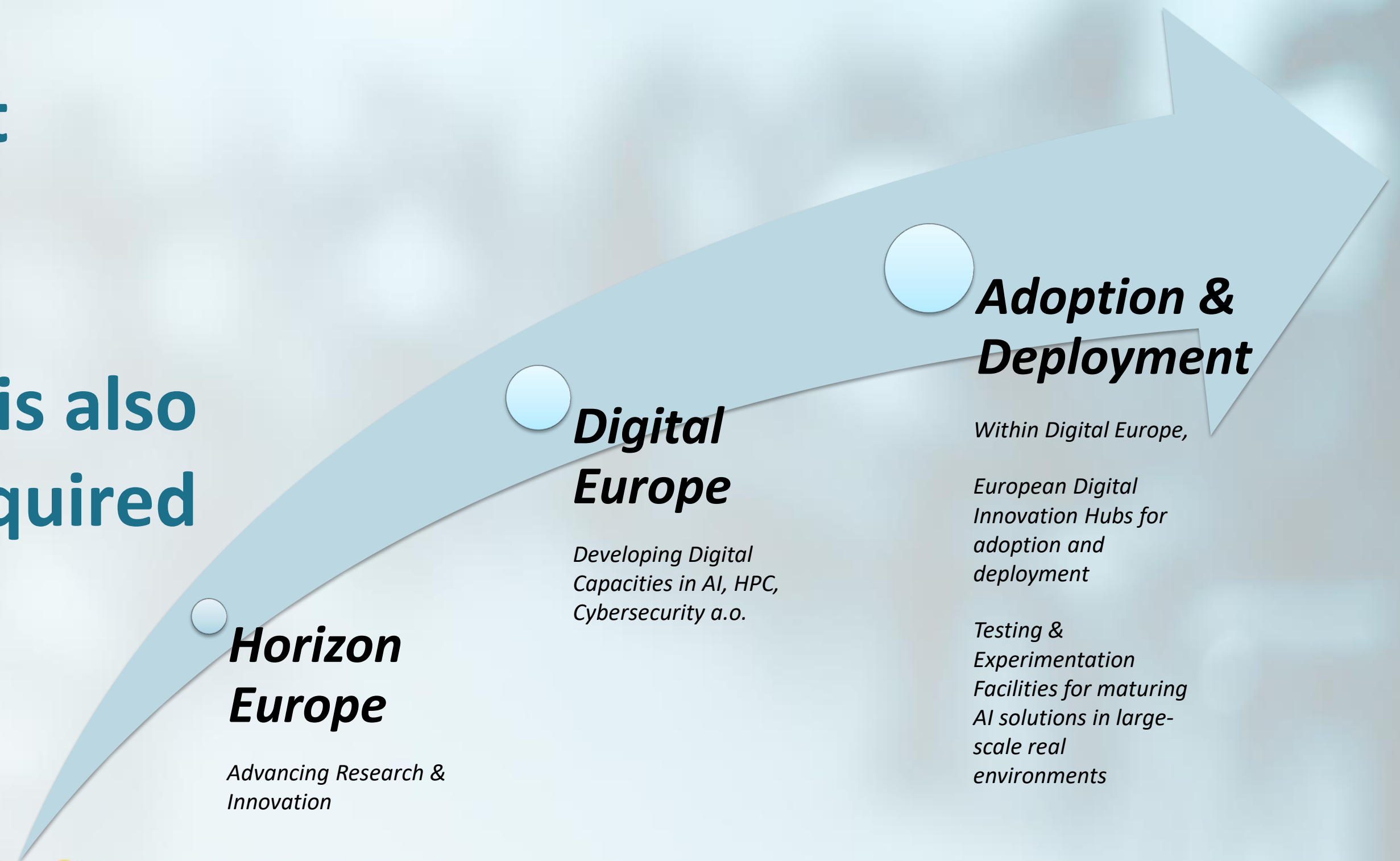


**Open for business event – 4 March 2024 Berlin**

# From Lab to Market

Driving innovations is not enough

Broad adoption is also required



# RESEARCH TO REALITY

DIGITAL SOLUTIONS TO  
EUROPEAN CHALLENGES



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# EDIHs, TEFs: Value, how?

Viewed through the lens of an research and technology organisation

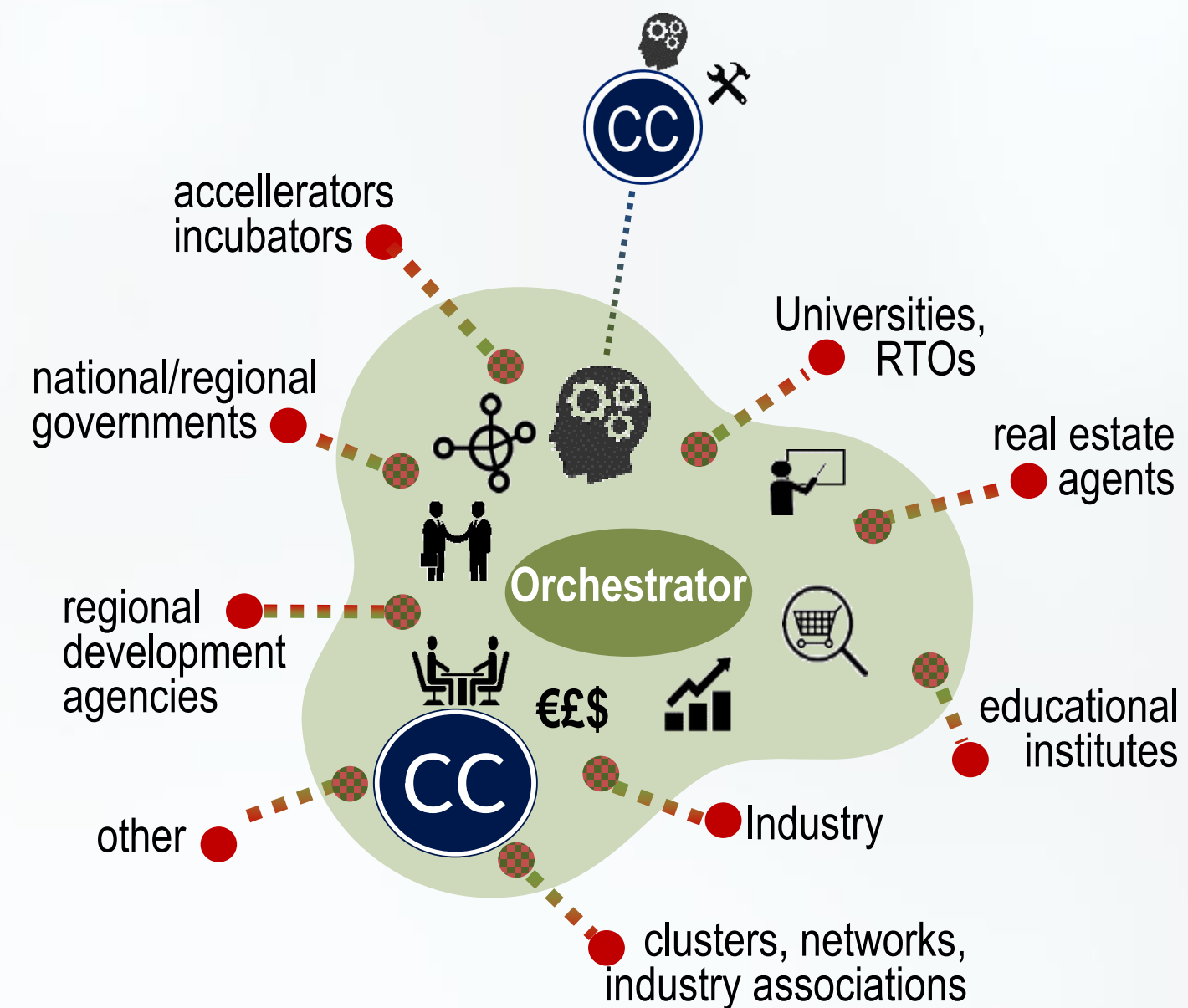
Maurits Butter (TNO)

**TNO** innovation  
for life

**RESEARCH**  
TO **REALITY**



# European Digital Innovation Hubs

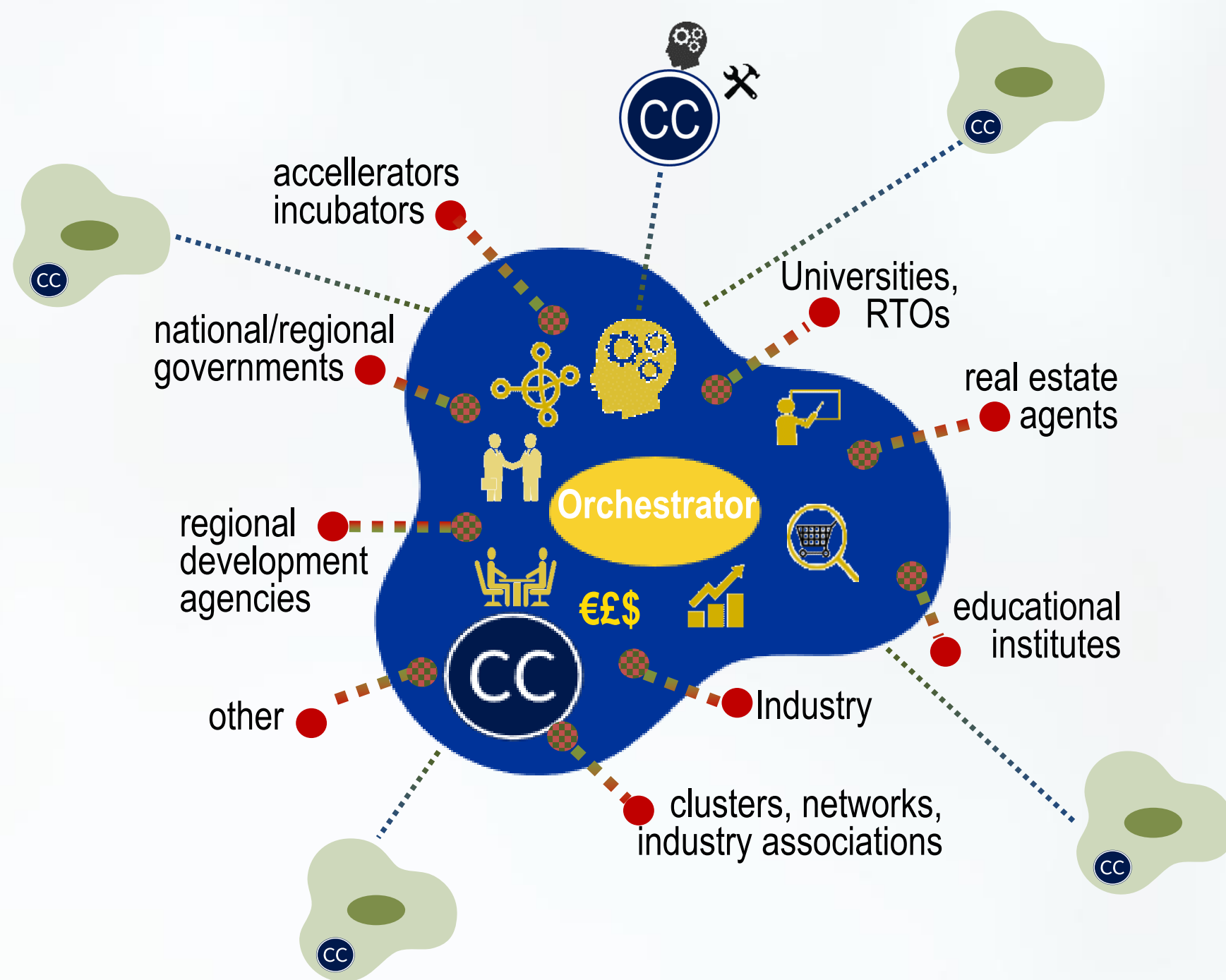


## Value

The regional function

- Coordinating the regional innovation relay game
- Supporting the regional development with regard to innovation
- Supporting the uptake of advanced digital technologies in SMEs

# European Digital Innovation Hubs



## Value

### The regional function

- Coordinating the regional innovation relay game
- Supporting the regional development with regard to innovation
- Supporting the uptake of advanced digital technologies in SMEs

### The European function

- Boosting interregional collaboration on innovation
- Enhancing the use of available infrastructures and expertise on EU-level
- Aligning, synchronizing innovation in different regions

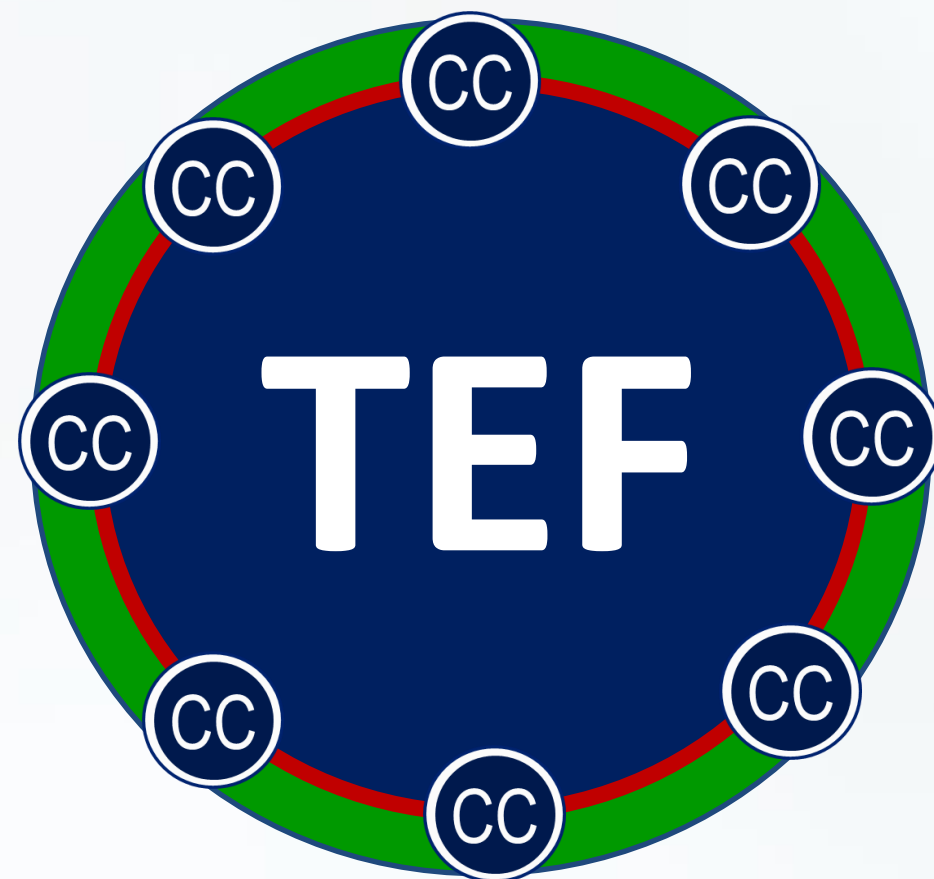
# Testing and Experimentation Facilities

## *Value*

The regional function

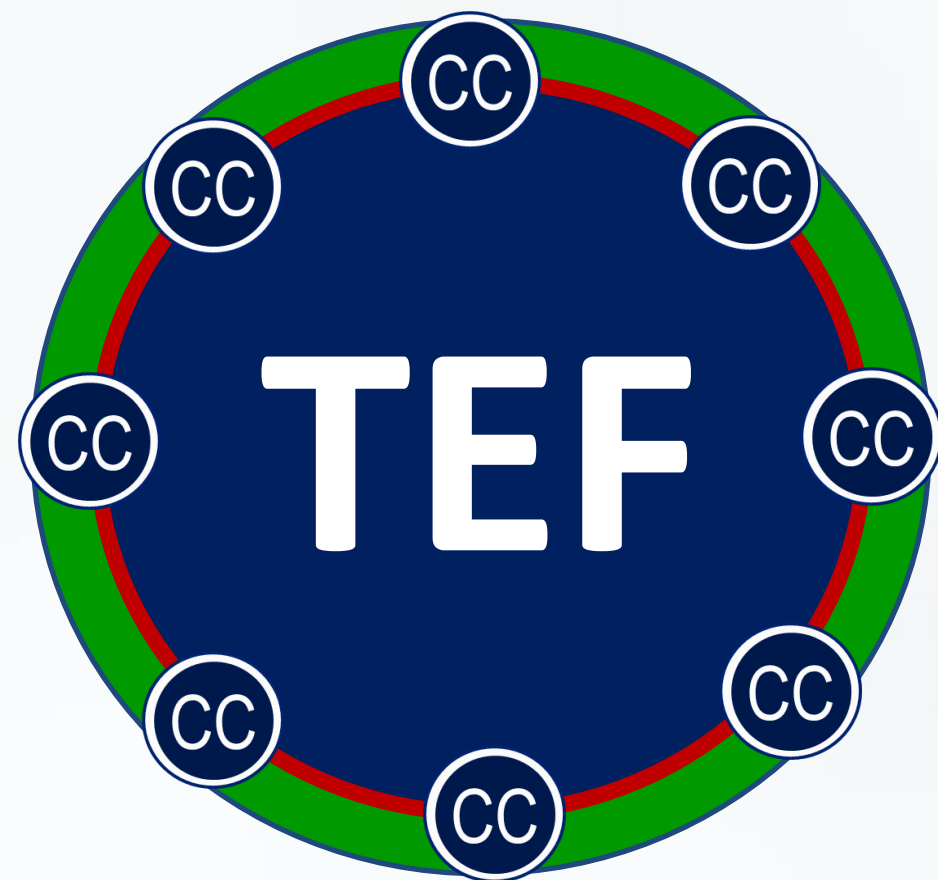
- Supporting the uptake in regions of state of the art technologies (in SMES/start-ups)
- Promoting sustainable practices for these technologies
- Facilitating the research-industry collaboration

**A**  
manufacturing  
healthcare  
agriculture  
smart cities



# Testing and Experimentation Facilities

**A**  
manufacturing  
healthcare  
agriculture  
smart cities



## *Value*

### The regional function

- Supporting the uptake in regions of state of the art technologies (in SMES/start-ups)
- Promoting sustainable practices for these technologies
- Facilitating the research-industry collaboration

### The European function

- Providing access to the state-of-the-art technology infrastructures on EU-level
- Enhancing European collaboration on innovation with regard to these technologies
- Alignment/synchronization of the the technological infrastructures



# *Value*

## The regional function

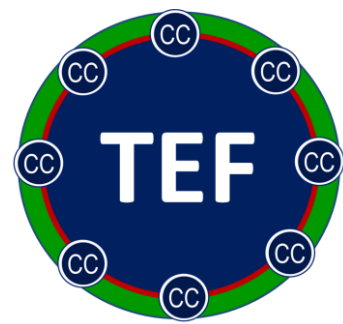
- Limiting the costs of attracting the customer
- Supporting the transfer of innovation to its customers
- Offering a more holistic solution to the customer

## The European function

- Identifying potential customers from other “regions” and their needs
- Reducing the costs of service delivery to customers from other regions
- Aligning/synchronizing the infrastructures from European “partners”

# Value of EDIHs for RTOs





# *Value*

## The regional function

- Re-enforcing the RTO in the region
- Increase valorisation of the knowledge and infrastructures
- Creating a point of attraction to the services

## The European function

- Exchange of knowledge and showcases on the subjects
- Further enhancing the market of the infrastructures on EU-level
- Support and cost reduction for EU collaborations

# Value of TEFs for RTOs





# Let me focus on the European function



# Project Europe!



*exchange experiences*

*pan-EU value chains*

*leading edge technologies*

*synergies &  
complementarities*

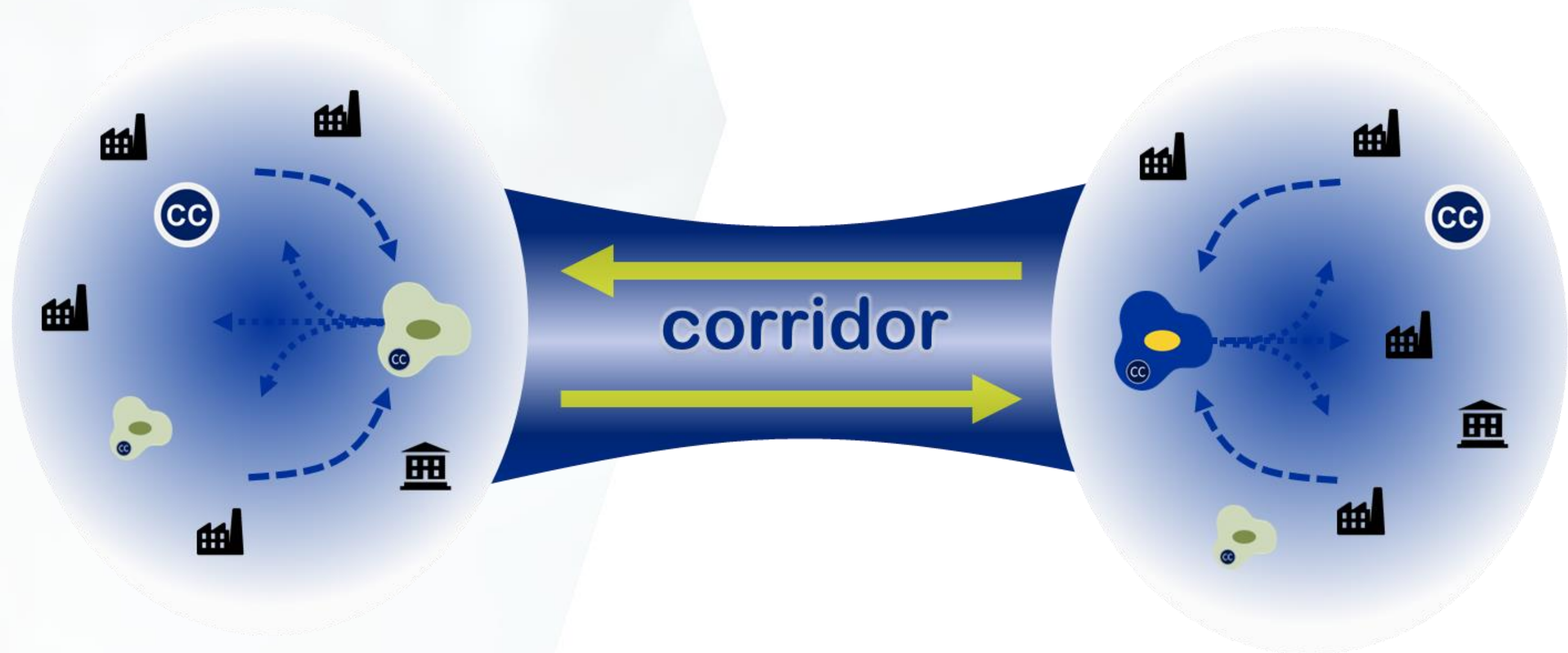
*new business opportunities*

*impact public funding*



# Interregional Innovation Corridors

Structural collaborations between two or more regions, orchestrated by (European) Digital Innovation Hubs in which continuous exchange of industrial and research capacities/capabilities takes place



# Example: BOWI corridor



## Value created:

- Acting as a conduit to get SMEs to the other region
- Making use of the expertise/infrastructures from the hubs

## Activities deployed:

- Peer and business visits (SMEs) organised
- Supporting interregional (startup) business activities

## Sustainability aspects:

- Business plan for continuation activities
- Funding for the corridor through new EU projects



# Some lessons learned for interregional collaboration

- Value is not obvious and needs to be researched systematically
- A corridor is a long-term objective
- Well developed RTOs see less value than RTOs from “widening countries”
- Making an interregional collaboration work structurally needs projects **and more**
- ***Project Europe is not easy, but crucial for the future***



# Conclusion on drivers for RTOs to participate

- (Reduction of costs and efforts to) get their innovations to the customer
- Support to efficiently “sell” the infrastructures and expertise to customers in Europe
- Access and insights on what other RTOs in Europe do, also on a operational level
- Opportunities to work together with other RTOs and expand knowhow and innovation
- ***Availability of funding for research and European collaboration***

**Thank you!**

Maurits Butter  
Maurits.butter@tno.nl

**TNO** innovation  
for life

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TO **REALITY**

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# AIRE EDIH

## Supporting Estonian Industry in Adapting AI & Robotics

Kirke Maar, manager of AIRE  
[Kirke.Maar@aire-edih.eu](mailto:Kirke.Maar@aire-edih.eu)

**RESEARCH**  
TO **REALITY**

# AIRE's team – since July 2022 European Digital Innovation Hub





170+  
Clients

600+  
Participants in trainings

1300+  
AIRE club participants

31  
Demonstration projects launched

AI & Robotics Estonia (AIRE) supports Estonian industrial companies in adopting smart digital solutions in the field of artificial intelligence and robotics. From AIRE you can get knowledge, contacts and information about funding.



DIGITAL MATURITY ASSESSMENT



AI SUITABILITY ASSESSMENT



ROBOTICS SUITABILITY ASSESSMENT



FINDING SOURCES OF FUNDING - PRIVATE CAPITAL



FINDING SOURCES OF FUNDING - PUBLIC MEASURES



TRAININGS



AIRE CLUB



DEMONSTRATION PROJECTS

- Ministry of Economic Affairs and Communication (financer)
- Tallinn University Technology - TalTech (leading partner)
- University of Tartu (partner)
- Estonian University of Life Sciences (partner)
- Tallinn Science Park Tehnopol
- Tartu Science Park
- IMECC (Innovative Manufacturing Engineering Systems Competence Centre)



MAJANDUS- JA  
KOMMUNIKATSIOONI-  
MINISTEERIUM

TAL  
TECH



Eesti Maaülikool  
Estonian University of Life Sciences

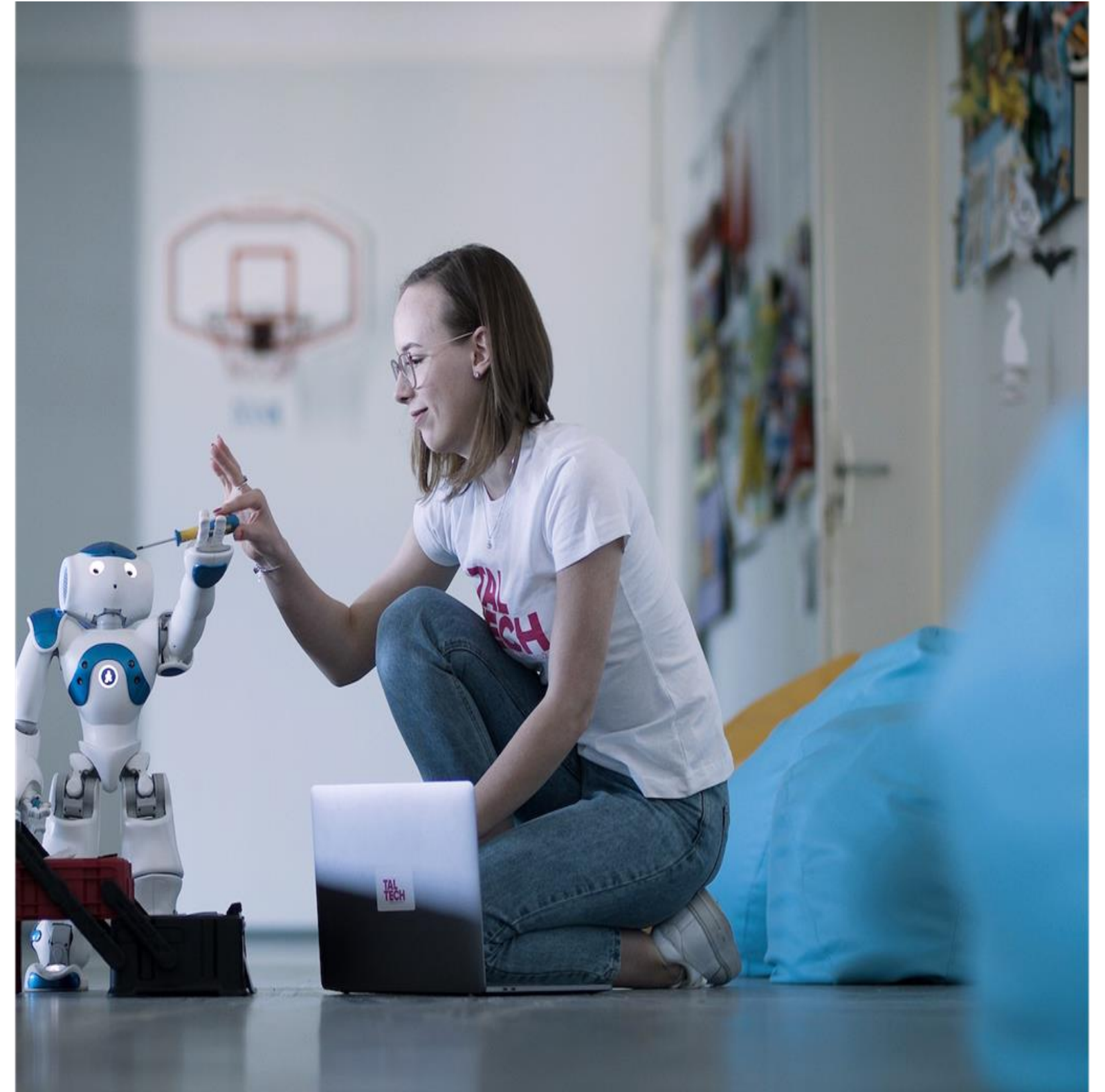
Tehnopol

TARTU TEADUSPARK

IMECC  
Innovative Manufacturing Engineering  
Systems Competence Centre

# Collaboration PARTNERS

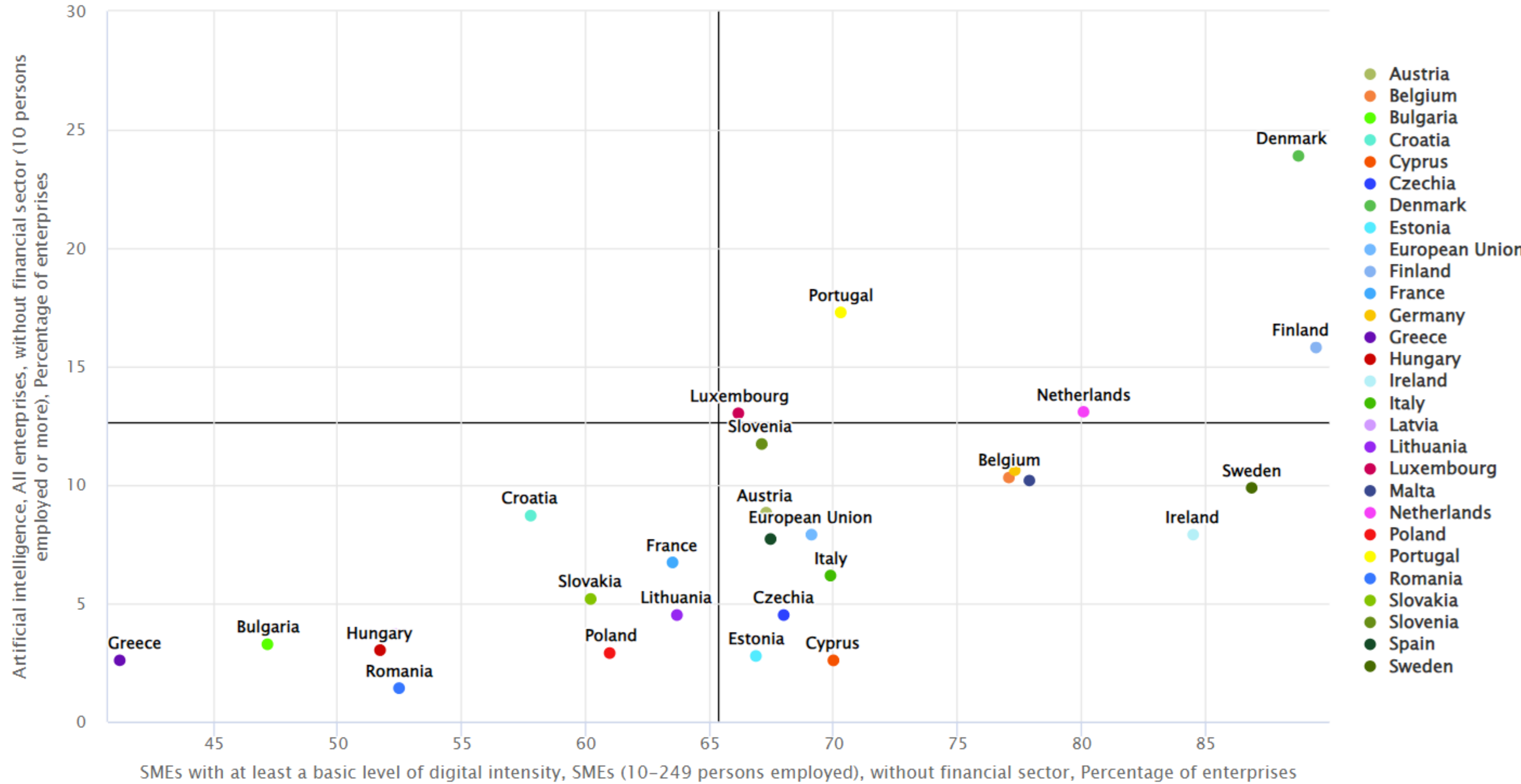
- **200+ EDIHs in Europe,**
- 8 Associated partners involved: City of Tallinn, City of Tartu, Tallinn University, Estonian Chamber of Commerce and Industry (EEN coordinator), Federation of Estonian Engineering Industries, Association of Estonian IT and Telecommunication Companies (ITL), Association of Estonian Electronics Industries, Estonian Business and Innovation Agency (formerly Enterprise Estonia).
- State funding related organisations,
- IT developers, AI solution providers, technology providers and developers.
- Robotics engineers & manufacturers,
- Electronics & ICT companies, banks.



# Estonian AI EDIH: state priority to focus on manufacturing and production

- National priority was set on **manufacturing and production sector** (AI & robotics as technologies for digitalisation).
- Estonia is on top of EU (DESI), among others in e-government users, digital public services, and access to e-health records - DESI 2023, <https://digital-decade-desi.digital-strategy.ec.europa.eu/>
- Unfortunately Estonia is below average:
  - SMEs with at least a basic level of digital intensity
  - Use of big data by SMEs
  - Adaption of AI
- **EXCELLENT EVERYDAY COLLABORATION WITH THE ESTONIAN STATE!**

DESI period: 2023



Together, the three axes trigger three major changes to achieve the objective of the Strategy.

- 1. RDIE addresses society's development needs.** RDIE helps to achieve societal and economic objectives. Efficient and effective solutions to society's development needs will be achieved, inter alia, through activities in the RDIE focus areas.
- 2. Increasing impact and influence of science and researchers.** The research system is strongly linked to society and the economy. An effective knowledge transfer is achieved. Research and researchers are highly valued in society, and research institutions and researchers are capable and valued partners for enterprises in solving societal challenges and shaping policies.
- 3. Business is becoming more RDI-intensive.** The aim is to achieve a growth in knowledge- and technology-intensive entrepreneurship and higher added value, and consequently higher levels of income and welfare, across Estonia.

### Strategic goals of the Estonia 2035 strategy



PEOPLE



SOCIETY



ECONOMY

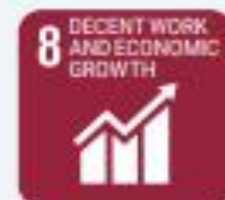


ENVIRONMENT



GOVERNANCE

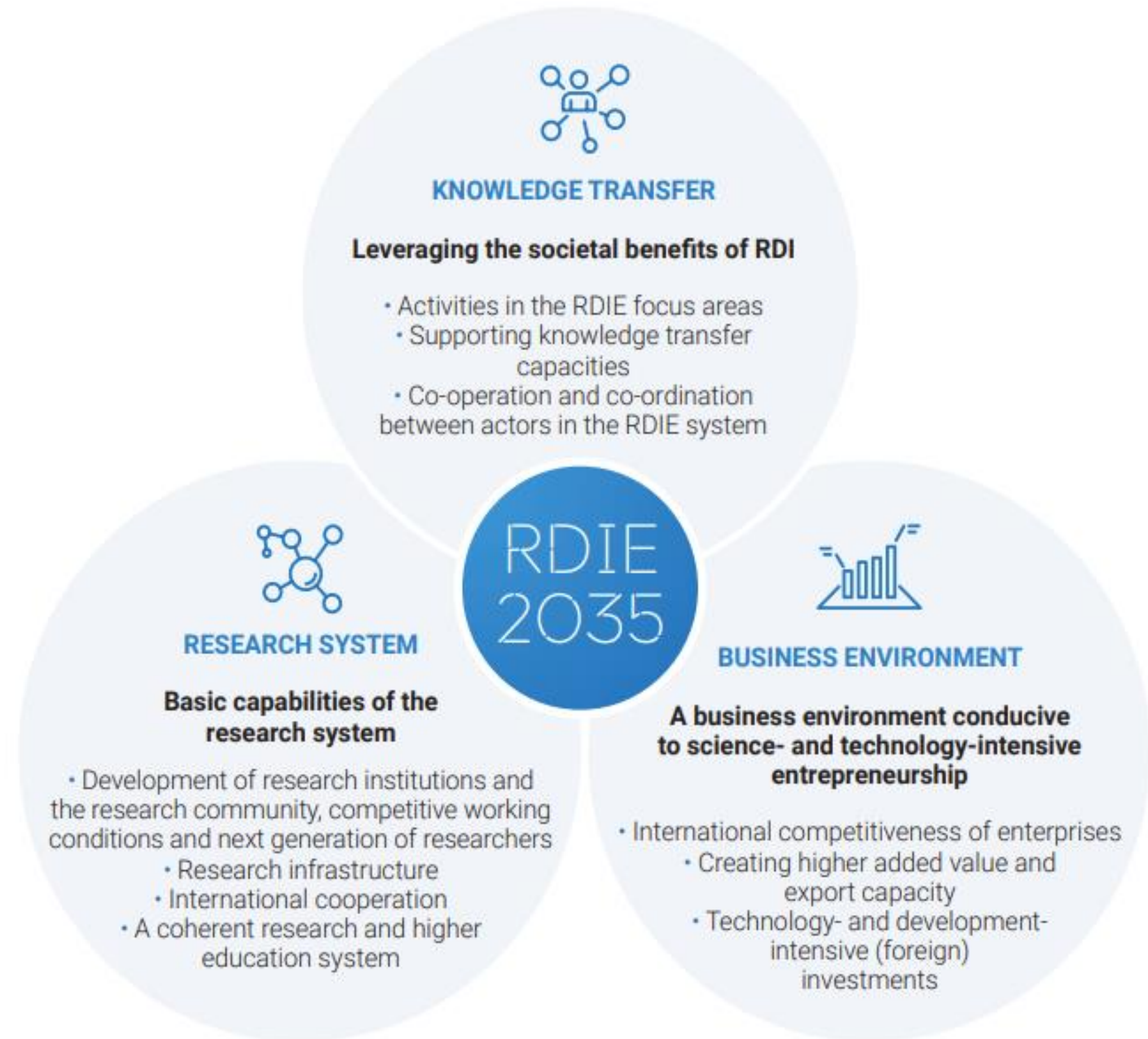
### UN Sustainable Development Goals





# Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021—2035

Photo: Erik Riikoja



# Lessons Learned from 170+ industrial companies in Estonia

- Companies have been very open towards us of our **demand-based collaboration** approach of **knowledge transfer**.
- We are recognized in the Estonian market and moving cross-border.
- **Test before invest: bringing down fears and risks of investment.**
- Custom software can be an enabler, but often inability to innovate fast
- **Only 5% companies have existing data for testing AI solutions.**
- Optimization and fine-tuning is not the source for growth
- Competition, Competition Law, Intellectual Property.
- **Need to focus on raising awareness over the next few years, especially regarding the EU AI Act.**
- Moving to other sectors, starting with **health technology in 2024.**



# SUSTAINABLE DEVELOPMENT GOALS



## Sustainability with AI?

YOUR INDUSTRIAL COMPANY HAS GAINED A SUBSTANTIAL COMPETITIVE ADVANTAGE AND IS BECOMING SUCCESSFUL THANKS TO THE DIGITAL REVOLUTION WITH THE HELP OF ARTIFICIAL INTELLIGENCE AND ROBOTICS. SMALL & MEDIUM-SIZED INDUSTRIAL COMPANIES, THE DIGITAL REVOLUTION CENTRE AIRE IS A KEY PARTNER.

# Innovation for Manufacturing Companies & Their Impact on SDGs



· **Energy-Efficient Machinery:** SDG 7: Affordable and Clean Energy



· **Sustainable Material Sourcing:** SDG 12: Responsible Consumption and Production



· **Waste Reduction & Recycling:** SDG 11: Sustainable Cities and Communities



· **Digitalization & Smart Manufacturing:** SDG 9: Industry, Innovation, and Infrastructure



· **Employee Upskilling:** SDG 4: Quality Education

· **Green Logistics & Transportation:** SDG 13: Climate Action

· **Water Conservation in Production:** SDG 6: Clean Water and Sanitation

# Health tech pilots starting in April 2024 – test before invest

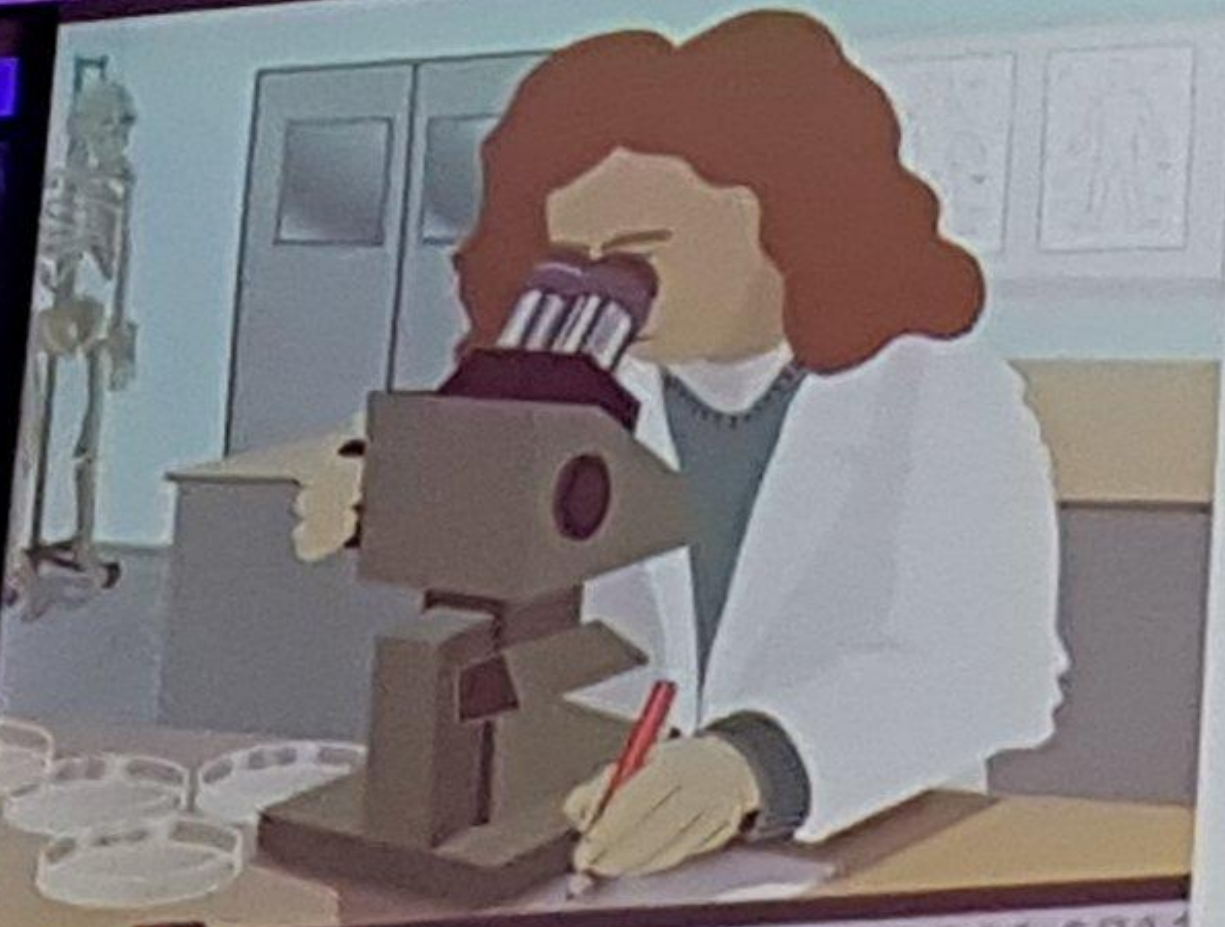


- From research to reality
- Knowledge transfer for validation
- Small scale pilots for test before invest:
  - Validation of technologies and systems
  - Mainly not clinical testing (except SMEs with high TRL level and MDR licences)
  - Robotics for health care
  - Data integration
  - Predictive analysis
  - Personalized medicine
  - Virtual health assistance
  - Health monitoring
  - Remote monitoring
  - Diagnosis support with AI

# WHERE IS THE VALUE

## Cancer Diagnose Error

Human	3.5%
AI	7.5%
AI + Human	0.5%



Only **25%** of the **digitalization effort** in a company is **reusable** for other companies.  
**How to extract and reuse that knowledge?**  
**Scalability** as an objective!

- **Knowledge transfer** is extremely needed – near market support activities from the universities and science parks into end-users! AIRE as an universities' based EDIH to support scalability (160+ unique SMEs served in 18 months! 1000+ participants in awareness raising);
- **Cross-border collaboration** with EDIHs is just about to start after 18 months of kick-off! First Estonian clients forwarded to other EDIHs services.
- **Clear market demand** in parallel with AI boom. Focus on demand-based collaboration and use-cases for **impact**.
- Importance of awareness raising – trustworthy and ethical issues, **EU AI Act**
- Links and actual collaboration between **EDIHs and TEFs** are still to be established.
- Unfortunately high level of bureaucracy (3 parallel reporting systems) – **we need to be agile and flexible!**

# AI & ROBOTICS ESTONIA

# Thank you!

Questions? Ideas!

Contact: [kirke.maar@aire-edih.eu](mailto:kirke.maar@aire-edih.eu)

YOUR INDUSTRIAL COMPANY HAS GAINED A SUBSTANTIAL COMPETITIVE ADVANTAGE AND IS BECOMING SUCCESSFUL THANKS TO THE DIGITAL REVOLUTION WITH THE HELP OF ARTIFICIAL INTELLIGENCE AND ROBOTICS. FOR SMALL AND MEDIUM-SIZED INDUSTRIAL COMPANIES, THE DIGITAL REVOLUTION CENTRE AIR IS A KEY PARTNER IN INTRODUCING AI AND ROBOTIC SOLUTIONS, AS ONLY AIR FULLY SUPPORTS COMPANIES THROUGHOUT THE VALUE CHAIN OF THE DIGITALIZATION PROCESS, REACHING WORKING SOLUTIONS. AIR ENCODES AI AND ROBOTICS EXCELLENCE AND EXPERIENCE IN ONE CENTRE AND GIVES INDUSTRY ACCESS



Co-funded by  
the European Union



AI & Robotics Estonia - AIRE (EDIH) is financed by the European Digital Innovation Centers sub-programme of the Digital Europe Program and the Ministry of Economic Affairs and Communications (Project nr: 101083677)

Co-funder:

Partners:



YOUR INDUSTRIAL COMPANY HAS GAINED A SUBSTANTIAL COMPETITIVE ADVANTAGE AND IS BECOMING SUCCESSFUL THANKS TO THE DIGITAL REVOLUTION WITH THE HELP OF ARTIFICIAL INTELLIGENCE AND ROBOTICS. SMALL & MEDIUM-SIZED INDUSTRIAL COMPANIES, THE DIGITAL REVOLUTION CENTRE AIRE IS A KEY PARTNER.



# RESEARCH TO REALITY

DIGITAL SOLUTIONS TO  
EUROPEAN CHALLENGES



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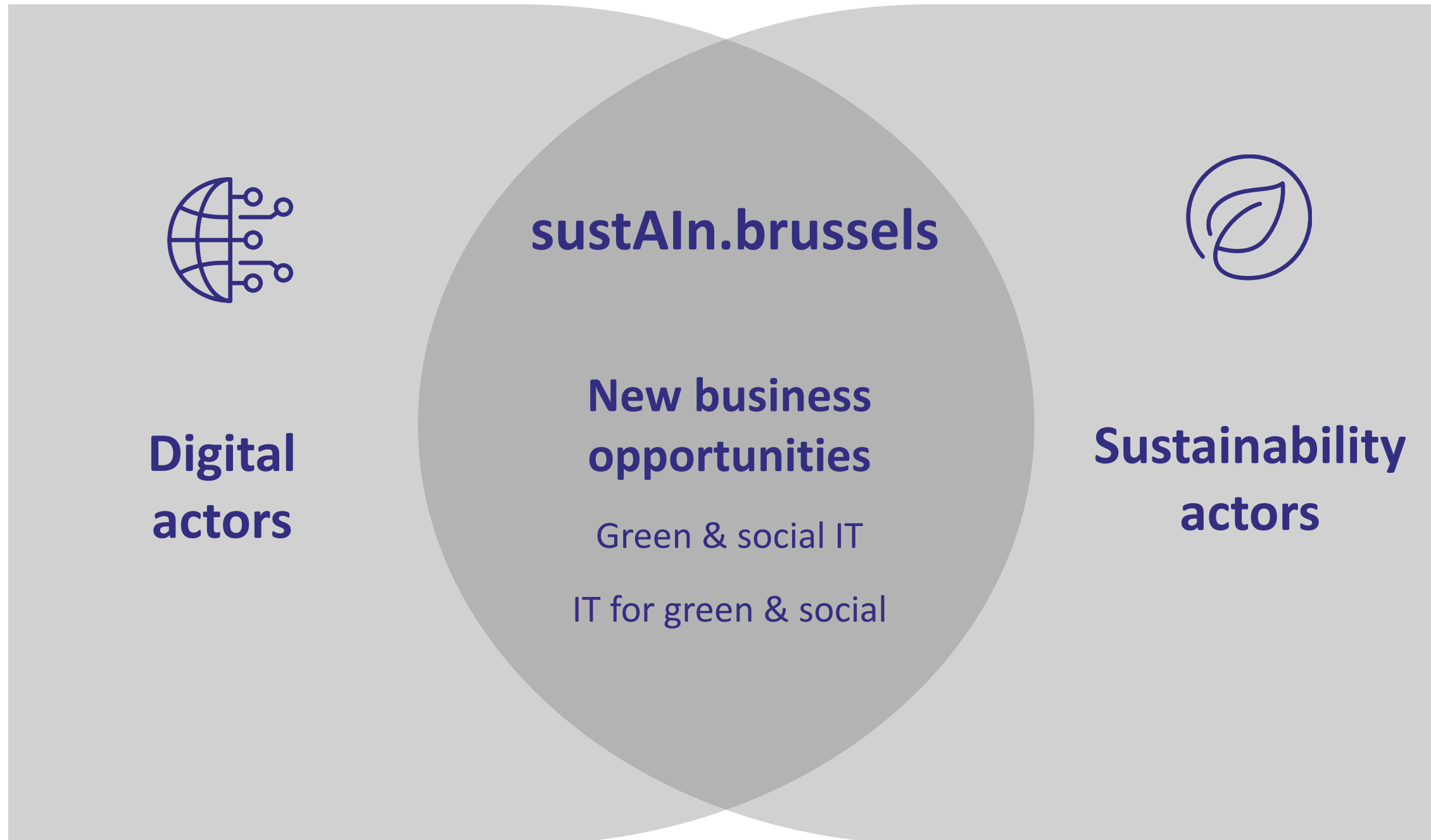
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# EDIH sustAIn.brussel

**ssion:** serve as single point of access for companies to  
**sustainable digital innovation,**  
with a focus on AI and other emerging technologies



**sirttis** **AGORIA**


UNIVERSITÉ LIBRE DE BRUXELLES **ULB** **VUB** VRIJE UNIVERSITEIT BRUSSEL

 **BE CENTRAL**


Supported by:



# uent access to support om a local ecosystem



Test before invest



Skills and training



Support to find investments



Innovation ecosystem and networking



The image displays a collection of logos for various organizations and networks in Brussels. The logos are arranged in a grid-like fashion. Key logos include: FARI (AI FOR THE COMMON GOOD INSTITUTE BRUSSELS), ISIT (Institute for Sustainable IT), THE SHIFTERS, GeSI (ENABLING DIGITAL SUSTAINABILITY), BE IMPACT, le wagon, greenbizz .brussels (WHERE SUSTAINABLE BUSINESS GROWS), paradigm .brussels, EDIH (European Digital Innovation Hubs Network), Beci, Technicity .brussels, BE! PLANET!, EURO BELGIUM, umec istart, THE SHIFT, enterprise europe network, hub.brussels ncp.brussels (your national contact point for Horizon Europe), LEAD, CLAIRe, </be>code, AI4Belgium, DIGITAL GOES GREEN, VBO FEB (Verbond van Belgische Ondernemingen / Fédération des Entreprises de Belgique), 19 CAMPUS, and bruxelles environnement leefmilieu brussel .brussels.

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# CitCom.ai

## Crash-testing AI for Cities and Communities

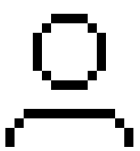

Martin Brynskov  
Technical University of Denmark (DTU)  
& Open & Agile Cities and Communities (OASC)

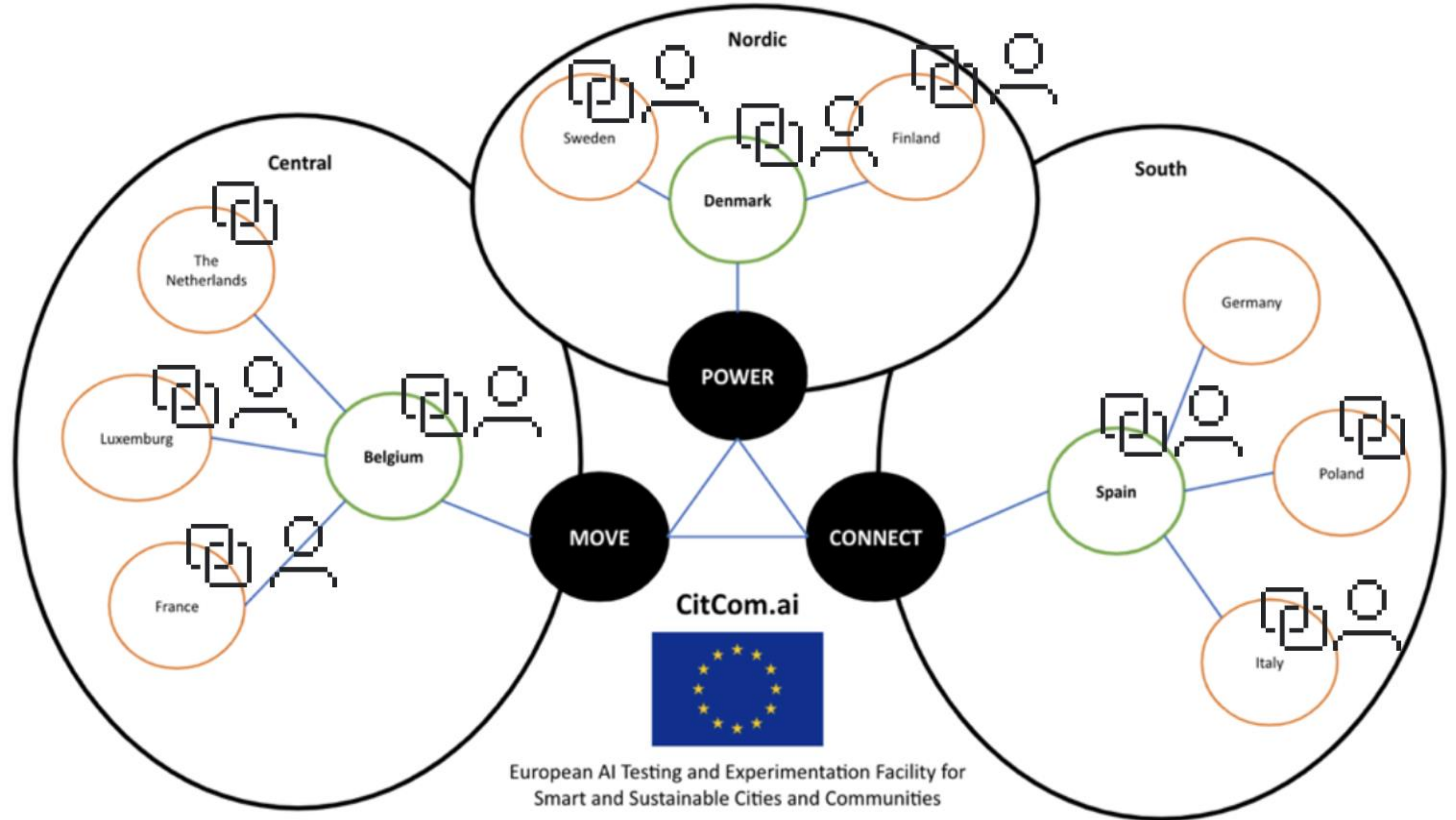
CitCom.ai TEF lead and coordinator

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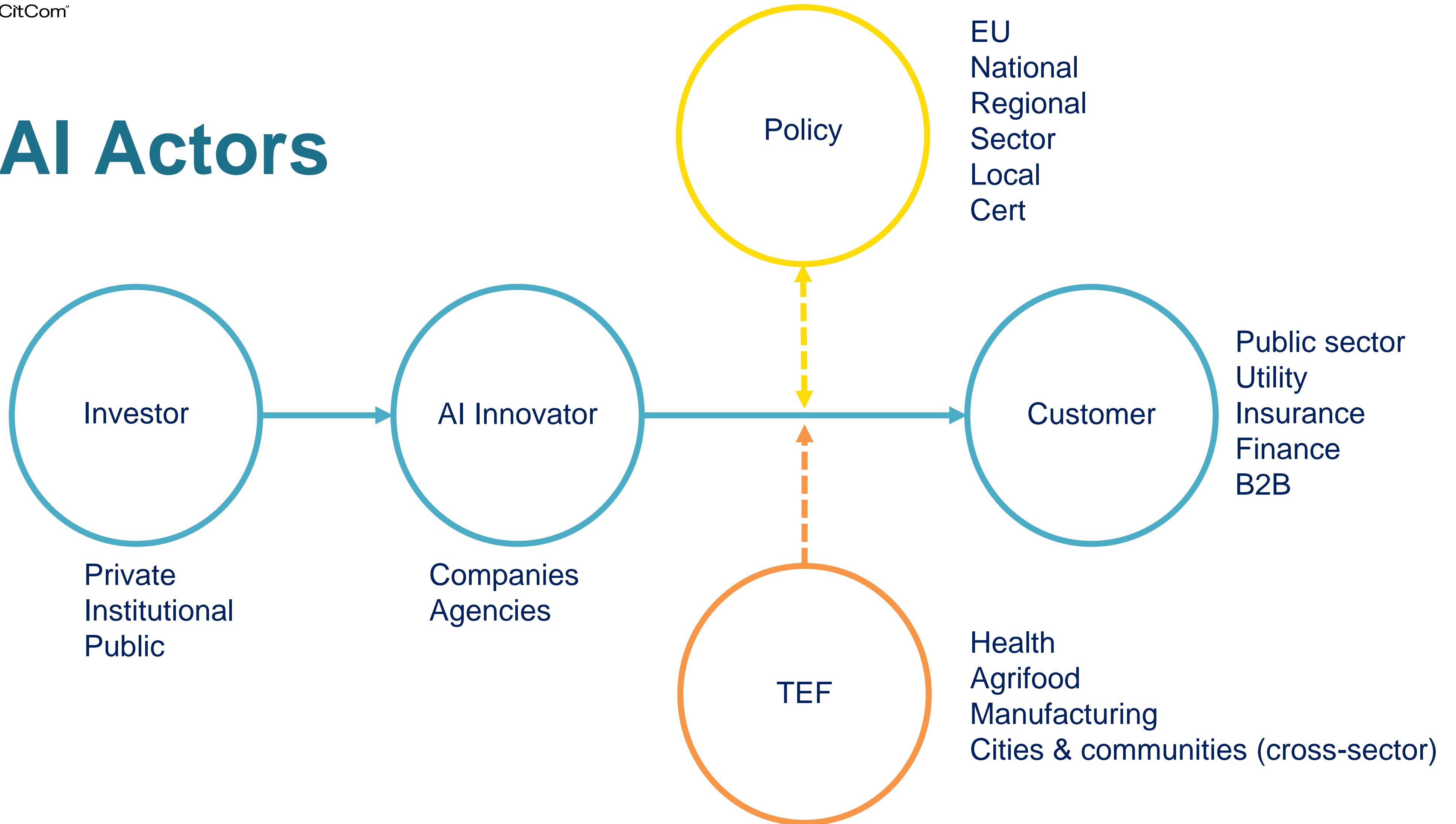
# STATUS

- 3 SUPERNODES
- 11 NODES
- 16 TEF SITES
- 29 TESTING ZONES
- 132 INITIAL SERVICES

Customer interest   
Service ready 



# AI Actors





# RESEARCH TO REALITY

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# FactoryXChange

Manufacturing Digital  
Transformation

The European Digital Innovation Hub  
for Manufacturing in Ireland

**#XMarksTheSpot**

**RESEARCH  
TO REALITY**



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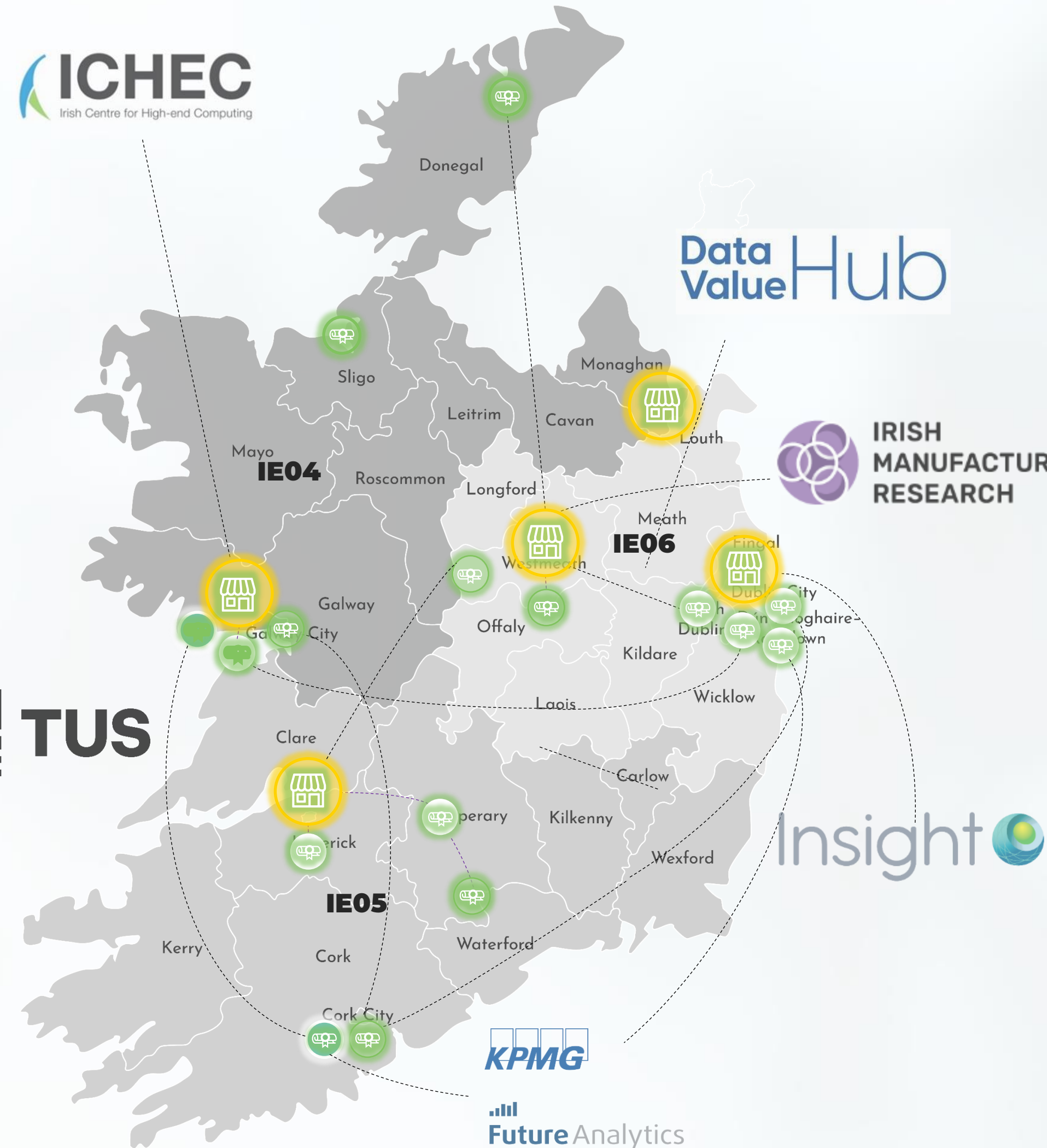
**#XMarksTheSpot**



The overall objective of FXC is to become a one-stop-shop with impact, that responds to customer needs in a fast flexible manner, removing financial and operational barriers, by disrupting the way we make things through digital innovations and knowledge exchange.

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

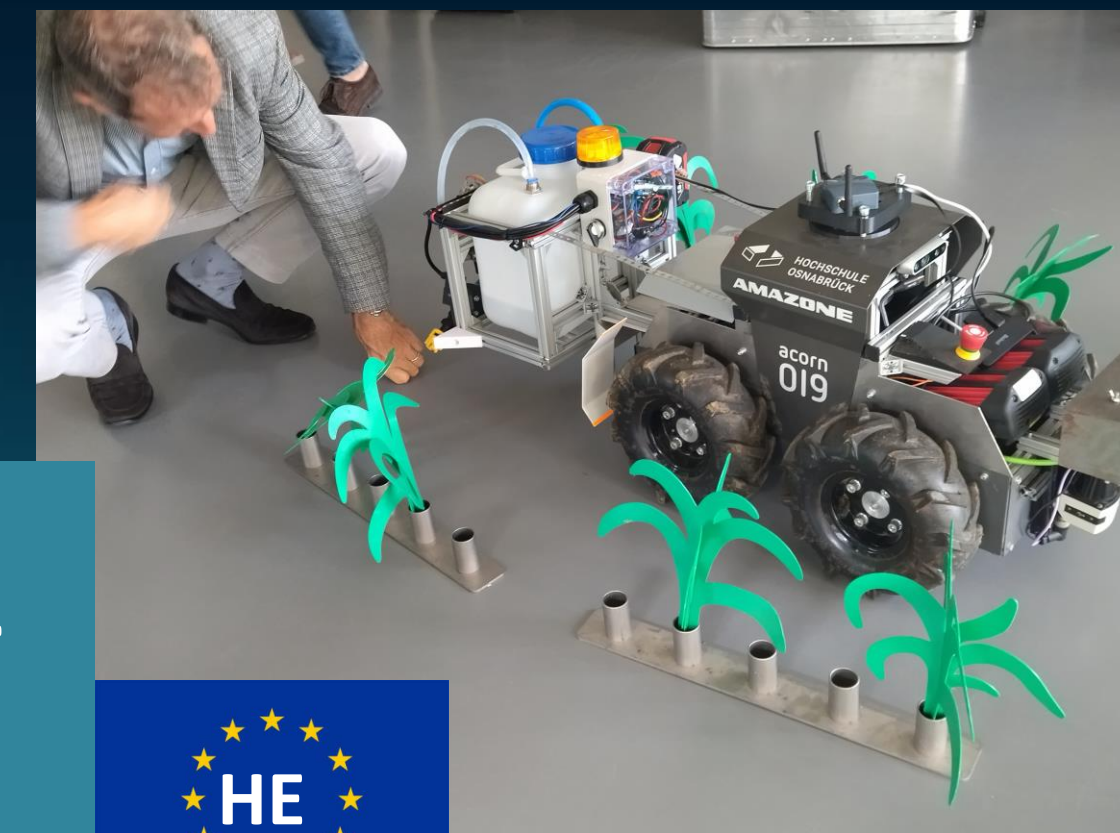
By connecting with our people and platform, we ignite digital success and innovation for businesses.



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- Digital Strategist
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Bring innovation from the clouds of geeks' world...



...down to the Earth of farmers' land

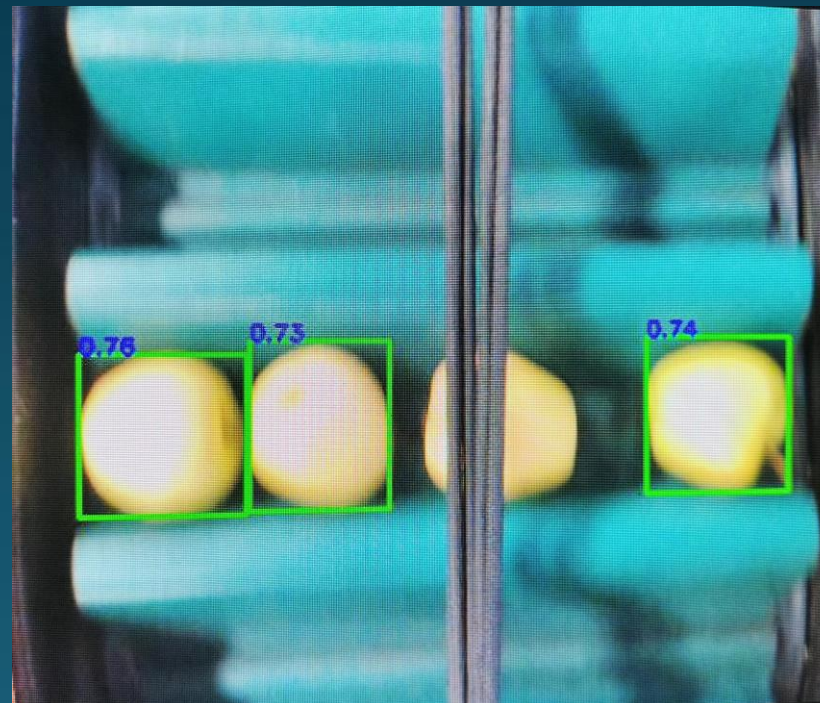


### Partners

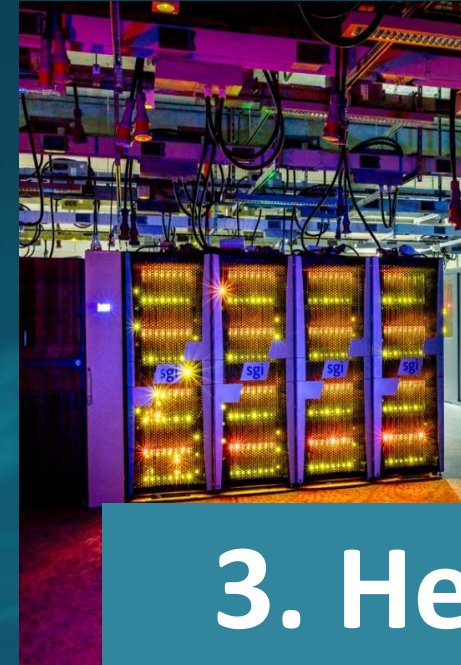





1. Benchmarking and improvement of Robotics



2. Field performance of AI for production control



3. Help valorise digi-agri data





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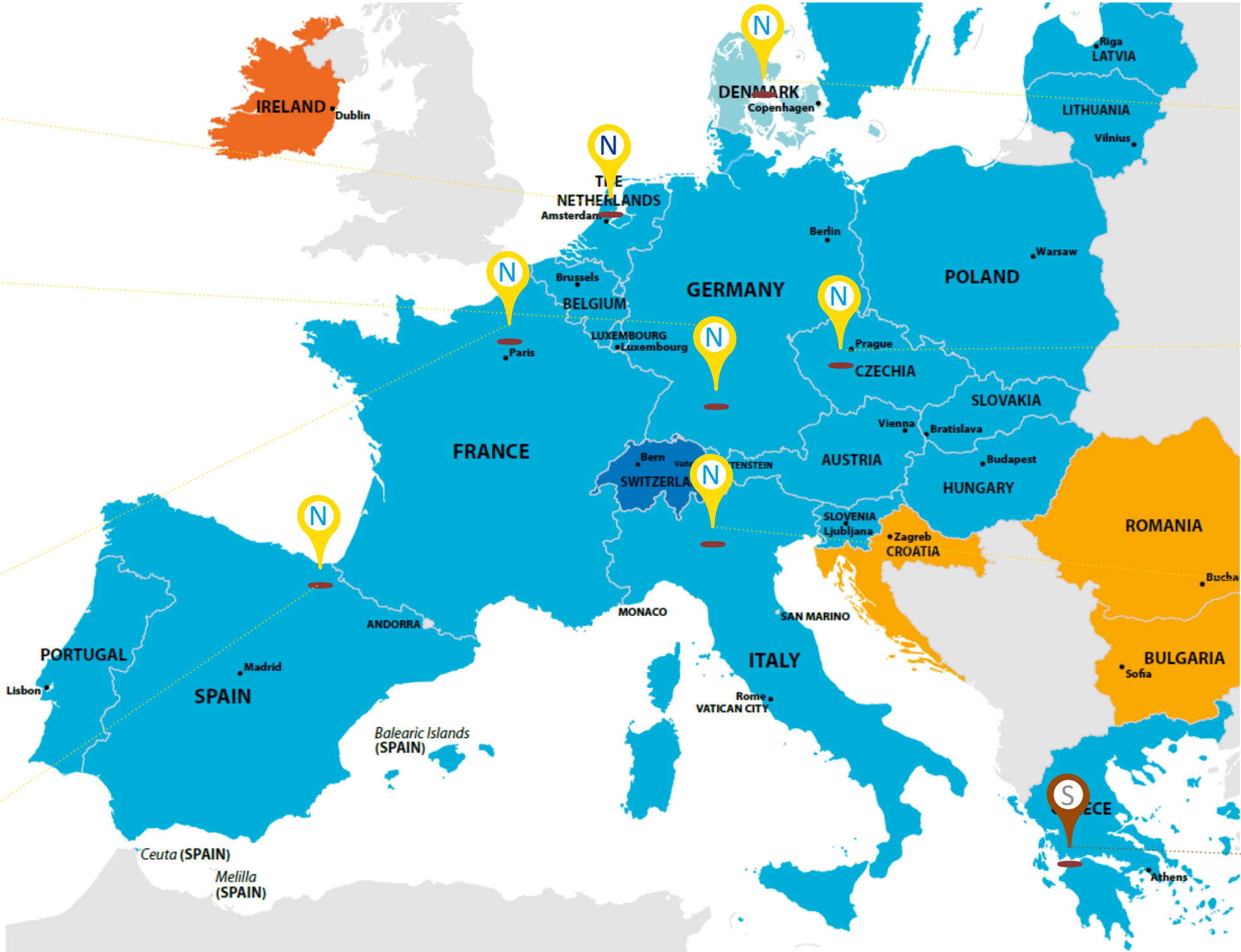
**A in  
MAnufActuring TesTing and  
ExpeRimentation facilities for  
European SMEs  
**AI-MATTERS**  
**The Manufacturing TEF****

*Valentina Ivanova*

# AI-Matters Network – 25 beneficiaries

 7 Nodes

 1 Satellite



 **Brainport Industries**

 **TNO** innovation for life

 **TU/e** EINDHOVEN UNIVERSITY OF TECHNOLOGY

 **Fraunhofer**

 **ARENA2036**

 **PTB** Physikalisch-Technische Bundesanstalt National Metrology Institute

 **Universität Stuttgart**

**Network coordinator**

 **cea**

 **list**

 **tecnal:a** MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

 **aimen** TECHNOLOGY CENTRE

 **AFM** MACHINE TOOL MANUFACTURERS AFM CLUSTER


 **ITAINNOVA** INSTITUTO TECNOLÓGICO DE ARAGON


 **DANISH TECHNOLOGICAL INSTITUTE**


 **ALEXANDRA INSTITUTTET**


 **ODENSE robotics**

 **FORCE TECHNOLOGY**

 **CZECH INSTITUTE OF INFORMATICS ROBOTICS AND CYBERNETICS CTU IN PRAGUE**

 **VSB TECHNICAL UNIVERSITY OF OSTRAVA**


 **BRNO UNIVERSITY OF TECHNOLOGY**


 **CEITEC** Central European Institute of Technology BRNO | CZECH REPUBLIC

 **MADE** Competence Center I4.0

 **FONDAZIONE BRUNO KESSLER** FUTURE BUILT ON KNOWLEDGE

 **ENGINEERING** THE DIGITAL TRANSFORMATION COMPANY

 **LMS** Laboratory for Manufacturing Systems & Automation

 **Teaching Factory**

# About AI-Matters

AI-Matters is a **network of seven nodes and one satellite** aiming at increasing the resilience and the flexibility of the European manufacturing sector through the deployment of the latest developments in AI and robotics, and intelligent, autonomous systems for flexible production.

Coordinated by CEA from the Paris-Saclay innovation ecosystem, AI-Matters brings together a consortium of major R&I organizations from **eight European countries** (Germany, Italy, The Netherlands, Czech Republic, Greece, Spain and France) including 25 beneficiaries.

All consortium members bring their expertise in **manufacturing for different sectors** such as automotive, space and mobility, textile, recycling, etc.

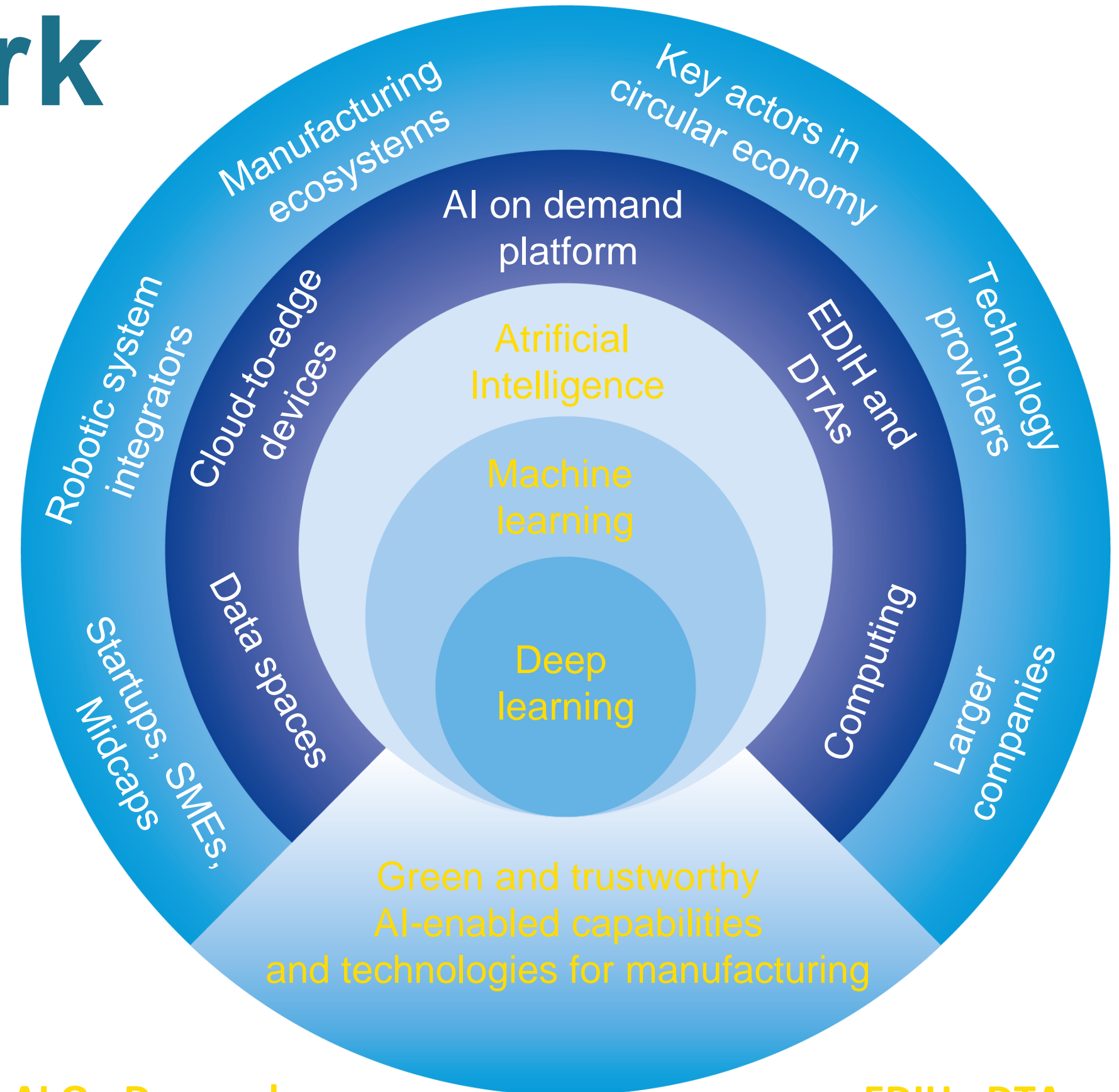
AI-Matters offers its customers an extensive **service catalogue** spanning the topics above that evolves through continuous updates as needs and expectations of the European manufacturing industry progress.

# The AI-Matters Network

The node-satellite-level-ecosystems work in a cohesive collaborative framework for sharing of knowledge, experiences, good practices, lessons learned, regulatory and ethics implications and operational quality assurance schemes.

Nodes-satellite are rooted in their regional innovation ecosystem and draw from their regional networks to develop and provide services to applicants from all of Europe through direct responses and transversal support.

These existing regional networks are key to the AI-Matters ability to provide a wide range of



AI On Demand  
Platform (ai4europe.eu)

EDIH - DTA



# RESEARCH TO REALITY

DIGITAL SOLUTIONS TO  
EUROPEAN CHALLENGES



Flanders  
State of the Art

