

KETs 2022, Calls 2023-2024

On-site event

EIT Manufacturing

Strasbourg, 10.11.2022



Co-funded by the
European Union

Manufacturing – Core to prosperity, job creation & growth



Over 2 million
companies in
EU



16.1 % EU-28 GDP



35 million jobs
in the EU



80% of EU exports

+ 13 million jobs in growing high-tech manufacturing industry

Manufacturing – Challenges and Opportunities

Europe's current challenges are: **Digitalization, Sustainability, Competitiveness**



SKILLS



TECNOLOGIES



STRATEGY

You cannot do this alone, you need an **ECOSYSTEM!**



**The European
Innovation Network
for Manufacturing**

Our Vision
Global manufacturing
innovation is led by
Europe



Co-funded by the European Union



A strong European community



Co-funded by the European Union

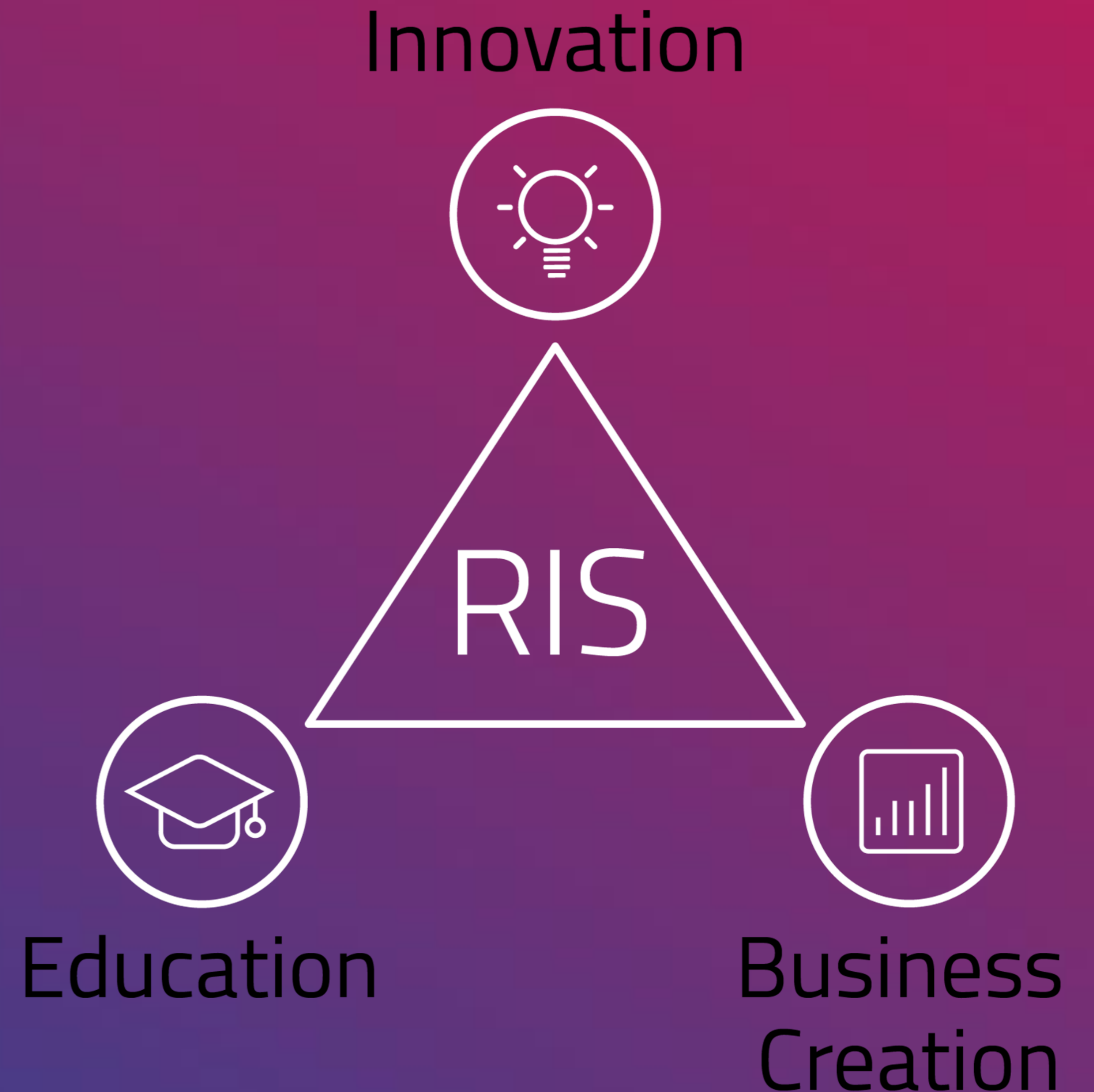
Unique approach

Integration of the Knowledge Triangle. We connect:

People - Skills

Technologies - Markets

Innovators - Investors



Unique approach – Innovation based on industry needs

Holistic approach (KTI)

Public-private
partnership

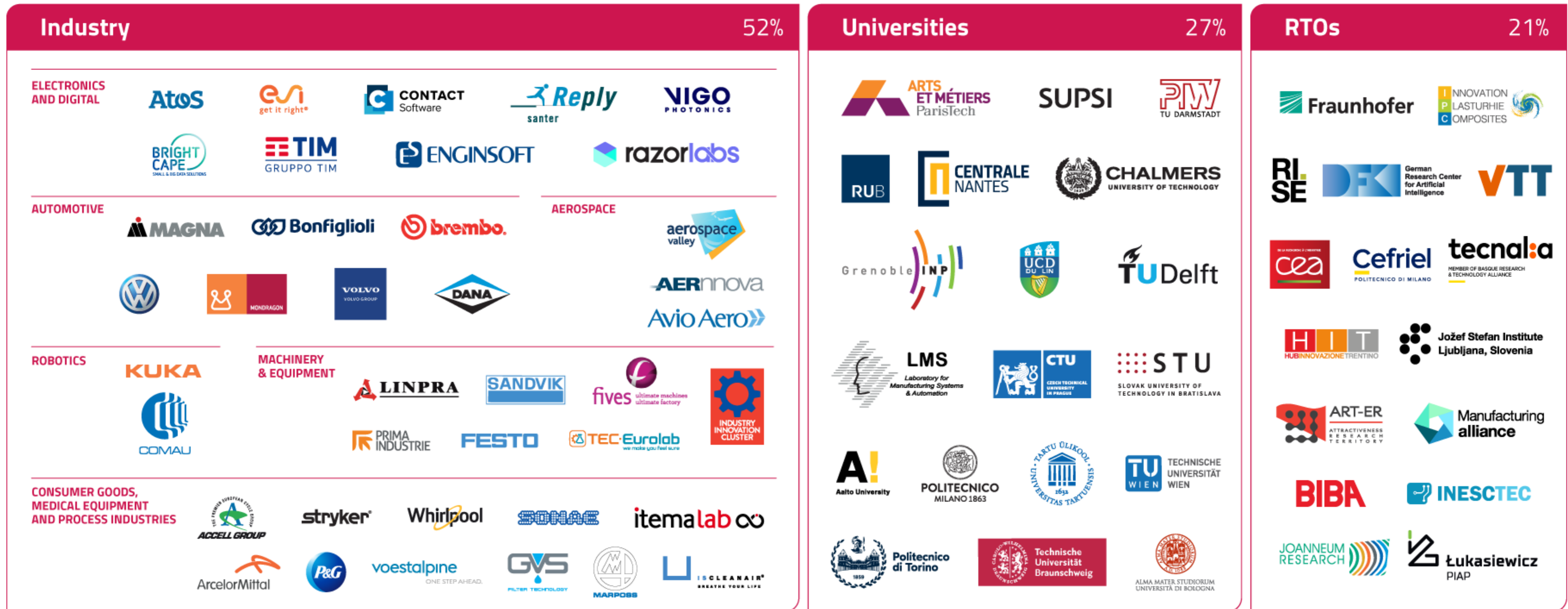
80+ full members
80+ activity partners



High-value
manufacturing
challenges

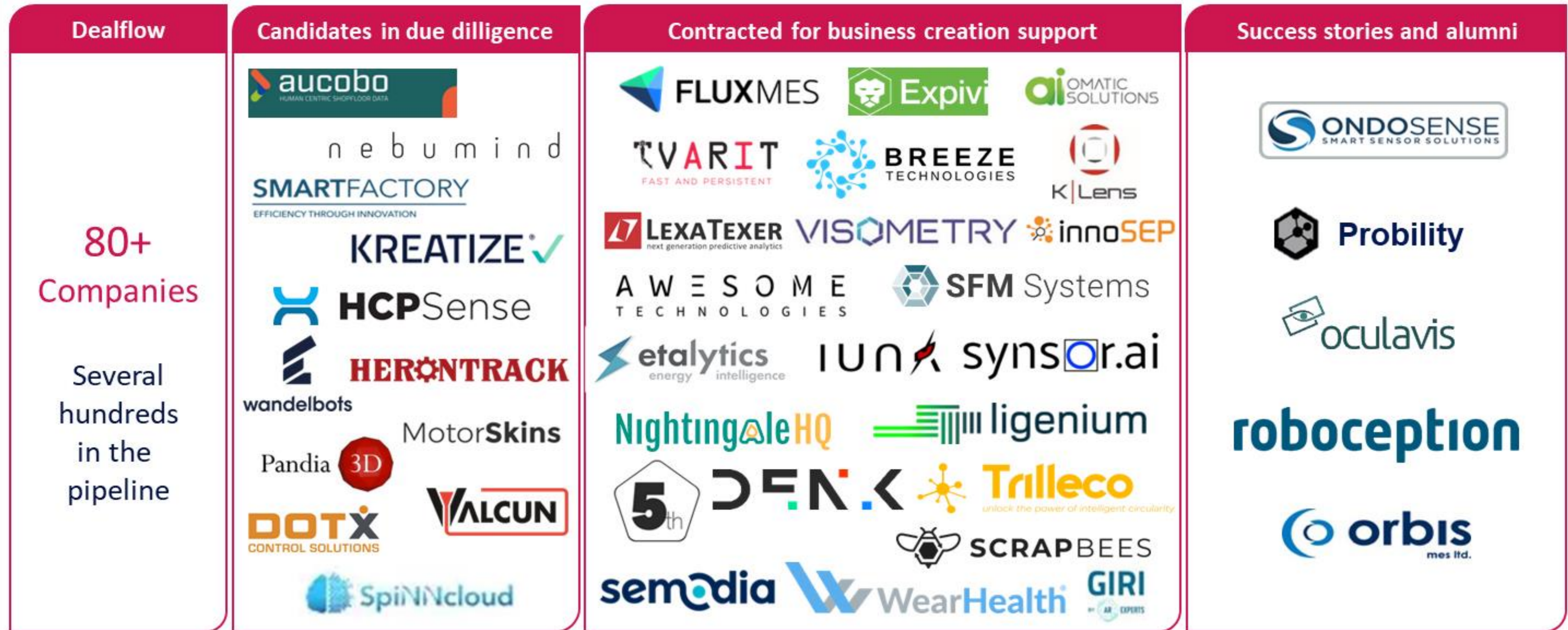
Budget until 2026
400 Million Euro

Powerful partnership: 83 partners from 17 countries



As of March 2022

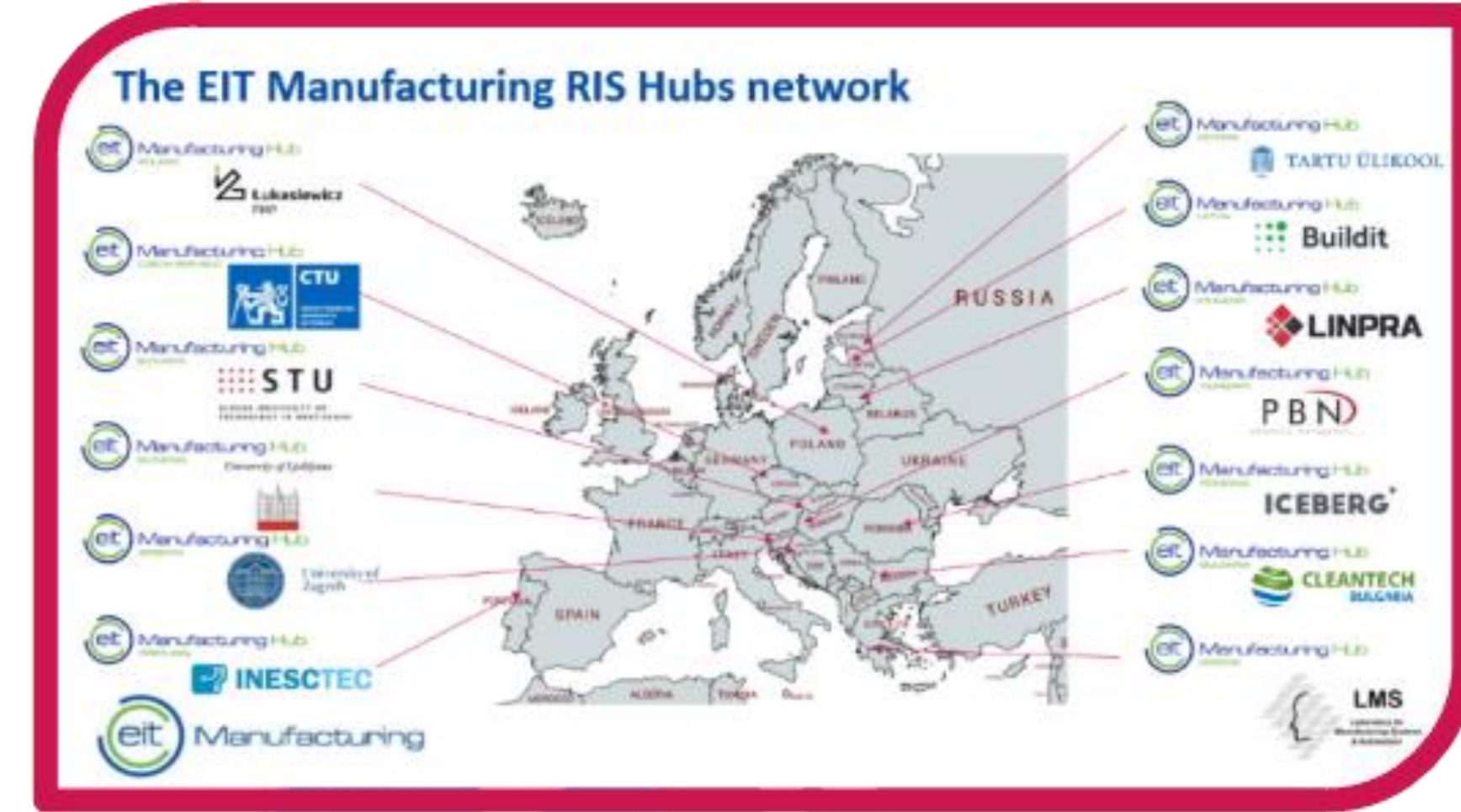
EIT Manufacturing Sparks – our young companies network



Unique approach – What we offer

- HQ in Paris
- 6 European regional offices (CLCs)
- 13 Innovation Hubs

Unique Europe-wide Network of Industry and Science



EIT Manufacturing Headquarters
Paris

CLC Central
[Darmstadt]

CLC South
[Milan]

CLC West
[San Sebastian]

CLC North
[Gothenburg]

CLC East
[Vienna]

CLC South-East
[Athens]

In addition, dynamically growing number of RIS hubs

Why would a company want to be part of EITM community?

Opportunities

Innovation

- **Technology surveillance** - 200 startups
- **Open innovation**
- **EITM Funded projects** - pilot techs



Knowledge

- **Trends** (RADAR)
- **Talent** (Master, Phd students)
- **Learning** (Skills.move + learn from EITM projects)

Investments

- Corporate ventures

Connections EU level

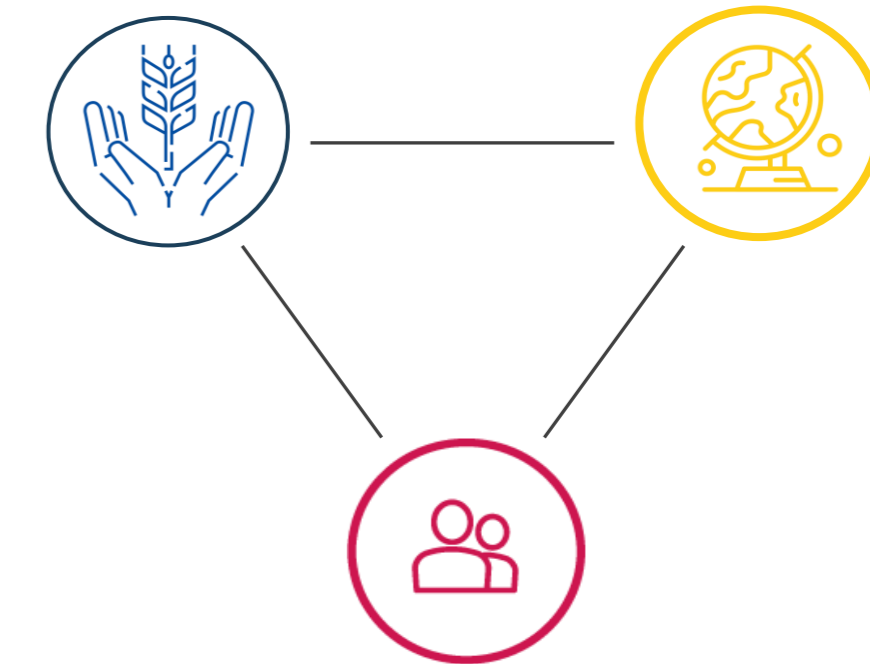


Our focus – shared industrial needs

1. Tailored network with contact points throughout Europe
2. A team of experts to support your business development and innovation management
3. Access to training courses for innovative technologies – actively foster entrepreneurial thinking of your decision-makers and workforce
4. Programs that are directly linked to EU policies – your opportunity to actively shape the future of manufacturing
5. A strong innovation support - develop a prototype to market maturity
6. Structured access to highly innovative young companies and their leaders

Prosperit
y

Planet



People

Four focus areas: The Flagships



Flexible production systems
for competitive
manufacturing



**Low environmental
footprint systems & circular
economy**
for green manufacturing



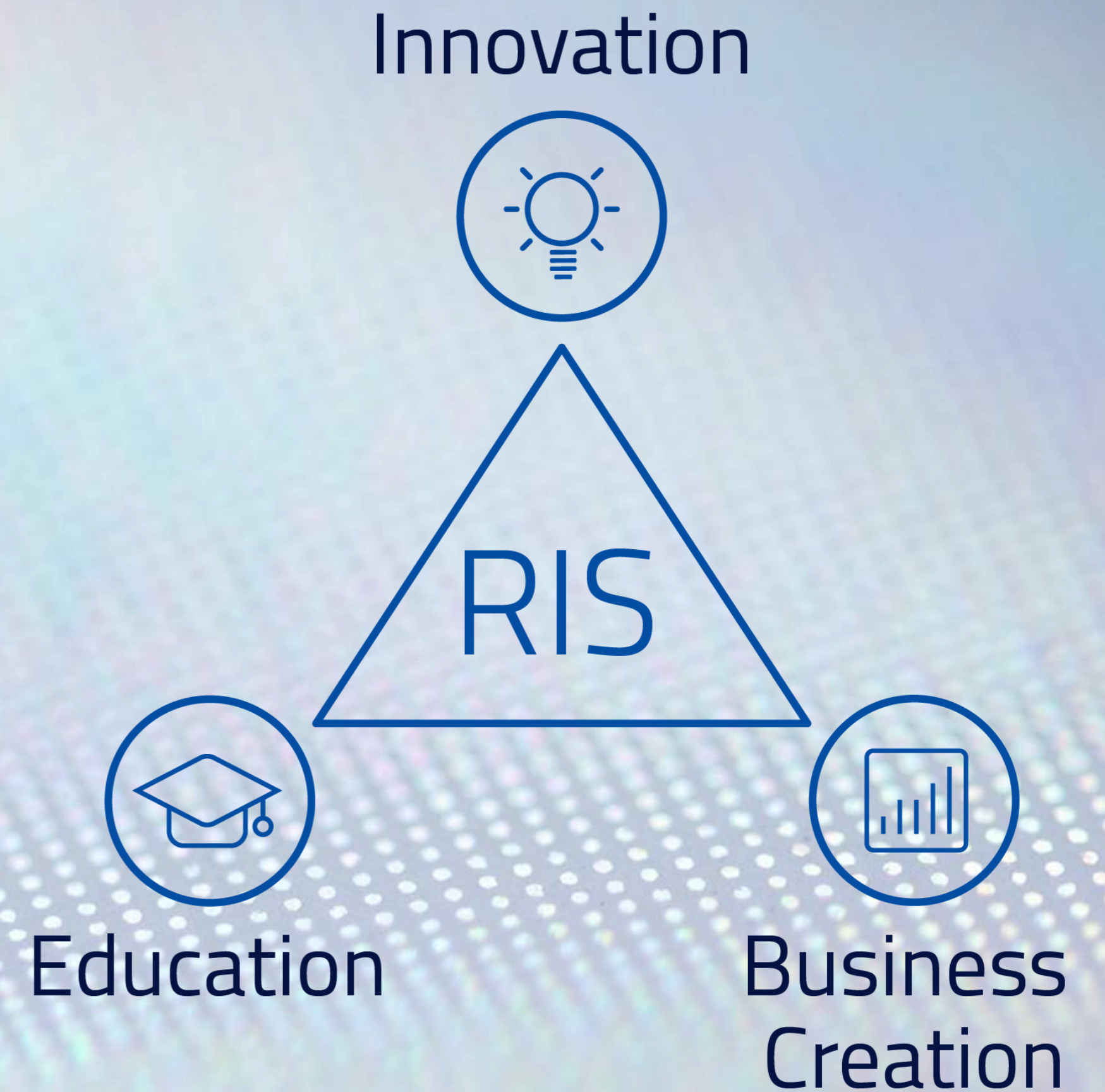
**Digital & collaborative
solutions** for innovative
manufacturing ecosystems



**Human-machine co-
working**
for socially sustainable
manufacturing

The strength of EIT Manufacturing

To ensure that innovations reach the market, industry has the right talent and entrepreneurs can thrive, EIT Manufacturing connects and integrates the areas of education, innovation and business creation and the Regional Innovation Scheme (RIS).





Join us today!

1,500+ members and counting!



Latest tech developments,
industrial use cases, insights
and discussions

Networking and
meeting

One-stop shop for
EITM & Manufacturing
news and activities

TUESDAYS
FROM

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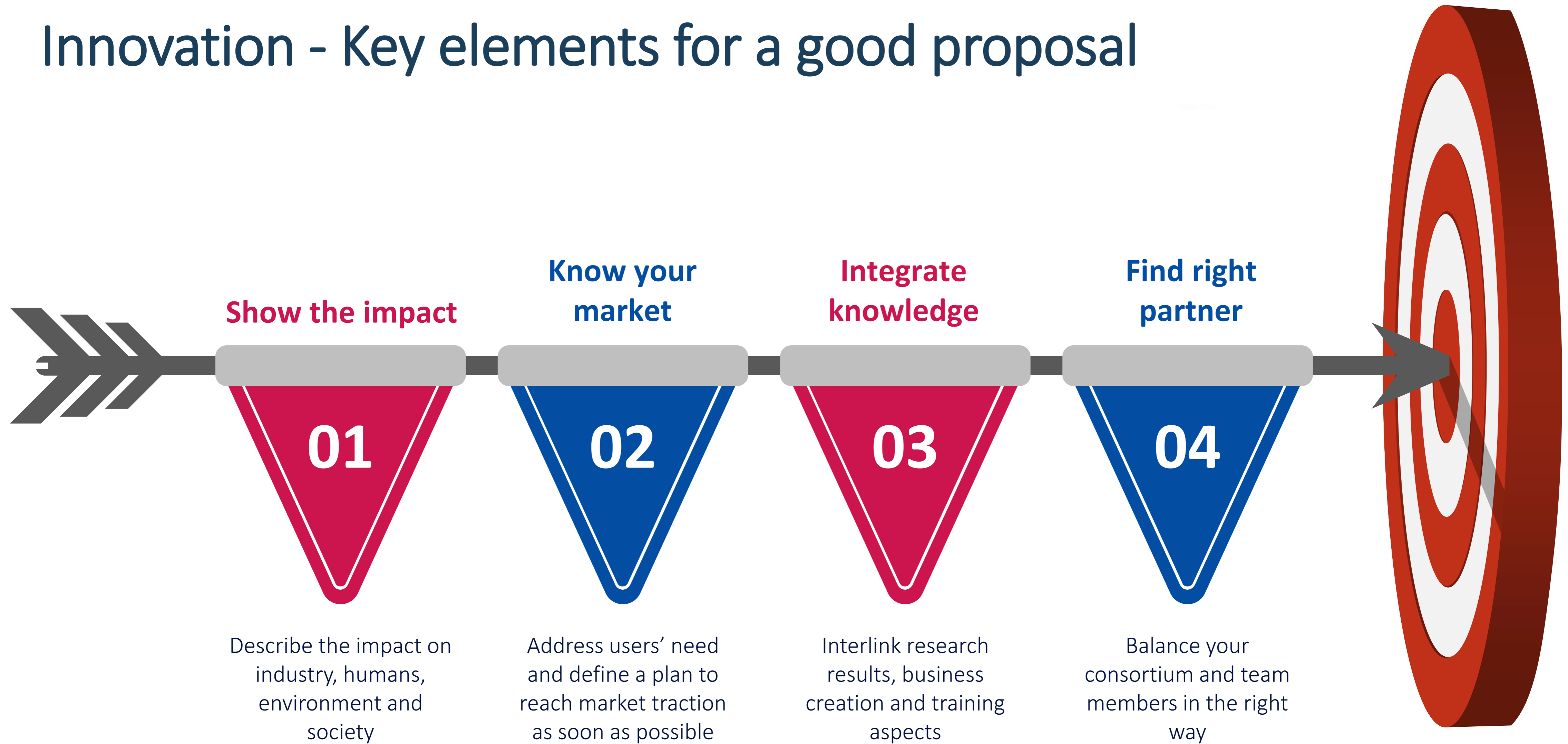
Innovation webinars



Co-funded by the
European Union

<https://agora-eitmanufacturing.eu>

Innovation - Key elements for a good proposal



EITM Education Programmes: Connecting people with competences



Empower

- EIT-labelled Masters programmes
- EIT-labelled PhD programme
- Flexible personalised empowering programmes



Connect & Transform

- Transform organisations through education & training
- Upskilling and re-skilling programmes for corporates



Engage

- Attract young talent through networking, workshops and events
- Engage Women, Engage Pupils
- Cross-industry, societal engagement



Teaching Factories
Green Manufacturing
2022 Competition



LEARNING FACTORIES
NETWORK DEVELOPMENT

Cross KIC Initiatives



EIT HEI Initiative



Skills .MOVE

Manufacture your future!

**Our digital learning platform
as an answer to the
challenges of manufacturing**





Funded by
the European Union

Securing the future of Europe's
competitiveness.
**One million people skilled in deep tech
by 2025.**





How can you work with us?

- You have a **startup** and **need support** and funding
- You have a **manufacturing challenge**
- You want to **discover new technologies** for Innovation projects
- You want to **run PoCs** in specific areas
- You are **looking to invest**

Get in touch with me!
gala.maturana@eitmanufacturing.eu

The Journey

Building bridges between the most innovative startups and large corporates

STEP 01

Challenges
Identification of industrial challenges

STEP 02

Tech bricks
A call to our startup ecosystem

STEP 03

Connect
Connecting corporates with startups

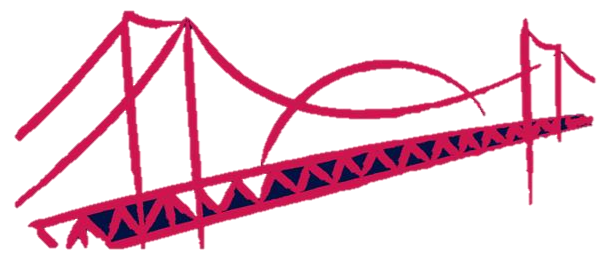
STEP 04

BoostUp! BRIDGE Competition

18 October 2021, during World Manufacturing Week

STEP 05

During 2022



Prenomics

KUKA



roboception

Whirlpool CORPORATION



GridMetrics

voestalpine



ChainTraced

Thank you!

Smart sensor solutions – based on radar!

Our mission

With smart sensor solutions, OndoSense ensures customers get relevant insight for the intelligent monitoring of production environments and machines in the Industry 4.0.

OndoSense was founded 2018 by Fraunhofer radar experts in Freiburg, Germany.

Our offer

Smart distance radar

- ✓ High precision sensor
- ✓ Measuring at very close-range
- ✓ Extreme reliability in harsh conditions

Smart pre-collision radar

- ✓ 3D collision avoidance
- ✓ Human recognition – 100% privacy-safe
- ✓ Outdoor & demanding environments

Business snapshot

-  21 experts in radar HW, SW & marketing
-  >40 international customers from Europe and the USA



 advised by  

 awards   

Robust solutions for process automation & collision avoidance

Our Business Segments



Process Automation



Industries:

Metal & Steel Industry, Precision Farming, Robotics

OndoSense USPs:

We offer an unmatched measurement precision of up to 1 μm across a large measurement range even in rough conditions including steam, dust and extreme temperatures.

Collision Avoidance



Industries:

Logistics, Robotics, Production Facilities

OndoSense USPs:

We offer 3D radar scanners with a field of view of up to 360° with the unique ability to securely detect transparent materials such as glass and to differentiate human beings from objects.

...distance measurement challenges:




"I can't measure precisely in this harsh environment!"


Operations manager



High speed rates (>300 Hz)
and velocity measurements?


Very precise measurements
in harsh environments?

Sensors immune to...

-  ...dust, smoke,
fog, bad lighting?
-  ...temperature,
pressure, heat?


Smart sensor network
for complex measuring tasks

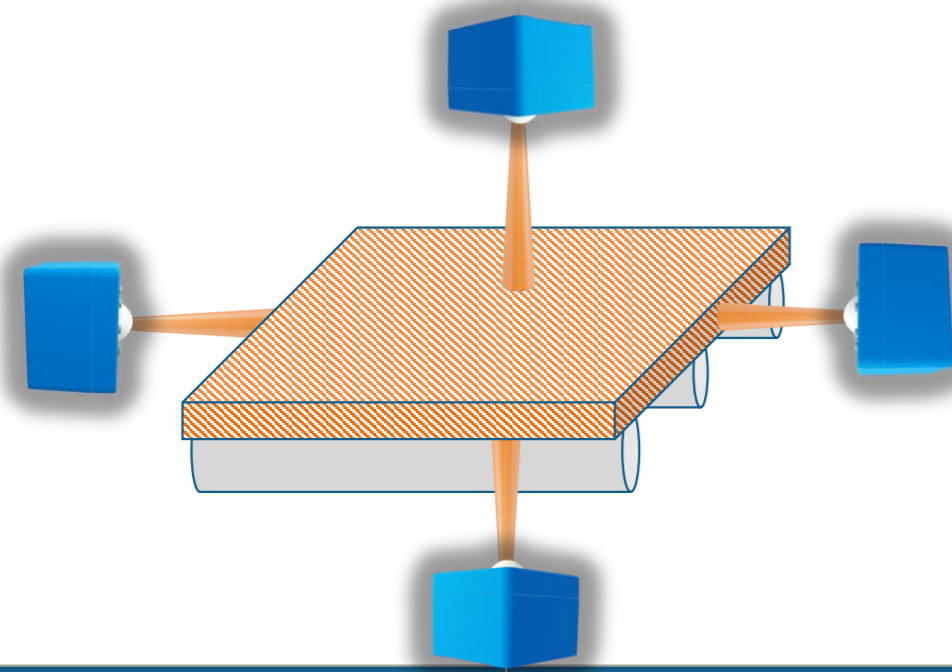

Measuring range from 5 cm
up to 20 meters (& more)

Solution: highly precise, robust & compact radar sensor

Use cases: smart distance measurements



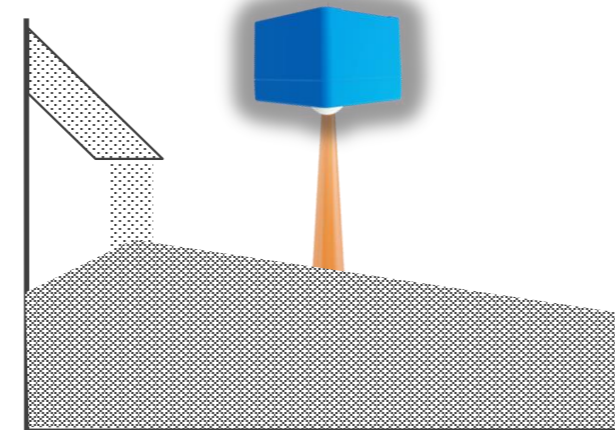
Dimension measurements
e. g. of hot metal slabs



Measuring & positioning in harsh environments

- ✓ Not affected by bad lighting, extreme temperature or heat, dust, dirt, fog, smoke, etc.
- ✓ Smart sensor network for complex measurements

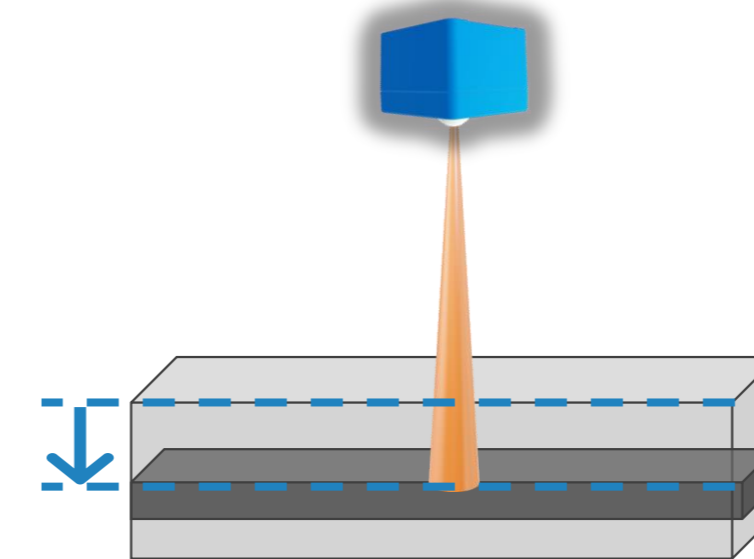
Fill level monitoring
e. g. of industrial filter bins



Fill levels in confined, dusty conditions

- ✓ Sensor not affected by metallic dust on lens
- ✓ Measuring in close-range of up to 10 cm – compact sensor

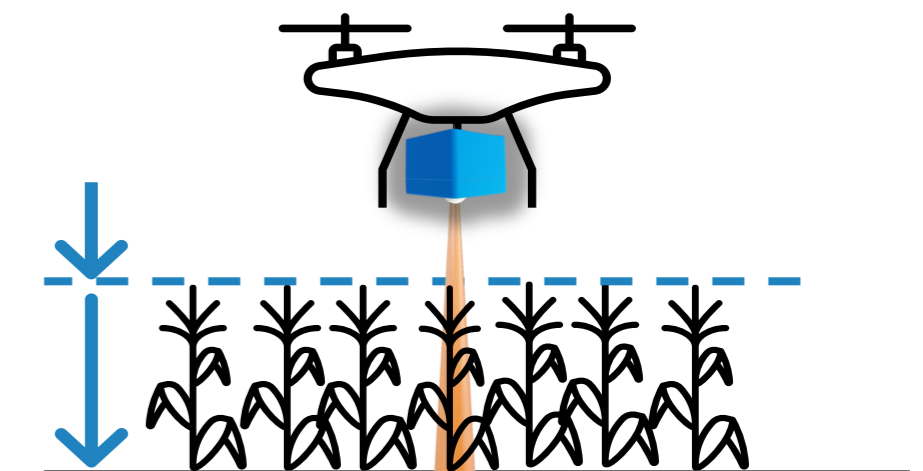
Positioning of metal objects
e. g. in plastic layers



Precise layer thickness measurements of plastic

- ✓ Ultra-precise positioning of metal objects in plastic layers
- ✓ Precise measuring of the thickness of plastic layers

Distance to Ground
e. g. for crop height



Monitoring of Crop Growth Rates

- ✓ Advanced Algorithms for specialized features
- ✓ Lightweight & compact sensor

+  **Faster production processes**

+  **Reliable avoidance of downtime**

Other solutions: limited in range & in harsh conditions

Our solution: precise, robust, wide range



		Laser / optical	Inductive	Ultrasound	Classical radar	OndoSense Radar
	Proximity and wide range From 5cm up to 20 meters	 <i>Limitations in precision</i>			 <i>Limitations in close range</i>	 Excellent in close-range
	Ultra-high precision in the micrometer range		 <i>Limitations: only in very close range</i>	 <i>Strongly varying precision</i>		 First radar with micrometer precision
	Measures in dust, smoke, bad lighting, extreme temp., heat...	 <i>Limitations: dirty/iced sensor, strong vibration, flashes...</i>		 <i>Limitations: temperature variations, vibrations, noise...</i>		 No cleaning needed & unique robustness
	High measurement frequency (300 Hz +)				 <i>Usually below 100 Hz</i>	 For fast environments
	Immune to surface quality can identify all materials	 <i>Limitations: rough and very dark materials...</i>	 <i>Limitations: metallic materials</i>	 <i>Limitations: soft materials...</i>		 Can penetrate non-metallic materials

...collision avoidance challenges for AGVs – or cobots, safety areas ...



“I can’t use AGVs in this complex & harsh environment!”
Operations Director

Sensors affected by...

 ...rain, snow, dirt,
bad lighting?

 ...temperature,
pressure, heat?



High hanging
objects?



Human recognition
100% privacy-safe
and behind objects?



Forklift tips & objects
lying on the ground?



Solution: 3D pre-collision sensor for demanding environments

Use cases: AGVs, safety areas, cobots...



AGVs (Automatic Guided Vehicles)

Cobots & safety areas



AGVs in outdoor areas of warehouses or container ports (etc.)

Fully weather/outdoor-proof

- ✓ Radar not affected by rain, snow, dirt, bad lighting, heat...
- ✓ Safe 3D detection of fork tips & other objects (low or high)



Complex, varying AGV settings e. g. with human interaction

Safe human recognition

- ✓ 100% privacy-friendly human recognition for added safety
- ✓ Reliable 3D object detection in fast changing environments



Cool warehouses or other harsh AGV environments

For extreme conditions

- ✓ Reliable in extreme temperatures, ice, fog, darkness...
- ✓ Sensor with no moving parts - low maintenance needs



Complex production environments with human interaction

3D collision avoidance

- ✓ Safe human recognition behind objects & when not-moving
- ✓ Very reliable & precise with multiple sensors on all axes

+ **Faster production processes**

+ **Reliable avoidance of downtime**

Limitations of current sensors – example AGVs

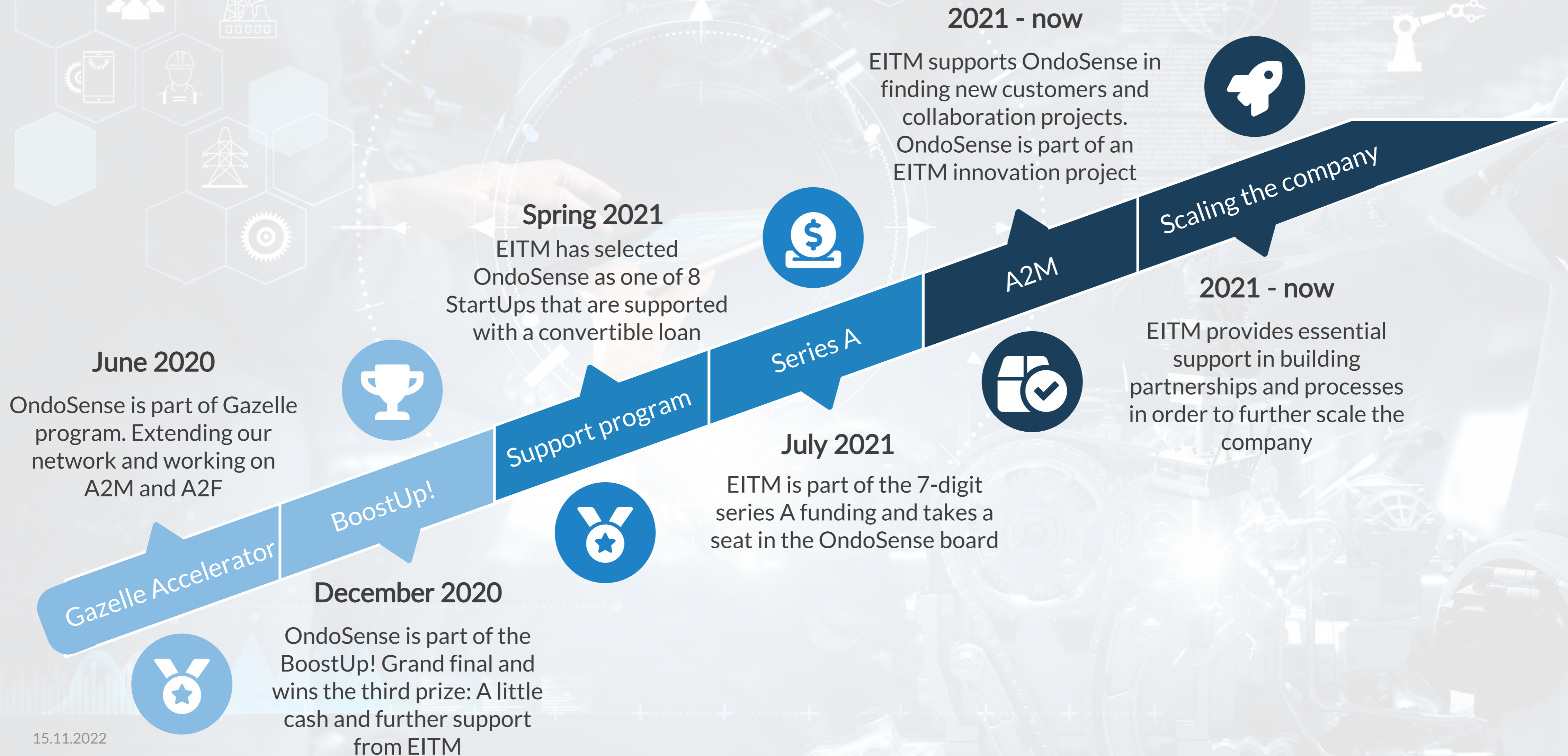
Our solution: 1st pre-collision radar



Collision avoidance sensors	Laser	Laser (improved)	Vision sensor	OndoSense radar
<p> Full 3D collision avoidance for fork tips & lying/hanging objects</p> <p> Outdoor/harsh conditions fully supported</p> <p> Human presence detection 100% privacy-friendly</p> <p> No moving parts – higher durability, less maintenance</p> <p> Precise speed measurement for stepless security zone config.</p>	<p></p> <p> 2D only</p> <p></p> <p></p> <p> Scanning mechanism</p> <p></p>	<p></p> <p> Only 7.5° elevation</p> <p> Limitations: dirty/iced sensor, heavy rain, strong vibration...</p> <p></p> <p> Scanning mechanism</p> <p></p>	<p></p> <p> Average: < 60° elevation</p> <p></p> <p> Not behind objects</p> <p> No scanning mechanism, but sensitive optics</p> <p></p>	<p></p> <p> 110° elevation & forklift tips detected!</p> <p> No cleaning needed!</p> <p> Even when not moving!</p> <p> Maintenance-friendly & extremely compact</p> <p> Calculated via sensor!</p>

Scaling modern radar technology in manufacturing

Our Journey with EITM



Let's enable smart measurements with robust sensors.

Start a collaboration with us!



 Profit from the robustness of radar to monitor automatize and speed up production processes, avoid downtimes and enhance security in environments where other technologies often fail!

What we offer you:

- Evaluate our solutions in your own environment with our evaluation kits.
- Benefit from our extensive radar expertise and expert support in the customization to your needs!
- You have another challenge for us? Let's talk about how we may help you.

Contact us now!



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