VANGUARD INITIATIVE
New growth through smart specialisation

Vanguard Initiative 3DP Pilot

Webinar Funding Opportunities S1 2021

Jean-François Romainville, IDEA Consult, 3DP Pilot Network Manager

IDEA CONSULT thinking ahead

Introduction

- **Welcome**
- **Structure** of the presentation (and follow up actions):
  - 3DP Pilot activities and associated funding needs, in a nutshell
  - Infra(regional) level
  - EU level: I3 and selected HE RIAs and IAs
  - Cascade funding

Sequence: *Presentation ➔ Needs/interests per Call (using online documents here (RIAs/IAs) and here (Cascade Funding) ➔ Flexible (bilateral/multilateral) 'consortia' generations/finalisations process (incl. using 19.03 (10-12) available slot for meetings)*

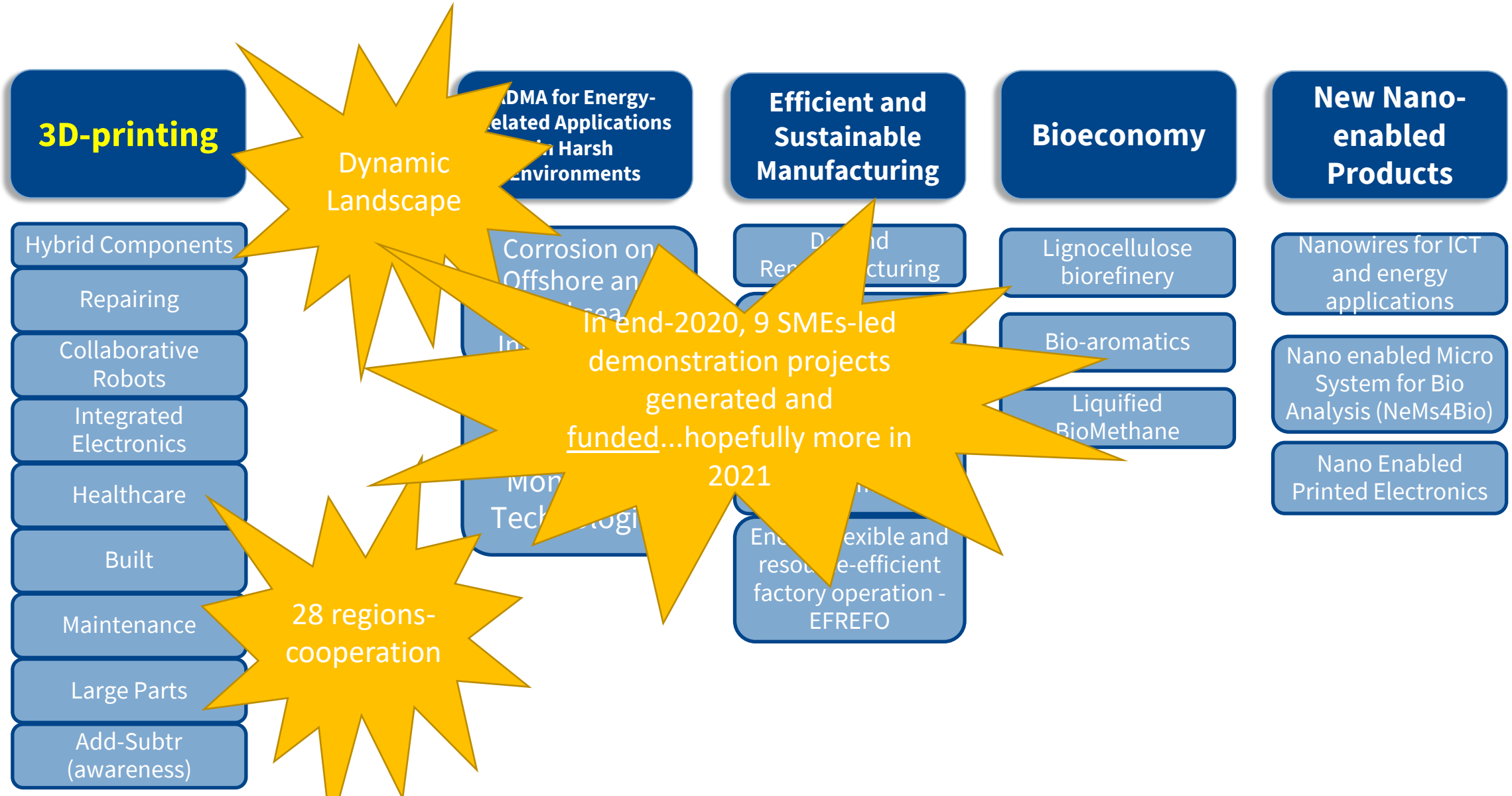
- The online environment's **guidelines**

IDEA CONSULT thinking ahead

VANGUARD INITIATIVE

The 3DP Pilot's
main activities and associated funding needs

VI Pilot Projects and Democases



3DP Pilot rationale and objectives, in a nutshell

To address industry **needs**, in their **'smart', 'green' and 'competitive' paths…**

…By enabling co-development, deployment and uptake of **AM-related solutions…**

…Through the timely development of **cross-regional demonstration projects** connecting capabilities and actors

Doing so, the 3DP Pilot will contribute to the emergence of new VCs and will reinforce existing ones

Implementation – The sequence, in a nutshell

Industry Needs

- Target group: (Downstream) SMEs, Tech-suppliers and start-ups
- Looking for expertise/equipment, new market/visibility
- *'Demonstration' and 'cross-regional'*

3DP Pilot 'Treatment'

- Actors: Facility Centres, Tech-suppliers, etc.
- Benefiting from Co-development /deployment, visibility/market

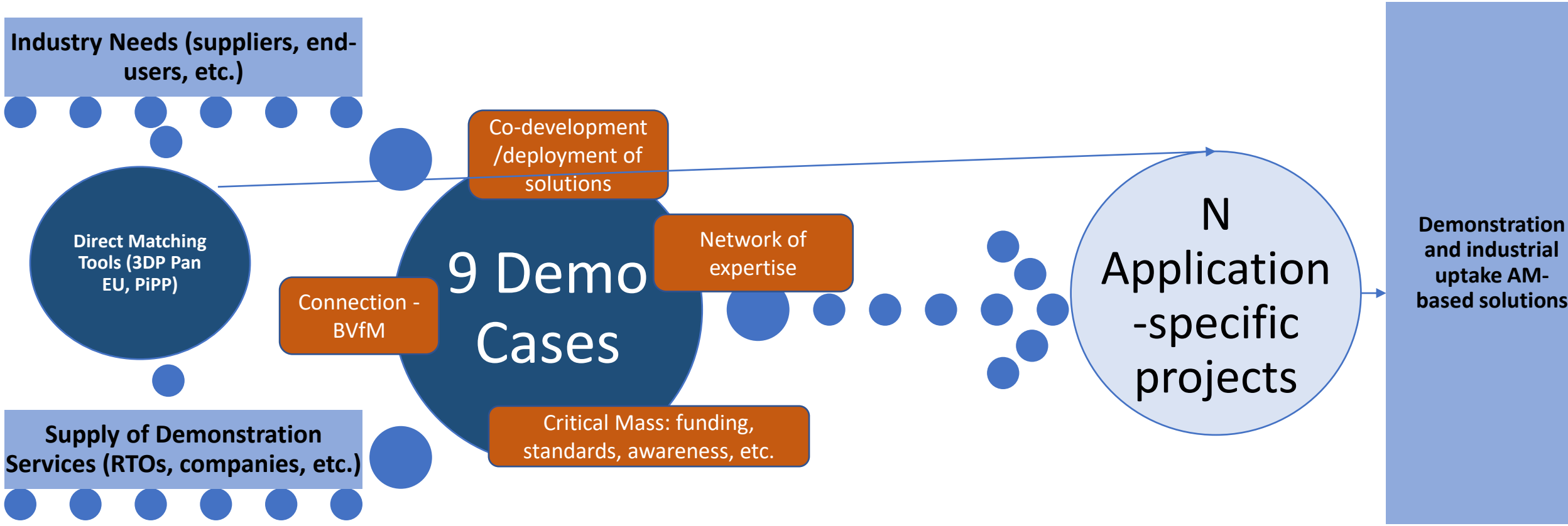
Projects Implementation

- Funding support, Spill overs and feedback loops
- *Towards Sustainable and Smart VCs*

IDEA CONSULT thinking ahead

Implementation – The 'back end'

1) 'Demo Cases' for emerging and complex solutions ('anticipate and develop') and 2) 'Direct' connections for others



2 'Cross-Demo Cases' (Transversal) Actions ('Awareness' and 'Benchmark Properties')

Overview of the Pilot's main action lines in 2021 (1)

Demo cases
Multi-materials components by **hybrid** 3D Printing manufacturing (Demo Case leader: Luca Tomesani, UNIBO, Emilia Romagna)
Innovative hybrid (subtractive/additive) manufacturing approach for **repairing added value** damaged objects (Demo Case leader: Paolo Gregori, Trentino Sviluppo, Trentino)
Multi-material 3D printing: Structural **integrated electronics** in 3D printed parts (Demo Case Leader: Hannes Fachberger, Profactor, Upper-Austria)
Medical Devices and **Healthcare** demo case: 3D-Printed customized components for orthosis, exoskeleton and exoprosthesis…and beyond? (Demo Case leader: Alberto Leardini, IOR, Emilia Romagna)
AM in the **Built** Environment (Demo Case Leaders: Maaike Riemersma and Theo Salet, TUE, South-NL)
3D-Printed **large parts** and complex shapes (mono-material) through emerging 3DP technologies (Demo Case leaders: José Antonio Dieste, Aitiip, Aragon and Giulia Marchisio, CIM40, Piemonte)
Efficient **collaborative robot** through 3D printing optimization (Demo Case Leader: Oscar Alonso, Leitat, Catalonia)
Provide a toolset for **maintenance** for 3DP and a training course for employees to do the maintenance (Demo case Leader: Coen de Graaf, Brainport, South NL)
Additive-subtractive high precision & high finish production (high-end metals): a focus on elaborating cross-regional solutions for raising awareness (among SMEs) on AM-related opportunities (Demo case Leaders: Bianca Maria Colosimo, Polimi, Lombardy and Coen de Graaf, Brainport, South NL)
Transversal Actions
Transversal Action 1 - Elaborating cross-regional solutions for raising **awareness** (among SMEs) on AM-related opportunities (Leaders: Bianca Maria Colosimo, Polimi, Lombardy and Coen de Graaf, Brainport, South NL)
Transversal Action 2 - Building an international Benchmark for **AM mechanical properties** for various materials" (Leader: Thomas Kairet, Sirris, Flanders/Wallonia)

VANGUARD INITIATIVE
New growth through smart specialisation

IDEA CONSULT thinking ahead

Overview of the Pilot's main action lines in 2021 (2)

End-2020 new ideas

- Scalability of serial-production: system approach of the AM-factory, automatization of post-production (South-NL, Brainport Development)

Ruben Fokkema, R.Fokkema@brainportdevelopment.nl

- Automated removal of support structures and surface smoothing of 3D printed metal parts (Lower-Austria, FOTEC)

Helmut Loibl, loibl@fotec.at

- 3D metal printing of catalytic reactor structures (South-NL, AddCat)

Gerald van Santen, g.vansanten@addcat.eu

- "Hyberfacturing", Auvergne-Rhône-Alpes (France), University of Grenoble in cooperation with Baden-Württemberg (Germany), University of Stuttgart

Frédéric Vignat, frederic.vignat@grenoble-inp.fr

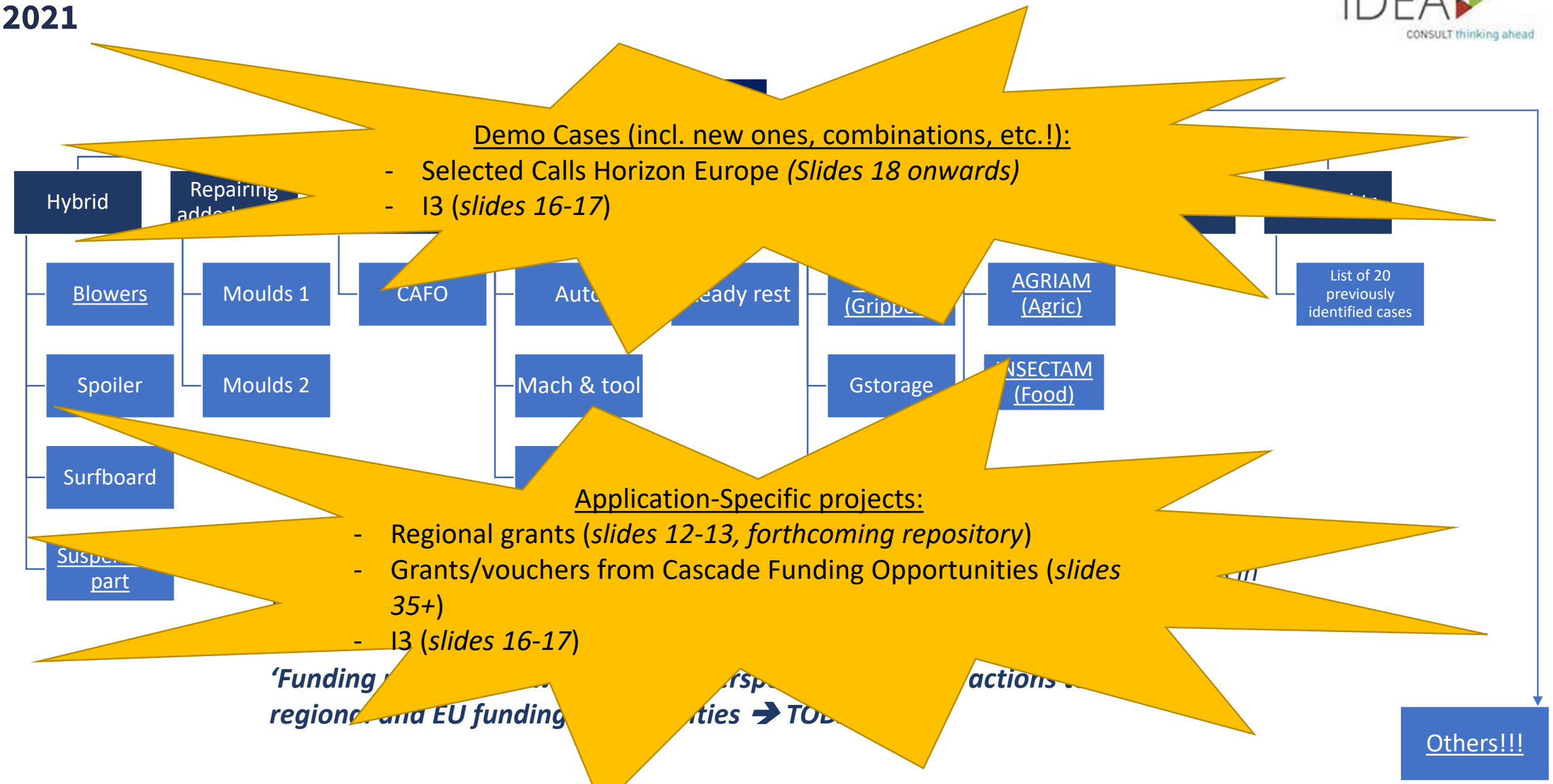
In 2021, still open to new ideas! Submit here

IDEA CONSULT thinking ahead

3dP PilotPitchingPlatform

VANGUARD INITIATIVE

The 3DP Pilot 'Portfolios' of projects – Illustrative overview in early 2021



Opportunities at (Infra)-regional level

State of play and next steps

State of Play

- First 3DP Pilot '**regional funding workshop**' on 18.11.2020
  - Funding experts from 6 regions discussing a selection of 14 calculated cases
    - Regional instruments available?
    - Conditions?
  - Takeaways:
    - Identification of relevant regional opportunities:
      - Saxony: "Innovationsprämie" voucher, ZIM international
      - Lombardy: FRIM FESR 2020, Call HUB Ricerca e Innovazione
      - Lower Austria: Additive Manufacturing Voucher" ("3D Druck Bonus")
      - East NL: Tailor made solution + subcontracting
      - Aragon: Open Call and CDTI loans
      - Trentino: 'Law 6 Open Call'

    BUT

    - …Operational Programmes as main sources of (limited) opportunities
- Report being **validated**, then circulated
- Towards a 'regional funding instruments' **repository**

IDEA CONSULT thinking ahead

Next steps – Calls for regional policy makers

1. **Populate the Regional Funding Instrument repository with existing opportunities**
   - Please submit instruments here *(information about Characteristics of cases and associated Funding needs are available on the online form*)
   - Based on this, elaboration of a 'matrix' of regional funding opportunities
2. Promote the following combination '3D Printing – Demonstration activities – Cross regional collaboration' in own **S3 / Operational Programmes**
3. **EDIHs** – 3D printing part of the targeted scope? Interactions among 3DP Pilot members for establishing EDIHs networks

Costs and associated funding needs : 3DP Pilot insights based on a selection of cases

	Application-specific projects	Coordination of 'Platforms' (one demo case and/or broader overarching platform)
Consortium and activities	Industry-led (one or more companies) cross-regional partnership (SMEs – FCs/tech Providers). Type of companies: from start-up to medium-sized company.	Multi-sided platform enabling generation and implementation of demonstration projects in key emerging areas
Role of regions	SMEs from the region in the lead and/or Facility Centres providing demonstration services.	Facility Centres and technology providers part of the network.
Phase 1 (demonstration activities) costs and funding needs	- From **80k to 400k/project** - 40-50% Private co-funding/contribution (funding mainly SMEs own costs) and public **grants** 50-60% (from 40k to 200k)	- Selection, Coordination and Management (252k€/year) (exl. Investment in new equipment). - **Grant** (800k-1M€) needed to support is activities during the first four years of existence.
Phase 2 (industrial uptake) costs and funding needs	- Costs of industrial uptake estimated from **250k to 4M** (depending on the project) - Private contribution (equity or debt) from 40% to 60% (depending on the project) to be complemented by government supported **equity/loan** (or private grant)	
Results	IRR higher than 56% and EBITDA above 4M€ at year N+3 *(one examplary case)*	

Opportunities at EU level
I3, selected HE IAs and RIAs

Interregional Innovation Investments (I3) – A focus on “Strand 1 (Innovation Actions) for mature partnerships” (1/2) (DRAFT!)

- **ERDF,** 3 strands of actions (EUR 570M), Strand 1: 279,3M
- **3DP Pilot** active contributions to generation and characterizations
- **Projects**: “Value chain investment” projects facilitated by interregional ecosystems; “Combination of activities, actors and strategic networking, interlinking firms, sectors and borders”
- **Type of Investment:** Interregional Investments in companies (TRL 6 -8) to accelerate the market uptake/ commercialisation. Uptake of innovative technologies /solutions/services scaling up of regional and local innovation in S3 strategic priority areas
- **Eligible costs:** expenditure linked to productive investments /demonstration/piloting in companies with possibility to cover part of the coordination costs up to 7%
- **Applicant:** Public authority on behalf an S3 quadruple helix partnership, signing the grant agreement and redistribute the grant to final beneficiaries (SMEs) composing the portfolio
- **Final beneficiaries:** mainly SMEs
- **Total Budget**: EUR 279,3 M; Budget per call is around EUR 40 M to finance around 4/5 grants (2-10 Investment projects per grant/portfolio) Average size of the grant EUR 8/10 M (value of the project portfolio in a specific value chain).

I3 – A focus on “Strand 1 (Innovation Actions) for mature partnerships” (2/2)

- Still **lacking** definite crucial information BUT…
- …Coming months are obviously relevant moment for **identifying/developing further our projects’ portfolios**
- **Next Steps:**
  - Communicate on key definite characteristics when ready;
  - Elaboration of a 3DP Pilot Strategy and Action Plan (in coop with Vanguard);
  - Implementation.

HE Selected RIAs and IAs– Action Plan

1. Presentation (today)
2. Interest in a listed Call ? Looking for complementing a consortium?

   ➔ Please fill in / consult (1 sheet per Call) the following document (members only): here
3. Interested in another Call ?

   ➔ Please put the reference of the Call in the Chat or contact jean-francois.Romainville@ideaconsult (Call to be then included in online document)
4. Possible short-term outcomes towards proposals submissions: flexibility!
   a) Call-focused meetings with interested partners (initiated by one partner or the board if critical mass);
   b) Bilateral / multilateral direct interactions.
5. In the meantime, '3DP Pilot Brochure' made available, especially for SMEs in the regions

Slides structure

Topic designation:

Topic title

Open dd/mm – dd/mm

- Open and close of calls

X mio. – X Projects

- Indicative budget per project and number of projects funded

X to Y

- TRL: Projects expected to start at TRL X and achieve TRL Y by the end of the project

RIA/IA/CSA

- RIA Research & Innovation Actions
  - 100% funding
- IA Innovation Actions
  - Enterprises: 70%; Partnership: 60%;
    NPO: 100%
- CSA Coordination & Support Actions
  - 100%

Timing for Horizon Europe calls – Suggestion

2021 Calls: Deadline 15 July 2021

Topic
- Topics choice and partner contact **before end of March**

Consortium
- Consolidation of consortia, value chains, project ideas **before end of May**

Submission
- Writing and submission of proposals between **June and July**

2022 Calls: Deadline 12 January 2022

Topic
- Topics choice and partner contact **before end of August**

Consortium
- Consolidation of consortia, value chains, project ideas **before end of October**

Submission
- Writing and submission of proposals between **November and January**

A selection of Additive Manufacturing related or focused Horizon Europe calls

HORIZON-CL4-2021-TWIN-TRANSITION-01: RIA

03: Laser-based technologies for green manufacturing (RIA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

5-7 mio. – 4 Projects

START:  FINISH:

3-4 to 6

- **Expected outcome:** Make European industry leader in agile and green manufacturing through laser technology, make processes more versatile and efficient through data exchange and improve environmental sustainability towards ‘first-time right’ processes with 30% lower consumption of resources compared to the state of the art.

- **Scope :** transmission of very high average and peak power laser radiation without loss or distortion including in the ultraviolet, mid and far infrared spectral range, powerful optical fibres, programmable beam guidance, maximum positional flexibility, free choice of energy distribution, rapid quantitative feedback and beam distribution systems with sub-micrometre resolution and high performance. A further research challenge is the integration of quality sensors in laser-based manufacturing. Edge devices with self-learning algorithms should be developed that can handle the computing requirements in the time required by the system to react with a feedback control action.

- **Consortium and targeted actors:** research institutes, technology suppliers and users.

HORIZON-CL4-2021-TWIN-TRANSITION-01: RIA

03: Laser-based technologies for green manufacturing (RIA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

5-7 mio. – 4 Projects

START:  FINISH:

3-4 to 6

- **3DP expected contributions:** *"Machine tools include various laser-based technologies such as milling, turning, grinding, laser processing, surface treatment, sintering, forming and additive manufacturing. Projects funded under this topic should integrate state-of-the-art high-power lasers and tailored beams together with quality sensors and real time monitoring systems into advanced manufacturing and re-manufacturing tools."* 3DP experts would help integrate state-of-the-art high-power lasers and tailored beams together with quality sensors and real time monitoring systems into advanced manufacturing and re-manufacturing tools.

- **Practical contribution:** contribute to at least three use cases, build on existing research, provide a business case and strategies for transferring developed technologies to other industrial applications.

- **Further research aims:** build on existing standards or contribute to standardisation. Additionally, a strategy for skills development associating also relevant social partners must be presented.

HORIZON-CL4-2021-TWIN-TRANSITION-01: RIA

05: Manufacturing technologies for bio-based materials (RIA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-6 mio. – 4 Projects

START: FINISH:

4 to 6

- **Expected outcome:** Demonstrate relevant scale production of innovative bio-based products to substitute traditional materials with high environmental footprint, develop products with similar or better mechanical, physical and chemical properties, demonstrate disruptive innovation of bio-based materials production in at least three different manufacturing value chains and develop sustainable business models for materials sourcing and recycling.

- **Scope:** The 2020 Circular Economy Action Plan aims at making sustainable products the norm in the EU. Rapid progress in manufacturing technologies using new and alternative materials, such as biomaterials, is one of the drivers of this trend. The use of reusable and recyclable products based on bio-based materials should increase substantially in order to build a truly sustainable manufacturing industry. Technologies should provide a valid alternative to conventional materials with a range of applications for example in construction, food, medical, packaging and textile industries.

HORIZON-CL4-2021-TWIN-TRANSITION-01: RIA

05: Manufacturing technologies for bio-based materials (RIA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-6 mio. – 4 Projects

START: FINISH:

4 to 6

- **3DP expected contributions:** "*Optimisation and improvement of smart manufacturing processes, e.g. additive manufacturing, injection moulding, extrusion etc., to unlock the full potential of biobased materials, such as carbon-positive bioplastics, biopolymers and other fibre-based materials (e.g. cellulose-based components and marine-based components)." AM stakeholders can contribute u*se cases on bio-based materials, material circularity, novel carbon-based materials and composite solutions and challenges for industry, also relating to standardisation.
- **Practical contribution:**
  - provide a business case and strategies for transferring the developed technologies to other industrial applications and areas.
  - build on existing standards or contribute to standardisation. Additionally, a strategy for skills development associating also relevant social partners must be presented.
  - build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms.
- **Further research aims:**
  - unlock the full potential of biobased materials in AM, such as carbon-positive bioplastics, biopolymers and other fibre-based materials (e.g. cellulose-based components and marine-based components);
  - achieve high technical properties while lowering environmental footprint;
  - combine the use of different bio-based materials to facilitate refurbishing and remanufacturing of products to achieve circularity by design;
  - adapt existing or new characterisation methods and quality controls for the bio-based materials in different formats and for new and regenerated products;
  - support the creation of a skilled workforce, through training/qualification of personnel related to AM

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

12: New breakthrough technologies for technological sovereignty in construction (IA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

10-15 mio. – 2 Projects

START:  FINISH:

5 to 7

- **Expected outcomes:**
  - integrate new breakthrough technologies in additive manufacturing, robots/robotic, etc. into construction activities, including maintenance, diagnostics and monitoring;
  - demonstrate the impact of the use of these new breakthrough technologies on the efficiency of resources (raw materials, water, etc.) and the reduction of waste and embodied CO2 emissions;
  - demonstrate the safety of these breakthrough technologies on a construction environment in cooperation with workers;
  - improve the wellbeing of the construction sector workforce.
- **Scope:** digitalisation and automation of construction sector, in view of improving safety on construction sites and attracting a younger workforce
- **Consortium and targeted actors:** start-ups, SMEs, large construction firms

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

12: New breakthrough technologies for technological sovereignty in construction (IA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

10-15 mio. – 2 Projects

START: FINISH:

5 to 7

- **3DP expected contributions:** *"Integrate new breakthrough technologies such as additive manufacturing, robots/robotic, etc. arms into construction activities, including maintenance, diagnostics and monitoring."* AM stakeholders can contribute their knowledge and use cases on the integration of AM practices into construction standards, practices and technologies.

- **Practical contributions:**
  - demonstrate developed solutions in at least four diverse construction sites (such as roadwork, bridges, tunnels, different types of buildings, etc.) across different countries in Europe;
  - develop solutions for monitoring the wellbeing of the workforce and prevention of accidents taking into account gender and intersectional perspective;
  - include a business case and a dissemination and exploitation strategy;
  - contribute to the development of new relevant standards or update of existing ones.

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

19: Improvement of the yield of the iron and steel making (IA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-5 mio. – 3 Projects

START:  FINISH:

6 to 8

- **Expected outcomes:**
  - for demo cases, achieve a metal recovery efficiency up to 90% and a mineral recovery efficiency of up to 80%;
  - minimise CO2 emissions in the iron recovery and productions process;
  - new technologies for onsite characterisation of ferrous materials to help standardisation of charge managing practice;
  - Deploy smart sensor and big data analytics in steel plants.

- **Scope:** currently steel and iron making is not efficient, has a high environmental footprint and is not integrated into higher value technologies. Therefore it should be the aim to increase the use of scrap metal and increase the quality finished products in EAF and BF/BOF route

- **Related efforts:** European Partnership on Clean Steel

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

19: Improvement of the yield of the iron and steel making (IA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-5 mio. – 3 Projects

START: FINISH:

6 to 8

- **3DP expected contributions:** *"Enabling the use of obtained by-products in higher value applications (i.e. filtering, coating, additive manufacturing, material for CO2 sequestration, heat accumulator)."* Material suppliers of metal powders to contribute input to enable the use of obtained by-products in AM.

- **Further research aims:**
  - selection and integration of best available and applicable technologies to reduce impurities in post-consumer scrap before melting together, supported by digital smart tools for scrap classification and charge optimization;
  - Development, deployment, and use of smart sensor and dedicated Big Data analytics to develop and further optimize decision-supported systems for helping steel plant operators to increase the process yield and to improve the final steel product quality
  - Development and implementation of highly efficient technologies for recovering metals and mineral fraction from steelmaking residues, including those coming from H2-based metallurgy ones, with high metallic or oxidic fractions

HORIZON-CL4-2022-TWIN-TRANSITION-01: RIA

02: Products with complex functional surfaces (RIA) (1/2) (DRAFT)

Open 12/10/21 – 12/01/22

4-6 mio. – 4 Projects

START:  FINISH:

4 to 6

- **Expected outcomes:**
  - develop more efficient manufacturing processes for products with functional surfaces that contribute to competitiveness and a transition to green and sustainable production flows;
  - significant reduction of the environmental footprint for surface treatments;
  - uptake of treatment technologies in applications for a sustainable society, targeting reductions in energy use and environmental footprint.
- **Scope:** surface treatments gain importance in manufacturing. Complexity and customisation requirements for shape, material and functionality are increasing posing considerable challenges for making new products environmentally friendly.
- **Related efforts:** European Partnership Made in Europe

HORIZON-CL4-2022-TWIN-TRANSITION-01: RIA

02: Products with complex functional surfaces (RIA) (2/2) (DRAFT)

Open 12/10/21 – 12/01/22

4-6 mio. – 4 Projects

START:  FINISH:

4 to 6

- **3DP expected contributions:** *"Surface treatments are an integral part of any manufacturing process. Surface treatments include many disciplines, such as painting/coating/printing (spray, powder, dip coating, inkjet etc.), plating/implantation (electroplating, vacuum plating/coating, etc.), thermal treatments (annealing, thermo-chemical processes, etc.), laser-based treatments (annealing, texturing, etc.), additive manufacturing, micro manufacturing (micro electrical discharge machining, micro milling, etc.) chemical and electrochemical treatments (anodizing, electropolishing, chemical deposition, etc.), biochemical treatments, etching (wet etching, plasma/dry etching, also for texturing)."* Use cases of manufacturing processes for additive manufacturing and micro manufacturing (micro electrical discharge machining, micro milling, etc.)

- **Practical contribution:**
  - creation of a business case and strategies for transferring the developed technologies to other industrial applications and areas. Interoperability for data sharing should be addressed.
  - build on existing standards or contribute to standardisation. Additionally, a strategy for skills development to which social partners should be associated must be present.
  - All projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms.

HORIZON-CL4-2022-RESILIENCE-01: RIA

12: Functional multi-material components and structures (RIA) (1/2) (DRAFT)

Deadline
02/02/22

4-6 mio. –
4 Projects

START: FINISH:

3 to 6

- **Expected outcomes:** demonstrate the combination of precision engineering design with additive manufacturing methods to provide tailor-made joining solutions for dissimilar materials, with the ability to be reused/dismantled;
- **Scope:** the role of new development in additive manufacturing processes with dissimilar materials.

HORIZON-CL4-2022-RESILIENCE-01: RIA

12: Functional multi-material components and structures (RIA) (2/2) (DRAFT)

Deadline
02/02/22

4-6 mio. –
4 Projects

START: FINISH:

3 to 6

- **3DP expected contributions:** *"Evaluation of matching materials properties to the production process to enable the joining of dissimilar materials for AM tools".* Other aspects in advanced manufacturing are also relevant such as quantification of functionalities, properties, quality and lifespan, recycling aspects of composite materials, modelling and simulation.

HORIZON-CL4-2021-SPACE-01: RIA

22: Low cost high thrust propulsion for EU strategic space launchers - technologies maturation including ground tests (1/2) (DRAFT)

Deadline
07/11/21

15-19 mio.
– 1 Project

START:  FINISH:

3-4 to 5-6

- **Expected outcomes:** overarching objective of launch cost/price reduction by 50% by 2030, for the benefit of EU Space programmes implementation and going towards reinforcing EU‘s independent capacity to access to space.
  - Innovation acceleration of enabling technologies (maturing, prototyping, on ground tests)

- **Scope:** the propulsion systems represent a significant part of launch system costs. It is necessary to mature new or optimised low cost effective (lower number of parts, better operability), high performance (high thrust to weight ratio, high specific impulse) and green propulsion concepts, technologies and propellants for high thrust engines.

HORIZON-CL4-2021-SPACE-01: RIA

22: Low cost high thrust propulsion for EU strategic space launchers - technologies maturation including ground tests (2/2) (DRAFT)

Deadline
07/11/21

15-19 mio.
– 1 Project

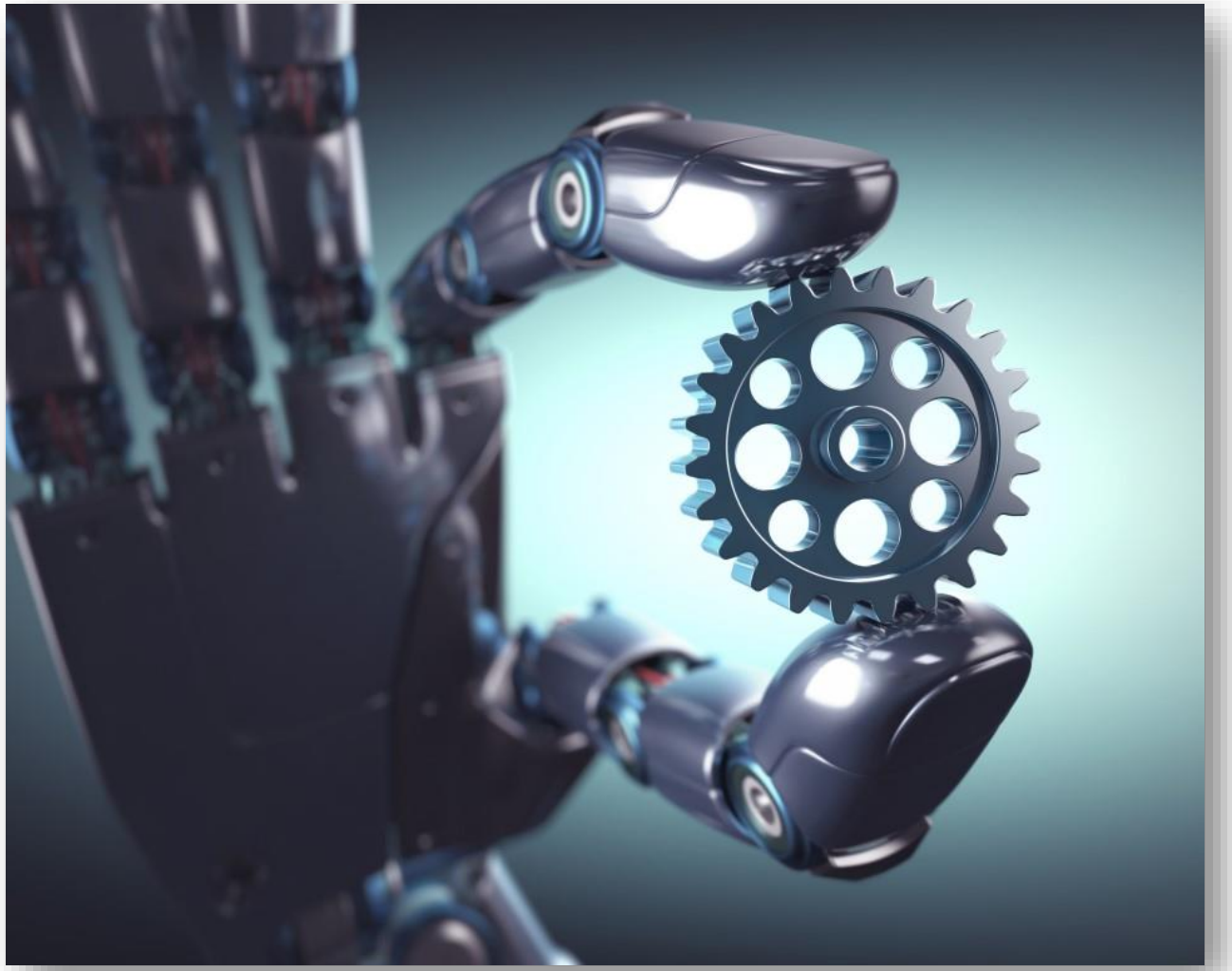
START:

FINISH:

3-4 to 5-6

- **3DP expected contributions:** *"The activities will address one or several of the following areas:*
  - *low cost propulsion,*
  - *throttability,*
  - ***reduced number of parts with extensive application of Additive manufacturing, or new composite technologies,***
  - *maintenance/overhaul,*
  - *associated fluidics."*

Horizon Europe calls related to advanced manufacturing, but non-AM specific



HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

01: AI enhanced robotics systems for smart manufacturing (IA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

8-12 mio. – 3 Projects

START:  FINISH:

5 to 7

- **Expected outcome:**
  - provide safe, highly flexible, reconfigurable and modular solutions, allowing fast response to repurposing changes in production requirements;
  - demonstrate significant improvements towards collaboration by exploiting the latest advancements in AI, robotics and Social Sciences and Humanities (SSH);
  - Create a network of open-access pilots to allow new users, especially students, start-ups, representatives from the makers' community and SMEs, to experiment new technologies and to enable data and knowledge sharing through the European industrial ecosystems.
- **Scope :** Projects should seize the opportunities arising from the latest state-of the art-developments in AI and robotics to deploy intelligent and autonomous systems for flexible production.
- **Consortium and targeted actors:** no information
- **Related efforts:** European Partnership Made in Europe

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

01: AI enhanced robotics systems for smart manufacturing (IA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

8-12 mio. – 3 Projects

START: FINISH:

5 to 7

- **3DP expected contributions:** use cases of smart manufacturing.
- **Practical contribution:** provide a business case and strategies for transferring the developed technologies to other industrial applications and areas. Interoperability for data sharing should be addressed. Research must build on existing standards or contribute to standardisation. Additionally, a strategy for skills development associating also relevant social partners must be presented.
- **Further research aims:**
  - development of robust, easy to use, explainable and compliant AI tools for manufacturing environments that require minimal learning and can be configured without highly skilled personnel;
  - implement and integrate the latest research findings on technologies such as sensors, actuators, control, edge computing, haptic technologies, mechatronics, robotics and autonomous systems;
  - demonstrate complex, safe and efficient collaboration between multiple agents simultaneously;
  - demonstrate results in at least three large-scale industrial use-cases, targeting sectors and tasks typically difficult to automate.

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

02: Zero-defect manufacturing towards zero-waste (IA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

8-12 mio. – 3 Projects

START:  FINISH:

5 to 7

- **Expected outcome:**
  - increase of sustainable production through improved control systems and non-destructive inspection methods;
  - develop methodologies and tools to prevent the generation of defects at component level and its propagation to the system level;
  - create new diagnostic methods for in-situ monitoring
  - ensure reduced production cost and time (through efficient use of materials and repair strategies)

- **Scope :** The projects must address the full production line or system, with an holistic approach, with the aim of reducing defects = enable a “first-time-right” production process. Projects should target types of waste or discarded material from identified defective products that cannot be easily reworked or recycled without significant effort through 2 main elements:
  - The integration of control systems and/or in-line non-destructive inspection methods
  - The use of large data sets and analysis for the creation of machine learning algorithms

- **Related efforts:** European Partnership Made in Europe

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

02: Zero-defect manufacturing towards zero-waste (IA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

8-12 mio. – 3 Projects

START:  FINISH:

5 to 7

- **3DP expected contributions:** use cases in manufacturing proving material savings and efficiency gains.
- **Practical contribution:** provide a business case and strategies for transferring the developed technologies to other industrial applications and areas. Interoperability for data sharing should be addressed. Research must build on existing standards or contribute to standardisation. Additionally, a strategy for skills development associating also relevant social partners must be presented.

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

07: Artificial Intelligence for sustainable, agile manufacturing (IA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-6 mio. – 4 Projects

START:  FINISH:

4 to 7

- **Expected outcome:**
  - improving the environmental sustainability of industrial production
  - improving the agility of European industry and its resiliency to external and internal influences;
  - integrating state-of-the-art AI technologies with advanced circular manufacturing exploiting their potential across the entire product lifecycle;

- **Scope :** Focus on manufacturing and process industries, addressing the entire lifecycle of products and services from design to remanufacturing and including all the aspects primarily relevant for industrial production. The objective is to exploit the potential of AI as a transformation tool to support circular production in the entire manufacturing and process industry

- **Related efforts:** European Partnership Made in Europe and AI, Data and Robotics.

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

07: Artificial Intelligence for sustainable, agile manufacturing (IA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-6 mio. – 4 Projects

START: FINISH:

4 to 7

- **3DP expected contributions:** use cases in AM where AI promotes circular manufacturing.
- **Practical contribution:** provide a business case and strategies for transferring the developed technologies to other industrial applications and areas. Interoperability for data sharing should be addressed. Research must build on existing standards or contribute to standardisation. Additionally, a strategy for skills development associating also relevant social partners must be presented.

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

08: Data-driven Distributed Industrial Environments (IA) (1/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-8 mio. – 4 Projects

START:  FINISH:

5 to 8

- **Expected outcome:**
  - develop sustainable data-driven manufacturing and process industries through efficient data processing and notably at the edge of the network;
  - demonstrate the use of open systems available and qualified open source software tools for data monitoring & collection as well as data analytics;
  - improving the agility of European manufacturing industry, including with agile, secure and easy-toi mplement non-public 5G systems, leading to more resilient production processes
  - foster industrial data and distributed computing standardisation.

- **Scope :** To reach the opportunities of sharing and exploiting industrial data, including deep industrial data. Computing, storage and networking technologies will have to show also flexibility along the industrial value chains and promote the introduction of new business models. Projects are encouraged to develop toolkits of open hardware, software and toolware, and qualify the use of these to provide opportunities to SMEs to further automate and digitalise their manufacturing, through, for example, OPC-UA and Administrative Shell (AAS)

- **Related efforts:** European Partnership Made in Europe.

HORIZON-CL4-2021-TWIN-TRANSITION-01: IA

08: Data-driven Distributed Industrial Environments (IA) (2/2) (DRAFT)

Open 15/04/21 – 15/07/21

4-8 mio. – 4 Projects

START:  FINISH:

5 to 8

- **3DP expected contributions:** use cases in AM of data sharing between industry stakeholders.
- **Practical contribution:** provide a business case and strategies for transferring the developed technologies to other industrial applications and areas. Interoperability for data sharing should be addressed. Research must build on existing standards or contribute to standardisation. Additionally, a strategy for skills development associating also relevant social partners must be presented.

HORIZON-CL4-2021-RESILIENCE-01: RIA

26: Sustainable Industry Commons (RIA) (1/2) (DRAFT)

Deadline
29/09/21

2-4 mio. –
2 Projects

START:  FINISH:

3 to 6

- **Expected outcomes:**
  - develop tools to support industry in sustainable production and consumption of goods, by embedding circular economy strategies;
  - develop ontology based data documentation for the application domain to facilitate
  - interconnection by data exchange between designers, manufacturers, users and collectors of used/waste products;
  - reinforce European industry capacities and adapt to the new trends in the areas of sustainability and digitalization, and contribute to the development and/or creation of standards;
  - increase competences for data handling among the potential data users (e.g. by providing trainings).
  - ensure high visibility of project results and user-friendly, open access to data and ontologies

- **Scope:** to develop tools for industry to enhance efficiency and contributing to less waste and emissions while improving material/product/process quality all along the lifecycle of a product/service system. The proposals should have a holistic approach, with a minimum of three demonstrators/use-cases, covering the entire material/product/process life cycle and proving the interoperability of data across the life cycle stages across industry domains.

HORIZON-CL4-2021-RESILIENCE-01: RIA

26: Sustainable Industry Commons (RIA) (2/2) (DRAFT)

Deadline
29/09/21

3-6 mio. –
2 Projects

START:

FINISH:

3 to 6

- **3DP expected contributions:** use cases in LCA and improvement of durability, reusability, recyclability, recycled content, product reparability of components.

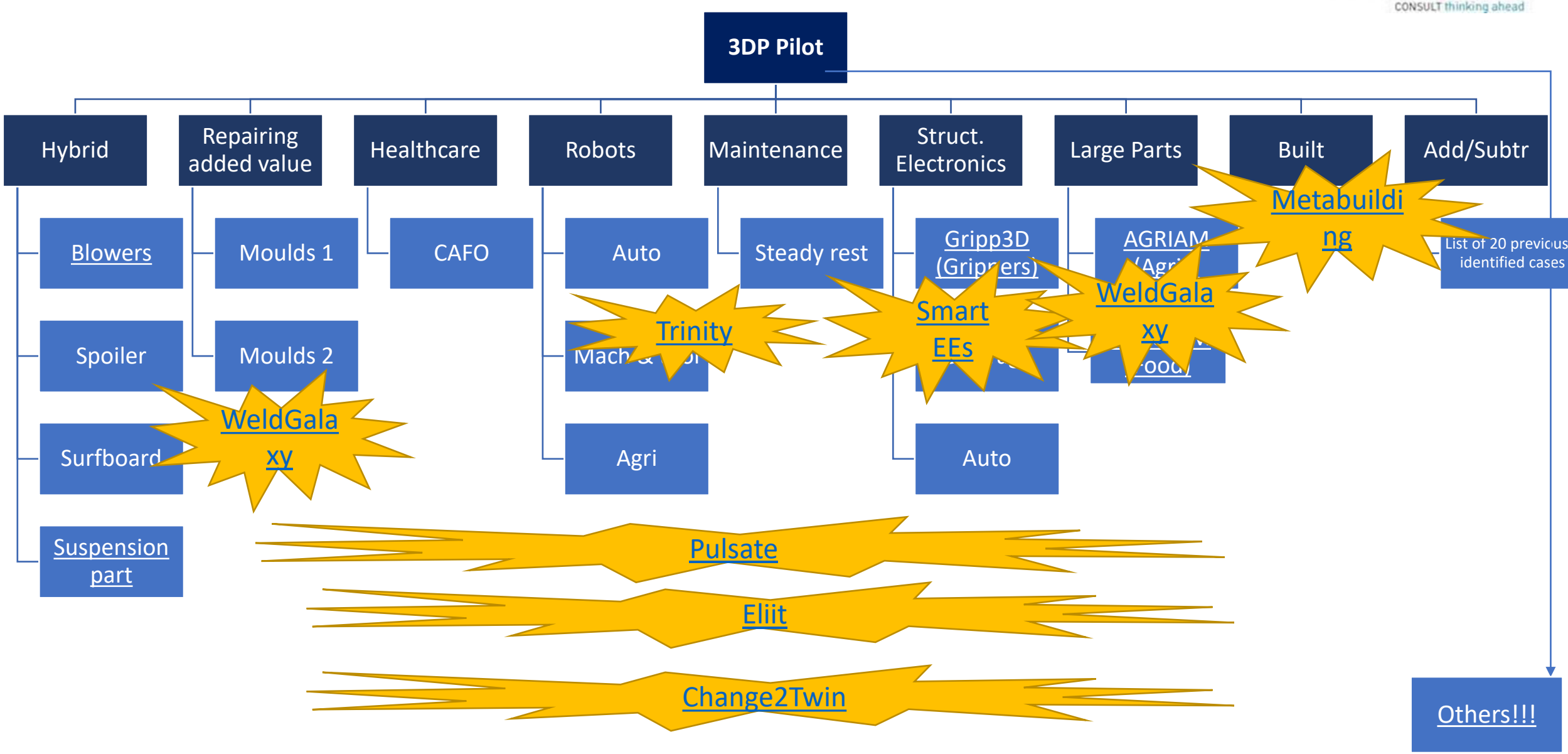
Opportunities at EU level
Current Cascade Funding Opportunities

Cascade Funding Opportunities – Action Plan

1. Presentation (today)
2. Interest (incl. connections with SMEs interested) in a cascade funding opportunity ? Looking for complementary expertise?

   ➔ Please fill in / Consult (1 sheet per Call) the following document (members only): here
3. Bilateral / multilateral direct interactions towards proposals submissions
4. In the meantime, 3DP Pilot Brochure made available, to be circulated among SMEs in the region

The 3DP Pilot 'Portfolios' of projects – Illustrative overview in early 2021



3DP Pilot Members FAQs	Trinity	Pulsate	WeldGalaxy	SmartEEs	Metabuidling
Scope of the Call and linckages with 3D Printing	The goal of TRINITY is to increase the agility of manufacturing SMEs in Europe by robotics, ICT and cyber-security. So AM activities fitting under this umbrella are fine. Focus should be in robotics.	LBAAM technology	for ex. WAAM technology	End-user cases targeted, not technologies. If end-user cases requesting 3D printing as an innovative solution: ok.	See Slides 108 onwards
Budget	2nd Open-call, max. 200k€ per project. 300k€ total limit if earlier TRINITY of DIH^2 funding received.	up to 150k EUR per experiment	100k EUR per pilot	100 k€ max (+ in-kind to reach funding rate ≤70% for private organisations)	
Funded Activities	Activities on TRL 5-7. Technical development and dissemination, mostly personnel costs. Equipment depreciation costs only.	TRL 5 to 7	TRL 5 to 7	Technolgy solutions must be > TRL4 Eligible costs are the same as H2020 costs for IA actions	
Cross-border: compulsory/favored?	Cross border compulsory. Additional points from EU-13 partners.	No	No	Compulsory: end-user and technology provider must be from different countries	
Consortia	Consortia of 2-3 partners. SME must lead but other type of partners accepted too.	Consortia including minimum 2 SMEs and/or Slightly bigger companies.	Proposals can be submitted by a single applicant (SME or MidCap) or consortium. Consortia applying to the call must include at least one SME or MidCap.	Elligible are SMEs or MidCaps only. End-user is the applicant in SmartEEs. If identified, technology supplier can be integrated in the proposal.	
Facility Centres: partners and/or sucontractors?	Facility centres can be partners. Critical research tasks should not be subcontracted, services only.	Only as subcontractors (maximum 15% of total grant)	Only as subcontractors (maximum 15% of total grant)	Testing is usually made by the end-user. Who can subcontract though. So, yes, the testing can be integrated inside the application. But must be functional testing and be a minor part of the action.	
Role of FCs	Partners only supporting the work of SMEs. Main focus on the project should be the needs of the SMEs.	(maximum 15% of total grant)	(maximum 15% of total grant)	Invite the end-user to mention the service inside its application	
Distribution of budget among FC partners / subcontractors	Lead SME must receive min. 40% of the total funding amount. Funding amount for all partners is 70% of the project costs.	(maximum 15% of total grant)	(maximum 15% of total grant)	FSTP *Financial Support to Third Parties* is defined by DG CONNECT as a support to SMEs and Midcap only. Other organisations can participate but at their own costs.	

Pulsate

Funded by

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

Looking for innovations in:

Laser-based advanced and additive manufacturing technology

Izabela Zrazinska

Senior Project Manager @Fundingbox

26.02.2021

About US

48 Projects, 9 as coordinator

Manufacturing

I4MS
ICT Innovation for Manufacturing SMEs

Robotics

SPARC
The Partnership for Robotics in Europe

Next Generation of Internet

NEXT GENERATION INTERNET
INTERNET OF HUMANS

Digital Innovation Hubs

DIHNET.EU

Artificial Intelligence

AI4EU

FundingBox

Funded by
I4MS
PHOTONICS21
PHOTONICS PUBLIC PRIVATE PARTNERSHIP

Pulsate

Fostering the PAN-European infrastructure for empowering SMEs digital competences in laser-based advanced and additive manufacturing

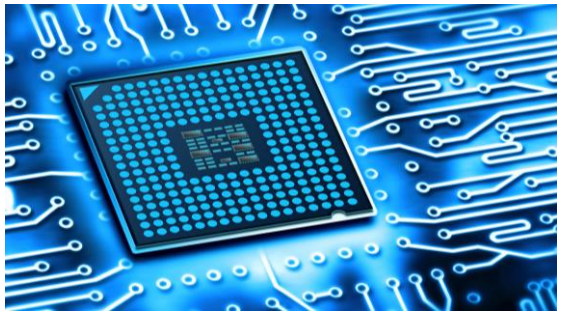
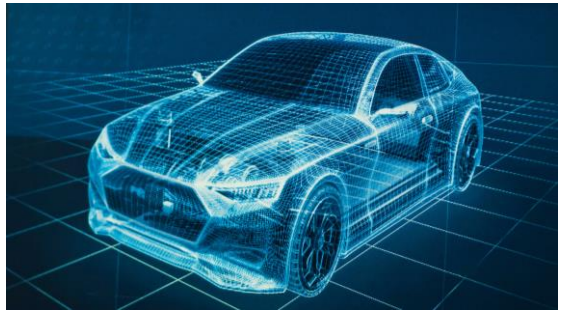
https://www.pulsate.eu/

Revolutionising Markets

LBAAM provide maximal benefits towards flexible manufacturing and highly digitalized production environments

LBAAM technology is particularly beneficial for sectors like aerospace, automotive, medical devices, industrial machinery, customised electronics, and textiles & clothing.



Pulsate

I4MS

Funded by

PHOTONICS21

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

About us

We are a strong consortium to support you with any need for implementing LBAAM technologies

aimen TECHNOLOGY CENTRE

SINTEF

cea

Fraunhofer IWS

CENTER FOR PHYSICAL SCIENCES AND TECHNOLOGY

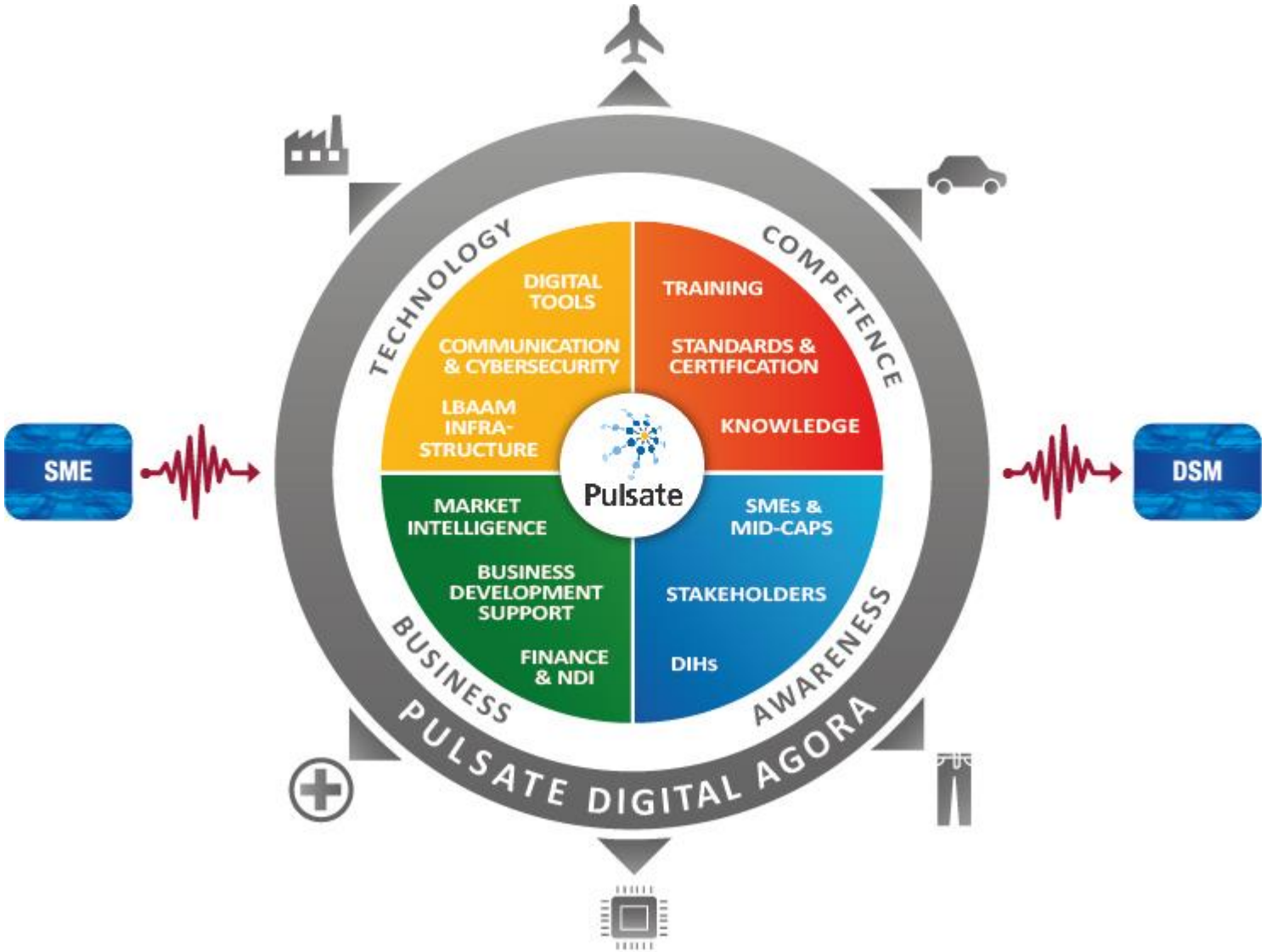
mtc Manufacturing Technology Centre

FundingBox

EPIC European Photonics Industry Consortium

clergo

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 951998


SME
DSM
Pulsate
TECHNOLOGY
COMPETENCE
BUSINESS
AWARENESS
DIGITAL TOOLS
COMMUNICATION & CYBERSECURITY
LBAAM INFRA-STRUCTURE
TRAINING
STANDARDS & CERTIFICATION
KNOWLEDGE
MARKET INTELLIGENCE
BUSINESS DEVELOPMENT SUPPORT
FINANCE & NDI
SMEs & MID-CAPS
STAKEHOLDERS
DIHs
PULSATE DIGITAL AGORA

Pulsate

Funded by

PHOTONICS21

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

Open Calls in a nutshell

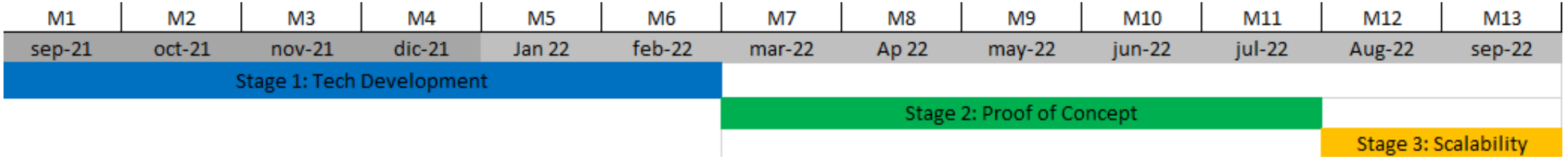
- 4 Open Calls
- 62 projects
- LBAAM technology
- 4.07 million EUR

https://pulsate-opencalls.fundingbox.com/

	TECHNOLOGY TRANSFER EXPERIMENTS	ADOPTERS USE CASES
CALL LAUNCH	1ST: FEB 2021 2ND: Q2 2022	1ST Q1 2022 2ND Q2 2023
WHO CAN APPLY?	CONSORTIA: MINIMUM 2 SMES OR SLIGHTLY BIGGER (TECH PROVIDER AND END USER)	1 SME OR SLIGHTLY BIGGER (END USER)
SCOPE	DEVELOPING, TESTING AND VALIDATING THE TECHNICAL AND ECONOMIC VIABILITY OF NEW TECHNOLOGIES IN LBAAM	PERFORM A TECHNICAL/ECONOMIC FEASIBILITY STUDY FOR THE IMPLEMENTATION OF LBAAM TECHNOLOGY
NO. SELECTED PER CALL	10	21
FUNDING	UP TO 150.000 EUR	UP TO 25.000 EUR
DURATION OF SUPPORT PROGRAM	13 MONTHS	3 MONTHS

What are the benefits?

- Technical support from industry experts
- Business Mentoring led by FBA
- Up to €150k funding per experiment
- Media exposure
- Access to private & public investment

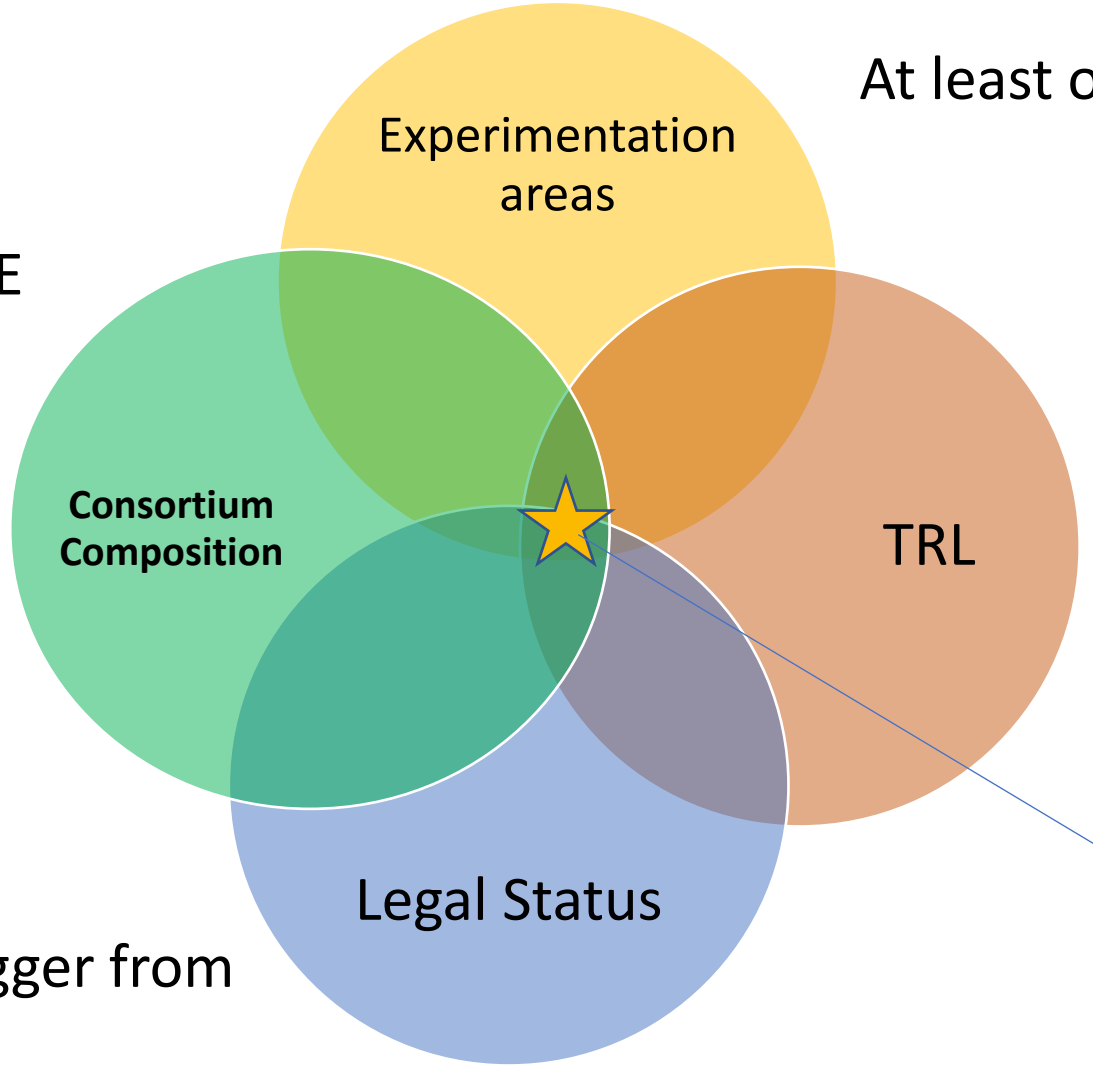


PULSATE Technology Domains	High Power Laser based Applications	Micro/nano fabrication	Additive Manufacturing	LBAAM Digitisation
CCs	Fraunhofer, MTC, AIMEN	FTMC, MTC, AIMEN	CEA, MTC, AIMEN	SINTEF, CEA, AIMEN

Who are we looking for?

Minimum one
Manufacturing SME

At least one



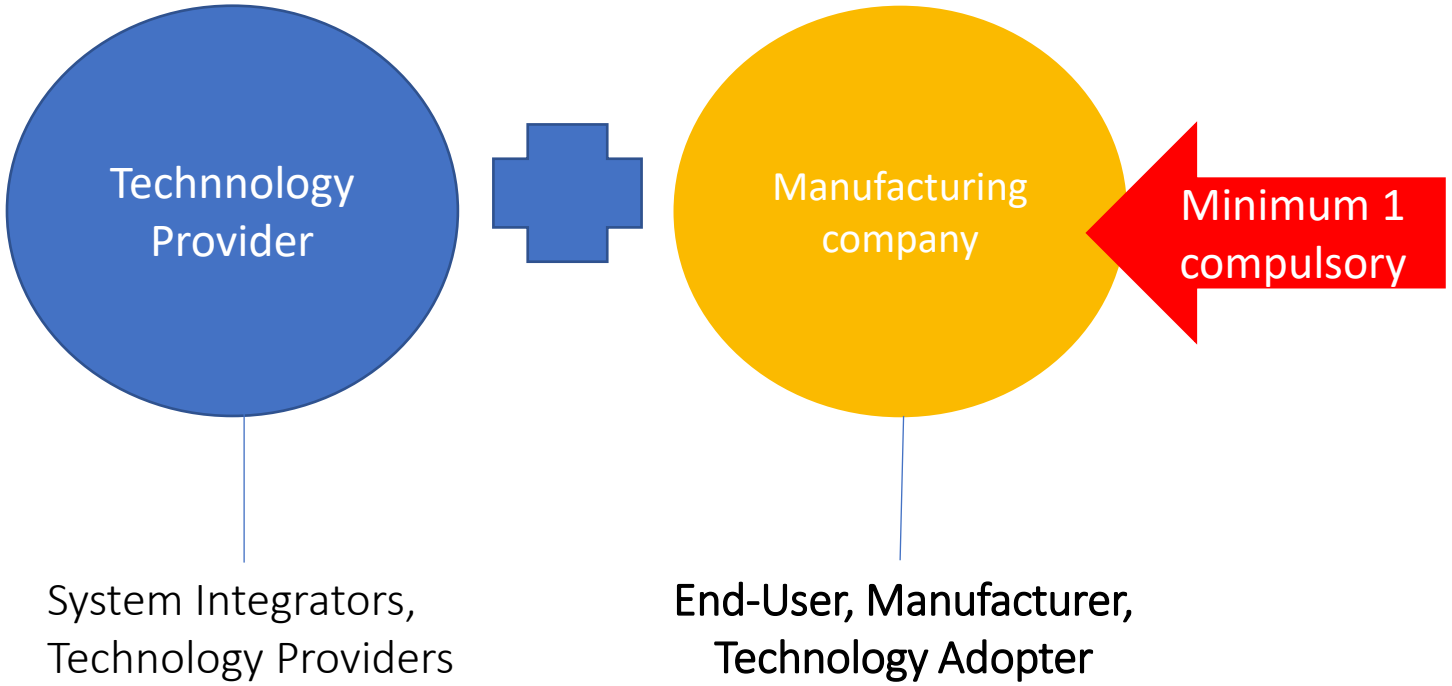
From 5 up to 7

YOUR PROPOSAL

ONLY SMEs or Sligthly Bigger from
EU + assosiated + UK

Technology Transfer Experiments Consortia

The TTEs have to be proposed by a Consortium including **minimum 2 SMEs and/or Slightly bigger** companies acting as :

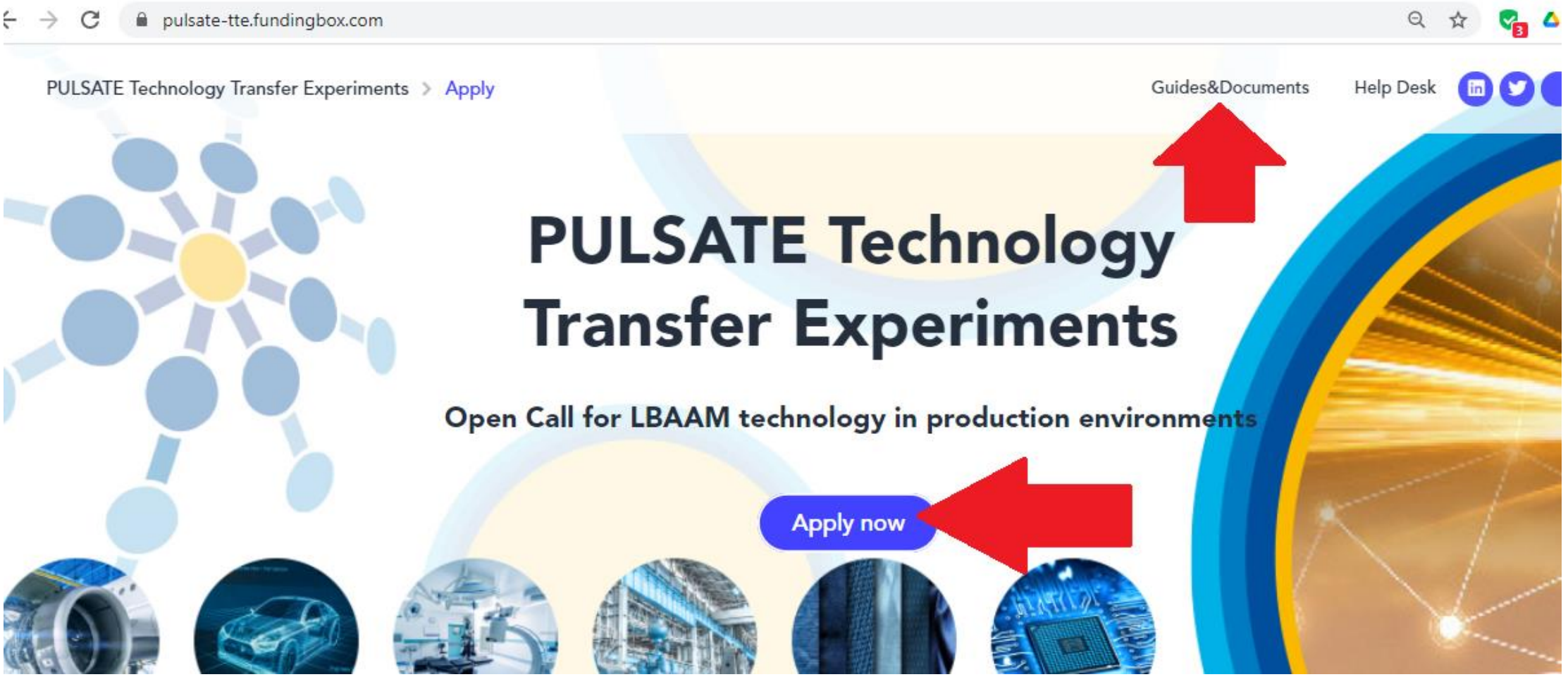


Do not have a partner to apply with?

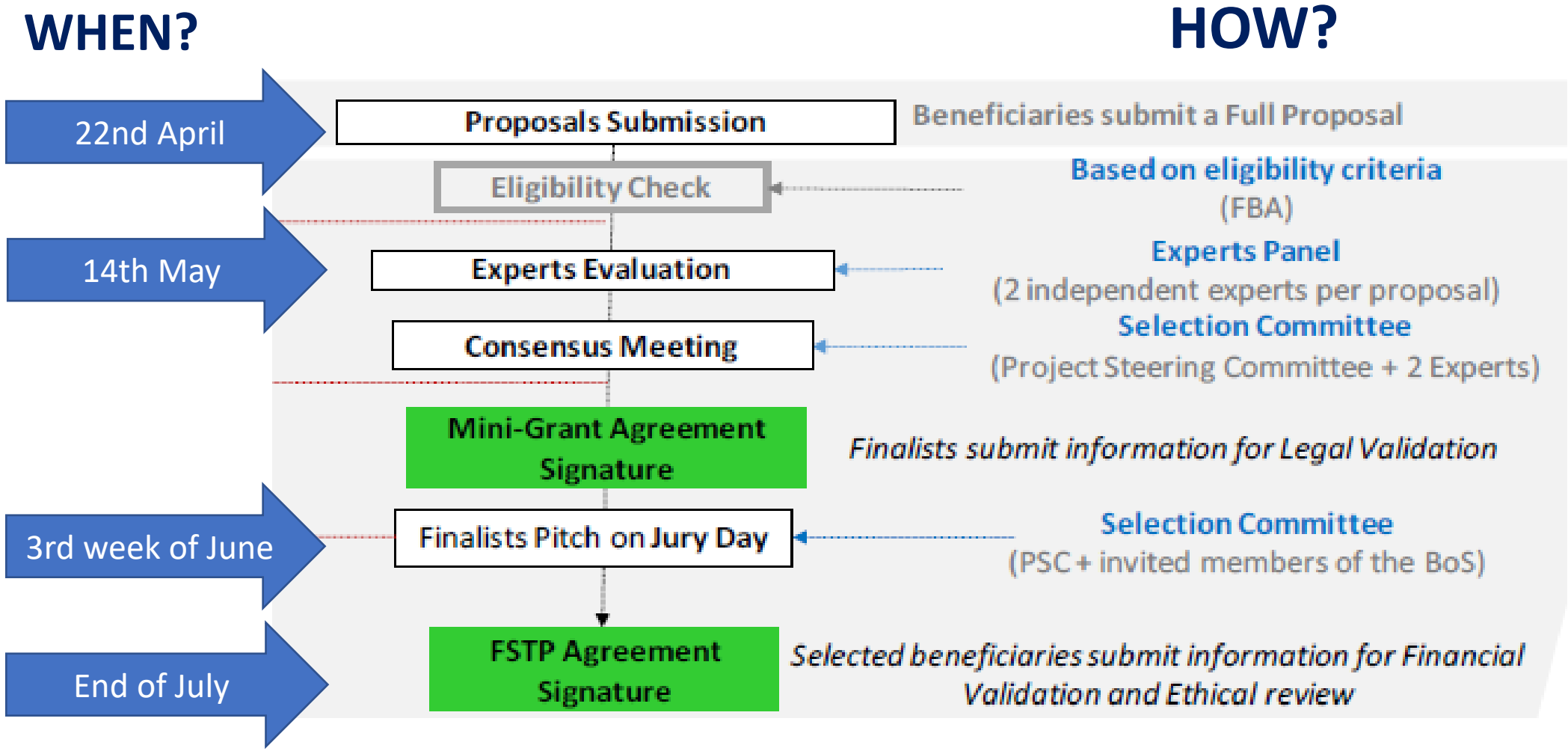
- Submit Expression of Interest: https://pulsate-matchmaking.fundingbox.com/
- Write a post in Matchmaking Community: https://spaces.fundingbox.com/spaces/i4ms-pulsate-networking-matchmaking-1

How to apply?

https://pulsate-tte.fundingbox.com/



Selection Process



Application Form

Funded by

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

GUIDE FOR APPLICANTS SECTION 5

* ✓ Contact information*	
* ✓ Consortium composition and legal info*	View
* ✓ EXCELLENCE: Technology Innovation*	View
* ✓ Market and Social IMPACT*	View
* ✓ IMPLEMENTATION*	View
6 STATISTICAL SECTION	View
* ✓ Declaration of honour on exclusion criteria and absence of conflict of interest:*	View
* ✓ Personal data processing*	View

Follow our series of webinars

Partner/Title	Country	Date and Hour
FRA	Germany	23rd Feb at 9am
AIMEN	Spain	25th Feb at 12
CEA	France	2nd March at 3pm
SINTEF	Norway	9th March at
MTC + FBA: Innovations in LBAAM & Technical Support	ALL	10th March at 3pm
FTMC: Industry Week	Lithuania	23rd March
FBA: Final Countdown Q&A and Tips	ALL	12th April

Pulsate

Funded by

PHOTONICS 21

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

Q&A

APPLY BEFORE 22nd APRIL!

https://pulsate-tte.fundingbox.com/

Mail: pulsate.help@fundingbox.com




Pulsate

Funded by

PHOTONICS 21

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

Thank you for your attention

aimen TECHNOLOGY CENTRE · SINTEF · cea · Fraunhofer IWS · CENTER FOR PHYSICAL SCIENCES AND TECHNOLOGY · mtc Manufacturing Technology Centre · FundingBox · EPIC European Photonics Industry Consortium · clerogo

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 951998.

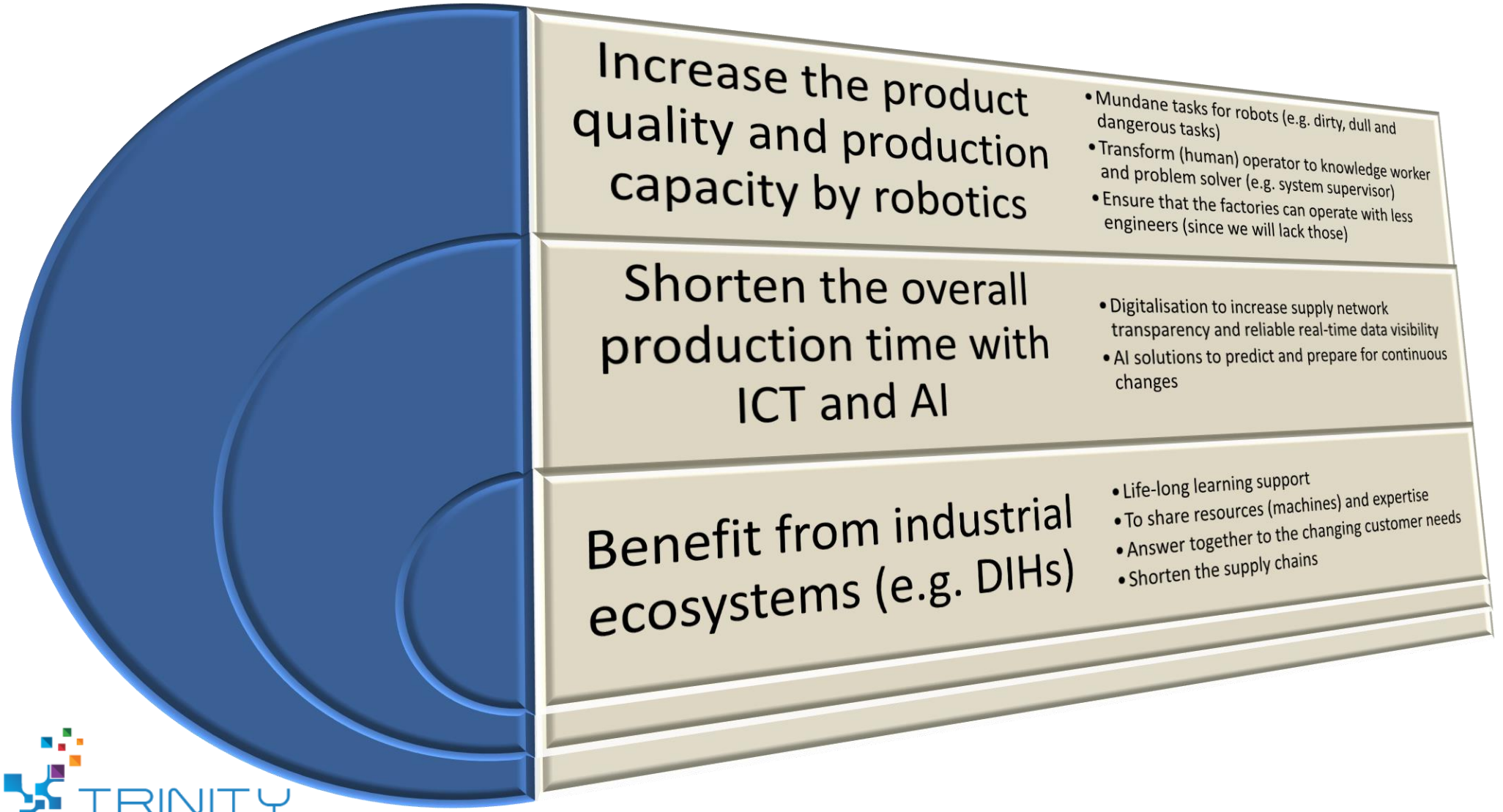
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825196

www.trinityrobotics.eu

Jyrki Latokartano, TRINITY Project Manager

Tampere University, Finland

What we can do to ensure successful business in Europe?



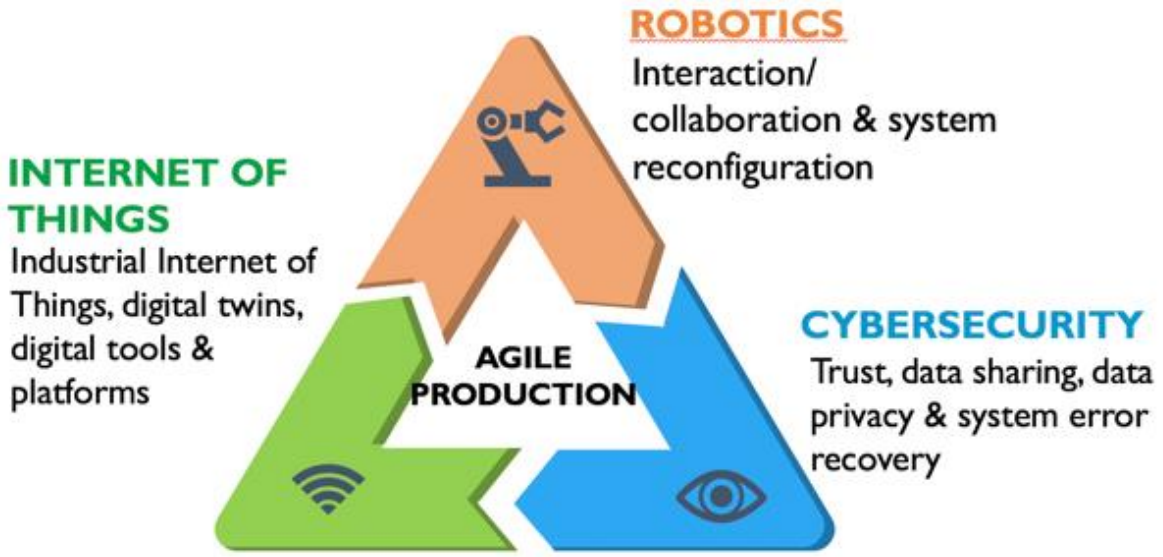
TRINITY

H2020 TRINITY 01/2019 -06/2023

The main objective of TRINITY is to **create a network of digital innovation hubs (DIHs)** composed of Research Centres and University Groups specialized in Advanced Robotics and Internet of Things (IoT), supported by a DIH with experts in Robotics Cyber security to contribute to novel robotics solutions that will increase agility in production.

The second objective is to continue this network after the ramp-up phase, by building a **sustainable business model** throughout the project lifetime.

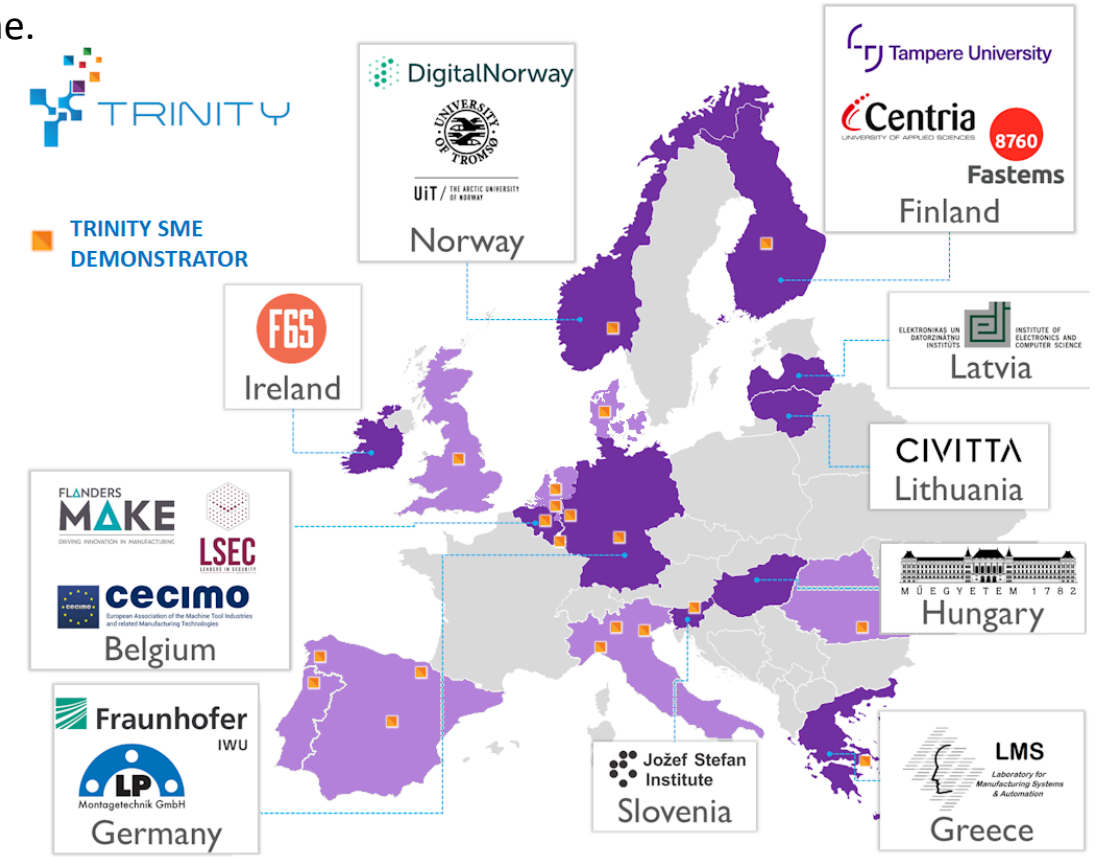
The third objective is to deliver a **critical mass of use case demonstrations** in collaboration with industry to support the industrial modernization leading to more agile production and increase the competitiveness of European companies.



TRINITY

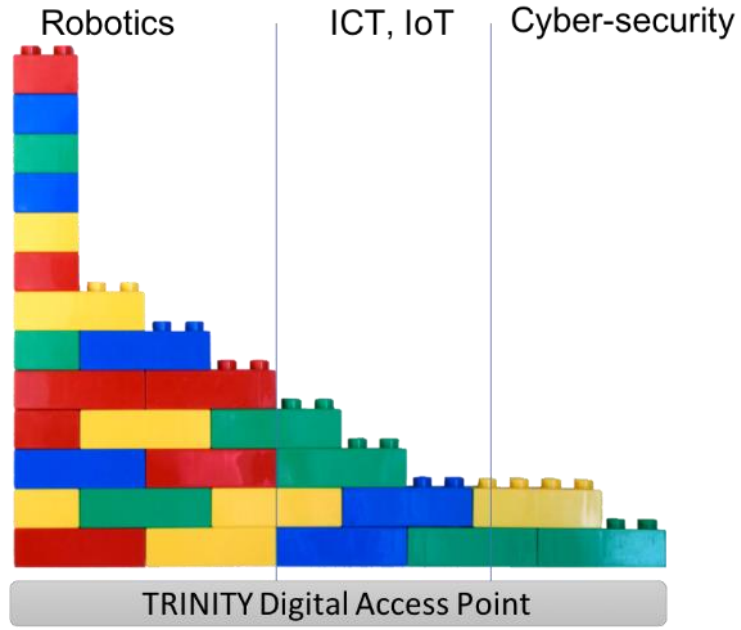
TRINITY

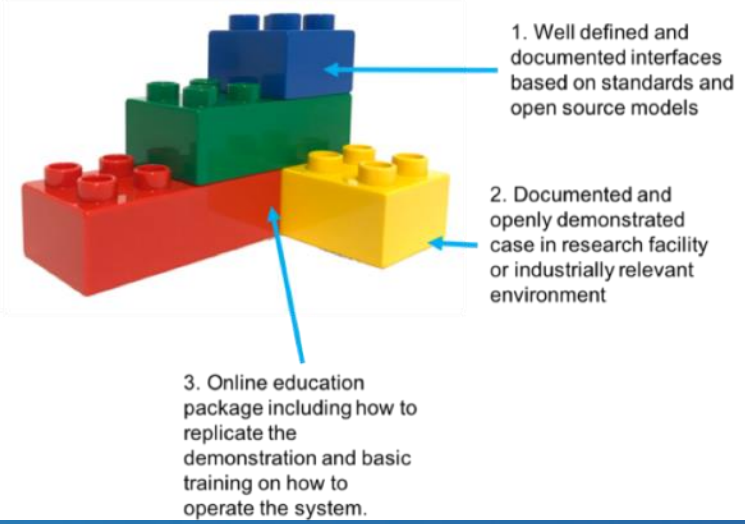
TRINITY SME DEMONSTRATOR



Modular approach

- The main target is to prepare modular and re-configurable use-case demonstrations on the fields of robotics, ICT and IoT, and Cyber-Security.
- External Use-case demonstrators
  - 18 Internal Use-case demonstrators: Each of the internal use case demonstrations include well defined specifications, 'how to set up' tutorials and 'how to use' education packages.
  - 19 External SME-lead use-case demonstrators aiming for the technology and business renewal
- The technologies we use are multi-purpose, and can be combined to fit the purpose.





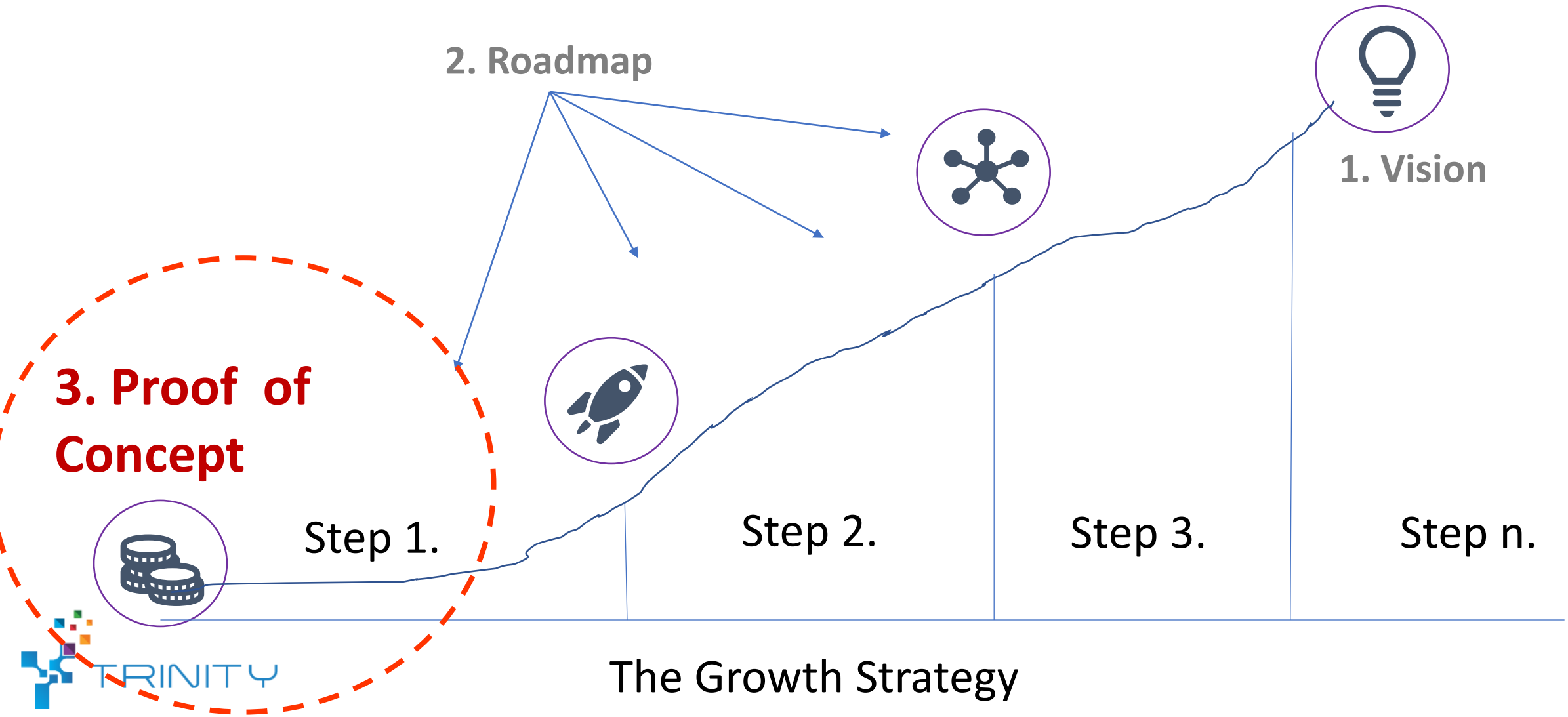
TRINITY

With the TRINITY use case demonstrations

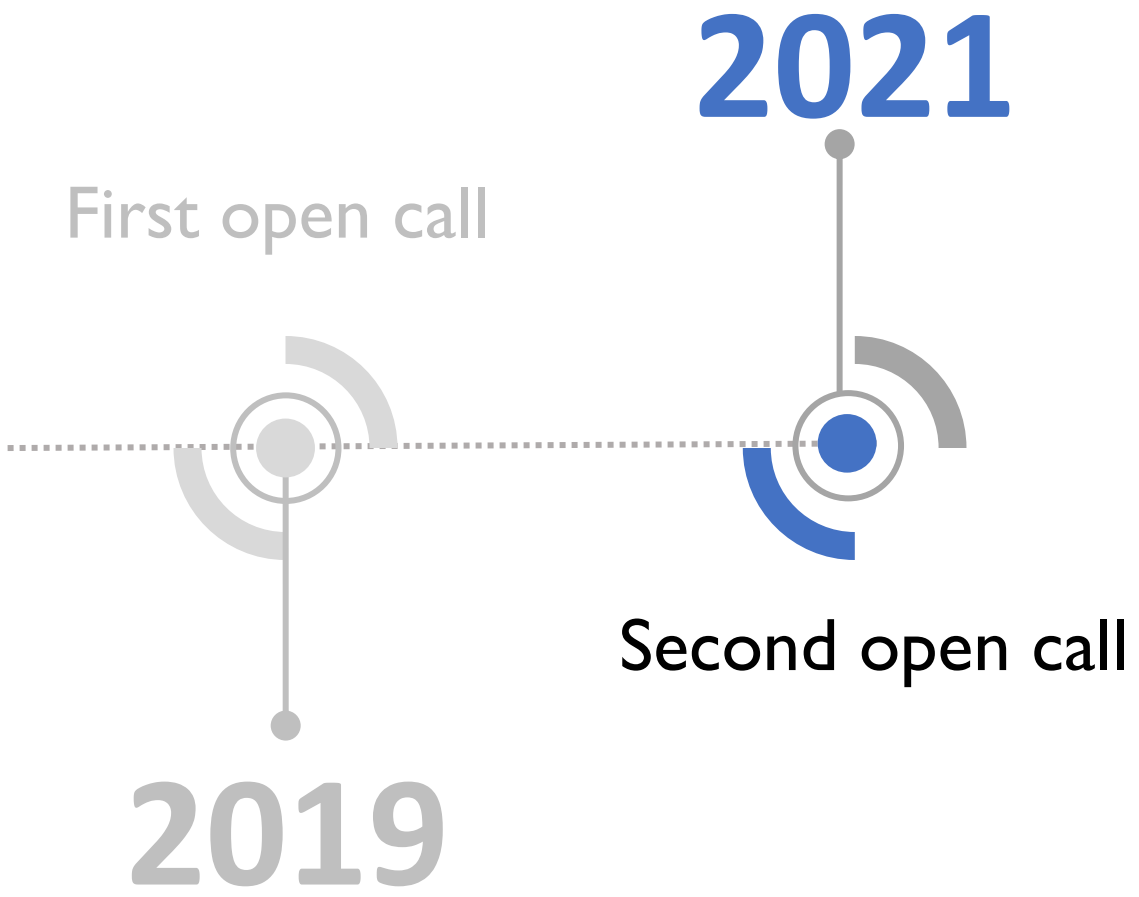
- The overall theme is “Robotics for Agile Production”
- We look forward
  - Novel (for applicant) utilisation of robotics, ICT and cyber-security applications and solutions developed and implemented by or into SMEs
  - Roadmap to success by the applicant
  - Measurable KPIs for outcomes – you decide what these are:
    - Non-value added time is reduced once the development is taken into use
      - Scrap is reduced
      - Quality is increased
      - Productivity is improved
    - New development can be commercialised
    - The company/partners gain new knowledge, competences and sellable items

TRINITY

TRINITY - Open Calls – What we actually fund



Open calls



- **Open Call 2**
  - Call opened 14.2.2021 and closes 1.6.2021
  - 1.7-31.8. evaluation period
  - September contracting
  - 1.10.2021 Demo Program 2 starts

  - Up to EUR 200,000 funding per demonstrator
  - Consortium lead by SME (or slightly bigger)
  - 10 months run-time
  - Must be a consortium of 2-3
  - Must be two countries
  - TRL 5-7
  - Total call budget 3,5 m€

TRINITY

2nd Open Call, 2 possible tracks

€ 3,5m€ → from €50.000 to €200.000

Open Call #2 February 2021 GET READY!

Demo TRINITY

Existing technical modules and their concepts for enhancing, testing & extending

Support available from TRINITY consortium

2-3 partners

- SME
- Partner 1
- Partner2

Novel solutions

Propose your own solution!

2-3 partners

- SME
- Partner 1
- Partner 2

TRINITY

Who can apply?

TRINITY ecosystem invites **small consortia (max 3)** to **plan**, **implement**, and **disseminate** ICT technologies incl. robotics, IoT and cybersecurity **to facilitate agile production** in European companies.

Lead applicant is SME or slightly bigger (less than 500 person, 100m€ turnover)

Consortium members:

- **Technology adopters/ end-users**: SMEs and slightly bigger
- **Technology providers**: Technology SMEs, Competence Centres, Large companies, Research Centres and academia
- EU member states, H2020 associated countries
- 2 countries

Budget and timing

- max 200 000€
- 10 months
- 3 gateways (M1, mid-term, final)
- Min 40% of the budget must go to the Lead SME

TRINITY

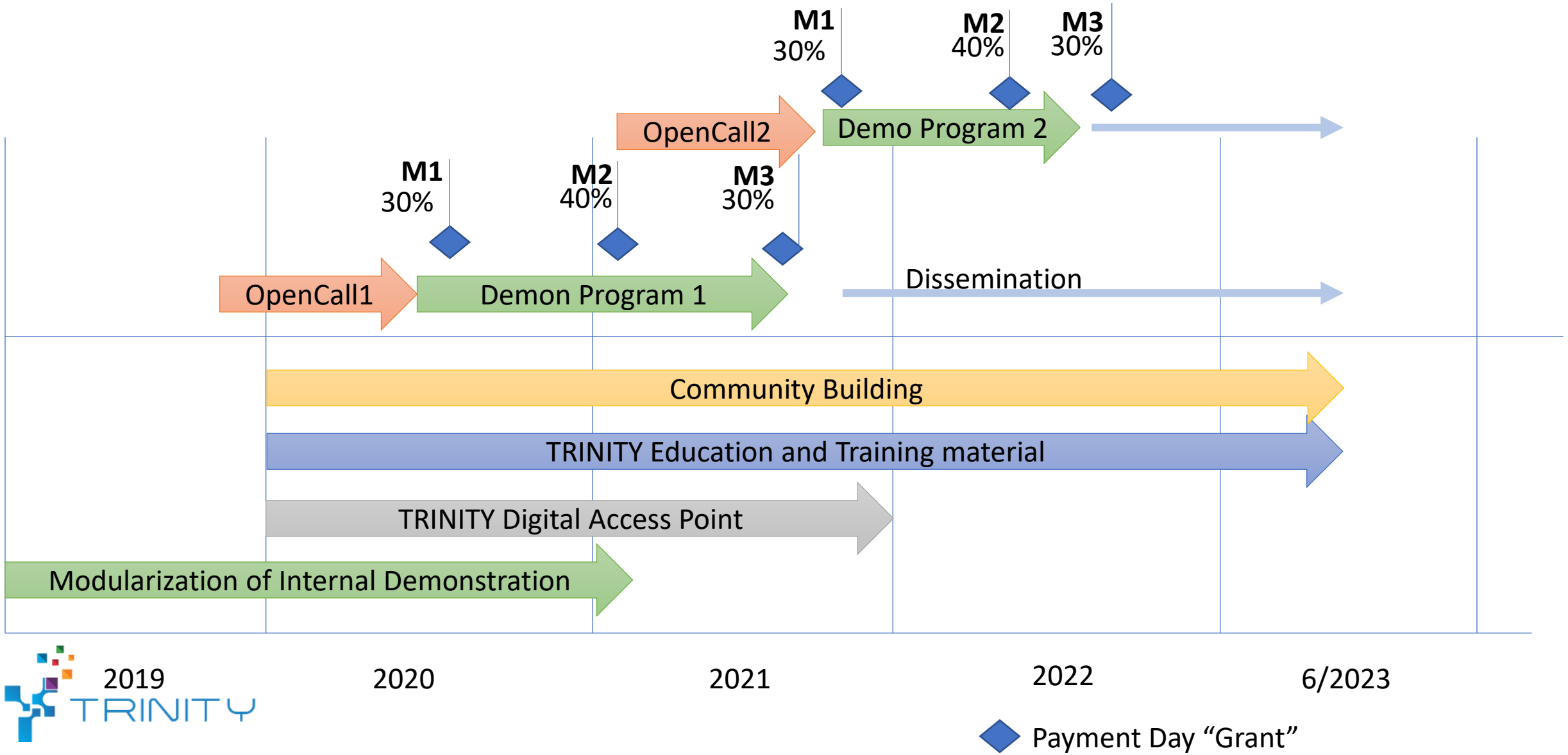
Special targets

- **Cross-country collaboration** (e.g. partners from 2 different countries is mandatory)
- Budget: at least 40% has to go to the Lead SME
- Extra Points:
  - 5 extra points if female(s) in lead roles (in of the consortium members)
  - 5 extra points if using/applying/testing/developing/ extending TRINITY modules
    - Combination of TRINITY+own development is allowed
  - 5 extra points if EU-13 collaboration (e.g. 1 partner is from EU-13)
- Total extra points are 15 in addition to the scores
- The threshold still needs to be reached in all categories

Resource	Score/Threshold
Impact in terms of Industrial relevance and exploitation plans •industrial impact (for partners) • Manufacturing SME → factory floor • System Integrator → markets •potential impact to general advancement of technology (minor role)	0-10 /6 (double points)
Soundness of Concept e.g technical soundness	0-10 /6
Implementation feasibility of the work	0-10 /6
Resources & Consortium: Partners of the consortium (capabilities), Deployment of resources for tasks and goals	0-10 /6
	max 50 max 65 (if all bonus)

TRINITY

Open calls for Demonstration Program 1&2



Expected impact

- Consortia should define on how the impact should be measured e.g. within timeline we as company expect following increases in … and it is measured by following KPIs

1. Industrial impact (for the company/consortium)
   - Manufacturing SME → factory floor
   - System Integrator → revenue, markets
2. Potential impact in general for the industry (secondary role)

- Increased
  - agility of production
  - deployment of robotics
  - use of standards for modules and systems
  - use of ICT and cybersecurity in Factory floor
- Improvement in
  - Turnover & Profits
  - Markets share
  - Collaboration with partners
  - Technology maturity
  - Gender balance and attractiveness (new employees)

TRINITY

How to apply ?

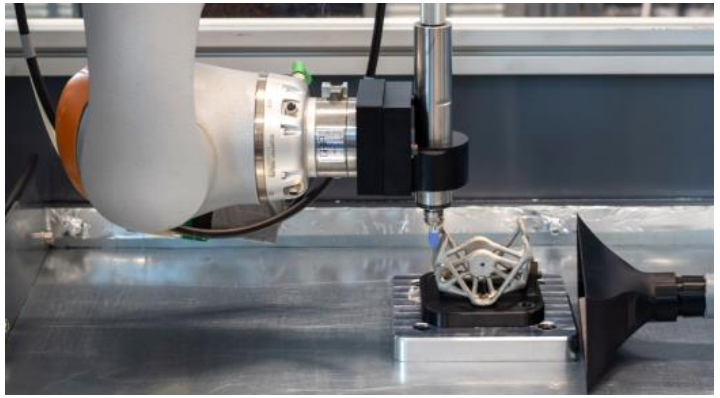
- Build a consortium
- Register at TRINITY webpage
  - https://trinityrobotics.eu/register/
- Find more info and download guideline
  - https://trinityrobotics.eu/open-calls/
- Register for PIC number
  - https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/participant-register
- Submit your application
  - https://www.f6s.com/trinitydihopencall2/apply

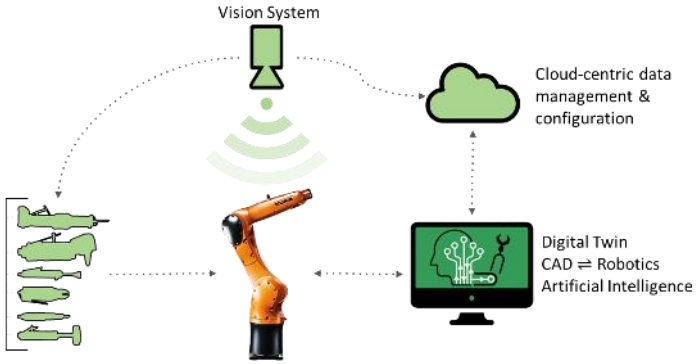
TRINITY

AM related demonstrations from TRINITY 1st demonstration program

- SALSA2d, Separation of Additive-Layer Supports by Automation via 2-way Digital Twin

ADDITIVE AUTOMATIONS · SHEFFIELD ROBOTICS · AMRC ADVANCED MANUFACTURING RESEARCH CENTRE · The University Of Sheffield.



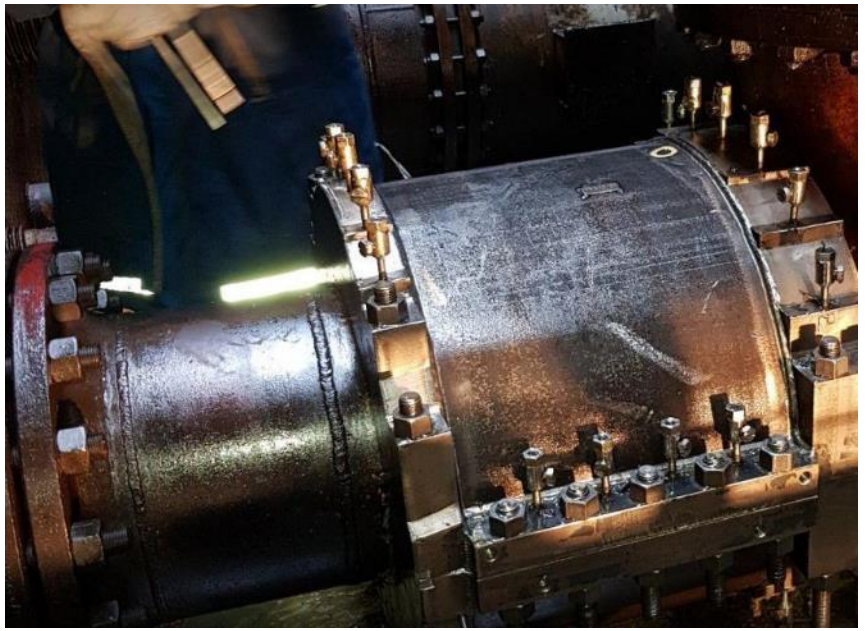


https://www.additiveautomations.com/news/cell-commissioning/

TRINITY

- WAAM CLAMP: Wire Arc Application of Metal Component Linked to Additive Manufacturing for Pipeline Repair

MX3D · TEAM Industrial Services · TiaT Europe NDT - Inspection, Training & Engineering



https://mx3d.com/news/

info@trinityrobotics.eu

@eu_trinity

https://www.linkedin.com/company/euproject-trinity/

3DP Pilot Webinar Funding Opportunities

8th of March 2021

SmartEES2 - at a glance

https://smartees.eu/

Innovation Action: DT-ICT-01-19 (*Smart Anything Everywhere*)

Number of partners: 14 partners from 9 EU countries

Grant: 8M€

Duration: 36 months

Expected results: 47 Application Experiments (AEs)

FSTP 2.9 M€ (37% of the grant)

Open call / 5 cut-off dates

CUT-OFF	DATES
1st Cut-off	05/06/2020
2nd Cut-off	23/09/2020
3rd Cut-off	15/01/2021
4th Cut-off	07/05/2021
5th Cut-off	31/08/2021

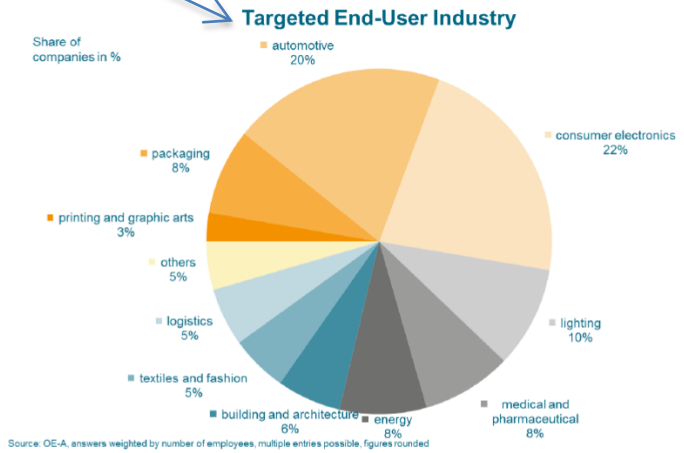
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872076.

DIH – Digital transition

Support the European Industry & reinforce its competitive advantage by providing **acceleration support for the integration of Flexible Electronics into novel products, processes and business models**

Technologies uptake & new businesses

Experimentation
(test before invest)



OE-A Business Climate Survey on General Trends in Organic and Printed Electronics, October 2018

Technologies adoption

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 761496.

SmartEEs2 - Tec services

Table 6: OLAE Applied Technologies (SmartEEs offer).

OLED Lighting (*)	TRL 5-6
Organic Photovoltaics (*)	
Flexible Displays	
Electronics & Components (Technologies/ Electronic design / Device design / Circuit design	
Integrated Smart Systems (Technologies / Software / Firmware) (*)	

(*) Educational / training support available within SmartEEs2 consortium.

Table 7: OLAE Manufacturing Technologies (InSCOPE & LYTEUS offers).

Print	Screen printing (*)	S2S	TRL 6	**Assembly**	Low mix assembly (SMD, bare die, foils)
		R2R	TRL 6		High mix assembly (Packaged die
	Inkjet flex Printing (*)	S2S	TRL 4		Stretch
		R2R	TRL 4		Lamination (*)
	Gravure Printing (*)	S2S	TRL 5	**Inspection**	Electrical testing (*)
		R2R	TRL 4		
	Flexo Printing (*)	R2R	TRL 6		Optical inspection (*)
	Nanoimprint Lithography (*)	S2S	TRL 7		Mechanical testing (*)
	Lift technology (*)	S2S	TRL 6		Reliability testing (*)

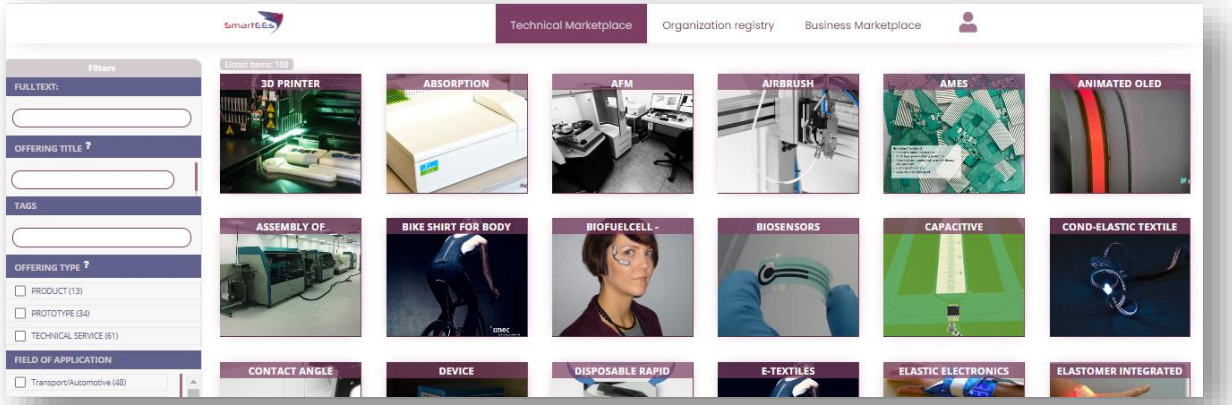
(*) Educational / training support available within SmartEEs2 consortium.

Categories of tec services

Table 8: Other Enabling Technologies (additional offer in SmartEEs2).

Smart Textiles	Printed electronics on fabrics and TPU (*)	TRL 5	**Structural Electronics**	In-Moulding	TRL 4-5
	Fibre placement technology	TRL 5		Thermoforming	TRL 6
	Stretchable interconnection (*)	TRL 5		Overmolding	TRL 5
	3D textiles	TRL 4		Post-process. cutting, slitting, laser	TRL 7
	Weaving/weft or warp knitting structures	TRL 3	**Wearable**	Stretchable devices	TRL 4
	Technical embroidery	TRL 3		Stretchable interconnection (*)	TRL 4
	Hybrid yarns by twisting, braiding & core wrapping (*)	TRL 5		Print on stretchable films (e.g. TPU) (*)	TRL 5
	Additive manufacturing (*)	TRL 4	**Other**	Data Analytics	TRL 5
	Textile surface functionalisation (*)	TRL 5		Mechanical characterisation of yarns & fabrics (*)	TRL 6
	Sheet-core co-extrusion of multilayer thermoplastic coatings (*)	TRL 4		APP development Android & IOS	NA
	Tri component Meltspinning of thermoplastic fibres (*)	TRL 4		Automation assembly lines	TRL 6

(*) Educational / training support available within SmartEEs2 consortium.



https://ecosystem.smartees2.eu/technical-marketplace/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872076.

Open Call / Latest results

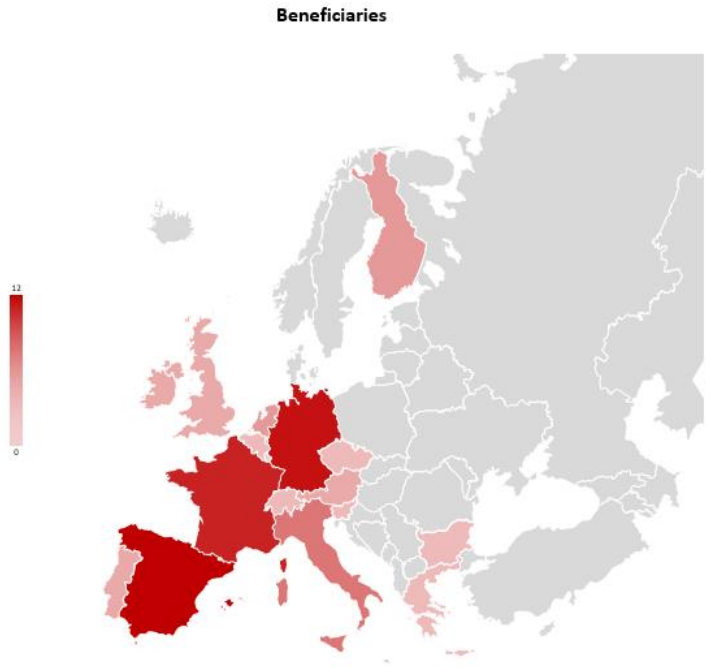
Product's functionalities vs. Sectors

	(AERO)SPACE	BUILDING / CONSTRUCTION	CONSUMER ELECTRONICS	DIGITAL MANUFACTURING	ENERGY	ENVIRONMENT	FOOD & AGRICULTURE	IOT/SMARTCONNECTEDOBJECTS	MEDICAL / PHARMACEUTICAL / LIFE SCIENCE / HEALTH	NATURAL RESOURCES	PACKAGING / LOGISTICS	SAFETY / SECURITY	TRANSPORT / MOBILITY / AUTOMOTIVE	OTHER(S)	Total
ACTUATING	0	0	0	0	0	0	0	2	0	0	0	1	0		3
COMMUNICATING	0	0	2	0	0	0	0	4	0	3	0	0	1		10
COMPUTING / PROCESSING / DATA STORAGE	0	0	0	0	0	0	0	3	0	1	0	0	0		4
ENERGY HARVESTING / CONVERSION / STORAGE	0	2	0	0	0	0	0	3	0	1	0	0	1		7
SENSING	0	1	1	0	0	0	1	0	13	0	1	1	0	8	26
SIGNALLING (OPTICAL IMAGING, LIGHTING)	0	3	1	0	0	0	0	0	6	0	2	0	2	2	16
OTHER(S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	6	4	0	0	0	1	0	31	0	8	1	3	12	

- High demand on Health, Textile & Sports (Others) and Packaging & Logistics
- 4 projects addressing COVID

Data=
SmartEEs data (20 projects)
+SmartEEs2 data (20/47 projects started)

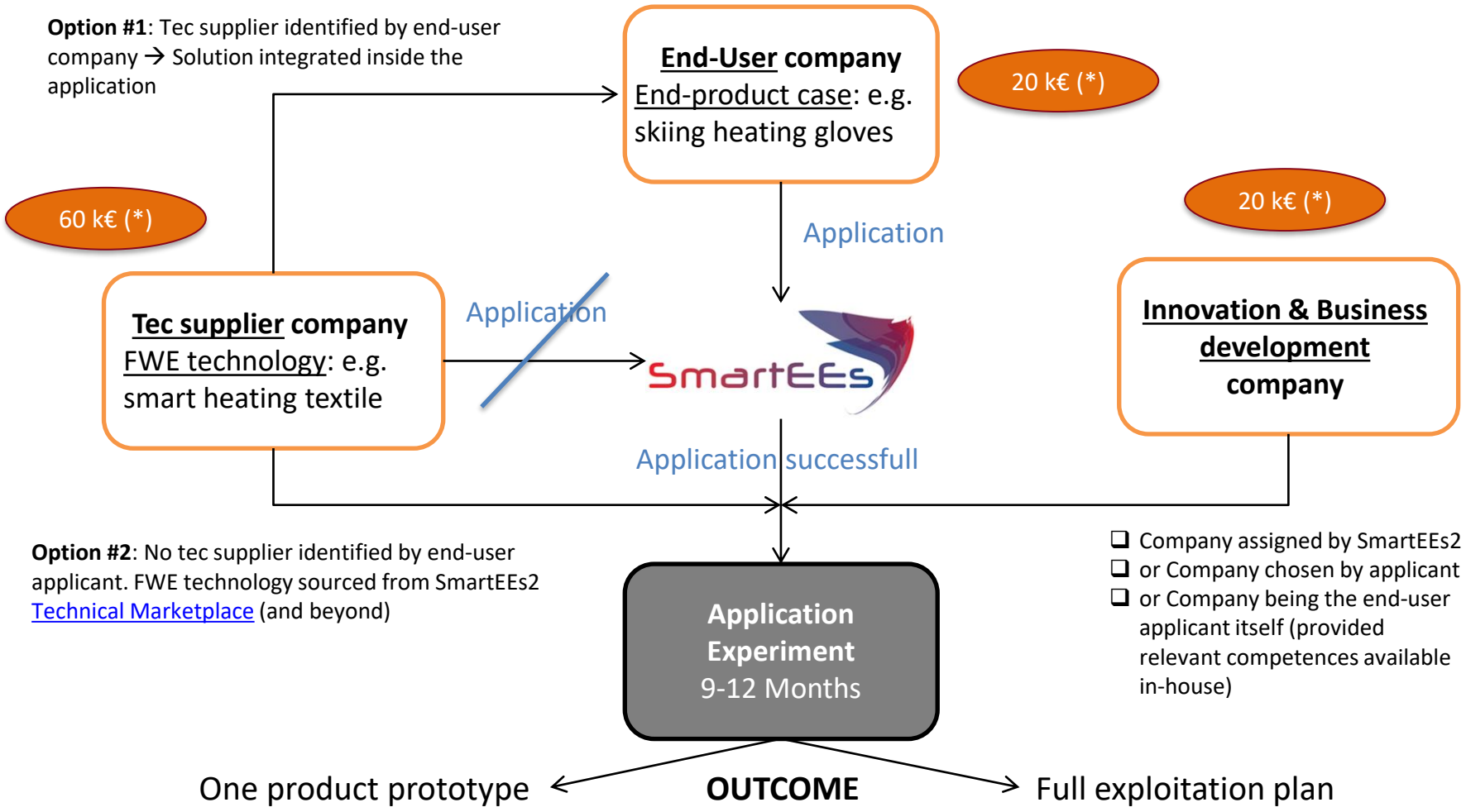
- Beneficiaries are SMEs and MidCaps
- 67 projects to be supported
- 4.1 M€ total support (cascade funding)



Beneficiaries

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 761496.

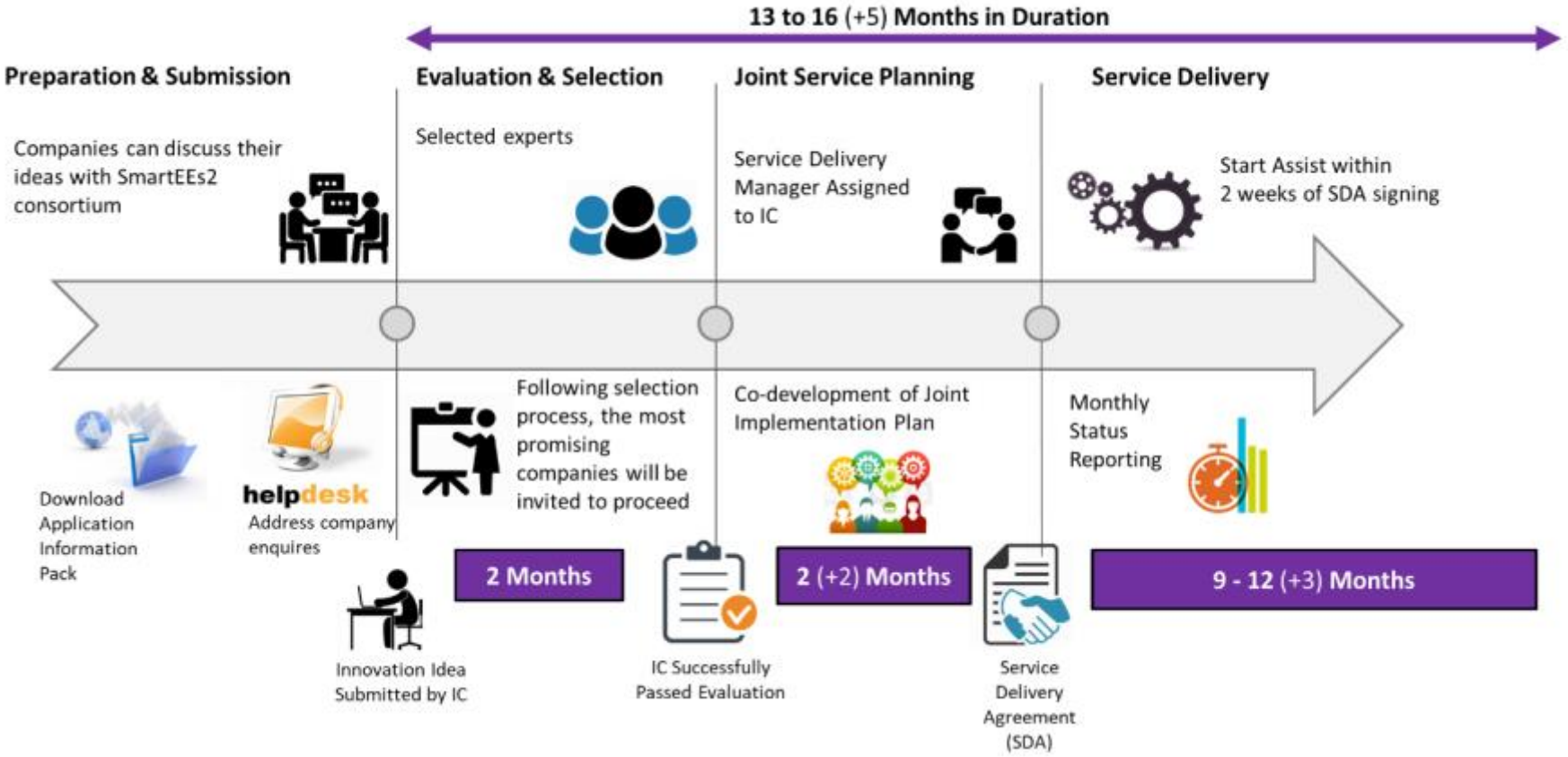
Financial Support to Third Party (FSTP)



(*) FSTP Voucher amount. Additional in-kind contribution requested to reach 70% funding rate maximum (H2020 rule for private companies)

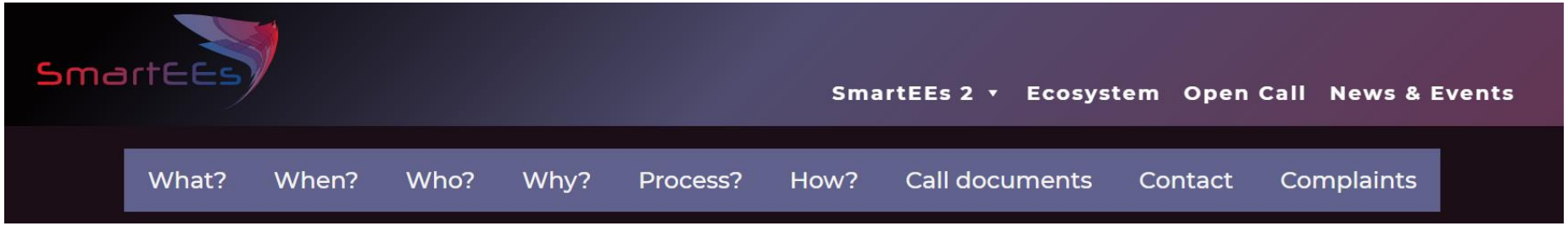
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 761496.

Customer journey



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 761496.

Get started



Open Call page

https://smartees.eu/open-call-smartees2/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 761496.

Q&As

Questions	Answers
Scope: what is the possible role of 3D Printing-related activities in the Open Call? I.e. to what extent 3D printing activities are targeted?	We target end-user cases. Not technologies. However, if end-user cases requesting 3D printing as an innovative solution, fine.
Total amount of Voucher/Grant per project?	100 k€ max (+ in-kind to reach funding rate ≤70% for private organisations)
Which activities (TRLs?) funded and which associated costs?	Again, we don't support technologies but user cases. Technolgy solutions must be > TRL4 Eligible costs are the same as H2020 costs for IA actions
Is cross border cooperation requested and/or promoted (e.g. higher scoring)?	Compulsory: end-user and technology provider must be from different countries
Only one organisation (SME?) submitting an application or can 'consortia' composed of several identified organisations submit an application (i.e. the SME in the lead and beneficiary but 'service' providers already identified) ?	Elligible are SMEs or MidCaps only. End-user is the applicant in SmartEEs. If identified, technology supplier can be integrated in the proposal.
Can 'Facility Centres' (providing e.g. demonstration services like e.g. testing, etc.) not part of the overarching project consortium (e.g. Pulstate) be part of a 'project' consortium submitting an application? Or can they act as subcontractors?	They cannot apply. Testing is usually made by the end-user. Who can subcontract though. So, yes, the testing can be integrated inside the application. But must be functional testing and be a minor part of the action.
If the answer to the previous question is positive, what are the requirements to be part of the consortium and/or act as subcontractor?	Invite the end-user to mention the service inside its application
Any limitations on the budget (from the voucher/grant) used for funding services from Facility Centres / Technology providers?	FSTP Financial Support to Third Parties is defined by DG CONNECT as a support to SMEs and Midcap only. Other organisations can participate but at their own costs.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872076.

THANK YOU!

WeldGalaxy 2nd Open Call: Looking for Arc Welding Innovators

3rd March
12 CET

Izabela Zrazinska, Senior Project Manager @Fundingbox

About US

48 Projects, 9 as coordinator

Manufacturing

I4MS

Robotics

SPARC

Next Generation of Internet

NEXT GENERATION INTERNET

Digital Innovation Hubs

DIHNET.EU

Artificial Intelligence

AI4EU

FundingBox

What is WeldGalaxy?

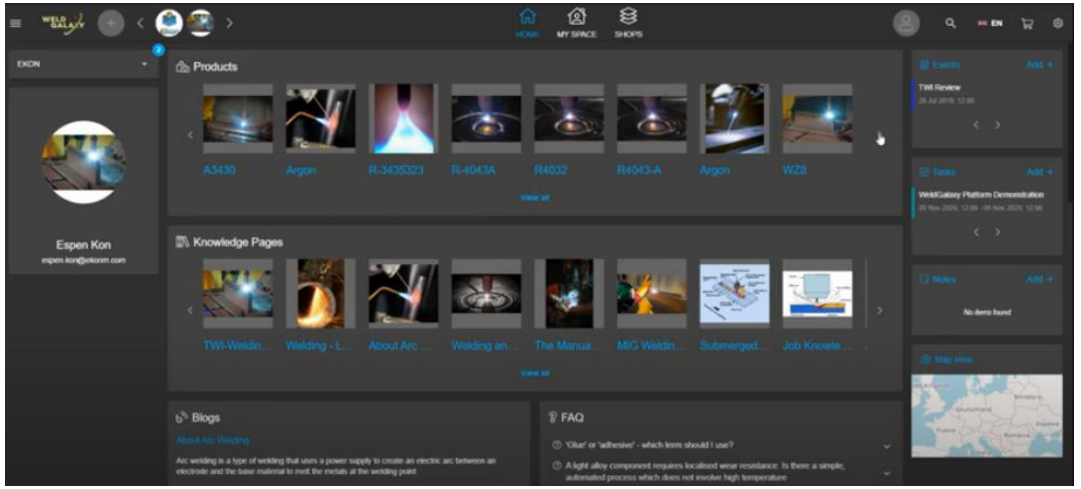
B2B online platform that brings together global buyers (end-users/OEM) and EU sellers. The project has as a goal to enhance the visibility of EU's welding products/services to global users.

WeldGalaxy project has received funding from the European Commission (Horizon 2020 2014-2020) under grant agreement n 822106

What is WeldGalaxy platform?

Our responsive Web-based Platform that integrates:

- Chatbot
- KBE
- DLT base tendering
- AI Analytics
- Ontology
- Simulation



Selected Pilots will become a beta testers of the 'online welding equipment and consumables platform'.

https://www.weldgalaxy.com/

Alpha Version

Open Calls in numbers

€2.5 MILLION
Equity free funding

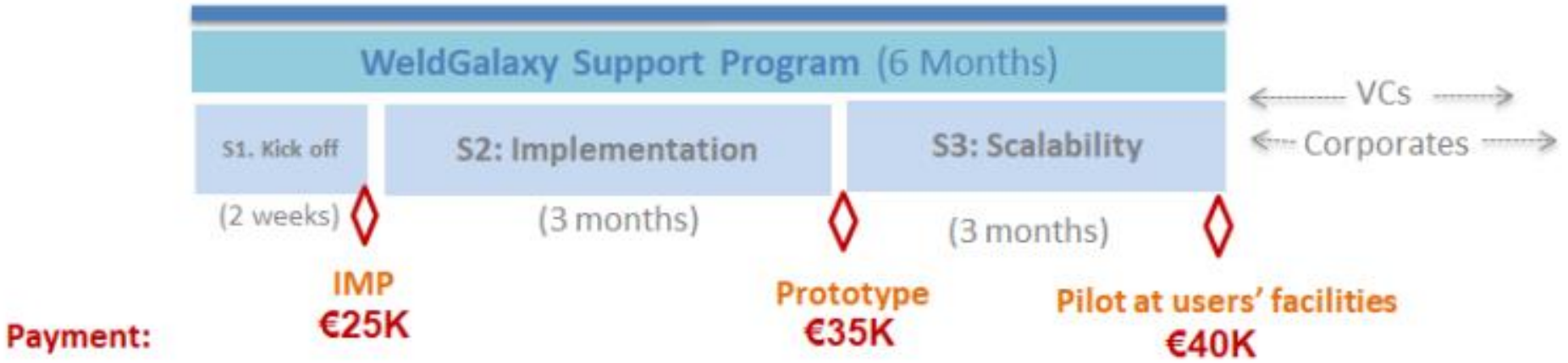
11 partners
From 8 European Countries

2 Open Calls
25 Pilots selected

6-MONTH
Support PROGRAMME

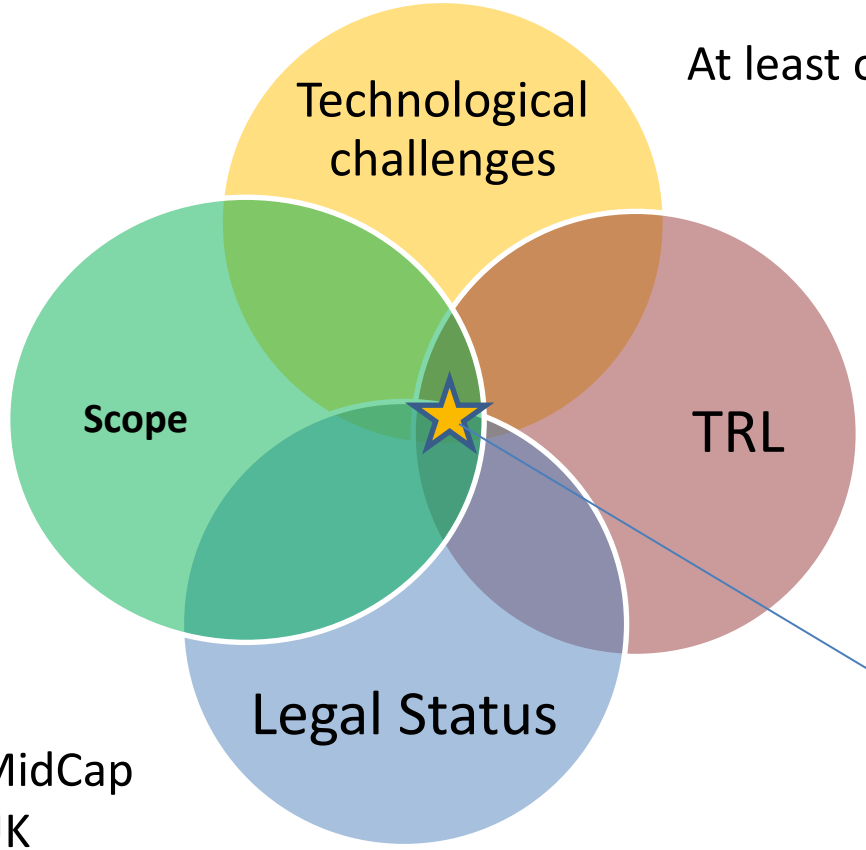
MULTIPLE BENEFITS

- Technical support from industry experts from TWI
- Business Mentoring from FBA
- €100k funding per pilot
- WeldGalaxy platform account
- Media exposure



Are you eligible?

Arc-welding



At least one

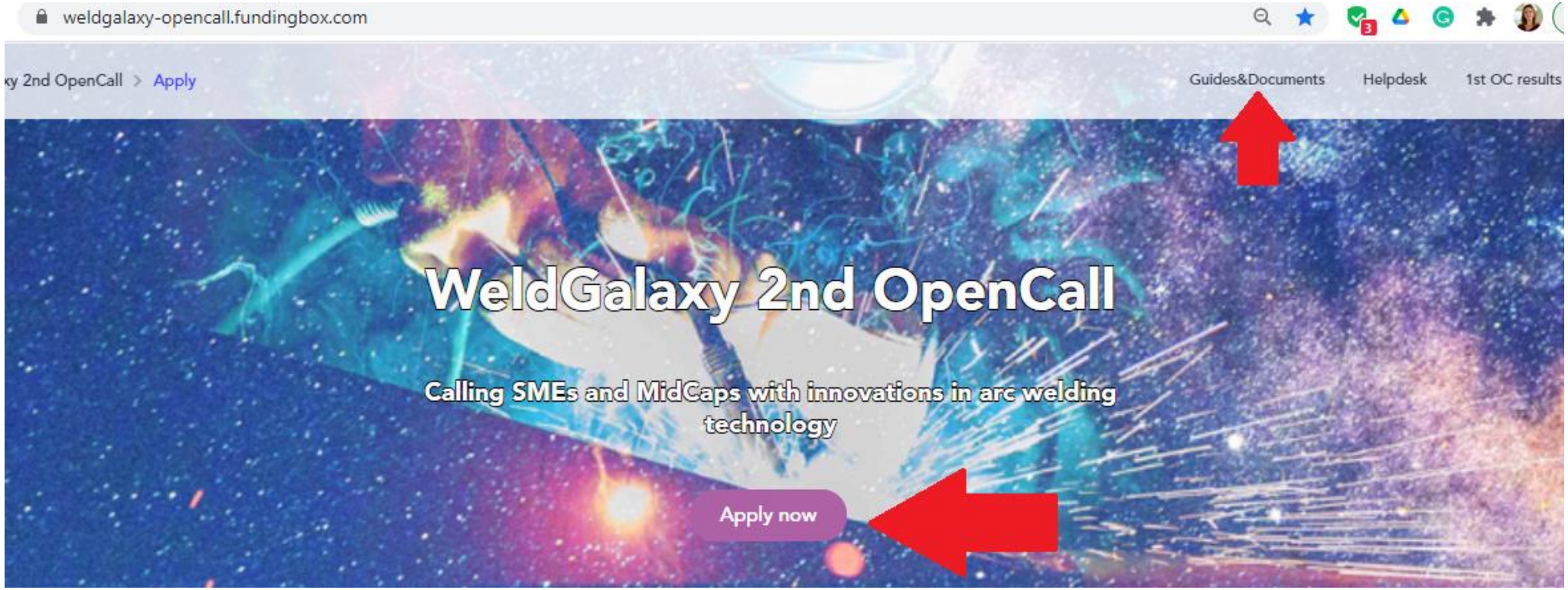
From 5 up to 7

Minimum one SMEs or MidCap from EU + assosiated + UK

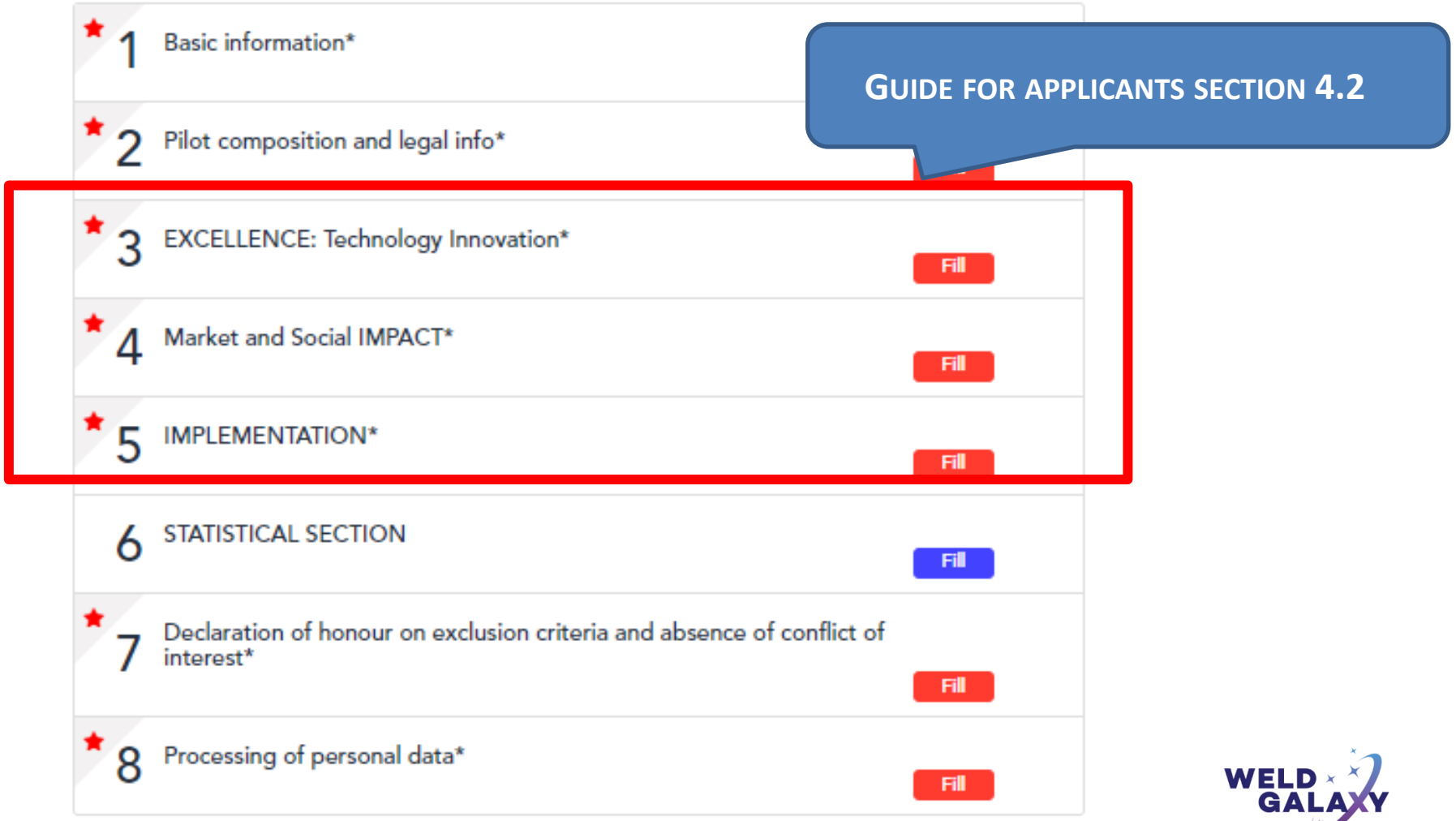
YOUR PROPOSAL

Open Call is open until 29th April

https://weldgalaxy-opencall.fundingbox.com/



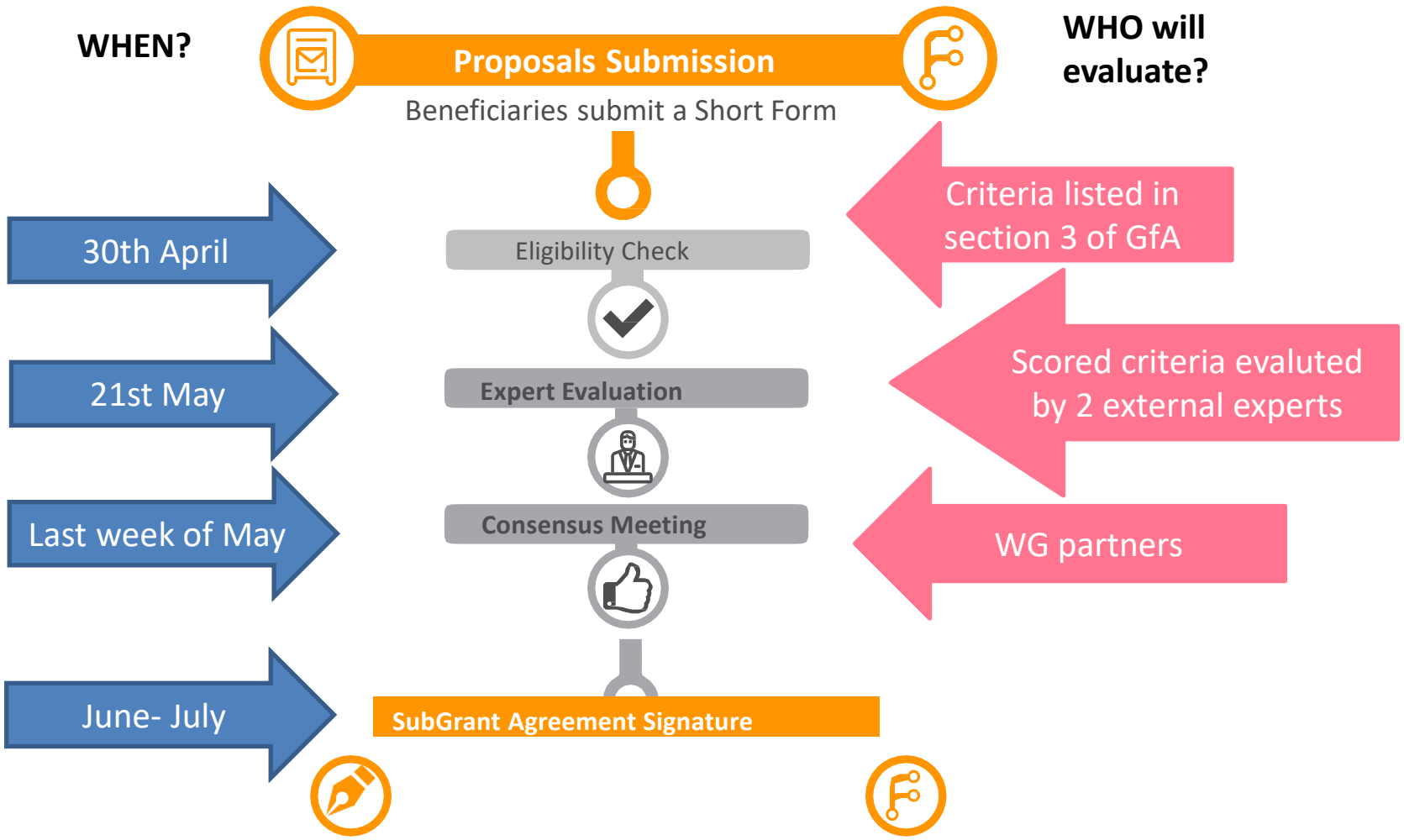
Application Form: basic information



GUIDE FOR APPLICANTS SECTION 4.2

WELD GALAXY

Selection Process:



xarion laser acoustics

NIT New Infrared Technologies

Nissatech innovation centre

REBARTEK

SARKKIS robotics

ABICOR BINZEL

Flex Hex ROBOTICS COMPANY

MX3D

CAVITAR

sentin

Submitted Applications per Country

No submission
1 submission
2 submissions
3 submissions
4+ submissions

Number of Submitted Applications	34
Number of Countries	19

Join our webinars

26.03.2021 WeldGalaxy Innovation Day

Presentation of 1st OC companies + 2nd Open Call

Register

21.04.2021 Final Tips

How to improve your application?

Q&A


Apply before 29th April
https://weldgalaxy-opencall.fundingbox.com/
Mail: weldgalaxy.help@fundingbox.com

metabuilding

Innovation Funding and Support for SMEs of the Built Environment Sector

VI 3DP Pilot Webinar - Funding Opportunities

8th March 2021

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 873964.
The sole responsibility for the content of this presentation lies entirely with the authors and in no way reflects the views of the European Commission.

MOTIVATION

Innovation Funding and Support for SMEs of the Built Environment Sector

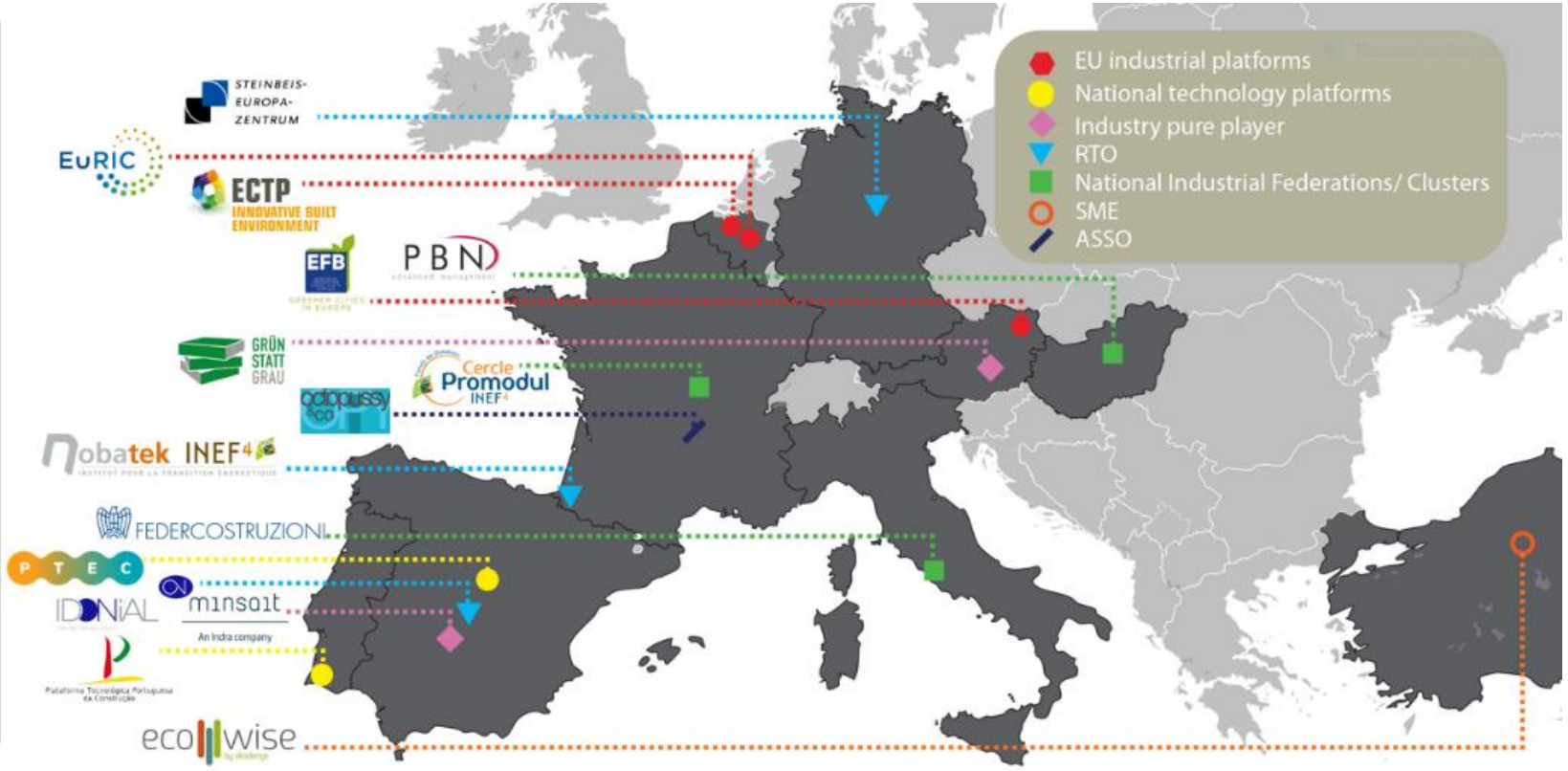
- **Bring innovation** to the "traditional" value chain of the **Construction sector**.
- Expand to other industries to create an enlarged Built Environment industrial sector.
- Enable SMEs to internationalise their activities and reach European markets.
- Consolidate, expand and nurture a modern construction sector innovation ecosystem backboned by a common Digital Open Innovation Platform

CONSORTIUM

metabuilding

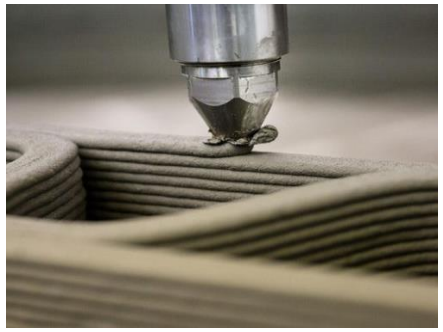
15 European Partners

- 4 EU Level Industrial Platforms
- 3 National Technology Platforms
- 2 National Construction Industrial Associations
- 1 Large ICT Industrial
- 1 Business Network



TARGET SECTORS

The **METABUILDING innovation ecosystem** brings together stakeholders from construction and 4 emerging industrial sectors



Outreach to over 6.000 SME by means of meta-clustering

Support for cross-sectoral, cross-border collaboration

6 target countries

Austria · France · Hungary · Italy · Portugal · Spain

DIGITAL PLATFORM

Backbone of an Innovation Ecosystem

Open Innovation Digital Platform, helping all stakeholders of the enlarged Built Environment sector, to:

- Find partners for collaborative projects.
- Discover innovative technologies.
- Find available funding for SME innovation.
- Discover new innovative tools.
- Provide information on innovation support.
- Help SMEs to reach new markets.
- Virtually showcase SME's products/services.
- Digitally connect, manage and nurture the ecosystem including sectoral sub-systems or "clusters".

Direct link to the European Construction Technology Platform activity and needs

INNOVATION FUNDING

3,75 M € for Innovation Support to SMEs




The **METABUILDING** project will finance **Innovation Vouchers of 5 000 €** dedicated at verifying technical, legal and business aspects of innovation projects and support **Collaborative Projects with grants of up to 55 000 €** per project.

***Cascade Funding** is a mechanism of the European Commission to distribute funding to third parties*
(final receivers like for example SMEs)

IMPACT

In a Nutshell

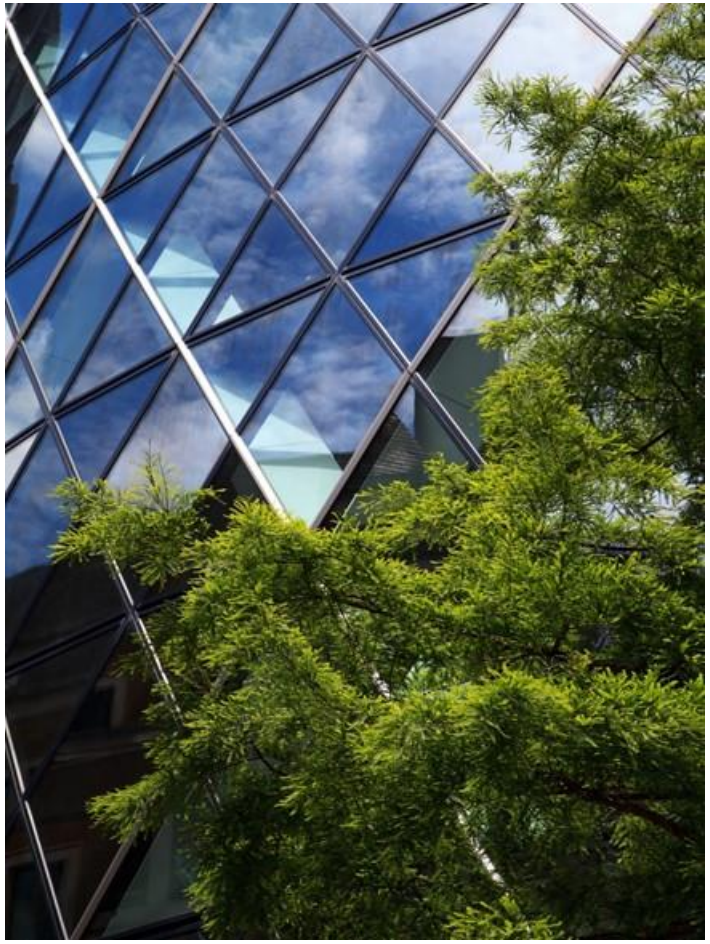
- **Provide** direct financial and non-financial innovation support for SMEs.
- **Increase** competitiveness of SMEs through international business collaboration.
- **Support** SMEs to get out of the COVID-19 crisis through innovation.
- **Stimulate** the innovation potential of the Construction sector through cross-sectoral and cross-border collaboration.
- **Create** and expand a Digital Platform facilitating collaboration and innovation in an enlarged Built Environment Sector.

WHY YOU ARE CONCERNED

WHAT IS IN IT FOR YOU

As SME, Cluster, RTO, University, etc.

- Receive financial and non-financial **innovation support for your SME**:
  - 75 % of the Maximum Grant Amount = 3,75 M €.
  - Possibility to develop your potential ideas to get out of the **COVID-19 crisis**.
- Identify **innovative technology** from actors of other sectors and countries or promote your own technology.
- Access to **new markets** with existing products and solutions.
- Access to **other funding and support** for innovation.
- Position your **regional cluster** in a European network and gain visibility to **attract new members**.
- Give the needs of your cluster's **SME members a voice** on European level.
- **Support SMEs in innovation projects & feasibility studies** as RTO/university member of the Innovation Stakeholders Pool.



CALLS FOR PROPOSALS

metabuilding

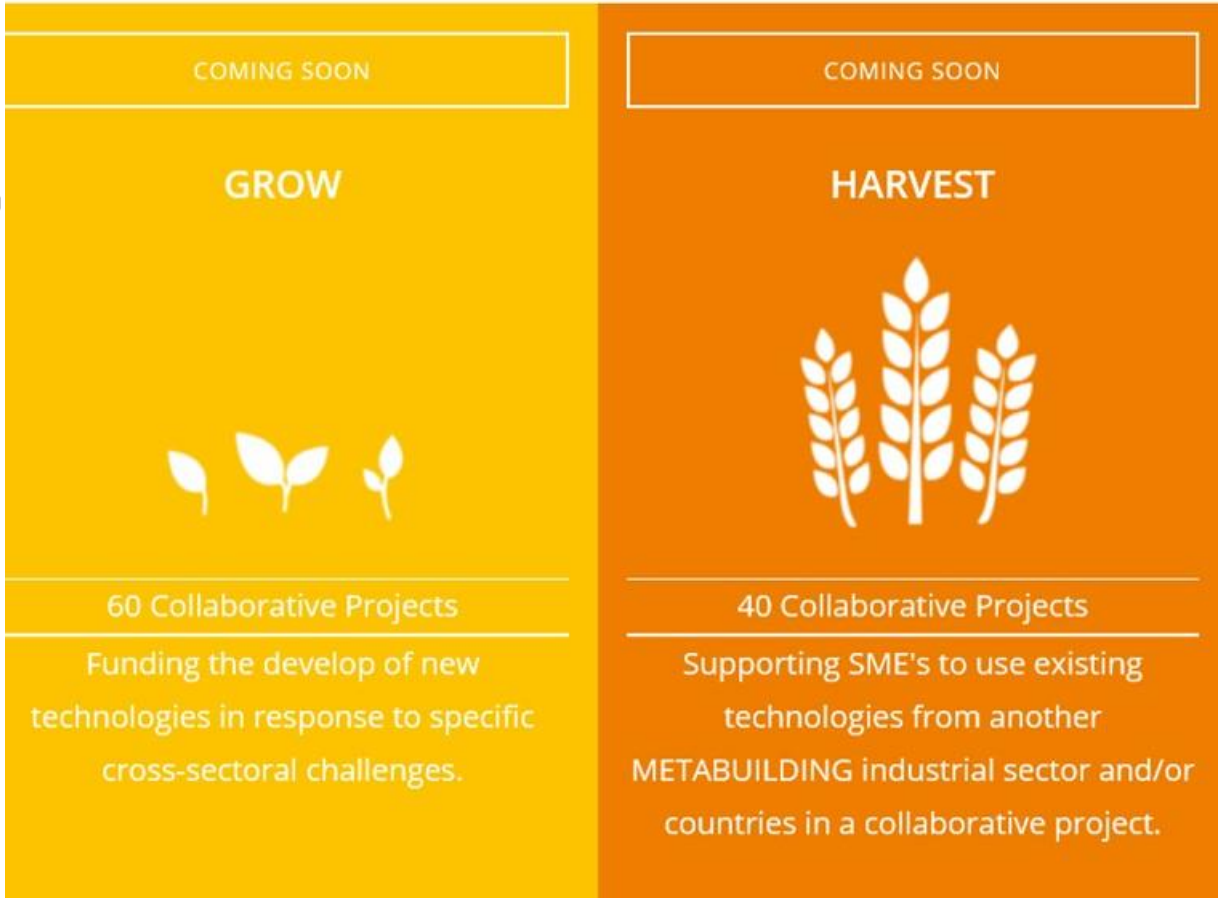
Funding Schemes

Deadline in February 2021!

Single SME	Collaborative Projects (at least 2 SMEs)	
SEED	GROW	HARVEST
		
Assess feasibility of project ideas / innovation opportunities	Development of new technologies (co-creation projects)	Technology transfer from other sectors / countries (In-sourcing projects)
Up to 5.000 € / SME	Up to 55.000 € / project	
Short interventions	6 months	

CALLS FOR PROPOSALS

Funding Schemes



Create collaboration across industrial sectors and country borders to develop new technologies in response to specific cross-sectoral challenges **(GROW)**

Encourage the use of existing technologies from an industrial sector in another METABUILDING industrial sector in order to respond to specific cross-sectoral challenges **(HARVEST)**

CALLS FOR PROPOSALS

Funding Schemes

DRAFT SCOPE: Cross-sectorial topics

- Use of 3D printing for green infrastructures/building
- integration of 3D printed components into building greening systems
- Integration of waste/residues in large scale 3D printing
- Development of systems allowing for the integration of reinforcement elements in 3D printed structures in line with structural regulations
- Establish and define 3D printing processes that allow working with mixed materials integrating or not mortar/concrete
- Development of union systems for the 3D printed big elements
- Integration of accessory components in 3D printing like windows, glass, wooden elements or new functionalities
- ….

DRAFT REQUIREMENTS

- consortia of a minimum of 2 SMEs from 2 different sectors,
- from the 6 targeted countries or member of ECTP, AM platform, EFB (or one of its members) and active in one of the 5 sectors.
- Higher TRLs (6-8, to be determined), essentially development and testing costs
- cross sector collaboration will be mandatory /cross border cooperation will only be promoted and awarded with a higher score
- Subcontracting costs will be eligible, but we most probably will limit them to between 30% and 50 % of the overall project budget

COMING UP

NEXT ACTIONS

- Joint roadmap concerning Construction / ICT / Additive Manufacturing / Nature Based Solutions / Recycling
- Announcement of call for collaborative projects (GROW/HARVEST calls)
- Starting of H2020 OITBs Project METABUILING LABS

MANY THANKS!!

metabuilding

Innovation Funding and Support for SMEs of the Built Environment Sector

Project website: www.metabuilding-project.eu

Platform and calls: www.metabuilding.com

IDONIAL TECHNOLOGY CENTRE

paula.queipo@idonial.com

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 873964.
The sole responsibility for the content of this presentation lies entirely with the authors and in no way reflects the views of the European Commission.

Next Steps

1. Indicate interest in online documents
    1. HE RIAs and IAs: here
    2. Cascade Funding: here
2. Flexible ways to interact and generate actions
    1. Bilateral contacts;
    2. Initiate meetings with group of partners (please put jean-francois.Romainville@ideaconsult.be in cc., if possible);

    Please note that all partners blocked the 19.03 (10-12) time slot ! Exploit that opportunity for scheduling meetings !
3. Follow up on other upcoming 3DP Pilot activities

Thank you !