JOINT TRANSNATIONAL CAMI4.0 STRATEGY FOR 2021-2027

D.T3.3.2 Policy Framework 1: Coop and Capitalisation grid among policies (strategies) for 2021-2027

Final version

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Document Control

Document Summary	
Project Number	CE1662
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Deliverable	D.T3.3.2 Coop and Capitalisation grid among policies (strategies) for 2021-2027
Deliverable Responsible (if applicable)	PP1/KPT
Deliverable Reviewer (If applicable)	All PPs- PP3/PIA as WPT3 Leader
Deliverable Due Date	April 2022

Dissemination Level		
PU	Public	
PP	Restricted to other programme participants	
RE	Restricted to a group specified by the consortium	
CO	Confidential, only for members of the consortium	CO

Document History			
Date	Version	Issuer	Description of Changes
15.04.2022	1.00.00	KPT	Complete draft
20.04.2022	1.00.02	KPT	Partners Review
30.04.2022	2.00.00	KPT	Final Version

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Executive Summary

Project Overview

CEUP 2030 aims to generate stable innovation networks which foster better understanding on **C**entral **E**urope Advanced **M**anufacturing and **I**ndustry **4.0** (“**CAMI4.0**”) topics, to generate improved knowledge resource exchange on these technologies leading to an upgraded framework for policy-making and implementation.

Ultimately CEUP 2030 creates and tests a common method to promote improved knowledge dissemination to policy-making stakeholders using a collaborative exchange framework based in physical and digital-methods. These methods and the technology show-cases disseminated within these method structures are harvested from existing, high-quality innovation know-how in the CE area.

The project focuses on:

- Identifying the highest-quality innovation know-how in the CE Area, on the CAMI4.0 Topics.
- Enhancing skills capabilities and knowledge of people in charge of local, regional, and (trans)national RTI Policies, associated to the CAMI4.0 Topics.
- Creating a sustainable structure for awareness-raising and shared-sustainable RTI knowledge resource use to enhance policy decision support.
- Anticipating and fast-tracking policy / strategy policy pilot actions to promote a joint RIS3 for CAMI4.0 Excellence in CE/EU.

Work Package and Activity Overview

The overall objective of WPT3 links to the project’s specific objective of anticipating and fast-tracking policy strategies focused on the sustainable and continuous development of CE/EU in order to promote aligned action on a joint Agenda for CAMI4.0 Excellence.

The challenge manifests in two sub-objectives which are:

1) To generate triple-helix stakeholder driven dialogue on support mechanisms for CAMI4.0 Excellence (via the RIS3 Round Tables)
2) To foster aligned cooperation processes among 30 CE/EU regions on generating support mechanism for CAMI4.0 using the CEUP 2030 Policy Framework

Thus, by synergizing the gained results (T1: lessons learnt, T2: structures & processes), WPT3 aims at creating long-term strategies supported by policy-relevant actions to assure quality & impact for practice.

A.T3.3 (PTP: DT3.3.1, KPT: DT3.3.2, AFIL: DT3.3.3, 3 deliverables) fosters a joint CAMI4.0 policy strategy for 2021-2027 with 30 regions in CE/EU. Some immediate policy actions get started & long-term capitalisation will be agreed among PP, ASPs & further stakeholders. The objectives of this activity lie thus in defining a Joint Transnational Strategy on CAMI4.0 and setting a joint capitalisation agenda for 2021-2027 across Central Europe.

Scope of Document and Deliverable Summary

This document contains the individual contributions from all CEUP 2030 project partners regarding the 20 (2/PP) RIS3 Alignment Instruments (5/CAMI4.0 topics). RIS3 Policy Instrument Pilot Projects (“Flagships”) are activated policy pilot actions (aka projects under the new programming period, which were under discussion during the RIS3 Round Tables)

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which include the PP region and showcase a specific model of how to utilize subsidy finance programs to better align support / value-creation for the CAMI4.0 stakeholders.

The objective of this document is to report all the Flagship projects into the 4 CAMI4.0 topics. This task should capitalize on WPT1 and WPT2 and knowledge from the new programming period 2021-2027. This task should also integrate the results from RIS3 Round Tables: Multi-sectoral in-region pilot actions on policy implementation /PP9/PBN (D.T3.2.2). Indeed, the partners should include the results from the Use Cases dialogue found during the 10 regional Policy Pilot Action Meetings (RIS3 Round Tables) organized by the PPs (1/ PP region on all 4 TIN topics) on RIS3 Instrument optimisation. All these templates have been uploaded on Alfresco.

Audience

This document is directed to all project partnership members. All PPs are asked to review this document and potentially provide changes or updates for the Cooperation and Capitalisation grid among policies (strategies) for 2021-2027. Additionally, the document could provide an external audience a complete overview of the policy instruments analysed to be exploited and upgraded for CEUP2030 objectives.

The appropriate status of this deliverable is reflected in the “Dissemination Level” table, on the Document Control page of this Document.

Change Control Procedure and Structure

The Deliverable Responsible: Krakow Technology Park (KPT/PP1) created this document which is hosted on the Project’s common repository in the appropriately named deliverable folder.

The document is under project deliverable change control protocols whereby partners are requested to give feedback on the draft version according to the timing proposed in the final section of this document. Feedback will be incorporated, and the final version will be issued by KPT.

At any time, partners believe a project methodology should change, the request should be brought to the Deliverable Responsible (KPT/PP1) and the Work Package Leader (PIA/PP3) to consolidate feedback from other partners, and then further integrate and disseminate the final agreed changes. A new version of the document should be created, and recorded in the document’s “Document History” table.

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Abbreviations

Abbreviation	Explanation
AF	Application Form
AM	Advanced Manufacturing
ASP	Associated Partner (i.e., Strategic Partner)
CAMI4.0	Central European Advance Manufacturing and Industry 4.0
I4.0	Industry 4.0
TIN	Trend and Innovation Network
PIF	Policy Implementation Framework
PLL	Policy Learning Lab
PP	Project Partner
RIS3	Regional Innovation Strategy for Smart Specialisation
S3	Smart Specialisation Strategy
Use-Cases	Policy Instrument Use-Cases
Flagships	RIS3 Alignment Policy Pilot Project Flagships

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1. Key Background information

1.1. AT3.3 activity within CEUP2030 project

The flow of information from Activity T3.3 can be viewed as in Figure **2**, also in relation with other WPs. It showcases that thanks to the Harvesting activity (AT3.1) and the RIS3 Round Table (AT3.2), AT3.3 can be implemented and therefore a Policy Framework can be defined. This focuses on specific manufacturing challenges and the specific model of targeted solution which can be operationalised to promote the uptake and adoption of advanced manufacturing and industry 4.0 technologies.

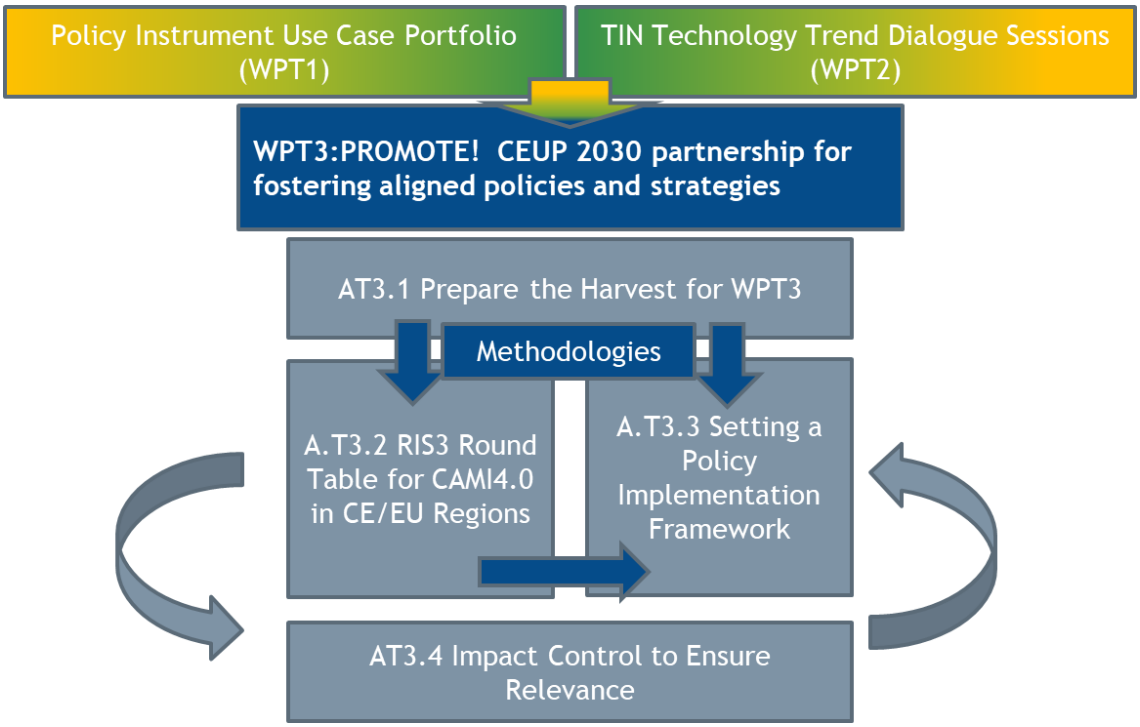

Figure 2 - Activity T3.3 inside WPT3 (Author of DT3.3.3. CEUP2030 generated)

In particular, within AT3.3, three main activities have been performed:

- AT3.3.1 for the definition of Cooperation Guide for around CAMI4.0 Policy Framework among all relevant EU programmes (Responsible: PP8/PTP)
- **AT3.3.2 for the set up and implementation of regional flagships on CAMI4.0 topics (Responsible: PP1/KPT)**
- AT3.3.3 for the set up and implementation of joint transnational CAMI4.0 strategy for 2021-2027 (Responsible: PP6/AFIL)

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1.2. Description and goal of the TINs

The **Trend & Innovation Networks are communities of stakeholders** established/anchored around the 4 main topics of CAMI4.0: Intelligent Production Systems, Automation & Robotics, Smart Materials and Artificial Intelligence (Refer to D.T1.1.1 and D.T.1.1.2 for detailed description of CAMI4.0 topics). Each PP established a TIN for each CAMI 4.0 area, inviting representatives of the triple-helix who will **discuss and share trend and innovation foresights** on the targeted topics.

Besides their regional configuration, TINs also have an interregional dimension thanks to action of PPs that guarantee connections among the different network exploiting the synergies emerged during TINs development. In particular, PPs contributed and fostered the identification and development of use-cases in each network that have been concretely implemented in flagship projects involving partners from different regions, either PPs or their stakeholders. Each TIN guaranteed the generation of 5 use-cases that then re used as basis for the definition of the joint transnational CAMI4.0 strategy for 2021-2027.

As an output of CEUP2030, Trend and Innovation Networks for CAMI4.0 contributed to the generation of stable innovation networks, designed to foster a better understanding, generate improved knowledge and exchange on new technologies relevant for Central Europe Advanced Manufacturing and Industry 4.0 and raise awareness on RTI knowledge resources to enhance policy decision making. Accordingly, the methodology and the processes of the TINs enabled for one side the exchange of good practices and available knowledge among stakeholders at regional and interregional level and on the other side the generation of professional inputs for policies improvement.

1.3. Flagships projects

As already mentioned, project partners had the opportunities to exploit TINs and TTTDMs to foster the identification and development of use-cases that can be turned into flagship projects involving CEUP2030 partners and/or their stakeholders. At the end, a total of 20 flagship projects have been initiated during the project duration and realized beyond the end of the project. Indeed, every partner should report 2 Flagship Projects out of their 4 Use Cases. As a reminder, Flagship projects:

- are built from the “Policy Instrument Use Cases” identified at the end of WPT1;
- aim to showcase how specific policy instrument action can improve regional S3 (or R&D) support for chosen CAMI4.0 topics;
- are significant initiatives which clearly add value or deliver enhanced competitive advantage to the innovation eco-system surrounding advanced manufacturing and industry 4.0;
- should have clear implementation milestones which bring the flagship to reality;
- should be evidenced by physical submission documents to show that formal next steps have been taken (which also evidence the financial value and committed stakeholders of the initiative);
- tackle specific challenges, and highlight specific solutions to promote the uptake and guarantee the adoption of advanced manufacturing and industry 4.0 in Central Europe’s manufacturing eco-system;

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- take into account new priorities/thematic targets expressed by the European Commission for the new period 2021-2027.

Each TIN, based on the topics and sub-topics identified and based on the competences and knowledge available in the participating regions, grouped 4-5 identified flagship projects in alignment with what has been pre-defined in WP T1 Harvesting for the different CAMI4.0 topics. The identified flagship projects divided in the four CAMI4.0 topics are reported in Table 2. They have been used as basis for the discussion and development of a joint strategy 2021 - 2027 for interregional cooperation, through the analysis of the main commonalities and differences.

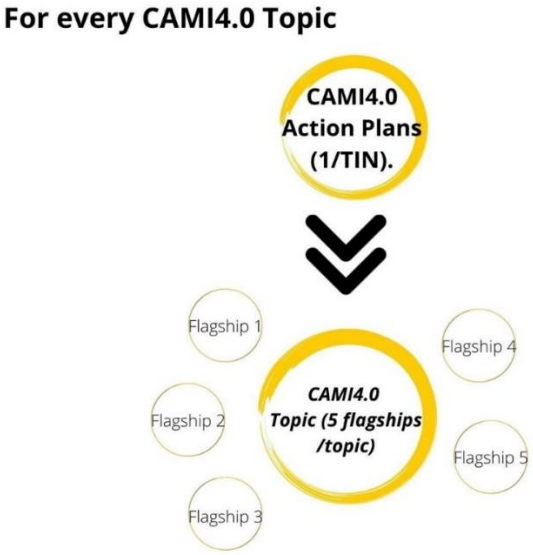

Figure 2 – Action to deliver DT3.3.2. (Author of DT3.3.3. CEUP2030)

1.4. Report structure

The report is divided as followed for the next parts:

Methodology, which provides:
- Common goals and objectives
- Templates and activities performed

Regional flagship projects by CEUP 2030 Partners

Regional flagship project summary

Annexes, which provides:
- Template regarding the Flagship projects

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2. Methodology

This section provides insight on the proposed methodology that PPs followed in order to complete the activity and deliver output T3.2 CEUP 2030 Policy Framework-Synergising CE/EU Policies & Strategies for CAMI4.0 Excellence. To fulfil the conditions, each partner submitted and reported their two flagship projects. Following that , the Partners work together in core TIN working groups to determine a Common Policy Use Case, and syntetize their contribution to the Common Policy Use Case.

This section provides insight on an agreed methodology which partners followed to deliver inputs for the Deliverable and thus for the design of WPT3 activities. The Methodology process is also described in D.T3.3.1.

2.1. Common Goals

This deliverable DT3.3.2. defines 2 flagship projects submitted and reported by partners (20 in total). Indeed, Partners, organized in core TIN working groups, identified areas of commonalities to capitalize and create a Common Policy Use Case (1 per CAMI4.0 topic). The final objective of this deliverable is to create a Coop & Capitalisation grid among policies/ strategies for 2021-2027 agreed among PPs and ASPs for every CAMI4.0 topic in Central Europe.

Thanks to the previous activities in CEUP 2030 and other work completed by the Partners during this past programming period, needs and expectations have been set about generating strategic cooperation opportunities to enhance industry 4.0 and advanced manufacturing in Central Europe. Indeed, during the past CEUP 2030 activities, PPs have worked in their TINs to develop 4 Use Cases thanks to deep dive into thematic webinars and alignment discussions organized by the partners with their stakeholder groups on the future of the CAMI4.0 topic areas (IPS, Automation and Robotics, Smart materials, and AI). PPs had the opportunity to exchange on their projects development and different topics included in the four CAMI4.0 topics with the internal project group and external stakeholders. This work lead now to the choice of 20 Flagship projects (2 per PP) to develop, implement and create a strong agenda for capitalisation through a stakeholder supported roadmap.

Project Partner	CAMI 4.0.	Title of Flagship Project
KPT	A&R	Hub4industry
KPT	SM	3DoP
PRO	A&R	CoRTeam
PRO	IPS	Human Centered AI Based Production Optimization (HAIPrO)
PIA	IPS	*Share4.0 - SK-AT*
PIA	A&R	*Testbed Exchange*
IWU	IPS	Smart Circuit
IWU	SM	STEPUP smart[3]
KIT	IPS	NEXT4FUN
KIT	A&R	BIOSAM (Biologicalisation for Sustainable Advanced Manufacturing)
AFIL	SM	Strategic Community on Advanced Materials
AFIL	AI	AI Roadmap
SIIT	AI	FORGING

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SIIT	SM	EU-ALLIANCE
PTP	IPS	Rising competences in less developed regions focused on small scale food product & service providers through new transnational mentoring services
PTP	SM	GREEN 4.0 Smart and green innovation approaches for scaling up digital transformation opportunities in CE
PBN	IPS	Purchase of autonomous production line (Teaching and Learning Factory) and smart material board and further developments
PBN	AI	Establishment and development of a smart senior room
HAMAG	A&R	Adriatic multifunctional smart buoys INTERREG Italy - Croatia
HAMAG	AI	CROBOHUB++: CROatian Industry and Society Boosting – European Digital Innovation HUB

Table 1: Individual PPs flagship projects within CEUP2030

These 20 Flagship projects were divided according to the reference CAMI4.0 topics (5 Flagship/topic) and acted as inputs to determine a common vision for promoting the growth, adoption and uptake of advanced manufacturing and industry 4.0 in Central Europe. This common vision emerged from a common characteristic analysis of the contributing Flagships and took advantage of these common themes to generate a model and roadmap for future activities which could promote transnational collaboration across Central Europe in the specific thematic topic area. More specifically it represents a **capitalisation agenda which consolidates recommendations on how we build strong connections across territorial areas** (30 regions), towards a common vision for our manufacturing future. According to this, Partners also identified and involved a strong dedicated stakeholder network with whom they will work to deliver the identified steps, which will be codified in the **Letters of Commitment** for the Policy Implementation Framework.

At the end of this activity, there are 5 flagship projects per CAMI4.0 topics where each partner has two flagship projects, with a total of 20 Flagship projects.

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IPS	Automation & Robotics	Smart Materials	Artificial Intelligence
Human Centered AI Based Production Optimization (HAIPrO) project *PP2 - PRO*	Hub4Industry *PP1 - KPT*	3DoP project *PP1 - KPT*	AI ROADMAP *PP6 - AFIL*
Testbed Exchange *PP3 - PIA*	CoRTeam project *PP2 - PRO*	STEPUP smart[3] project *PP5- IWU*	FORGING project *PP7 - SIIT*
Smart Circuit project *PP4- IWU*	Share4.0 – SK-AT *PP3 - PIA*	Strategic Community "Advnced Polymers" *PP6 - AFIL*	National Demo Center initiative for advanced technologies in Agrofood processing industry *PP8 - PTP*
NEXT4FUN (Next Generation InkJet-based Process Chain for 3D/4D Multi-material Functional Printing) project *PP5 - KIT*	BIOSAM (Biologicalisation for Sustainable Advanced Manufacturing) *PP5 - KIT*	EUAlliance *PP7 - SIIT*	Establishment and development of a smart senior room *PP9 - PBN*
Autonomous production line (Teaching and Learning Factory) and smart material board *PP9 - PBN*	Adriatic multifunctional smart buoys *PP10- HAMAG*	Smart and green innovation approaches for scaling up DT opportunities in CE *PP8 - PTP*	CROBOHUB++: CROatian Industry and Society Boosting – European Digital Innovation HUB *PP10- HAMAG*

Table 2: PPs individual flagships on CAMI 4.0. topics within CEUP2030

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Core TIN working groups worked towards common cooperation projects and initiatives through co-creative brainstorming. This **co-creation process** was influenced by the different backgrounds and experience of the contributing partners by some clear inputs from across the project:

1. The stakeholder feedback from the RIS3 Round Tables (AT3.2);
2. An analysis of the common features of the contributing Flagship projects for the specific CAMI4.0 topic area (AT3.3.2);
3. The ideations which partners brought in from their Policy Instrument Deep-Dive (WPT1);
4. The changes to or new opportunities within each Partner's territorial area Smart Specialisation Strategy/RIS3 for Manufacturing related R&D;
5. The changes to the key challenges identified by the European Commission to be the basis for the new programming period 2021 to 2027 (Digital Europe Programme, European Green Deal, etc.)

2.2. Input documents

Following the guidance Deliverable DT3.3.1, the work performed by PPs during TIN working groups and detailed in the following sections of this deliverable has been described through a template. PPs used this template and uploaded it on Alfresco, in order to report the performed activities and to quantify the impact of the Common Policy Use-Cases on their regional ecosystem. To complete this part of the activity, every partner completed one template for **each** flagship project. Having to choose 2 flagship projects out of their 4 Use Cases, every partner completed 2 templates for this deliverable DT3.3.2.

The Flagship template was divided into four parts, which are reminiscent of the structure used to report on the Partner's Use Cases. Following are some explanations/definitions regarding the questions asked in the template.

1. Administrative Information, which provides some basic information about the project Project Partners are pursuing
    - By Milestone, it is asked to define the key events or actions of your flagship projects. For instance, it can be your project submission, when you completed your task of WPT1
    - By Fiscal Value, it is asked to think about the full financial value/plan of the project. If possible, it is then required to detail as much as possible the full budget plan in euros of the flagship project.
    - The final question about evidencing is only to make sure that the right documents are available for auditing. In this document, please write the name of the evidence. It can be an application form, a memorandum of understanding, a signed letter of commitment for a specific initiative Please upload a screenshot of the evidence to your partner folder on Alfresco.
2. Challenge Explanation, which provides a small space for Partners to write about the challenge their Flagship is tackling and which part of the manufacturing eco-system is impacted by this challenge.

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3. Solution Explanation, which provides a space for the Partners to explore the solution which the Flagship is fostering.
4. Strategic and Policy Implications, which provides an important area for Partners to clarify the strategic aim of the Flagship.

These 2 templates and evidence of the Flagship's tangible next steps were uploaded on Alfresco in the folder "CEUP2030 Public".

Full detail of this template can be found in the Annex of this document.

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3. Regional flagships by CEUP2030 partners

3.1. Partner 1 KPT

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Template for Flagship Project	
Title of Organisation:	KPT: KRAKOW TECHNOLOGY PARK LTD
Date of Reporting	30.04.2022
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	*Hub4Industry [h4i] - EDIH*
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	Hub4industry (h4i) is a coordinated group of entities aiming to provide wide range of services to local manufacturing SMEs, midcaps and public sector, supporting them in digital transformation. H4i has a successful history of internal collaboration (operational since 2019) and services delivery, therefore, the support from EU DIGITAL will serve to strengthen, improve the hub services and infrastructure and build h4i interregional cooperation corridors to other EDIHs. The main focus of h4i services and its specialisation corresponds with DEP objectives: Advanced Digital Skills and Deployment and Best Use of Digital Capacity and Interoperability, but thanks to engagement of AGH university, ASTOR, T-Mobile, ICsec and ReliaSol, h4i adds value also in Artificial Intelligence and Cybersecurity. The goals will be achieved by by leveraging local experts in AI, smart factory, connectivity including 5G, use of IoT in manufacturing, additive manufacturing, smart and autonomous intralogistics, cybersecurity. The emphasise will be also put on on competencies related to communicating digital transformation, team management and building transformation strategies based on new business models. The development of EDIH involves the two most important technical universities in southern Poland and also Ł-KIT an important research institute that is part of the national Łukasiewicz network, with their laboratory and research infrastructure and competencies.
CAMI4.0 Technology Focus - Primary	*Automation & Robotics*
PP's CAMI4.0 Tin Role	*Core*
CAMI4.0 Technology Focus - Secondary	*Choose as many secondary influencing technologies that apply;* ☒ *Intelligent Production Systems* ☐ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☒ *Artificial Intelligence*

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Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	Krakow Technology Park	Business Support Organisation	Knowledge Facilitator	PL
	AGH University of Science and Technology	Higher Education & Research	Knowledge Supplier	PL
	Cracow University of Technology	Higher Education & Research	Knowledge Supplier	PL
	BIM Klaster	SME	Knowledge Supplier	PL
	Astor Robotic Centre	SME	Knowledge Supplier	PL
	T-Mobile	Other (LE)	Knowledge Supplier	PL
	Łukasiewicz - Kraków Institute of Technology (Ł-KIT)	Higher Education & Research	Knowledge Supplier	PL
	ICsec S.A.	Large Enterprise	Knowledge Supplier	PL
	ReliaSol	SME	Knowledge Supplier	PL
	Entra Group	Large Enterprise	Knowledge Supplier	PL
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Open Call			
	Submission Deadline			11.2021
	Result of Evaluation & Contract			06.2022
	Project Start		01.2023	
	Project end			12.2025
Define the budget of your Flagship project:	What is the fiscal value of the project?		Estimated budget 2,5 mln euro	
	What are the different financing unit of the project?		European Commission	

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	What are the funding program(s) used? What are the other potential funding sources?	Digital Europe Programme (DIGITAL) Call: DIGITAL-2021-EDIH-01
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Proposal  Digital Europe Programme (DIGITAL) Application Form Technical Description (Part B) EUROPEAN COMMISSION Directorate-General for Communications Networks, Content and Technology Bartosz JÓZEFOWSKI KRAKOWSKI PARK TECHNOLOGICZNY SP ZOO UL. PODOLE 60 30-394 KRAKOW POLAND Subject: Digital Europe Programme (DIGITAL) Call: DIGITAL-2021-EDIH-01 Project: 101083652 — h4i GAP invitation letter Dear Madam/Sir, I am writing in connection with your proposal for the above-mentioned call. Having completed the evaluation, we are pleased to inform you that your proposal has passed this phase and that we would now like to start grant preparation. Please find enclosed the evaluation summary report (ESR) for your proposal. Invitation to grant preparation Grant preparation will be based on the following:	
Challenge addressed by the flagship project		
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The challenges has been identified during the operation of regional digital innovation hub in years 2019-2021. Main challenges the project addresses are based on research and they cover: #1 Difficulty in calculating ROI #2 Difficult access to capital #3 Low profitability of new technologies #4 Low digital skills among employees #5 Lack of sound plan The main motivation to foster the flagship is the capacity identified to implement technological upgrades. The consortium possesses the expertise and experience necessary to guide the companies through the digitalization process.	
Who are target groups of the project? Tick the answer relevant for your flagship project	*Choose as many which will apply* ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☒ *Schools and Training Institutes*	
Evaluate the Manufacturing Value Chain by *choosing the area of*	*Choose as many which will apply* ☐ *Research & Development*	

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manufacturing which is impacted by this challenge.	☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☒ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	*C32 - Other (please clarify below)No specific sector is identified, the flagship will cover number of mentioned above.*
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Consortium structure is created in such a way in order to offer a complimentary set of services corresponding to the needs of companies which are beginning their digitalization journey (education, identification of challenges, directions of transformation) as well as those ready to start pilot implementations. Carefully selected partners provide know-how and experience in areas of process optimization and technologies which are most required by SMEs from our EDIH region of activity. Furthermore, existing experience in mutually realised projects by consortium partners guarantees effective management and achieving the project goals. The consortium will involve a team of approximately 40 closely cooperating, experienced specialists and experts. At least 6 people, involved in the management, promotion and accounting of the project, will be employed full-time from KPT. The remaining project staff will be employed on a part-time basis. EDIH will operate h4i Factory of the Future Showroom in two locations: 1) located in **ASTOR Robotics Center** in an industrial hall (1600 m2). It features workstations equipped with state-of-the-art robots for automated welding, robotic palletising, collaborative robots (cobots), AGV/AMR mobile robots, IoT technology supporting analytics and intralogistics. The space is equipped with T-Mobile 5G industrial grade wireless network campus network. It also has a Living Lab, which is a workspace for testing innovative solutions, including Proof of Concepts for customers and by industrial startups for experiments. 2) **in ASTOR Innovation Room:** presentssolutions for advanced analytics. The Control Room functionality allows most important data to be collected and analysed to determine the efficiency and potential threats to the continuity of a plant's operations. Data presented in the Control Room is transmitted from a second showroom and other locations using the 5G network and WAN network provided by T-Mobile. There is also an integrated robotic installation presenting a personalised production line (the so-called mini-Factory 4.0). Other advanced technologies demonstrated include: industrial 3D printer, AR and VR technology equipment.

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	Showrooms in ASTOR, KPT conference center and T-Mobile hubraum testbeds are interconnected by dedicated secured network ring allowing demonstrations of systems for factories with multiple locations. Other resources that allowed us do provide services to our customers can be found below in partners description.
What are the key goals to achieve this project? What are the specific objectives?	**Goals:** **Direct** - attracting new customers for EDIH services - educating entrepreneurs on the benefits that digital transformation can bring to their business, - lead generating and nurturing - developing and strengthening relationships with buyers/customers at each stage of the sales funnel, aiming at conversion to the h4i services described from WP3 to WP5 - promoting involvement of EU in digitalization of economy **Indirect:** - sharing inspiration by showcasing innovative solutions and technologies, including those that increase a sustainable, green approach to production management, - inspiring engineers and production managers to be leaders of transformation, - reducing the sense of risk of investing in innovation, - building a network of engaged companies and experts. - promoting EU initiatives aimed at digital transformation of EU Regions, - engaging stakeholders in digitalization and twin transformation activities - delivering data and insight supporting better decision making by key policymakers at local, regional and national levels, - providing insights to regional authorities for better design of regional public policies and instruments, as well as revision of current strategies e.g., Regional Innovation Strategy (RIS3 for Małopolska), - promotion of the EDIH international network and DTA.
What is the methodology utilised to implement the solution?	The methodology used to develop this flagship is based on the best practise gained during deployment of hub4industry (2019-2021). H4i concept went through several iterations including pilot project, and was refined thanks to data from extensive regional research. The methodology was enriched by conducted surveys and workshops aimed to identify the needs and digital transformation readiness of companies. Budget includes more than 250k € dedicated to travel to enable presence of h4i in EDIH network. H4i will implement all activities as described in the Call document i.e., business training and advisory (Service 1 – see list below), technical training and advisory (Services 2-3), test before invest services including preparation to investment (S.5-11), digital maturity assessment (S.4), simulations and pilot projects (proof of concept and testing) (S.12-17); support in funding pillar (S.18-19). Moreover, h4i will provide networking and

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	community building actions and awareness building activities as described in WP2 and WP6.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	Concrete benefits for h4i target groups: • access to information and knowledge that is usually scattered or biased (non-neutral) • new or radically increased availability and affordability of development services around digitalisation • improved feasibility of digitalisation projects thanks to consultancy, simulations and proof of concept services • investment risk reduction through testing and pilots • digitalisation projects cost reduction • identification of unconscious needs and gaps in the field of digitization • reduction of potential losses resulting from poorly planned investments • access to network of EDIHs and companies internationally = new growth opportunities. Expected results for companies: • increased resilience to supply chocks and sudden changes in the economic climate • improve production flexibility to adapt to changing market requirements • rationalise the use of resources, including raw materials and energy, through evidence-based management Impact on digital maturity: H4i brings holistic approach to digitalisation, promoting transformation planning, rather than isolated modernization investments. That is why we estimate that each EDIH client will improve at least in the first dimension of digital maturity level according to JRC DMA: Digital Business Strategy. Skills and Training, and Test before Invest services will add to growth as they are aimed at specific organizational and technical challenges that correspond to other Digital Maturity dimensions and sub-dimensions. In medium-term EDIH activities will initiate new processes and investments that will lead to uptake of new technologies, changes in management and business models
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	We manage well development phase as we have regular meetings with other PP and it was very clear from the beginning which role on the project we would be assigned to. There were no difficulties during the project proposal preparation phase.
Describe the implementation plan and milestones for the Flagship. Please connect to the five	The implementation work plan was designed to optimally align identified market development needs described as DEP objectives - with actions planned and realised within provided services. Hub4industry operations as a one-stop

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milestones raised at the start of this document.	shop, with focus not only on matching the demand of SMEs and public sector institutions with advanced digital services and technologies, streamlining their digital transformation but also to assist our customers on every step of their transformation. Hub has a large focus on clients who are not very technologically advanced, in the beginning of their digital journey who are ready to gradually grow, discover possibilities and ways to overcome shortcomings. EDIH will provide them with relevant neutral advice and support, which definition and scope has been practically verified during KPTs, and consortium partners experience as a DIH. Following graph shows mutual relations between call objectives, services, work packages and customer journey steps: **WPT2 Popularize & Evangelize** Promotion Conferences, fairs Tech open days Case studies Dissemination **WP3 Skills & Training** Webinars Study tours Trainings Workshops E-learning **WP4 Test-before-invest** Demonstrations Digital maturity Transformation plans Consulting Proof-of-concept Pilot implementations Lab/R&D tests **WP5 Find investment** Finding financing Accelerating **WP6 EDIH Collaboration and network building** Recommendations Progress monitoring Sharing experience Matchmaking EDIH's actions and services are grouped in work packages corresponding to four main categories of services that DIHs can provide to the local SMEs/public sector beneficiaries: a) skills and training (WP3), b) test before invest (WP4), c) support to find investment (WP5) and d) innovation ecosystem and networking (WP6). They are supported by a large range of activities in areas of building awareness, interest, evangelization of new manufacturing and management technologies not forgetting role of transformation in reducing environmental impact as well (WP2). The effectiveness of the actions and their expected impact, and achieving project objectives is ensured by means and tools grouped in WP1: managing tasks and consortium partners commitment to mutual goals, controlling smooth implementation of processes and monitoring growth of customers maturity.

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How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The project leader (KPT) is a permanent contact point for all the partners, responding to any relevant requests and maintaining a high level of communication within the consortium. The project coordinator ensures that all information such as meeting minutes, task reports, and relevant publications will be communicated to all other partners and related parties in accordance with the Model Consortium Agreement. In addition, the project coordinator will be responsible for resolving any conflicts, solving issues related to problems and constraints against the implementation of the project goals, managing changes related to the project, and promoting gender equality in the project. In order to ensure that high-quality work is performed in adherence to the requirements specified, careful planning and harmonisation of all project activities will be applied throughout each phase of the project, from the setup, through implementation and finishing with interim and final reporting and dissemination. The evaluation methods and indicators to monitor and verify the outreach and coverage of the activities and results will be defined in detail in Project governance plan (D1.1), which will contain in particular: the technical aspects regarding the quality management of the project and services (see above), specific guidelines for internal and external communication and coordination with partners (templates, due dates, accuracy); WP leaders meetings with task teams to 1) align WP activity across WPs and 2) coordinate task-level activity/deliverable input – especially number of services provided, customers' feedback, protocols and state aid certificates issued. WP updates are brought to PMT monthly & continuously maintained.
How is your flagship connected with other flagship projects? What are the most important connection points?	This flagship connects to other flagship projects such that they are complementary to each other in terms of topics addressed or that stakeholders involved in other flagships can benefit from the scientific outputs of this flagship project or maybe even support the activities by providing additional use cases opportunities to test the scientific outcomes in real-life scenarios in an industrial context. The flagships are all essentially pushing the state of the art of CAMI 4.0 topics
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	The idea of the project has been built up on a long and vital experience of the consortium members. Regional hub4industry was part of Interreg and Horizon 2020 projects, where the experience and knowledge were extended and improved. The flagship emerges as a follow-up of number of activities, ideas and best practices gained in frame of S3HubsinCE, CEUP2030 and BOWI projects at the transnational level but also from number of national projects.

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Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The flagship is perfectly in line with the main regional goal exposed in the Joint Strategy: To increase the innovation potential of the region the focus is the promotion and investment in the smart specialisations of the region. It also responds to the main assumption of the Automation & Robotics area as it supports the "Factory of the Future" and enables realising efficient, effective production processes ranging from nano scale processes over collaborative robotic systems to complex adaptive production systems.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	By increasing the innovativeness of companies and develop the digitalisation processes it will definitely influence their competitiveness and position the European market. It will be a step towards internalisation and exporting the products and services. Impact on digital maturity: H4i brings holistic approach to digitalisation, promoting transformation planning, rather than isolated modernization investments. That is why we estimate that each EDIH client will improve at least in the first dimension of digital maturity level according to JRC DMA: Digital Business Strategy. Skills and Training, and Test before Invest services will add to growth as they are aimed at specific organizational and technical challenges that correspond to other Digital Maturity dimensions and sub-dimensions. In medium-term EDIH activities will initiate new processes and investments that will lead to uptake of new technologies, changes in management and business models.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	Hub4Industry is collaborating closely with regional authorities in order to align the activities and strategies. The goals and activities of flagship project are in line with the objectives of Regional Innovation Strategy for the Malopolska region. H4i is maintaining relevant impact on public policies, providing necessary data and insights for regional authorities, this is evidenced also by letter of Support from Marshall of Małopolska Region. KPT actively supported consultation and preparation of such important regional documents as Regional Innovation Strategy for Małopolska Region 2030 and Air Quality Plan 2020 - 2023. Since 2021 KPT is regional operator of Vanguard Initiative for Małopolska region. KPT as a leader has also extensive experience in cooperation with other centres in Poland and internationally through participation in numerous cooperation networks and international projects, for example: international networks: ENOLL, EBN, IASP, BOWI; international projects in the last 3 years, participation in: 5 x Interreg, 2 x H2020, 1 x direct EC service contract and cooperation with EIT DIGITAL. This is a testament to our ability to work in an international network of EDIHs as an access point, an active broker and valid partner for DTA. H4i will also be a contact point for other European initiatives as KPT is running local branch of ESA BIC. A part of h4i is also Cracow University of Technology that leads a regional EEN contact point, which will allow synergies between projects and seamless services. H4i project is aligned with national Strategy for Responsible Development (Warsaw 2017) answering to Objective 1: "Sustainable economic growth increasingly based on

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	knowledge, data and organizational excellence" especially in areas: Reindustrialisation, Development of innovative companies, Support for SMEs. H4i is aligned with the Regional Development Strategy "Małopolska 2030", Objective 2: "Innovative and competitive economy", Objective 4: "Strategic Management of regional development". It also responds to Regional Innovation Strategy of the Małopolska Region 2030, addressing the challenges of domain 3 and 6 out of seven smart specializations named: Regional Smart Specialisation: Information and communication technologies and Regional Smart Specialisation: Electrical engineering and machine industry. The Regional Innovation Strategy was updated in February 2021 and among other mentions directly o ur DIH on page 61: "An important advantage of the region in the context of automation and digitalisation of industry is the presence in the region of one of the five national DIHs (Digital Innovation Hubs), which are to support entrepreneurs in digital transformation (the role of the Małopolska Region DIH will be played by KPT)." H4i is also mentioned as a proposed action under 1st and 3rd Areas of Intervention.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	Hub4industry is oriented toward topics and services that directly respond to objectives of reindustrialization of Europe, digitalisation of businesses, increasing up-take of advanced technologies, increasing level of digital skills on the labour market, using advanced technologies to increase sustainability of manufacturing companies and their global competitiveness. As for Europe fit for digital age all these goals are visible in 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery and it's twin transformation pursuit; in 2030 Digital Compass: the European way for the Digital Decade. Tasks planned by h4i are relevant in these areas i.e., organising awareness rising events and sharing inspiring transformation stories through promotion and dissemination activities. Also providing advice to SMEs on smart manufacturing technologies including AI and Cybersecurity services. Finally, h4i will offer relevant test before invest services that reduce the investment risk by eliminating knowledge gaps and uncertainty in the implementation of innovative solutions. Good example can be Service S.16 that can lead to technology co-development while testing and demonstrating new solutions on a hub4industry Factory of the Future Showroom infrastructure with built already smart robotisation solutions, Autonomous Mobile Robots in intralogistics and working 5G industrial campus network with edge computing capabilities. Response for Green Deal and challenges is specifically described in section 3.3.

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Template for Flagship Project				
Title of Organisation:	KPT: KRAKOW TECHNOLOGY PARK LTD			
Date of Reporting	15.03.2022			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	3DoP			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	The project builds upon four 'packages of investment projects', aiming each to unlock large investments enabling the optimisation of production through AM and increase productivity. • Each package is driven by a 'leading company' and aims at addressing a pressing need or challenge related to optimizing manufacturing processes. • Each package of investment projects consists of several associated 'SME-led investment subprojects' that are essential either in unlocking the investment made by the leading company or in adapting the SME's products/processes to this investment. • All projects within a package are contributing to an overarching ambition, which is related to lead company and SMEs' needs in terms of smart, green and more competitive transitions. • The proposed packages will ensure impact maximization by bundling projects towards VC and leading companies' needs			
CAMI4.0 Technology Focus - Primary	*Smart and Advanced Materials*			
PP's CAMI4.0 Tin Role	*Learner*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☒ *Intelligent Production Systems* ☐ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☐ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	STRATEGISCH INITIATIEF MATERIALEN VZW	**Higher Education & Research**	Knowledge Supplier	Belgium
	BRAINPORT DEVELOPMENT NV	**Business Support Organisation**	Knowledge Supplier	Netherlands

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	IDEA STRATEGISCHE ECONOMISCHE CONSULTING	**Higher Education & Research**	Knowledge Supplier	Belgium
	AM-Flow BV	**SME**	Knowledge Receiver	Netherlands
	3Faktur GmbH	**SME**	Knowledge Receiver	Germany
	ZiggZagg NV	**SME**	Knowledge Receiver	Belgium
	SIOUX TECHNOLOGIES BV	**SME**	Knowledge Receiver	Netherlands
	World Wide Automation BV	**Large Enterprise**	Knowledge Receiver	Netherlands
	TRENTINO SVILUPPO SPA	**Higher Education & Research**	Knowledge Supplier	Italy
	HUB INNOVAZIONE TRENTINO - FONDAZIONE	**Business support organization**	Knowledge Enabler	Italy
	RAZVOJNI CENTER ORODJARSTVA SLOVENIJE	**Business Support Organisation**	Knowledge Enabler	Slovenia
	RIJECKA RAZVOJNA AGENCIJA PORIN DOO	**Business Support Organisation**	Knowledge Enabler	Croatia
	CAP - CENTER ZA APLIKATIVNE	**SME**	Knowledge Receiver	Slovenia

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	POLIMERE DOO			
	Photo4Chem	**SME**	Knowledge Receiver	Poland
	PHIBO CAD-CAM, SL	**SME**	Knowledge Receiver	Spain
	Krakow Technology Park	**BSO**	Knowledge Enabler	Poland
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Preparation of the proposal		Jan 2022	March 2022
	Efficient and sustainable 3D metal printing		Oct 2022	March 2023
	Development of 3D printed tools and moulds with imprinted electronics for plastics production		December 2022	September 2023
	Automated, dedicated AM production line for affordable 3D printed dental implants and aligners		February 2023	February 2023
	Automated, modular AM production line for high-mix @ high-volume polymer and metal 3D printed parts		April 2023	September 2024
	Investments Leveraging and Sustainability		January 2024	December 2024
Define the budget of your Flagship project:	What is the fiscal value of the project?		6 MLN euro	
	What are the different financing unit of the project?		I3 Action Grant Partnership funding	
	What are the funding program(s) used? What are the other potential funding sources?		I3 Action Grant	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Project proposal			
Challenge addressed by the flagship project				
	3D printing (3DP)1 has a demonstrated potential for increasing productivity, combined functionality and			

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Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	foresting smart and green transitions2. However, despite the clear benefits of 3DP in optimizing production processes, there are still significant bottlenecks that do hamper deployment and uptake of 3DP. As a consequence, there is an untapped range of possible investments that are not being made. Removing the bottlenecks and unlocking the productive investments require for: o The setup of an integrated innovation and investment ecosystem framework. o The development of technical solutions in targeted application areas. o The generation of sustainable investments chains of close to market and SMEs led projects.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☒ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☒ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	Choose an item.
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	*Delivering new or improved products, processes or services in the manufacturing industry.* o 3DoP will enable efficiency and sustainability in 3D metal printing, help reduce cost and time through 3D printed moulds with imprinted electronics, provide automated identification, quality control and handling for the dental industry and unlock industry 4.0 automation for 3DP factories • *Supporting interregional innovation investments for the uptake of new manufacturing solutions.* o 3DoP will sustain interregional cooperation for the uptake of new 3D metal printing solutions, create

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	new regional supply chains through improved 3D printed moulds, increase automation in the dental industry and increase automation of AM factories across regions • *Supporting interregional innovation investments to face the challenge of digitalisation.* o 3DoP will develop software for digital inventory, orders management and control, support smart integration of electronic controlling devices, enable digitalization of manual labor for personalized dental implants and digitial identification, quality contol, machine learning, sorting and handling • *Supporting interregional innovation investments for a more environmentally sustainable production.* o 3DoP will promote localized production in metal industry, enable circular design of electronics due to recyclable materials and waste reduction, shortens supply chains through local production, reduce waste of batch production and enable a price point preventing offshoring
What are the key goals to achieve this project? What are the specific objectives?	Helping new products to reach the market faster or having more efficient and sustainable processes: o 3DoP will help to lower cost of prototyping of metal 3DP, develop 3D printed moulds and LED tile as sustainable technology carrier for SMEs, develop modules for track&tracing, quality control and handling of 3D dental implants and help the scale up of 3DP factories • Valorizing research results and practical applications: o 3DoP will involve end-users as project partners or lauching customers, diffuse knowledge on the combination of LED tile and 3D printed moulds, share data with stakeholders and potential end users and share innovations with academia and industry at the Brainport Innovation Centre • Connecting or making complementary use of testing and demostration facilities at interregional level: o 3DoP will make use of multiple testing and demonstration facilities (e.g. ProM facility, Brainport Industries Campus) and form a network between them • Improving the use of natural resources and reuse of materials promoting circular models: o 3DoP will enable substitution of metal items and recycling of metal scrap, enable circular design for electronics and reduce energy usage, shorten supply chains and increase product lifespan, enable local, one-piece-flow production leading to decreased waste and reduced global logistics
What is the methodology utilised to implement the solution?	Overall, 3DoP will implement innovation investment projects that will generate and deploy specific solutions to identified bottlenecks. Such **solutions/investment-generations approach will rely upon a novel concept of 'packages of investment projects'** (WP2 to WP5, further described below). • Once solutions generated and cross fertilized (through 'cross packages activities'), 3DoP will generate **additional 'investment' snowballing/leveraging/spillover effects through a further activation (and**

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	serving) of the regional ecosystems. The aim will be to address needs of (and offer opportunities to) these ecosystems (beyond 3DoP consortium) by offering an integrated portfolio of services (Demonstrating/Piloting; Projects and Business Generation; Funding) framed by solutions from the 'packages of investment projects'.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	3DoP will create leverage and spill overs across entire regional innovation ecosystems, of which will benefit de facto a wide range of organizations beyond the consortium partners. Such snowballing effects will be ensured through **the set of activities (described in details in the section 5.2)**.Starting from the 'needs analysis' focused on the solutions fields developed in packages and connecting it with overall needs and opportunities of ecosystems, different 3DoP support services (1. Demonstrating/Piloting, 2. Projects Building, 3. Funding) will be activated to serve organisations outside of 3DoP consortium (but that can contribute to development of 3DoP solutions). As result, '3DoP solutions owners' (i.e., SMEs owning solutions developed in packages) will have their needs being addressed, towards full market deployment. Companies from outside the consortium will be selected through Open call process (see section 5.2) and will benefit from services to co-develop complementary solutions or use/take up solutions developed in the packages. Through the integrated services portfolio approach (piloting, partnering, commercialising, business planning and funding) and the outreach towards external partners and end-users, WP6 will unlock additional investments, both by solutions owners and solutions takers/contributors. On a more ecosystem-level, WP6 will ensure the 3DoP solutions, instrumental for the smart and green transitions of industries, are being deployed on targeted territories and will leverage generation of complementary innovation ('feedbacks loops process') and investment projects aligned with Regional S3.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The Investment Package-based approach of this project, along with the novelty of the topics, require an appropriate consortium management and decision-making structure. To ensure the integration of different expertise and to guarantee that the Investment Packages will not act in isolation, a tight cooperation of key partners is required. Figure 1 depicts the management structure of this project.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	3DoP will be organised along 4 main 'vertical Work Packages' (vertical WP) or 'Packages of Investment Projects' (PIP) (WP2-5) aiming at developing and deploying market-ready innovations (from TRL6+ as starting point) that are key for the future development of Additive Manufacturing in Europe (and beyond). In each vertical WP or PIP, innovations will be developed by a team of companies being AM-providers / -manufacturers, or committed end-users. The innovations developed will allow unlocking industrial investment across different value chains amongst end-users, as well as within the AM-industry. Each vertical WP or PIP addresses specific industrial challenges in specific value chains / supply chains and is driven by the needs of a leading industrial company. WP5, however, while targeting a specific supply chain, will develop solutions that can be implemented in many different factory set-ups in other application domains; hence it is expected to have important spillovers across the

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	other vertical WPs. On top of Project Management (WP1) and Targeted Communication (WP7), WP6 'Investments Leveraging and Sustainability' will generate additional 'investment' snowballing/leveraging/spillover effects through a further activation (and serving) of the regional ecosystems, by offering an integrated portfolio of services.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The **Project Management** aims to guarantee an efficient, timely and high-quality implementation of the activities planned in the scope of the 3DoP project as well as to monitor closely the implementation of the activities, the associated costs, and the alignment of the results with the KPIs. All the needed tools for internal communication, sharing of the information, implementing an action plan with dedicated roles according to the skills, resources and responsibilities will be developed to guarantee the efficient implementation of the project. Additionally, the aim is to guarantee timely and efficient reporting of the activities and the associated costs. To ensure high-quality and timely project implementation, several mechanisms are in play related to (1) quality assurance, (2) risk management, and (3) evaluation methods to monitor the project's outreach, activities and results.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	3DoP builds upon the results of the **Thematic Smart Specialisation Partnership "High Performance through 3D Printing" (VI 3DP),** a permanent, trusted and specialised community reaching directly +600 quadruple helix players hosted since 2014 by the Vanguard Initiative (VI) and co-led by 3DoP partners SIM/Flam3D and Brainport Development. VI is a network association currently composed of 38 member regions and their economic stakeholders from across the EU. VI offers a cross-regional content driven platform to meet and join forces in finding new innovative solutions to societal challenges. VI 3DP is mainly working on mapping the value chain, actively connecting the actors involved, supporting the design of collaboration projects and the early phases of implementation. 3DoP is allowing a selection of VI 3DP 'frontrunners' - complemented by some additional non-VI 3DP parties – to take a next decisive step on the TRL scale, towards full deployment of 3DP technology and actual market entries. VI 3DP serves as a dissemination arm to create spillovers and to ensure continuity (see section on sustainability).
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	**The project responds directly to the objectives defined in Joint Strategy for Smart Materials Area:** 1. **Networking (**Connect the partners via the TIN to broaden the scope of reach and promote future development of smart materials topics. Use the competencies of existing networks in the partnership) 2. Refine technological best practices to inform and raise awareness among the different stakeholder groups (policy makers, business, research institutions).
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	3DoP – uniting partners from 15 EU regions and 2 full EU Member States and the formal additional support of 6 regions and 2 EU Member States - is building upon the results of complementary innovation actions and is a logical step

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	following their implementation. 3DoP aims at filling a gap in the landscape of 3DP initiatives, with a unique and complementary value proposition and delivery of services.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	3DoP builds upon the results of the **Thematic Smart Specialisation Partnership "High Performance through 3D Printing" (VI 3DP),** a permanent, trusted and specialised community reaching directly +600 quadruple helix players hosted since 2014 by the Vanguard Initiative (VI) and co-led by 3DoP partners SIM/Flam3D and Brainport Development. VI is a network association currently composed of 38 member regions and their economic stakeholders from across the EU. VI offers a cross-regional content driven platform to meet and join forces in finding new innovative solutions to societal challenges. VI 3DP is mainly working on mapping the value chain, actively connecting the actors involved, supporting the design of collaboration projects and the early phases of implementation. 3DoP is allowing a selection of VI 3DP 'frontrunners' - complemented by some additional non-VI 3DP parties – to take a next decisive step on the TRL scale, towards full deployment of 3DP technology and actual market entries. VI 3DP serves as a dissemination arm to create spillovers and to ensure continuity (see section on sustainability). 3DoP has access to the **3DP PAN EU Gateway**, an online search engine and matchmaking tool for the European 3D Printing community and all value chain partners which has been built by 3DoP partners Brainport Development and IDEA Consult. 3DP PAN EU Gateway gives any interested organisation full overview of and access to the detailed offer of +300 suppliers 3DP related demonstration services (equipment, advice, etc.) across the EU helping companies to improve their competitiveness. This enables anyone to find complementary expertise and bring together demand and supply. It is an online technical support tool allowing interaction between 3DoP partners and enabling also a larger reach-out. 3DoP will actively use this to ensure benefits going beyond own consortium partners.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	All projects within the Investment Package are contributing to an overarching ambition, which is related to lead company and SMEs' needs in terms of smart, green and more competitive transition, ensure impact maximization by bundling projects towards VC and leading companies needs. The activities supporting the different Investment Packages will contribute to maximize the project impact to extend the reach of the results of the SME-led sub projects. In the short term, new value chains centered on SMEs providing new types of green and digital technologies enabled by AM will reach the market while in the medium and long term perspective those new value chains will reinforce relevant economic sectors contributing to strengthen them and make EU industry more efficient, sustainable and competitive. In the short term the project will tackle the main obstacles for the widespread adoption of AM by demonstrating and bringing to the market less expensive, high quality, fully integrated 3DP solutions, so contributing to the implementation of innovative paradigms in the production and maintenance processes. This will increase the number of SMEs adopting innovative technologies, exploring new business models and investing in skilled persons, thus contributing to making - in the medium term - the EU SMEs more competitive and sustainable (Table 1 in ANNEX 4). The impacted markets in the long term are potentially huge

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	spanning from food, to medical, from automotive, to energy, cleantech, repair & maintenance, etc. A relevant medium term impact of the project will be an high capacity of the Regions to drive investments and co-invest on S3 priorities enabled by AM, supporting strategy implementation and unlocking the EU regions innovation.

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3.2. Partner 2 – PROFACTOR

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Template for Flagship Project	
Title of Organisation:	PRO: PROFACTOR GmbH
Date of Reporting	
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	CoRTeam
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	In the era of mass customization that demand manufacturing industries for small lot size production, Europe is also experiencing a demographic change with growing concern of the retiring workforce and a subsequent skill drain. To keep up the high quality of produced goods and the need of optimized assistance for the worker/s in the factory, flexible assistance systems are being developed. The goal is to assist users at the factory floor both physically (e.g., using robots) and cognitively (e.g., intelligent guidance system). However, dealing with the factory floors involves multiple working stations and users. Therefore, such solutions should tackle multiple users and varying production workflows (mass customization) which could involve multiple robots. Such assistance systems should also be re-configurable (to accommodate production changes) according to the situation in the factory floor and cater to users accordingly. The project CoRTeam aims at implementing a reconfigurable framework to deploy and configure multiple collaborative teams of workers, robots and machines in manufacturing processes. This is achieved by a human-centered approach, studying behaviors and practices at work, informing a digital simulation environment that can optimally and dynamically allocate roles of agents (humans, robots) and initiate the required collaboration to improve the overall productivity at factory floor level. CoRTeam promotes a humanistic perspective to robotization (introduction of robots to carry out industrial tasks): it engages the gendered worker (their values, beliefs and abilities) in participatory design of their future working contexts. This approach will improve equality, diversity and inclusion by design, thus opening the possibility to reducing the gender gap in manufacturing industries. The project tackles safety holistically, as a key quality metric of robot adoption at work, and ensures safety at the factory floor level and at the local workstation level.
CAMI4.0 Technology Focus - Primary	*Automation & Robotics*
PP's CAMI4.0 Tin Role	*Core*
CAMI4.0 Technology Focus - Secondary	**Choose as many secondary influencing technologies that apply;**

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	☒ Intelligent Production Systems ☒ Automation & Robotics ☐ Smart and Advanced Materials ☒ Artificial Intelligence

Project Partners Pool (feel free to create more rows if necessary):

Name all the stakeholder involved in your flagship project

PP Name	Org Type	Org Role	NUTS2 Region
PROFACTOR GMBH	SME	Knowledge Enabler	AT
LIBERA UNIVERSITA DI BOLZANO	Higher Education & Research	Knowledge Facilitator	IT
OULUN YLIOPISTO	Higher Education & Research	Knowledge Enabler	FI
LUNDS UNIVERSITET	Higher Education & Research	Knowledge Supplier	SE
UNIVERSITA DEGLI STUDI DI TRENTO	Higher Education & Research	Knowledge Enabler	IT
ALMA MATER STUDIORUM - UNIVERSITY DI BOLOGNA	Higher Education & Research	Knowledge Enabler	IT
HT Laser Oy	SME	Knowledge Enabler	FI
FUNDACIO EURECAT	National Public Authority	Knowledge Supplier	ES
EUROPEAN DYNAMICS LUXEMBOURG SA	Business Support Organisation	Knowledge Facilitator	LU
EUROPEAN DYNAMICS ADVANCED INFORMATION TECHNOLOGY AND TELECOMMUN ICATION SYSTEMS SA	SME	Knowledge Receiver	EL
ARTIMINDS ROBOTICS GMBH	SME	Knowledge Enabler	DE
NUOVA TESI SYSTEM SRL	SME	Knowledge Facilitator	IT
RINA CONSULTING SPA	Business Support Organization	Knowledge Supplier	IT

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	RINA CONSULTING - CENTRO SVILUPPO MATERIALI SPA	Business Support Organization	Knowledge Supplier	IT
	ALSTOM TRANSPORTE SA	SME	Knowledge Facilitator	ES
	Printstones GmbH	SME	Knowledge Supplier	AT
	NATIONAL UNIVERSITY CORPORATION TOHOKU UNIVERSITY	Higher Education & Research	Knowledge Facilitator	JP

Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone	Start date	End Date
	Open Call		
	Submission Deadline		24.09.2021
	Result of Evaluation & Contract	24.02.2022	24.05.2022
	Project Start	01.10.2022	1.10.2025

Define the budget of your Flagship project:	What is the fiscal value of the project?	7,9 milion €
	What are the different financing unit of the project?	European Comission
	What are the funding program(s) used? What are the other potential funding sources?	Horizon Europe
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Submission Document	

Challenge addressed by the flagship project	
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship?	In the era of mass customization that demand manufacturing industries for small lot size production, Europe is also experiencing a demographic change with growing concern of the retiring workforce and a subsequent skill drain

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Describe the challenge addressed in Maximum 700 characters	
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☐ *Large Enterprises* ☒ *SME* ☐ *Higher Education & Research Organisation* ☐ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C32 - Other (please clarify below)Mass Customization**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Objectives: Modular framework implementation
What are the key goals to achieve this project? What are the specific objectives?	The goal is to assist users at the factory floor both physically (e.g., using robots) and cognitively (e.g., intelligent guidance system). However, dealing with the factory floors involves multiple working stations and users.
What is the methodology utilised to implement the solution?	Such solutions should tackle multiple users and varying production workflows (mass customization) which could involve multiple robots. Such assistance systems should also be re-configurable (to accommodate production changes) according to the situation in the factory floor and cater to users accordingly.

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What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	This approach will improve equality, diversity and inclusion by design, thus opening the possibility to reducing the gender gap in manufacturing industries.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	We set up a team of proposal writers including all stakeholders.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The project CoRTeam aims at implementing a reconfigurable framework to deploy and configure multiple collaborative teams of workers, robots and machines in manufacturing processes. This is achieved by a human-centered approach, studying behaviors and practices at work, informing a digital simulation environment that can optimally and dynamically allocate roles of agents (humans, robots) and initiate the required collaboration to improve the overall productivity at factory floor level. CoRTeam promotes a humanistic perspective to robotization (introduction of robots to carry out industrial tasks): it engages the gendered worker (their values, beliefs and abilities) in participatory design of their future working contexts.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	According the European Commission Rules
How is your flagship connected with other flagship projects? What are the most important connection points?	Technology Transfer & Similar interest groups
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	***Yes***
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	It meets the technical interest of CEUP and deals with a European wide problem.
How does the Flagship impact the competitive advantage of	The proposed result affects multiple layers of production it increases competitiveness by effectiveness.

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Central Europe's manufacturing eco-system?	
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	It came out to be a result out of the dialogues between the different stakeholders.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	This project will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan of the commission: CLIMATE NEUTRAL, CIRCULAR AND DIGITISED PRODUCTION

Template for Flagship Project	
Title of Organisation:	PRO: PROFACTOR GmbH
Date of Reporting	
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	Human Centered AI Based Production Optimization (HAIPrO)
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	The project addresses the topic of vertical process optimization to increase productivity and sustainability, taking production data and human-centered assistance into account. The main challenges are: a) increasing personalization in production with small batch sizes, b) increasing conversion costs for new production lines, c) great variability in processes involving human actors, d) lack of sustainability of modern production processes as well as d) ethical, especially privacycritical aspects like GDPR. The use of assistance systems is intended to make production more flexible (e.g. by supporting low volume, high mix production, greater transparency of both machine operation and process management). An inter-company quality data exchange or inter-company available evaluation and visualization services enable a crosscompany increase in product quality (e.g. by integrating the Gaia-X platform). Tools are created to guarantee high interoperability of the quality data to be exchanged. Furthermore, the project aims to increase worker satisfaction, productivity and the sustainability of humancentered manufacturing processes through an improvement in the safety and stability of manufacturing processes and through optimized, employee-centered

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<table>
<tr><td></td><td>production planning. This is made possible by processes such as transfer learning, data augmentation and data fabrication. This data is to be enriched by individual operating and handling data at operator and team level. An innovative platform for privacypreserving-transform-learning and the integration of the open platform Gaia-X guarantee a high level of data security and data sovereignty even when using data sources with differing statistical characteristics</td></tr>
<tr><td>CAMI4.0 Technology Focus - Primary</td><td>Intelligent Production Systems</td></tr>
<tr><td>PP’s CAMI4.0 Tin Role</td><td>Core</td></tr>
<tr><td>CAMI4.0 Technology Focus - Secondary</td><td>Choose as many secondary influencing technologies that apply;

☒ Intelligent Production Systems
☒ Automation & Robotics
☐ Smart and Advanced Materials
☒ Artificial Intelligence</td></tr>
<tr><td>Project Partners Pool (feel free to create more rows if necessary):
Name all the stakeholder involved in your flagship project</td><td>
<table>
<tr><td>PP Name</td><td>Org Type</td><td>Org Role</td><td>NUTS2 Region</td></tr>
<tr><td>PROFACTOR GMBH</td><td>SME</td><td>Knowledge Enabler</td><td>AT</td></tr>
<tr><td>Karlsruher Institut für Technologie</td><td>SME</td><td>Knowledge Facilitator</td><td>DE</td></tr>
<tr><td>Software Competence Center Haagenberg</td><td>Higher Education & Research</td><td>Knowledge Facilitator</td><td>AT</td></tr>
<tr><td>BRP-Rotax GmbH & Co KG</td><td>SME</td><td>Knowledge Supplier</td><td>AT</td></tr>
<tr><td>Fabasoft R&D GmbH</td><td>SME</td><td>Knowledge Supplier</td><td>AT</td></tr>
<tr><td>Research Industrial Systems</td><td>SME</td><td>Knowledge Supplier</td><td>AT</td></tr>
</table>
</td></tr>
</table>

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	Engineering GmbH			
	TTTech Industrial Automation AG	SME	Knowledge Receiver	AT
	AUDI AG	Large Enterprise	Knowledge Receiver	DE
	Fraunhofer ISST	SME	Knowledge Facilitator	DE
	ITQ GmbH	SME	Knowledge Receiver	DE

Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone	Start date	End Date
	Project Presentation		02.09.2021
	Data Submission		06.10.2021

Define the budget of your Flagship project:	What is the fiscal value of the project?	5,47 Mio €
	What are the different financing unit of the project?	FFG BMWi/DLR-PT
	What are the funding program(s) used? What are the other potential funding sources?	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Submission Document Short Description Project-Folder	
Challenge addressed by the flagship project		
Which challenges have to be overcome in the context of the	The main challenges are: a) increasing personalization in production with small batch sizes, b) increasing conversion costs for new production lines, c) great variability in processes involving human actors, d) lack of sustainability of	

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project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	modern production processes as well as d) ethical, especially privacy-critical aspects like GDPR.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☐ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C29 - Manufacturing of Motor Vehicles, Trailers and SemiTrailers**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	An inter-company quality data exchange or inter-company available evaluation and visualization services enable a crosscompany increase in product quality (e.g. by integrating the Gaia-X platform). Tools are created to guarantee high interoperability of the quality data to be exchanged
What are the key goals to achieve this project? What are the specific objectives?	An innovative platform for privacy-preserving-transformlearning and the integration of the open platform Gaia-X guarantee a high level of data security and data sovereignty even when using data sources with differing statistical characteristics
What is the methodology utilised to implement the solution?	The use of assistance systems is intended to make production more flexible (e.g. by supporting low volume, high mix production, greater transparency of both machine operation and process management).
	The project aims to increase worker satisfaction, productivity and the sustainability of human-centered

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What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	manufacturing processes through an improvement in the safety and stability of manufacturing processes and through optimized, employee-centered production planning
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The project developed out of several discussions between industrial partners and research institutes. Basically, all requirements are met, however, due to many administrative procedures given by the government it is not anymore feasible for the industrial partners.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	Based on the rules of FFG & BMWi/DLR-PT
How is your flagship connected with other flagship projects? What are the most important connection points?	Technology Transfer & Similar interest groups
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	***Yes***
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	It meets the technical interest of CEUP and deals with a European wide problem.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The proposed result affects multiple layers of production it increases competitiveness by effectiveness.
How is the project compatible with strategies and policies pursued on the regional /	It came out to be a result out of the dialogues between the different stakeholders.

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national / European level? (Please reference your preparatory discussions)	
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	This project will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan of the commission: CLIMATE NEUTRAL, CIRCULAR AND DIGITISED PRODUCTION

3.3. Partner 3 – PIA

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Template for Flagship Project				
Title of Organisation:	PIA: Association Industry 4.0 Austria			
Date of Reporting	03.12.2021			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	***Share4.0 – SK-AT***			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	There is a solid knowledge base for research and innovation in the cooperation area. However, there is a lack of constant cooperation between the key players. The institutions involved only build regional, national, and cross-border relationships on an ad-hoc basis, but strategic cooperation and networking is not significantly evident. Awareness of permanent strategic cooperation is latent, but has yet to be developed, established and anchored through workable structures and processes. Other challenges relate to insufficiently finding qualified staff, exploiting research results, and incorporating EU excellence into research and innovation activities. Share 4.0 implements current needs of the target groups as well as strategic documents in a practicable way and forces cooperation potentials through a distinctive transfer for high-quality implementations and new forms of cooperation.			
CAMI4.0 Technology Focus - Primary	*Intelligent Production Systems*			
PP's CAMI4.0 Tin Role	*Core*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☐ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	Profactor GmbH	**Higher Education & Research**	Knowledge Supplier	Vienna
	FOTEC Forschungs- und Technologietransfer GmbH.	**Interest Group (incl. NGOs)**	Knowledge Supplier	Lower Austria

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	Forschung Burgenland GmbH	**Interest Group (incl. NGOs)**	Knowledge Supplier	Burgenland
	Ústav materiálov a mechaniky strojov Slovenskej akadémie vied	**Other (Contributory organisation)**	Knowledge Supplier	Bratislavský kraj
	Národné centrum robotiky	**Other (Non-profit organisation)**	Knowledge Supplier	Bratislavský kraj
	Slovenská inovačná a energetická agentúra	**Other (Contributory organisation)**	Knowledge Supplier	Bratislavský kraj
	Združenie inteligentného priemyslu - Industry4UM	**Other (Non-profit organisation)**	Knowledge Supplier	Bratislavský kraj
	Plattform Industrie 4.0 (PIA)	**Other (Non-profit organisation)**	Knowledge Supplier	Wien
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Kick-off meeting		19.7.2021	19.7.2021
	Publication of Organization Manual		1.8.2021	15.12.2021
	Publication of pilot project final report #1		1.8.2021	1.8.2022
	Publication of pilot project final report #2		1.8.2021	1.8.2022
	Publication of strategy and action plan 2021-2027		1.10.2021	30.11.2022

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	Signing of MoU	1.10.2021	30.11.2022
	Submitting final report	30.11.2021	30.4.2023
Define the budget of your Flagship project:	What is the fiscal value of the project?	779.985,97 €	
	What are the different financing unit of the project?	---	
	What are the funding program(s) used? What are the other potential funding sources?	Interreg V-A Slovakia - Austria 2014 - 2020	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Application form (can be provided on demand) Partnership Agreement (can be provided on demand)		
Challenge addressed by the flagship project			
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	A key challenge relates to the creation of the foundations for sustainable cooperation and how to deepen and anchor those. This may be achieved by the strategy and action plan 2021-2027 and by the Memorandum of Understanding. In order to enable efficient and effective cooperation between the relevant decision-makers and multipliers for Industrie 4.0 and to anchor it substantially and permanently, various political instruments must be used, and a cross-border framework created. This may be the way to ensure that the interests of both regions are given equal consideration.		
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☐ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☐ *Schools and Training Institutes*		
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☒ *Service and Repair*		

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	☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	***C32 - Other (please clarify below)Different manufacturing sector in the project region (AT & SK) are addressed by this project.***
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Our solution aims at creating a cross-border Smart Industry Network. In order to implement a sustainable solution, we will collaboratively create an organisational manual, we will build a Memorandum of Understanding and we will draft a Strategy as well as an Action Plan for fostering the Network I the region.
What are the key goals to achieve this project? What are the specific objectives?	One key goal is the establishment of the work basis in the form of an organization manual for the Smart Industry Network SK-AT for forcing and optimizing the cooperation for research and innovation. Another important goal is the Implementation of two joint cross-border pilot projects with high model character for the SK-AT region A third goal of the project is the sustainable anchoring of the Smart Industry Network SK-AT.
What is the methodology utilised to implement the solution?	The project heavily relies on cross-boarder collaboration. Therefore, the constant exchange and the building of relationship in order to create trust among the project partners is a key feature and methodology of SHARE 4.0.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	We want to establish workable structures and work processes for cooperation, knowledge management, learning, innovation and trend monitoring. The flagship project aims for building and anchoring a sustainable model for smart industry governance in the SK-AT region. The project should create model projects for Industrial Assistance Systems and Resilient Sustainable Production Systems by using research infrastructure, knowledge transfer and exploiting the results of synergetic projects and initiatives. SHARE 4.0 will anchor the cooperation within the region by developing the strategy and action plan and by signing the MoU for the Smart Industry Network.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	There were hardly any difficulties during the development phase. The project goals were clearly communicated right from the start and each project partner was able to identify with them. There is one main partner per country. These carry out coordination in the respective country and communicate the results. Key decisions were made in project partner meetings. A negligible difficulty was the language barrier.

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	The working language is English while publications are published in German and Slovak. The long, delayed approval process affected the project schedule.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The implementation phase has started with the project kick-off (July 2021). One project partner is responsible for each work package. The work package 3 forms the basis for work package 4. The organization manual (December 2021) and the implementation of the two pilot projects (August 2022) lay the foundation and provide important insights for the development of the strategy and action plan (November 2022). Cooperation beyond the project period and based on the strategy and action plan will be guaranteed by the Memorandum of Understanding (November 2022).
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The SHARE 4.0 project team will be creating one monitoring report per reporting period on activities performed and outputs according to the schedule. It is also planned to establish a concept for the work processes and structures of quality and risk management. A management group to participate in discussions on quality of implementation and results and to continuously review partner reports and overall reports on quality of implementation and results will be created. Furthermore, the preparation of three reports on quality and risk management with recommendations for improvements and optimization is conducted.
How is your flagship connected with other flagship projects? What are the most important connection points?	While Share4.0 aims to establish a Smart Industry Network with various stakeholders and decision makers, Testbed Exchange aims to promote the cooperation of pilot factories and testbeds in Austria and the Czech Republic. The fields of action of Testbed Exchange include education and training, best practices for small and medium-sized enterprises as well as research and development in an Industry 4.0 context. Testbed Exchange could be seen as the cornerstone and preliminary phase of a Smart Industry Network in the Czech Republic and Austria. Both projects are building on PIA's efforts in cross-border cooperation that have been heavily influenced by CEUP 2030.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	SHARE 4.0 builds on the current and past work of PIA, e.g. in the project CEUP 2030. The regional and national need for a permanent sustainable strategic cooperation of Austria and Slovakia in the Industry 4.0 context results from the project partners know-how and the exchange with each other. There is a very good relationship between the project partners, as well as good regional networks – this situation results from mutual cooperation in the past. For instance, work with Profactor has been conducted through CEUP 2030.
Strategic/ Policy Impact:	

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How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The Joint Strategy of CEUP 2030 regarding IPS states the specific objective of "Transnational network building". This is the key area SHARE 4.0 focuses on. As one weakness, it was mentioned in the Joint Strategy that there is competition with other, especially regional networks – SHARE 4.0 aims to reduce that and create collaboration instead of competition in the program area.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The Flagship strengthens regional and cross-border cooperation of key Industrie 4.0 stakeholders and decision-makers. SHARE 4.0 also leads to the deepening of relationships within the program region. Apart from that, the project aims to create a role model effect of the Smart Industry Network for other Central European countries.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	Share 4.0 SK-AT contributes in particular to the following strategies and policies, with a focus on networking between the key players for research, technology and innovation, and thematically on the fields of industrial assistance systems and resilient sustainable production systems: • EU: Europe 2020 (Smart Growth) • Green Deal • Digital Agenda • S3 Smart Specialisation Strategy • EUDRS: e.g. PA7/WG1: Innovation and Technology Transfer Many of those have been discussed in CEUP 2030 and are closely linked to the project.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The European Commission's goal is to foster collaboration in the EU. In their focus on the "Twin Transition" they highly prioritize the collaboration on digital topics. SHARE 4.0 creates a sustainable network in the project region (SK and AT). The goal of this network is to be used as a potential leverage for further goals and projects in the future. For instance, the EU missions can only be reached if regions collaborate – SHARE 4.0 wants to contribute in this sense.
Template for Flagship Project	
Title of Organisation:	PIA: Association Industry 4.0 Austria
Date of Reporting	03.12.2021
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	***Testbed Exchange***
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	Even today, we often encounter a situation where the concepts of Industry 4.0 are still only vaguely understood, and each company may understand something different by it. We therefore believe it is necessary to create a solid framework that standardizes the view of Industrie 4.0 and

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<table>
<tr><td></td><td colspan="4">thus leads to a more concrete understanding of Industrie 4.0 among the general public. The leading players in Industrie 4.0 are currently in many cases universities and specialized departments of top companies. At academic institutions, so-called testbeds (in Austria called pilot factories) have emerged in recent years, which have both in-depth expertise and modern infrastructures. The aim of this project is to survey these testbeds and to create a sustainable network in which intensive communication, mutual learning and exchange of experience takes place.</td></tr>
<tr><td>CAMI4.0 Technology Focus - Primary</td><td colspan="4">Automation & Robotics</td></tr>
<tr><td>PP’s CAMI4.0 Tin Role</td><td colspan="4">Core</td></tr>
<tr><td>CAMI4.0 Technology Focus - Secondary</td><td colspan="4">Choose as many secondary influencing technologies that apply;

☒ Intelligent Production Systems
☐ Automation & Robotics
☐ Smart and Advanced Materials
☐ Artificial Intelligence</td></tr>
<tr><td rowspan="10">Project Partners Pool (feel free to create more rows if necessary):
Name all the stakeholder involved in your flagship project</td><td>PP Name</td><td>Org Type</td><td>Org Role</td><td>NUTS2 Region</td></tr>
<tr><td>Vysoká škola polytechnická Jihlava</td><td>Higher Education & Research</td><td>Knowledge Facilitator</td><td>Jihovýchod</td></tr>
<tr><td>Plattform Industrie 4.0 (PIA)</td><td>Other (Non-profit organisation)</td><td>Knowledge Facilitator</td><td>Vienna</td></tr>
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		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Kick-off		2.11.2021	2.11.2021
	Publication of Electronic catalog with thematic orientations, know-how and infrastructure of the testbeds / pilot factories		1.10.2021	31.12.2022
	Publication of strategic plan for fields of action (1) education and training, (2) research and development activities in the context of Industrie 4.0, and (3) exchange of best practices to support SMEs		1.10.2021	31.12.2022
	Holding of 3 topic-specific, publicly accessible workshops on Industry 4.0		1.6.2022	31.12.2022
	Signing MoU		31.12.2022	31.12.2022
	Submitting final report		31.12.2022	31.5.2023
Define the budget of your Flagship project:	What is the fiscal value of the project?		130 989,43 €	
	What are the different financing unit of the project?		---	
	What are the funding program(s) used? What are the other potential funding sources?		INTERREG V-A Austria - Czech Republic	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Application form (can be provided on demand) Partnership Agreement (can be provided on demand)			
Challenge addressed by the flagship project				
Which challenges have to be overcome in the context of the	There are many manufacturing SMEs in the program region, and both countries (CZ + AT) have a high ratio of industry to GDP. Due to the increasing complexity of Industrie 4.0 technologies, the manufacturing companies in particular need support in their digital transformation.			

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project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	In addition, there is a high need for testbeds/pilot factories to exchange information about successful activities, to cooperate and to learn from each other, as these testbeds/pilot factories have a not inconsiderable refinancing expense and at the same time (have to) build up expertise to support SMEs. Another problem is that many SMEs are not aware of valid or emerging norms and standards and may therefore experience a competitive disadvantage.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☐ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☐ *Business Support Organisation* ☒ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	***C32 - Other (please clarify below)This heavily depends on the focus of the respective pilot factories***
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	The basic idea in solving the main challenges is to connect selected pilot factories, where the project partners themselves will mainly act as facilitators. The goal of this collaboration is mutual knowledge transfer, exchange of experience and best practices. This approach, the establishment of a network of testbeds and pilot factories does not exist in the program region and therefore offers potential for joint research projects and joint submissions. The link between science and industry will be particularly important, as both companies and universities will be represented in testbeds.

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	Sustainable cooperation between the pilot factories is to be ensured by means of a MoC.
What are the key goals to achieve this project? What are the specific objectives?	One goal is to create and implement a strategic plan to identify key areas of interest and plan concrete collaborations among the cooperating pilot factories. The second goal concerns the transfer and publication of expertise. This will be done through three seminars. These seminars are designed for cooperating testbeds, SMEs, students and partner universities, as well as the general public. The goal of these seminars is to promote knowledge transfer of expertise and current trends between experts and the general public alike within the program region.
What is the methodology utilised to implement the solution?	Mutual exchange, common events, the exchange of information and seminars are used as methodologies to implement the solution.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The intended impact is to create a solid basis for cooperation within the program region and for potential future cooperation of individual pilot factories on specific R&D projects. The international network of technology-oriented institutions will consequently help to increase the competence level individual partners and members and thus their competitiveness and consequently contribute to the further development of the program region.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	There were minor difficulties regarding language barriers when developing the project. However, the project goals were clearly communicated right from the start and each project partner was able to identify with them. There are two partners in total, one per country. Each partner is responsible for the execution in their respective countries. Key decisions are made in project partner meetings. The working language is mainly English while publications are published in German and Czech. There were no delays in the approval process.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The implementation phase has started with the beginning of October. The kick-off meeting took place on the 2nd of November in Jhilava. Both project partners are collaborating on each work package. All project activities are planned in chronological order and built upon each other. The electronical calendar forms the foundation for the strategic action plan. The memorandum of cooperation will guarantee the future cooperation of pilot factories and testbeds.
How is the project being monitored throughout its lifespan	Creating one monitoring report per reporting period on activities performed and outputs according to the schedule. The lead partner is responsible for project monitoring.

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(development & implementation) and who is responsible?	
How is your flagship connected with other flagship projects? What are the most important connection points?	Share4.0 – SK-AT follows the goal to establish a Smart Industry Network in the Austrian – Slovakian region. Testbeds and pilot factories play a major role in the industry 4.0 context. Therefore, laying the foundations and working structures for a functioning network of testbeds and pilot factories may have a role model character for other regions in Central Europe.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	CEUP 2030 was our first Interreg project and a major step in our engagement within transnational European collaboration. The project has shown the regional and national need for collaboration of testbeds and pilot factories. The Testbed Exchange builds on best practices, knowledge of and relationships with major national industry 4.0 players that have been built through previous projects of PIA.
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The Joint Strategy states in the strengths of the CE region that infrastructure in A&R is available but that more knowledge has to be built in how to use the different technologies. The Testbed Exchange is aiming for that and tries to foster training and technology transfer in CE. Therefore, it is aligned with the Joint Strategy of CEUP 2030.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	Better regional and cross-border cooperation of testbeds and pilot factories as well as key Industrie 4.0 stakeholders; deepening of relationships within the program region; role model effect of pilot factory network for other Central European countries.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	Testbed Exchange contributes to the following strategies and policies, with a focus on networking the key players of industry 4.0 especially pilot factories with the open public: • CE 1662 Central Europe Upstreaming for Policy Excellence in Advanced Manufacturing & Industry 4.0 towards 2030 • Interreg CENTRAL EUROPE CE 1352 S3HubsinCE: Unleashing the potential of Transnational cooperation, through Digital Innovation Hubs, to promote RIS3implementation • Interreg CENTRAL EUROPE: ATHU118 Improving Structural Funds for better delivery of R&D policies, Interreg ATHU • CA18136 European Forum for Advanced Practices • Digitale Industrie Verständlich Eklärt • Activities of the CLC East on Industry 4.0 Many of the projects mentioned have been previously discussed in CEUP 2030 and are closely linked to the project.
How this project is going to answer the new challenges raised by the European Commission as a	The European Commission focuses on the green and digital transition. While the Testbed Exchange obviously is aligned with the goal of the digital transition, it should also lead to the more efficient use of pilot factories and testbeds

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focus area for the programming period 2021-2027?	throughout the program region. Therefore, it also aims to contribute to the green transition of CE.

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3.4. Partner 4 - IWU

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Template for Flagship Project				
Title of Organisation:	IWU: Fraunhofer			
Date of Reporting	24.01.2022			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	Smart Circuit			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	There is an increasing need to become resilient. We face globally impacting trends like climate change and overconsumption. That is why many countries have national funding programs and project opportunities in place to support sustainable ideas and innovation. Those sustainable ideas need to be embedded in many different technological areas for production of the future. The project tries to establish service corridors to promote sustainable transition in industrial production facilitated through digitally enabled technologies. The project tries to reduce implementation barriers and upgrade the production of sustainable products.			
CAMI4.0 Technology Focus - Primary	*Intelligent Production Systems*			
PP's CAMI4.0 Tin Role	*Learner*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☐ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	Krakow Technolo g y Park	**Business Support Organisation**	Knowledge Facilitator	Malopolsk a Poland
	PROFACT O R Gmbh	**Higher Education & Research**	Knowledge Supplier	Upper Austria
	Forschung Burgenlan d	**Higher Education & Research**	Knowledge Supplier	Burgenlan d
	microTEC Südwest	**Business Support Organisation**	Knowledge Facilitator	BadenWür ttembe rg Germany

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	SIIT scps	**Business Support Organisation**	Knowledge Facilitator	Liguria Italy
	Comet Cluster	**Business Support Organisation**	Knowledge Facilitator	Friuli Venezia Giulia Italy
	TECOS	**Business Support Organisation**	Knowledge Facilitator	Eastern Slovenia
	INTEMAC Solutions	**Business Support Organisation**	Knowledge Facilitator	CZ SouthEast
	Pannon Business Network	**Business Support Organisation**	Knowledge Facilitator	Western Transdanu bia Hungary
	HGK Varazdin	National Public Authority	Knowledge Enabler	Varazdin County croatia
	Technical University Kosice	Higher Education & Research	Knowledge Supplier	Eastern Slovakia
	Regional stakeholder ecosystem & associated partners	Choose an item.	Knowledge Receiver	CE
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Project Duration total		01.11.2022	31.10.2025
	Kick-off		November/December 2022	
	WP focused on learning		tbd	tbd
	WP focused on networking		tbd	tbd
	WP focused on projects		tbd	tbd
Define the budget of your Flagship project:	What is the fiscal value of the project?		2.2 million EUR as total project volume	
	What are the different financing unit of the project?		100% funded by EC (If granted)	

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	What are the funding program(s) used? What are the other potential funding sources?	Proposal in Interreg CE first call 2022 (15.11.21-23.02.22)
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	By February end proposal submission: application / information documents	
Challenge addressed by the flagship project		
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	There is an increasing need to become resilient. We face globally impacting trends like climate change and overconsumption. That is why many countries have national funding programs and project opportunities in place to support sustainable ideas and innovation. Those sustainable ideas need to be embedded in many different technological areas for production of the future. The project tries to establish service corridors to promote sustainable transition in industrial production facilitated through digitally enables technologies. This challenges should be addressed through better exchange and community building.	
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☒ *Schools and Training Institutes*	
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☒ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☒ *De or Re-Manufacturing* ☒ *Recycling and End of Life Management*	
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	***Many***	

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Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	- Set up exchange formats for project partners and facilitate sharing of experience - Exchange of good practices - Fostering new projects and pilot actions
What are the key goals to achieve this project? What are the specific objectives?	(1) Improving capacities of and cooperation among innovation stakeholders by strengthening transnational innovation networks among digital innovation hubs (2) Exchanging good practice on digital circular economy in manufacturing and gaining insights from successes. (3) Implementing pilot actions to improve SMEs access to the research and technological innovation required to take up and support the roll out of innovative solutions to promote digitally-enabled circularity.
What is the methodology utilised to implement the solution?	Exchange formats, workshops, projects
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	To help SMEs to better integrate digital and circular principles in their sustainable transition to industry 5.0
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	Through some already established connections in other projects and through the talks within Interreg CEUP2030, the project development could become concrete quickly and some of the partners were already comfortable with each other.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The proposal writing phase is still ongoing and the very specific milestones are not set yet. The different reports and interim results will probably be reflected in milestones. The final (submission) decision will be made by the end of February 2022.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	Proposed lead partner KTP will overlook the management and the proper development of the project tasks.
How is your flagship connected with other flagship projects? What are the most important connection points?	The exchange and network building approach is very important and will be a connecting point to other project ideas.
On what did you capitalize to build this flagship project? Does	It builds on the S3HubsinCE and CEUP2030 projects.

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it expand previous projects, programs, initiatives and good practices?	
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The flagship pays in to the "subtopic 1: Smart Sustainable Manufacturing" which was defined in the CEUP2030 common strategy.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	It strengthens the innovative capacity of the involved SMEs and helps SMEs to better integrate digital and circular principles in dealing with industry5.0, initiate new collaborations and bring together stakeholders to spin joint ideas and possibly projects.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	The EU released the EU Circular Economy Package as well as the EU Action Plan for Circular Economy in 2015. In these documents it is clear that change is necessary and encouraged to establish concepts in union with sustainable principles. Documents like the recently published "Materials 2030 Manifesto1" also point out the linkages and importance of new materials and circular and sustainable principles as well as being the key to sustained European competitiveness.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The challenges above mentioned have been gradually raising and have become core in the new programming period and focus areas. Therefore, the challenges are more relevant than ever.

Template for Flagship Project	
Title of Organisation:	IWU: Fraunhofer
Date of Reporting	24.01.2022
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	STEPUP smart[3]
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	It is the purpose of the project to further develop the services and USPs for companies in the region. The overall goal should be to increase the number of the memberships in smart[3] network and of cooperations/cooperation projects to boost the impact of the smart materials community. The project aims at identifying and developing new cooperation partners

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	in Germany and internationally, establishing new offers in English, generally new services to provide incentives and stimulate innovation and participate in roadshows and events.
CAMI4.0 Technology Focus - Primary	*Smart and Advanced Materials*
PP's CAMI4.0 Tin Role	*Lead*
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☐ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☐ *Artificial Intelligence*

Project Partners Pool (feel free to create more rows if necessary):

Name all the stakeholder involved in your flagship project

PP Name	Org Type	Org Role	NUTS2 Region
Smart³ Network Partners	Diverse/multiple: Many are companies and Higher Education and Research.	Knowledge Receiver	Majorly Eastern Germany

Duration of Flagship Project / of each milestones (Intended Start and End):

At least 5 Milestones should be identified

Milestone	Start date	End Date
MST1 : Kick-off	01.05.2023	31.05.2023
MST2: Mid-term Evaluation	01.12.2023	31.12.2023
MST3: final conference & future perspective	01.05.2025	31.05.2025

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Define the budget of your Flagship project:	What is the fiscal value of the project?	Ca. 200K EUR funding / project volume around 260K EUR	
	What are the different financing unit of the project?	SAB financing (central development agency of the Free State of Saxony)	
	What are the funding program(s) used? What are the other potential funding sources?	SAB financing (central development agency of the Free State of Saxony)	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Excerpts of the submission document The proposal is in its first stage and further changes are possible when entering the review processes.		
Challenge addressed by the flagship project			
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The funding scheme is very focussed on the tangible strengthening of regional/Saxon players. That is why the reasoning had to be very clear in the proposal, on point and underlining those aspects specifically.		
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☐ *Business Support Organisation* ☒ *Schools and Training Institutes*		
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☒ *Design* ☒ *Procurement* ☒ *Manufacturing* ☒ *Distribution* ☒ *Marketing / Sales* ☐ *Service and Repair*		

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	☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C32 - Other (please clarify below)** The companies and members of the smart³ network are very diverse and target different stages in the manufacturing process as well as different areas within manufacturing up to design/art.
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	- New workshop formats to incentivize innovative ideas - International information material and international orientation - Visibility and range increase through event participation, trade fairs etc.
What are the key goals to achieve this project? What are the specific objectives?	- Spread of smart materials knowledge and competence - Gain of potential / new network members - Value adding for SMEs and big enterprises
What is the methodology utilised to implement the solution?	- Interactive workshop formats bringing together scientific competence and the companies (SMEs) with their specific need
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	- International orientation - Increase in international partners and visibility - Strengthening of value creation and business through reflux from the network contacts to the region Saxony
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The proposal passed the first evaluation phase and now, some remarks from the policy making institution have to be incorporated. The regional focus has to be put in the spotlight and the descriptions need to be further adjusted and accentuated. The proposal may face changes in this review process.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The flagship follows a 3 step plan, beginning with the preparation phase where the workshops are planned and communicated and the information materials translated. Step 2 will consist of innovative cooperation flagship projects and step 3 will be the continuous marketing activity for increase of attractiveness and visibility. The milestones fit accordingly.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The management team of the smart³ network together with the involved IWU colleague from the CEUP2030 project will prepare the proposal, manage the timely achievements and assure to stick to the planned timeframe.
How is your flagship connected with other flagship projects? What are the most important connection points?	The connection is achieved through the focus on community building, strengthening and amplification of international networks and clusters about smart & new materials or in

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	general research topics. Even though the focus is different, PP AFIL also focussed on a community building approach.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	The project follows off a German national funding program (Zwanzig20 program) from the BMBF (German Ministry for Education and Research) which officially ended December 2021. The idea and concept, which was "planted" with the inauguration and first years of the network's existence, will be continued and enriched with this flagship.
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	It focusses on the community and network building aspect and is in line with the goals expressed in the joint strategy for the TIN 3 Smart & New Materials, subtopic 3 "smart materials networks".
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	It aims at strengthening of value and business creation through the reflux from the new contacts to the region Saxony, ideally in form of projects, cooperation arrangements and orders.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	New materials technologies are a huge topic area in the High-tech Strategy in Saxony and Germany. Furthermore, their importance for Europe's future competitiveness and science is underlined in the newly issued "Materials 2030 Manifesto" 1 . In the Manifesto 4 pillar were outlined that generate the basis for the development of advanced materials. Those are Safeguarding Europe´s technology leadership, reducing the environmental footprint by using advanced materials, securing strategic autonomy and targeting advanced materials innovation markets.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The uptake of smart and new materials have a high potential for sustainability and green/circular technologies. Therefor they are in line with the new challenges and goals raised by the European Commission in the next programming period.

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3.5. Partner 5 - KIT

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Template for Flagship Project				
Title of Organisation:	KIT: Karlsruhe Institute of Technology			
Date of Reporting	30.11.2021			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	NEXT4FUN (Next Generation InkJet-based Process Chain for 3D/4D Multi-material Functional Printing)			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	NEXT4FUN is a project that combines both scientific development as well as training the next generation of researchers in the field. The scientific training is combined with complementary skills and hands-on training exercises, creating highly trained personnel. Therefore, Next4Fun will: (1) Ensure the availability of highly trained professionals to facilitate the rapid growth of the AM industry, and enrich their future career opportunities while promoting the innovation capabilities of European industry; (2) Launch the next generation of 3D/4D functional inkjet printing technologies and hence increase the range of applications of AM technologies; (3) Facilitate the integration of AM processes within Industry 4.0 smart manufacturing, thereby making it more attractive for large-scale adoption by European industry and thus increasing the market acceptance and penetration of AM.			
CAMI4.0 Technology Focus - Primary	*Intelligent Production Systems*			
PP's CAMI4.0 Tin Role	*Core*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☐ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	KIT	Higher Education & Research	Knowledge Supplier	BW, Germany
	TUD	Higher Education & Research	Knowledge Supplier	Delft, NL
	KTH	Higher Education & Research	Knowledge Supplier	Stockholm, Sweden

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	UL	Higher Education & Research	Knowledge Supplier	Luxembour g
	UNIPD	Higher Education & Research	Knowledge Supplier	Padua, Italy
	AMU	Higher Education & Research	Knowledge Supplier	Paris, France
	Tiger	SME	Knowledge Enabler	Vienna, Austria
	NOS	SME	Knowledge Enabler	BW, Germany,
	Sensofar	Large Enterprise	Knowledge Enabler	Barcelona , Spain

Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone	Start date	End Date
	Website public and vacancies advertised	1	6
	All Doctoral Candidates (DC) recruited and submission of Researcher declaration on conformity to the participant portal.	6	12
	Personal Career Development Plans for all DCs	6	48
	Next4Fun book publication	12	48
	All DCs receive PhD degree	48	60

Define the budget of your Flagship project:	What is the fiscal value of the project?	~ 2.7 Million EUR
	What are the different financing unit of the project?	Horizon Europe
	What are the funding program(s) used? What are the other potential funding sources?	Horizon Europe MSCA DN
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Signed and sealed submitted proposal	

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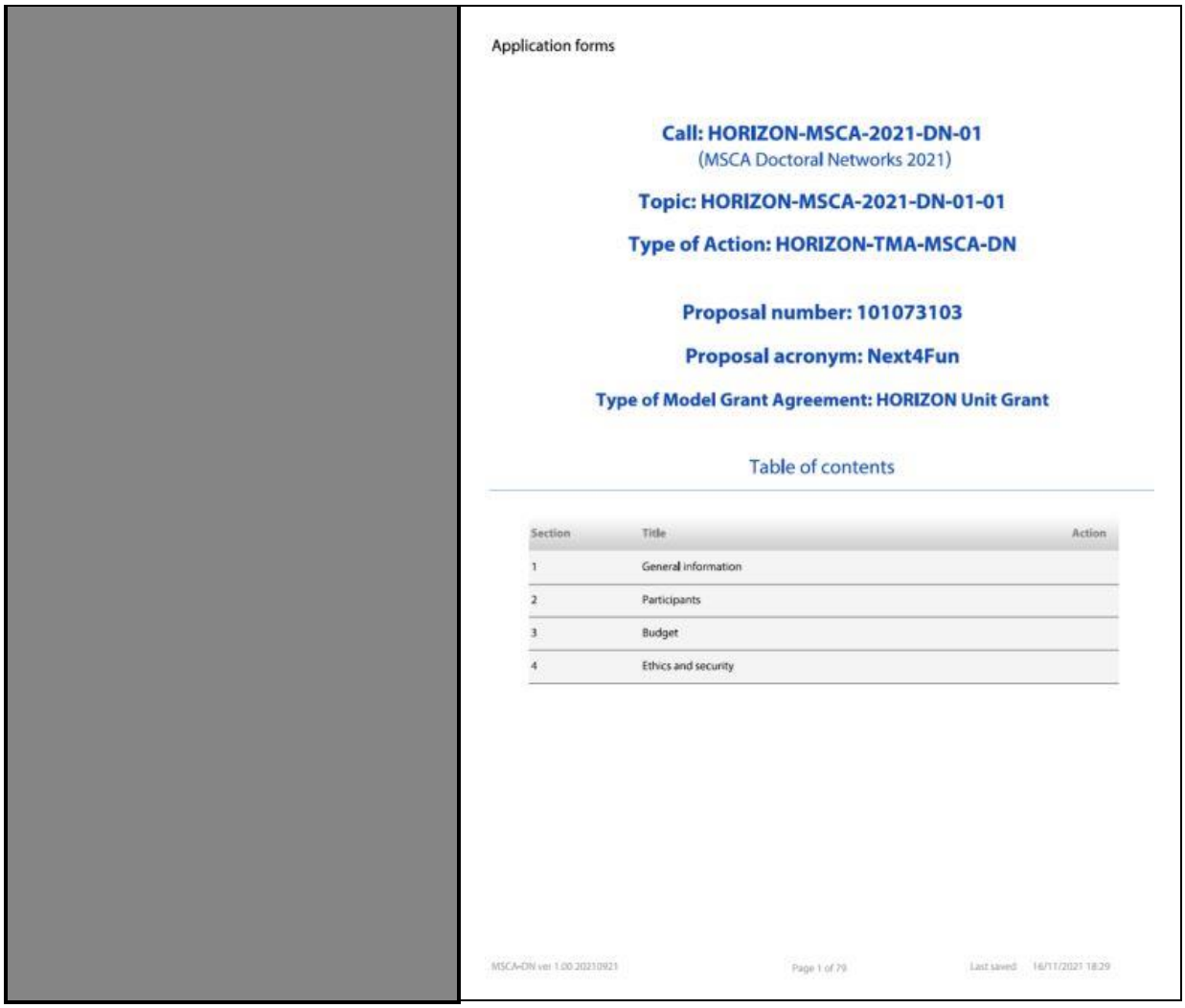

Application forms

Call: HORIZON-MSCA-2021-DN-01
(MSCA Doctoral Networks 2021)

Topic: HORIZON-MSCA-2021-DN-01-01

Type of Action: HORIZON-TMA-MSCA-DN

Proposal number: 101073103

Proposal acronym: Next4Fun

Type of Model Grant Agreement: HORIZON Unit Grant

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(https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq)

Challenge addressed by the flagship project	
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	Next4Fun will: (1) Ensure the availability of highly trained professionals to facilitate the rapid growth of the AM industry, and enrich their future career opportunities while promoting the innovation capabilities of European industry; (2) Launch the next generation of 3D/4D functional inkjet printing technologies and hence increase the range of applications of AM technologies; (3) Facilitate the integration of AM processes within Industry 4.0 smart manufacturing, thereby making it more attractive for large-scale adoption by European industry and thus increasing the market acceptance and penetration of AM.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☐ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development*

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	☒ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☒ *Service and Repair* ☒ *De or Re-Manufacturing* ☒ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C28 - Manufacturing of Machinery and Equipment**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	The scientific work of the project is divided into three interconnected technical work packages, namely WP1- Computational design, simulation and modelling techniques, WP2-Process Development and WP3- Integrated smart and sustainable manufacturing. The results of the technical WPs will be shared proactively within the consortium in order to foster mutual technology development.
What are the key goals to achieve this project? What are the specific objectives?	Our overarching goal is to train highly-skilled Doctoral Candidates (DCs), collaborating to push the state-ofthe-art 3D/4D printing-based process chain by addressing the primary scientific challenges. To this end, Next4Fun builds the 'next generation functional inkjet-based process chain' to create complex multimaterial 3D systems and devices with additional actuation and sensing functionalities and preprogrammed structural responses
What is the methodology utilised to implement the solution?	Next4Fun achieves this by the collaboration of research groups in topology optimisation, mechanics of materials, manufacturing innovation, metrology, sensors development and influential industries. The constant and close interconnectivity between industrial and academic participants ensures that the DCs are trained both via industry pull and research push.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	Next4Fun pushes the boundaries of the current stateof-the-art in a variety of topics such as the development of multifunctional sensors and devices, topology optimisation, (open-source) multi-physics and multi-scale simulation and multi-material printing development, real-time monitoring, metrology, sustainability assessment, close-loop feedback control. The innovation lies in integrating all these topics to develop a unified holistic process chain able to print fully functional multi-material 3D/4D devices and sensors, while creating a new capability standard and thus boosting future opportunities for European industry. Additionally the trained DCs are expected to contribute to the requirements of the EU in this field.
	It helped that all partners have previous experience with Marie Curie project development. At the heart of Next4Fun

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How did you manage the development phase? What were the difficulties met and how did you mitigate them?	are its 10 DCs. Each DC will take part in a research project within their academic organisations forming the primary part of the training programme. Due to the complexity of 3D/4D printing processes, a tightly-knit interdisciplinary cross-collaboration of the DCs is required. To ensure this, each DC will be mentored by an expert supervisor anchored at the host beneficiary site.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	Through close collaboration between internationally recognised scientists and leading industries, all with long-term expertise in AM, the Next4Fun DN will address both the innovation and training requirements, and facilitate the creation of the next generation 3D/4D inkjet AM process chain and deliver several scientific and technological firsts: multi-material parts with integrated functionalities, such as strength, conduction, sensing, and actuation. All Next4Fun DCs will be immersed within a comprehensive training programme that exposes them to multi-disciplinary knowledge of the Next4Fun entire inkjet process chain. During the implementation the major milestones are geared towards involving the ESRs by guiding them with personal career development plans as well as publications and the eventual award of the PhD degree.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The project creates a plethora of different review committees as well as support committees for the DCs, Monitoring is therefore done by the steering committee and regularly reported to be submitted and reviewed by the EC.
How is your flagship connected with other flagship projects? What are the most important connection points?	This flagship though is a standalone topic as its focus is on research and training. It connects to other flagship projects such that they are complementary to each other in terms of topics addressed or that stakeholders involved in other flagships can benefit from the scientific outputs of this flagship project or maybe even support the activities by providing additional use cases o opportunities to test the scientific outcomes in reallife scenarios in an industrial context. The flagships are all essentially pushing the state of the art of CAMI 4.0 topics.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	We had a similar Marie Curie project and we build our new flagship project with some of our partners participating in previous projects
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The flagship project is situated in one of the main key target areas for development as exposed in the joint strategy document for Baden Württemberg
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The expansion to 3D/4D functional printing with the early involvement of European stakeholders from industry (with experience in training young researchers) will allow Europe to compete at the forefront of 3D/4D printing for high-value, multifunctional devices and sensors and to enter markets currently led by the USA and China. Next4Fun will therefore

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	lay the foundations of training of highly specialised researchers in the field of 3D/4D printing that will strengthen future European innovation capabilities. Next4Fun will contribute to sowing the seeds to yield the future work-force requirements of a rapidly growing AM industry.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	The project impact results from addressing the strategic priorities of European Commission for 2019- 2024 in terms of a European Green Deal and an economy that works for people. Many production jobs in manufacturing involve repetitive, physically demanding work, which could be effectively fulfilled by 3D/4D printing. However, current 3D/4D printing technologies are not adequately competitive enough to alter conventional manufacturing flows. Increasing the investment in this area will promote the creation of high-quality work opportunities for EU citizens. Furthermore, 3D/4D printing technologies compared with conventional subtractive methods, inherently saves material, and reduces the consumption of raw materials, which then indirectly reduces the CO2 emissions and ease the negative effect to the environment from the manufacturing industry.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The global manufacturing economy is worth $12.8 trillion, of which in 2018, AM accounted for $7.3 billion, which represents a share of 0.060% of all manufacturingError! Bookmark not defined.. However, the AM industry shows rapid growth and predictions have shown that it will exceed a share of 5% in the future. At such rates, AM industry is expected to be worth upwards of $27.3 billion by 2023Error! Bookmark not defined.. This will be facilitated by the steady and incremental increase in applications for AM produced parts. Application will expand first in traditionally popular AM industries such as automotive, aerospace, medical, etc5. However, AM must also be used for applications that are currently unimaginable. Herein lies the need for innovation that Next4Fun plans to fulfil by enabling the printing of functional parts. This will open up completely new possibilities for applications within traditional industries and traditionally ‘non-industrial’ markets, such as fashion, eyewear, textiles and foodError! Bookmark not defined.. Conducting all R&D through collaborative efforts between European universities and companies will help solidify Europe’s position as a leader in AM technologies and will greatly contribute to the growth of the European manufacturing sector. European residents will also have first and cost-effective access to products such as printed prosthesis, dental implants, smart sensors and other innovative products.

Template for Flagship Project	
Title of Organisation:	KIT: Karlsruhe Institute of Technology
Date of Reporting	20.12.2021
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	BIOSAM (Biologicalisation for Sustainable Advanced Manufacturing)

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Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	This project aims to develop the biologicalisation in design for manufacturing. The network is composed of 4 Universities, 2 Research and Technology Development organisations and 1 industrial partner from 4 different countries. This network will enrol 10 doctoral candidates (DCs), developing individual research projects within the doctoral network programme. One of the many challenges being addressed by this project include the unavailability of trained R&D personnel in this field within Europe. By training DCs this project achieves this along with all the technological developments outlined.
CAMI4.0 Technology Focus - Primary	*Automation & Robotics*
PP's CAMI4.0 Tin Role	*Core*
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☒ *Intelligent Production Systems* ☐ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☐ *Artificial Intelligence*

Project Partners Pool (feel free to create more rows if necessary):
Name all the stakeholder involved in your flagship project

PP Name	Org Type	Org Role	NUTS2 Region
KIT	Higher Education & Research	Knowledge Supplier	BadenWürttenmberg Germany
THE UNIVERSITY OF BIRMINGHAM	Higher Education & Research	Knowledge Supplier	Birmingham, UK
UNIVERZAV LJUBLJANI	Higher Education & Research	Knowledge Supplier	Slovenia
THE MANUFACTURING TECHNOLOGY CENTRE LIMITED	Higher Education & Research	Knowledge Supplier	Birmingham, UK
KATHOLIEKE UNIVERSI	Higher Education & Research	Knowledge Supplier	Leuven, Belgium

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	T EIT LEUVEN			
	RAZVOJNI CENTER ORODJARS TVA SLOVENIJE	Higher Education & Research	Knowledge Supplier	Slovenia
	SIEMENS INDUSTRY SOFTWARE NV	SME	Knowledge Enabler	Belgium
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Website public and vacancies advertised		1	6
	All DCs recruited and submission of Researcher declaration on conformity to the participant portal.		6	12
	Personal Career Development Plan for all DCs		6	48
	All DCs receive PhD degree		48	60
	2 publications by each DC		12	48
Define the budget of your Flagship project:	What is the fiscal value of the project?		~ 2.7 Million EUR	
	What are the different financing unit of the project?		Horizon Europe	
	What are the funding program(s) used? What are the other potential funding sources?		Horizon Europe MSCA DN	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Signed and sealed submitted proposal			

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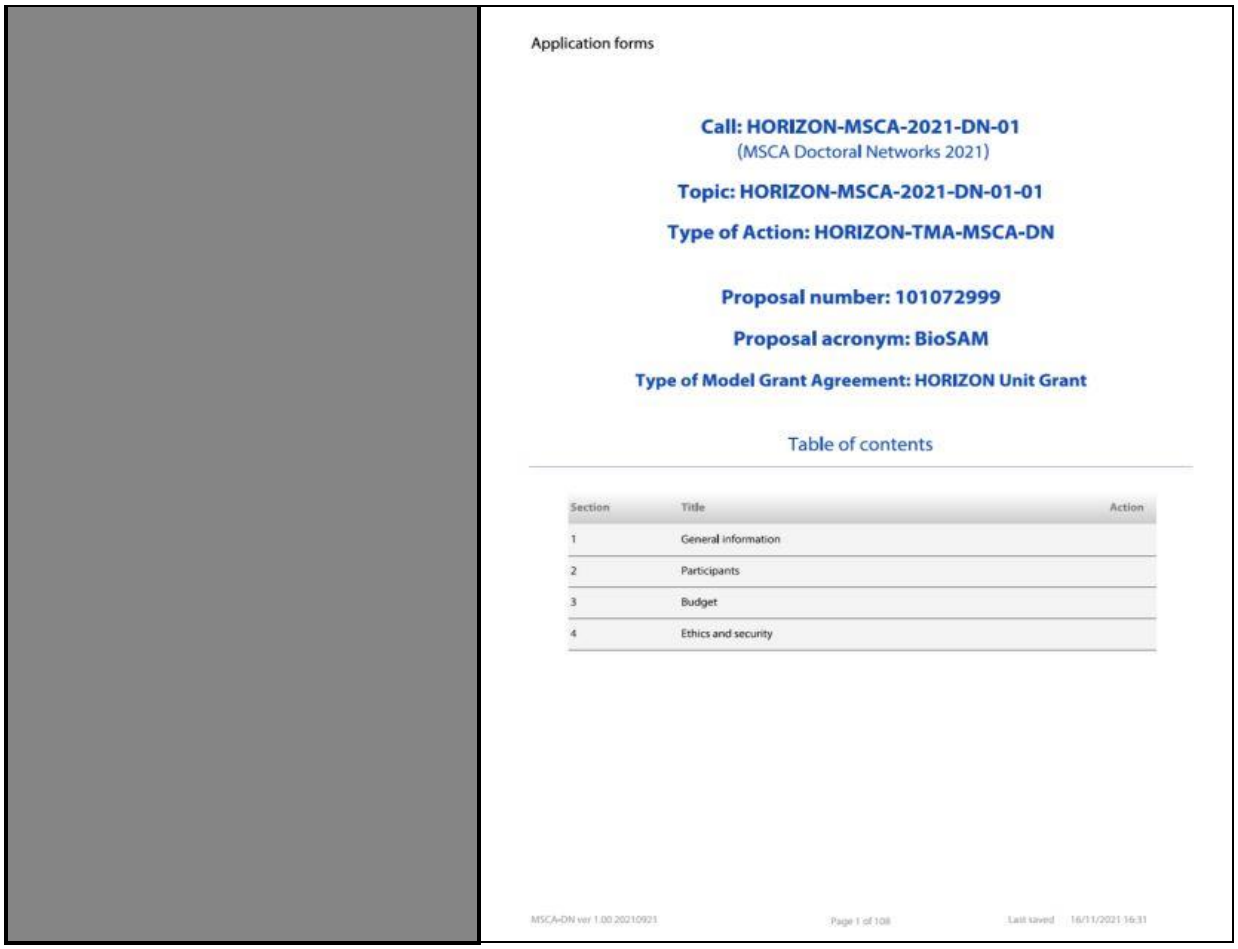

Application forms

Call: HORIZON-MSCA-2021-DN-01
(MSCA Doctoral Networks 2021)

Topic: HORIZON-MSCA-2021-DN-01-01

Type of Action: HORIZON-TMA-MSCA-DN

Proposal number: 101072999

Proposal acronym: BioSAM

Type of Model Grant Agreement: HORIZON Unit Grant

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Section	Title	Action
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4	Ethics and security	

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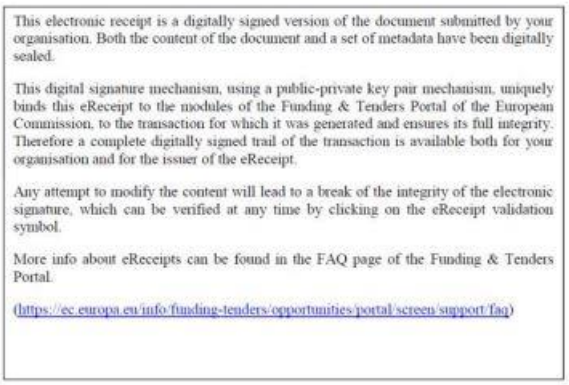

Challenge addressed by the flagship project	
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The research project will use bioinspired process and product design for manufacturing as a promising enabling strategy towards sustainable, value-added manufacturing that meet increasing consumer demands. Bio inspired solutions to manufacturing problems can give more capacity for manufacturing systems to handle problems in a greater systematic and automated manner. The implementation of the program is focussed on the demonstration of the complete approach through concrete use cases and applications developed within the project consortium. The focus is also on commercialisation of the applications and the holistic development of the ESRs involved within the project.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☐ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of*	***Choose as many which will apply***

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manufacturing which is impacted by this challenge.	*☒ Research & Development* *☒ Design* *☐ Procurement* *☒ Manufacturing* *☐ Distribution* *☐ Marketing / Sales* *☐ Service and Repair* *☒ De or Re-Manufacturing* *☒ Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C28 - Manufacturing of Machinery and Equipment**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	The scientific work of the project is divided into three interconnected technical work packages, namely WP1- Bioinspired Design Methods, WP2- Technology to Biology Analogy Approaches and WP3- Biology to Technology Abstraction Approaches. The results of the technical WPs will be shared proactively within the consortium in order to foster mutual technology development.
What are the key goals to achieve this project? What are the specific objectives?	This network will enrol 10 DCs, developing individual research projects within this research programme. The DCs will be awarded their PhD within 48 months to become desirable and in-demand experts on the manufacturing of bioinspired design to address technical challenges facing multiple sectors.
What is the methodology utilised to implement the solution?	The utilisation of biologically inspired design principles is of significant interest due to the large repository of well proven design principles that can be used to develop new and innovative products across various sectors. The methodology of the project includes the training of DCs in their personal projects along with scientific development throughout.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The work on BioSAMs will push advanced micro and nanomanufacturing beyond state of the art and generate societal, scientific and economic impact by ensuring more sustainable solutions by applying nature-inspired design. Additionally, the trained DCs will be able to act as experts in a field where such trained personnel are currently unavailable in the EU.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The development phase of the project itself was inspired by a number of already existing similar projects within the BIOSAM project consortium. The difficulties involved were in finding the right mixture of challenging topics for each DC and establishing solid links and working agreements between partners. The industrial partners are very deeply integrated with the development of the research strategies for the ESRs and in the final application cases as well. The demonstrators

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	finally will also be qualified by the involved industrial partners within the consortium.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	During implementation, the DCs will work on the manufacturing of bioinspired design to address technical challenges facing multiple sectors. This will have been assured through the provision of practical training on various state of the art manufacturing processes, technical training incorporating topics such as biomimetics, sustainability, digitisation of manufacturing, secondments in various academic and non-academic sectors and transferable skills that will give them a competitive advantage in their future career endeavours.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The project establishes a whole range of sub committees within the project such as the steering committee and regularly reported to be submitted and reviewed by the EC.
How is your flagship connected with other flagship projects? What are the most important connection points?	This flagship though is a standalone topic as its focus is on research and training. It connects to other flagship projects such that they are complementary to each other in terms of topics addressed or that stakeholders involved in other flagships can benefit from the scientific outputs of this flagship project or maybe even support the activities by providing additional use cases o opportunities to test the scientific outcomes in real-life scenarios in an industrial context. The flagships are all essentially pushing the state of the art of CAMI 4.0 topics.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	We had a similar previous Marie Curie project and we build our new flagship project with some of our partners participating in previous projects. good practices established in the previous MSCA project were used to shape the current project plan in particular related to the training of the DCs and the setting of the industrial secondments
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The flagship project is situated in one of the main key target areas for development as exposed in the joint strategy document for Baden-Württemberg
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	BioSAMs will support Horizon Europe and European Research Agency objectives. Increasing the sustainability of manufactured products and manufacturing processes is a timely challenge. The DCS trained within the project will be highly employable and that is an advantage for the EU. Thematic topics addressed in the project also align with the goals of the German research strategy for material research thereby strengthening the German manufacturing ecosystem as well.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	It is known that bioinspired design has the potential to lead to more environmentally sustainable solutions. Thus, this research network will lead the EU's activities in applying this paradigm to ensure a more sustainable manufacturing

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	industry and ensure its pre-eminence in the use of bioinspired design to achieve value-added products.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	BioSAMs will also contribute to early-stage research training, using the network to promote innovative, collaborative research across industrial sectors, borders and between the academic and non-academic sectors.

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3.6. Partner 6 – AFIL

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Template for Flagship Project				
Title of Organisation:	AFIL: Lombardy Intelligent Factory Association			
Date of Reporting	15/10/21			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	Strategic Community on Advanced Materials			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	Plastic sector is one of the most relevant area for Lombardy economy and AFIL constituency involves a good number of stakeholders operating in this field. However, the activities in this context were mainly associated to sustainability and Circular Economy rather than on innovative materials. Since this is a key aspect for the future development of this sector, AFIL wants to foster the creation of a new Strategic Community focused on functional plastics. The "Advanced Polymers" Strategic Community should represent the regional capabilities and expertise in the field along the whole value-chain and identify research challenges and industrial needs to foster the innovation. Once set up the working group, the Strategic Community should plan activities aimed at increasing the regional competitiveness and constitute new synergies and collaborations at inter-regional and European level, for example within Vanguard Initiative.			
CAMI4.0 Technology Focus - Primary	*Smart and Advanced Materials*			
PP's CAMI4.0 Tin Role	*Learner*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☒ *Intelligent Production Systems* ☐ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☒ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	Politecnico di Milano	Higher Education & Research	Knowledge Supplier	Lombardy
	Università di Brescia	Higher Education & Research	Knowledge Supplier	Lombardy
	Polymeris	Other - Cluster	Knowledge Enabler	Auvergne Rhone Alpes

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	AFIL	Other - Cluster	Knowledge Facilitator	Lombardy
	NTS SPA	SME	Knowledge Receiver	Lombardy
	STIIMA CNR	Higher Education & Research	Knowledge Receiver	Lombardy
	Flint Group	SME	Knowledge Receiver	Lombardy
	Unione Industriale Della Provincia Di Varese	Business Support Organisation	Knowledge Facilitator	Lombardy
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Presentation of the concept to AFIL associates		01/06/21	14/07/21
	Topics identification with SC coordinators		01/08/21	30/09/21
	Presentation event of the Strategic Community		01/10/21	28/10/21
	Interested stakeholders' mapping		28/10/21	05/22
	Periodic Working Group meetings		From January 2022	-
Define the budget of your Flagship project:	What is the fiscal value of the project?		The fiscal value of the project is represented by: i) the promotion of networking that favour new collaborations and business opportunities among academic and industrial partners, ii) the creation of consortia and the proposal of new projects to be submitted and demonstrated through different funding opportunities, iii) the dialogue with regional and European institutions through the connection with Regione Lombardia and other EU initiative (Vanguard) to influence future policies according to real industrial needs.	

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	What are the different financing unit of the project?	This use-case is cooperation-based rather than technology-based, although it is conceived to address a technical challenge. Therefore, investments are foreseen for human resources who will take care of establishing and animating the community of stakeholders. Financial resources will come directly from the private funding of the organization (AFIL associates fees), and from regional, national and EU projects having synergies with the activities and objectives of the Strategic Community, for example supporting the demonstration and implementation of specific applicative cases.
	What are the funding program(s) used? What are the other potential funding sources?	Different funding programmes could be used to finance the Strategic Community. From a technical point of view, H2020 and HE programmes supported the development and demonstration of innovative solutions. The projects FiberEUse and DigiPrime, for example, were originated by Circular Economy solutions and supported the development of sustainable composite materials. Interreg and Erasmus+ programmes, instead, could support the dissemination, the sharing of best practices, the expansion of the network and the increase of awareness of the innovation topics, providing a link with institutions and policies. Other potential funding sources could come

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		from European initiatives, such as Vanguard. Within the ESM Pilot, there is a demo-case focused on Functional Polymer-based products, that received business consultancy through TAF service.
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Presentation of the concept to AFIL associates: agenda + presentation of Strategic Community to AFIL Associates during the AFIL General Assembly + list of participants + photos. Presentation event of the Strategic Community: corresponding to the TTTDM 28/10 with agenda, list of participants, pictures, TTTDM report. Formalization of strategic Communities: corresponding to RIS3 Round table 09/11 with agenda, list of participants, pictures, RIS3 report. List of meetings among coordinators and with stakeholders.	
Challenge addressed by the flagship project		
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The main challenges to be overcome are: i) the realistic representation of the value-chain creating a community able to connect and embrace significant regional stakeholders, ii) the identification of innovative applications and interests within the chose thematic area and iii) the transfer of needs and priorities to institutions to allow strategic actions aligned with industrial ecosystems.The motivation of the flagship starts from these challenges and considers the leadership position of Lombardy region on this topic. The integration of functions and added-value products combining electronic, light and/or sensing features into polymeric components, in fact, are in high demand and rapid development for several markets and applications. Furthermore, lots of opportunities has bee shown also at European level, where the Smart Plastic Hub of ESM Vanguard demo-case is actively working to bring innovation with a cross-regional and cross-sectorial approach.	
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☐ *Schools and Training Institutes*	
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development*	

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	☒ *Design* ☒ *Procurement* ☒ *Manufacturing* ☒ *Distribution* ☐ *Marketing / Sales* ☒ *Service and Repair* ☐ *De or Re-Manufacturing* ☒ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C22 - Manufacturing of Rubber and Plastic Products**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	The solution proposed is more cooperation-oriented rather than technology-oriented and it is envisaging the creation of a Strategic Communities of stakeholders around the topic of Smart Materials, with the aim to address the abovementioned challenges and contribute to the development and improvement of competencies in the region. Strategic Communities are designed to aggregate and guide their participants in a structured path from raising awareness and knowledge on the topic until the uptake of the technologies, passing through the definition and implementation of R&I projects. The group, with the support of the cluster, will organise its activities considering the interests of the members and the specific development needs. AFIL will also ensure constant strategic alignment and effective connection with its activities, promoting: • Periodic meetings opened to the regional community to constantly monitor their needs and interests • Dissemination of the progress achieved to AFIL network at regional and interregional level, promoting the inclusion and integration of new interested actors • Definition of innovative projects to be implemented with the support of regional, national or EU instruments, if possible in synergies with ongoing initiative • Alignment with institutions, organizing dedicated meting and workshop with Lombardy region or developing strategic documents (e.g. Roadmaps) to be adopted at policy level
What are the key goals to achieve this project? What are the specific objectives?	The key goal to achieve is the setting up of a Strategic Community on “Advanced Polymers”, having a list of interested members representing both academia and industrial players and formulating a clear value proposition for the community. It means that the regional priorities have been investigated, to define a portfolio of innovation projects to work on and the potential connections with stakeholders in other EU Regions have been exploited, such as the formal inclusion of Lombardy Region within the “Functional polymer-based products” demo-case in Vanguard Initiative ESM Pilot.

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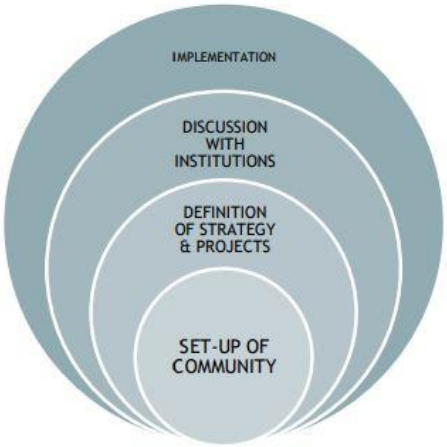
What is the methodology utilised to implement the solution?	AFIL focuses on cooperation-oriented solutions, trying to capitalise the activities for its associates. While the topics emerged as significant from recent interactions with local stakeholders, the methodology proposed for the establishment of Strategic Communities has been designed by the cluster and will bring a strong value added to AFIL associates as well as to the extended network of EU partners.  The methodology is not based on a linear path: each step and activities continue during time, incorporating always new stakeholders and defining always new projects according to market evolution and to the current needs and priorities of regional key actors.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The impact of this solution will be amplified if implemented in synergies in other regions, even outside CE area, leveraging on the already established network of Vanguard ESM Pilot. Indeed, having structured group of stakeholders working on a targeted innovation area will promote the cooperation within the region but it will also facilitate the exchange and the connection among the ecosystems of different regions, thus capitalising complementarities and replicating best practices. As project result, the regional Strategic Community will promote the development of innovative solutions on the topic “Advanced Polymers” using available funding opportunities and through the discussion with institutions to include the priorities identified within the community in its future strategic programmes. This will increase the competitiveness of Lombardy region at national and international level, maintaining its relevance and leaderships position.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	During the development phase, we approached a small group of local stakeholders interested in joining the community to clearly identify the scope and the potential activities to be implemented. AFIL started by academic researchers who had expertise and capabilities related to the topic, and who show an interest to build up and coordinate the community also in relation to the other EU opportunities. Furthermore, AFIL proposed the methodology and supported the definition of a short-term and long-term plan for the implementation. The main difficulties during the development phase are mainly connected to the pandemic emergency that strongly limits the physical meeting and interactions. It is difficult to involve new stakeholders, raise interest and make workshops interactive, when many webinars and meetings have been

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	organized at the same time. To mitigate it, beyond the usual communication channels (newsletter, website, socials, etc.) AFIL starts inviting one by one its interested associates, trying to give a brief context and overview of the project, and make the material available also after the meeting to circulate it as much as possible.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	Once completed the implementation phase, the development will focus on the consolidation and expansion of the community of stakeholders. Concretely speaking, this would result in the organization of periodic meetings where the communities will define a set of topics of interest to be addressed and potential innovation projects to be implemented with the support of public funding. According to the identified milestone, the implementation follows different phases: • The presentation of the concept to all AFIL associates during the yearly AFIL General Assembly. Here the academic partners briefly showed the opportunity represented by the development of a Strategic Community on "Advanced Polymers" and proposed some innovation topics that could collect industrial interests. • A dedicated event has been organized, where AFIL associates dealing with plastic products have been invited and the Strategic Community objectives and thematic areas have been detailed. • The mapping of interested stakeholders started from the dedicated event through the collection of feedbacks on the proposed topics. In the next period, the group will be established and mapped in a more structured way through a list of members and related capabilities/interests. • Periodic meetings of the working group will allow the development and implementation of the identified strategies and projects. At the beginning, periodic meetings has been set up between the coordinators of the Community to align on the steps and activities to be performed, but then these meeting will be extended to all the interested stakeholders
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	AFIL monitored and will monitor all the phases of the flagship through: i) periodic formal meetings between the coordinators of the Strategic Community and AFIL Technical Scientific Committee to report the past and in progress activities, ii) regular operative meetings to support the organization of events and to updated on new funding opportunities that the cluster promotes, iii) the continuous dissemination of Strategic Community events and activities to attracts new interested players, and iv) the integration of regional Strategic Communities in other regional, national and European initiatives in order to ensure the alignment with other running activities.
How is your flagship connected with other flagship projects? What are the most important connection points?	AFIL has pre-existing Strategic Communities on different topics (e.g. Artificial Intelligence, Circular Economy, etc.). The set-up of this new one dedicated to Advanced Polymers represents a new opportunity for the regional stakeholders and could also integrate the best practices and lesson learnt of the other ones to be more effective. Cross-communities initiatives could also be promoted.

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	At European level, the flagship is connected to Vanguard Initiative. AFIL is involved in the Vanguard Initiative since 2013 co-coordinating the Efficient and Sustainable Manufacturing Pilot. In this framework, one of the democase, led by Auvergne Rhone Alpes, is focusing on Polymerbased functional products. In this context, Lombardy contribution was mainly connected to sustainable coating and surface treatments on polymers, but given the interest of our associates, there will be the opportunity to establish and favour the growth of a community around the topic of functional polymers and plastronics.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	As already mentioned, this flagship could expand the good practices implemented in other Strategic Communities, but on a completely different topic that wasn't previously considered within AFIL activities.
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	Within Smart Materials TIN, AFIL was a learner because no strong actions have been implemented before CEUP2030. According to this and to the defined objectives in WP1 Joint Strategy, the "Advanced Polymer" Strategic Community is addressed to: i) promote the networking, grouping all the relevant regional stakeholders and representing the challenges, interests and needs of all the different valuechain actors, ii) favour the joint discussion on the topics in order to define projects to be submitted within different funding programmes, also at European level through the connection with Vanguard Initiative, and iii) increase the awareness on the topic, in terms of innovative polymeric materials (with specific properties or more sustainable) and innovative components and products embedding sensors and/or electronics to add new functionalities.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	For Lombardy region, the flagship allows the interaction among different stakeholders, promoting a fruitful discussion and collaboration on how to introduce innovation and to implement advanced polymeric materials/products in the market. This increases regional competitiveness, giving visibility also outside regional boundaries. Through CEUP2030 project, this action favours and advantages also Central Europe manufacturing eco-system thanks to the sharing of best practices and lesson learnt and to the new rising collaborations among project partners and connected regional stakeholders.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	The establishment and development of a Strategic Community on Smart Materials will contribute to the definition of R&I priorities on the topic, gathering the inputs of the regional innovation ecosystem (composed of companies, universities, research centres, intermediaries, etc.) and outlining guidelines useful to support the development of regional policies. AFIL directly interacts with Lombardy region, that is strongly interested to understand and promote the development of strategies aligned to real industrial needs and priorities representing its regional manufacturing eco-system. AFIL also joins and interacts to national clusters (e.g., Cluster Fabbrica Intelligente) that dialogue with national institutions to promote aligned strategies. These inputs can be also capitalized and revised to support EU strategies on Advanced Manufacturing

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	promoted by European Commission (e.g., Vanguard Initiative).
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	EU cohesion policy has set a shorter, modern menu of 5 policy objectives supporting growth for the period 2021-2027. Among them, the "Advanced Polymers" Strategic Community contributes to the first two: • A more competitive and smarter Europe, through the development of innovative polymeric components and products integrating additional smart functionalities (i.e., plastronics) and the development of more efficient production processes able to increase competitiveness. • A greener, low-carbon transitioning towards a net zero carbon economy, through the development of polymeric and composite materials more sustainable, easily reparable or recyclable.

Template for Flagship Project	
Title of Organisation:	AFIL: Lombardy Intelligent Factory Association
Date of Reporting	17/11/21
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	AI Roadmap
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	AFIL promotes the identification and collection of industrial needs within its AI Strategic Community, where academic and research actors, SME, LE, startups and associations periodically meet and discuss on AI topics. Through the organization of Innovation Labs, webinar and workshops, the AI Strategic Community increases the awareness on the potential applications and benefits of AI-driven solutions and fosters the collaborations among the relevant stakeholders, particularly between industrial users and technology providers. The Community also works to transform the innovation interests and topics in concrete actions, through the submission of projects and the collaborations with different regional, national and European initiative (e.g., Vanguard Initiative). Although lots of actions are running and regional stakeholders are involved and commit in these, additional supporting tools and mechanisms could be activated in next years to favor the implementation of AI-driven solution at industrial scale. To do that, AFIL wants to develop a structured AI Roadmap to highlight the current barriers and priorities to be shared at regional level with Lombardy Region.
CAMI4.0 Technology Focus - Primary	*Artificial Intelligence*
PP's CAMI4.0 Tin Role	*Lead*
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;***

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	☒ *Intelligent Production Systems* ☒ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☐ *Artificial Intelligence*

Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	STIIMA CNR	Higher Education & Research	Knowledge Supplier	Lombardy
	POLIMI	Higher Education & Research	Knowledge Supplier	Lombardy
	Università degli studi di Bergamo	Higher Education & Research	Knowledge Supplier	Lombardy
	Università degli studi di Brescia	Higher Education & Research	Knowledge Supplier	Lombardy
	JRC	Higher Education & Research	Knowledge Supplier	Lombardy
	Consorzio Intellimech	SME	Knowledge Receiver	Lombardy
	Cosberg SPA	SME	Knowledge Receiver	Lombardy
	DIH Lombardia	Business Support Organisation	Knowledge Facilitator	Lombardy
	AFIL	Other (Cluster)	Knowledge Facilitator	Lombardy
	Regione Lombardia	Regional Public Authority	Knowledge Enabler	Lombardy
	Tenova spa	Large Enterprise	Knowledge Receiver	Lombardy
	Ratti spa	Large Enterprise	Knowledge Receiver	Lombardy
	Feralpi Siderurgica Spa	Large Enterprise	Knowledge Receiver	Lombardy

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	Candy Hoover Group Srl	Large Enterprise	Knowledge Receiver	Lombardy
	Whirlpool Europe S.R.L.	Large Enterprise	Knowledge Receiver	Lombardy
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Organization of Focus Group		01/04/21	30/06/21
	Creation of draft document		01/04/21	01/11/21
	Request of contributions		01/11/21	31/01/22
	Roadmap elaboration and fine tuning		01/02/22	31/04/22
	Release		01/05/22	31/05/22
	Implementation		From June 2022	-
Define the budget of your Flagship project:	What is the fiscal value of the project?		The fiscal value of the project is represented by: i) the strengthening of the regional ecosystem on AI topics promoting the awareness, the exploitation of synergies and the networking among the regional stakeholders, ii) the direct connection with regional and European institutions (particularly Regione Lombardia) to highlight the regional barriers, activities and priorities to influence future policies according to real industrial needs.	
	What are the different financing unit of the project?		AFIL team will be engaged in the preparation of the document, harvesting stakeholders' inputs through the organization of focus groups, finalizing the collected information, and releasing the document to Lombardy region for its implementation. Financial resources will be addressed to the development and finalization of the document, the release and all connected	

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		dissemination activities. Internal private funds (membership fee) will be used for the Roadmapping activity.
	What are the funding program(s) used? What are the other potential funding sources?	The dissemination activity could be also supported by the ongoing AFIL projects on the topic, such as AI Regio H2020 project. No further funding sources are needed.
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Organization of focus group: list of participants, Murals elaborated during the workshops, reports Draft document: table of content List of meetings among AFIL team and the contributors (Politecnico di Milano, University of Bergamo, Regione Lombardia).	
Challenge addressed by the flagship project		
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The roadmap identifies and collects the needs, the priorities and the barriers faced by stakeholders dealing with AI-driven solutions, particularly enterprises on several manufacturing sectors approaching AI solutions, technology providers and research centres developing and integrating them. All interested AFIL associates will be involved, to promote collaboration and ensure a good representativeness in different manufacturing sectors. All the collected inputs coming from workshops and focus groups among the stakeholders of the regional community will be then matched with the European and national trends obtained through a topdown approach. As output of the service, a document will be developed and shared, particularly with Lombardy Region with the aim of updating the S3 Strategy in Advanced Manufacturing area. The roadmap will be discussed for the approval in the regional government representing a strategic document for the planning of next program. Different section will be detailed to highlight European trends and local challenges and barriers in several manufacturing sector, at product, process and business levels.	
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☐ *Schools and Training Institutes*	
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply***	

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	☒ *Research & Development* ☒ *Design* ☒ *Procurement* ☒ *Manufacturing* ☒ *Distribution* ☒ *Marketing / Sales* ☒ *Service and Repair* ☒ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C32 - Other (It represents all the main Lombardy manufacturing sector)**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	The proposed solution is the development of a strategic document reporting the main regional priorities: the Roadmap on Artificial Intelligence within Lombardy ecosystem. It combines both approaches, cooperation oriented and technology-oriented, identifying the most advanced solutions with the related value-chain and involved stakeholders to allow and promote the adoption of AI-driven solutions at industrial level. The development of the AI Roadmap requires the inclusion of different point of view and the contribution of different academic and industrial experts on the topic. Within the document, the priorities will be identified and summed up starting from the inputs collected during specific and sectorial workshops, namely the Focus Group. The Roadmap will become a strategic document to be adopted by regional authorities in order to update their strategy and to invest in medium and long term on the significant priority highlighted at industrial level. It will promote and strengthen the Lombardy Advanced Manufacturing, supporting the identification of current barriers and challenges and connecting regional authorities with real industrial needs.
What are the key goals to achieve this project? What are the specific objectives?	The key goal to achieve is the development of the AI Roadmap and the adoption by Lombardy Region, identifying the main industrial trends and priorities on the topic. In particular, the Roadmap should be: i) inclusive and representative of the regional ecosystem, that means have the contributions of different actors of the value chains in different sectors, collecting real needs and challenges, ii) aligned at national and European level, to be effective in its adoption and influent towards the other regions, considering Lombardy as a leader in Europe for manufacturing, and iii) strategic, having a medium and longterm view on the topic based on the interests and capabilities of regional stakeholders.
What is the methodology utilised to implement the solution?	To develop the AI Roadmap, a precise methodology has been used, developed for the Circular Economy Roadmap, adopted by Lombardy Region in May 2020. Task 1 → Harvesting (Focus

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	group) The first step is the collection of contribution from the interested stakeholders. Sectorial focus group as workshops have been organized to discuss the main barriers and necessity for AI-driven solutions. In parallel, punctual contributions required to JRC and EU key players have been collected to highlight the current trends and strategies at national and European level. Task 2 → Consultation Elaborating the collected inputs, a set of priorities have been identified and grouped to be easily understood. This activity is performed with AFIL associated experts on the topic, particularly with the AI Strategic Community. Task 3 → Fine tuning and release The final version of the document is prepared, homogenising the different contributions. The Roadmap is then release for Lombardy Region. Task 4 → Implementation Dissemination of the roadmap to AFIL associates, to external stakeholders participating to focus groups and to interested European actors through EU initiatives and project where AFIL is involved. In parallel, Lombardy Region adopted the document and starts a series of actions to support the implementation of AI-driven solutions at regional level.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The impact of the development of the AI Roadmap and its adoption from Lombardy Region is to influence and guide the future regional strategies according to the real industrial needs, challenges and priorities discussed within the Focus Group and highlighted in the document. It represents a supporting tool for regional institutions and policy makers, to be aligned on an emerging topic in Advanced Manufacturing area. In case of Circular Economy Roadmap, once the Region adopted it, specific actions and calls have been promoted to support the green transition of industries and a specific funding tool has been created to set up a regional Circular Economy HUB supporting the industrial transfer of innovative solutions on Circular Economy topics. The AI Roadmap is a first step in this direction. As specific output of AFIL flagship, the AI Roadmap strategic document will be developed and provided to Lombardy Region.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	During the development phase, the idea to create a Roadmap on AI has been discussed within AFIL AI Strategic Community, that means the group of associated stakeholders interested to AI-driven solutions (tech providers, manufacturers & end users, competence centres, academia, etc.). The already developed and adopted CE Roadmap has been used as successful model to be replicated and to demonstrate the usefulness of the Roadmap as contact point with regional institutions. It has also been set the core group working on the document together with AFIL team. The main difficulties during the development phase are connected to the pandemic emergency that strongly limits the physical meeting and interactions. Furthermore, it is a very dense period with lot of different activities running and it was difficult to combine the time and the work of the team. To mitigate this barriers, specific and reasonable deadlines have been set in order to facilitate the monitoring of the progresses and to allow rapid changes when needed.
	Once completed the development phase, the implementation consists in the preparation of the document

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Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	that will be then shared with Lombardy Region to be adopted. The AI Roadmap implementation has different phases, associated to the identified milestone: • The organization of Focus Groups allow to collect the needs and the challenges on AI topics from different manufacturing sectors, effectively representing the regional ecosystem and giving a real industrial basis to the document. • The creation of draft document with a specific Table of Content discussed and agreed within the core team is the first step to understand the type of contributions and information that are necessary to be collected. • Once identified the proper people having expertise and competences on the specific topic, the contributions are requested, for example to JRC for the alignment with international initiatives or to Lombardy Region on existing opportunities. • Finally, the Roadmap is elaborated and released to be adopted by Lombardy Region.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	AFIL monitored and will monitor all the phases of the flagship through: i) formal meetings with the institutions and the contributors of the Roadmap to evaluate with them the best way to proceed, ii) regular operative meetings within the core group to progress and discuss eventual issues and barriers, iii) the continuous dissemination of the work and the objectives of the development of AI Roadmap to raise awareness on the initiative, and iv) the integration within the document of other regional, national and European initiatives in order to ensure the alignment with other running activities.
How is your flagship connected with other flagship projects? What are the most important connection points?	The AI Roadmap is a regional flagship, strongly connected to Lombardy ecosystem. For this reason, it is not related to flagships of other PPs, but could represent a good practice to be implemented also in other regions in future. Concerning to AFIL flagships, instead, the AI Roadmap represent one of the future expected outputs from the Strategic Community on "Advanced Polymers", i.e. AFIL flagship on Smart Materials CAMI4.0 topic.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	To build this flagship project, AFIL used as input and successful example the Circular Economy Roadmap already developed and adopted by Lombardy Region. Furthermore, different ongoing projects related to AI (es. CEUP2030, AI REGIO) could be capitalized within this flagship. The AI Roadmap does not represent the expansion of a previous project, but it is the application of a good practice transferred to AI topics from other past successful experience (i.e. CE Roadmap). Furthermore, it represents one of the main activities set up within AFIL Strategic Communities: the identification of challenges, barriers and priorities at regional level in order to promote a fruitful discussion with institutions and aligned policy strategies to real industrial needs.
	Within AI TIN, AFIL was the leader due to the several regional activities and competences implemented before CEUP2030. According to this and to the defined objectives in WP1 Joint

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How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	Strategy, the AI Roadmap is fully aligned to: i) the development of a cross-regional strategic document, highlighting R&I priorities in the area of Artificial Intelligence, ii) the promotion of networking, grouping all the relevant regional stakeholders and representing the challenges, interests and needs of all the different valuechain actors, through the setup of Focus Group as input for the Roadmap, and iii) the increase the awareness on the topic, sharing industrial best practice as well as latest R&I achievements with institutions, particularly Lombardy region representatives who will adopt the Roadmap at regional level.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	For Lombardy region, the flagship represents a significant achievement to group all the relevant stakeholders and collect from them the main priorities to be addressed in the future strategic policies and programmes. The AI Roadmap is cross-sectorial, so it well describes the existing regional industrial ecosystem dealing with AI topics and promote the alignment with institutions and the development of useful tools able to support them in facing current challenges. This increases regional competitiveness, giving visibility also outside regional boundaries. Through CEUP2030 project, this action favours and advantages also Central Europe manufacturing eco-system thanks to the sharing of best practices and lesson learnt and to the new rising collaborations among project partners and connected regional stakeholders.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	At regional and national level, the AI is seen as a significant and promising enabling technology to be applied in different sectors, also outside Advanced Manufacturing. In the last years, lots of tools, policies and strategies have been implemented to support the digital transformation of SMEs and industrial stakeholders. The latest and most important is the PNRR (National Plan for Recovery and Resilience), that has Mission 1 Component 2 "Digitalisation, Innovation, Competitiveness in production systems" supporting the technological innovation and digitalization of SMEs and large enterprises on international market for made in Italy products. In particular, the first investment is about Transition 4.0 through tangible and intangible assets for digital transition of production processes, training activities and investments in research and innovation, comprehensive of AI-enabling technologies and solutions. At European level this is fully aligned with the European Next Generation EU (NGEU) programme to facilitate Recovery and Resilience after pandemic.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	EU cohesion policy has set a shorter, modern menu of 5 policy objectives supporting growth for the period 2021-2027. Among them, AI Roadmap contributes to "A more competitive and smarter Europe", through the definition of current barriers and needs for the implementation of AIdriven solutions in Advanced Manufacturing. The strategic document highlights where industrial stakeholders need support and how the latest technological assets could promote the progress and industrial development. Furthermore, being AI an enabling technology possibly applicable to many sector and with different objectives, it could also contribute to other objectives of EU cohesion policy.

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3.7. Partner 7 – SIIT

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Template for Flagship Project				
Title of Organisation:	SIIT S.c.p.a. Intelligent Integrated Systems Technologies			
Date of Reporting	20/12/2021			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	**FORGING**			
Short Description of Flagship Describe the challenge addressed in Maximum 1000 characters	Forum for Emerging Enabling Technologies in Support to the Digital and Green Transitions through Value Sensitive Innovations			
CAMI4.0 Technology Focus - Primary	Artificial Intelligence			
PP's CAMI4.0 Tin Role	Core			
CAMI4.0 Technology Focus - Secondary	**Choose as many secondary influencing technologies that apply;** ☐ Intelligent Production Systems ☐ Automation & Robotics ☐ Smart and Advanced Materials ☒ Artificial Intelligence			
Project Partners Pool (feel free to create more rows if necessary): Name all the stakeholder involved in your flagship project	PP Name	Org Type	Org Role	NUTS2 Region
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	

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Duration of Flagship Project / of each milestones (Intended Start and End): At least 5 Milestones should be identified	Milestone	Start date	End Date
	Proposal preparation	01/06/2021	15/10/2021
	Proposal evaluation	15/10/2021	01/02/2022
	Develop the forum	01/09/2022	31/08/2025
	Explore emerging sciences and technologies	01/09/2022	31/08/2024
	Build future scenarios: societal futures for the emerging technologies	01/09/2022	31/08/2023
Define the budget of your Flagship project:	What is the fiscal value of the project?	2494093.00 euros	
	What are the different financing unit of the project?	100% funded by EC (If granted)	
	What are the funding program(s) used? What are the other potential funding sources?	HORIZON-CL4-2021-DIGITAL-EMERGING-01-13 Type of Action: HORIZON-CSA	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Horizon Europe ver 1.00 20210928		
Challenge addressed by the flagship project			
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? Describe the challenge addressed in Maximum 700 characters	Technological breakthroughs empowered by enabling technologies hold a transformation potential that can be funneled to address industrial and societal grand challenges, like greening and digitalisation. To exploit this transformative potential, the innovation journey that leads new emerging technologies to their market-uptake shall embed since its early value-sensitive considerations, such as environmental and societal implications. With FORGING we propose a new methodology based on a value-sensitive innovation journey that breaks linear innovation trajectories to stimulate new technological visions and pathways attentive to the environment and society, and human-centred in alignment with Industry 5.0. technological frameworks.		
	Choose as many which will apply		

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Who are target groups of the project? Tick the answer relevant for your flagship project	☒ Large Enterprises ☒ SME ☒ Higher Education & Research Organisation ☐ Business Support Organisation ☐ Schools and Training Institutes
Evaluate the Manufacturing Value Chain by choosing the area of manufacturing which is impacted by this challenge.	**Choose as many which will apply** ☒ Research & Development ☒ Design ☐ Procurement ☐ Manufacturing ☐ Distribution ☐ Marketing / Sales ☐ Service and Repair ☐ De or Re-Manufacturing ☐ Recycling and End of Life Management
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C32 - Other (please clarify below)**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	**Significant technological advances are being made across a range of fields, including human-machine-interaction, bioinspired technologies, and AI, to name but a few. These breakthroughs are expected to be highly disruptive and bring about major transformative shifts in how societies function and in environmental terms.**
What are the key goals to achieve this project? What are the specific objectives?	**The aim of FORGING is to initiate a sustainable and interactive multi-level, multi-sector and multi-stakeholder forum that actively supports the co-creation and the uptake of the enabling technologies of the future in support to the digital and green transitions through human-centred technologies and innovations, respecting the boundaries of the planet, and maximising the benefits for all parts of society.**
What is the methodology utilised to implement the solution?	With FORGING we propose a new methodology based on a value-sensitive innovation journey that breaks linear innovation trajectories to stimulate new technological visions and pathways attentive to the environment and society, and human-centred in alignment with Industry 5.0. technological frameworks. The value-sensitive innovation journey will be deployed in three phases: the technological uncovering with tech experts from academia and industry to detect early signals of emerging technologies; the societal confluence exploring the desirability and societal impact, and implications of novel technologies; the full-fledged co-creation opening to the broader community to develop

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	concrete use cases for tech uptake. We will develop 6 Technological Pathways to transfer ideas and help industry navigate through issues related to the absorption and deployment of the use cases. FORGING methodology will be implemented by catalysing stakeholders' community with 600 active members, from academia to industry, to CSS, to policy makers and to the broader society. We aim to organise 24 co-creation sessions, consultations with 20 policy bodies, 6 scenario workshops and Tech. and Innovation campaigns to drive tech. adoption. The FORGING Playbook and Toolbox will gather a set of facilitation guidance and materials for exploration, reflection, co-creation and evaluation of emerging technologies. These assets, jointly with the FORGING community, will sustain FORGING as a new flagship initiative on emerging enabling technologies.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	Support Europe's leading industry sectors and society in **absorbing transformative enabling technologies** in support to the digital and green transitions. Supported by the technology pathways, we will identify key up takers to put forward opportunities to drive adoption and deployment of new enabling technologies.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The proposal developement started long before the submission and it was a long work of do and re-do to get to the final idea.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The consortium intends to turn their participation in the project and its outcomes into a new flagship initiative in Europe and to launch new activities beyond the scope of the project, thanks to the increased gained knowledge. Exploitation will ensure that partners will work towards a successful sustainability and replicability of the project outcomes. The piloting and expansion phases of the project's implementation are expected to test the approach and bring results on how to establish a long-term functioning of the community and co-creation activities for ist consolidation phase.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	KPIs have been fixed in the proposal phase and, if the project gets funded, will me monitored through the whole project duration.
How is your flagship connected with other flagship projects? What are the most important connection points?	The creation of a community allows interconnections among flagships.
On what did you capitalize to build this flagship project? Does it expand	It builds on a developed methodology that analyses cross cutting technology.

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previous projects, programs, initiatives and good practices?	
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The collaborative community will be a key outcome of the FORGING project and will be connected to all activities. The community will be hosted in the FORGING Hub where all resources will be made available to enable the stakeholders to interact and co-create with the perspective that the mechanism established will ensure continuity in the post-project scenario.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	**The aim is to create the EU Forum of reference** for future emerging technologies and their transformation potential contributing to increase EU leadership in academia and industry.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	New enabling tech. – based solutions allowing to improve performances in industrial and environmental terms. Business models/processes absorbing enabling tech. to attain sustainability
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	Community building will be one of the transversal approaches of FORGING, covering a central role to establish an **active forum of 100 participants engaged in mutually inspiring and co-creating**. The forum will build on a **multi-level, multi-sector and multistakeholder** approach to catalyse a diverse community ranging from academia, to industry, to other stakeholders like policy makers, CSS. It will back up a structured **co-creation method** and introduce a **cross-pollination scheme** that will incentivise different players to interact and contribute to ideation of responsible future enabling technologies.

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Template for Flagship Project				
Title of Organisation:	SIIT S.c.p.a. Intelligent Integrated Systems Technologies			
Date of Reporting	20/12/2021			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	EU-ALLIANCE			
Short Description of Flagship Describe the challenge addressed in Maximum 1000 characters	EUropean ALLiance for International business development on Advanced materials and coNnectivity for defenCe and sEcurity markets			
CAMI4.0 Technology Focus - Primary	Smart and Advanced Materials			
PP's CAMI4.0 Tin Role	Learner			
CAMI4.0 Technology Focus - Secondary	**Choose as many secondary influencing technologies that apply;** ☒ Intelligent Production Systems ☐ Automation & Robotics ☐ Smart and Advanced Materials ☐ Artificial Intelligence			
Project Partners Pool (feel free to create more rows if necessary): Name all the stakeholder involved in your flagship project	PP Name	Org Type	Org Role	NUTS2 Region
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	

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<table>
<tr><td rowspan="8">Duration of Flagship Project / of each milestones (Intended Start and End):
At least 5 Milestones should be identified</td><td>Milestone</td><td>Start date</td><td>End Date</td></tr>
<tr><td>Proposal preparation</td><td>01/10/2020</td><td>31/12/2020</td></tr>
<tr><td>Proposal evaluation</td><td>01/01/2021</td><td>01/03/2021</td></tr>
<tr><td>Beginning and end of the project</td><td>15/09/2021</td><td>14/09/2023</td></tr>
<tr><td>Mission organization</td><td>O1/06/2021</td><td>01/06/2022</td></tr>
<tr><td>Business analysis</td><td>09/09/2021</td><td>14/09/2023</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Define the budget of your Flagship project:</td><td>What is the fiscal value of the project?</td><td colspan="2">449990 euros</td></tr>
<tr><td>What are the different financing unit of the project?</td><td colspan="2">80% EC
20% partners</td></tr>
<tr><td>What are the funding program(s) used? What are the other potential funding sources?</td><td colspan="2">COSME</td></tr>
<tr><td>List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)</td><td colspan="3">Grant agreement</td></tr>
<tr><td colspan="4"><u>Challenge addressed by the flagship project</u></td></tr>
<tr><td>Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship?
Describe the challenge addressed in Maximum 700 characters</td><td colspan="3">The current Covid-19 pandemic has increased the need for a strong and common European defense and security policy. Today, the reinforcement of European capabilities through dedicated actions to sustain and strengthen the European Defence Technology and Industrial Base, EDTIB, is crucial1. In this context, dual-use products are key because it enables companies providing these technologies to target a wide market. It is a win-win situation for large companies and SMEs as well as for those that are active both in the defence and civil sectors, as new opportunities for diversification arise. For the defence industry, new markets can be opened and civil industry can penetrate a rather closed market by adapting their products and services.</td></tr>
<tr><td>Who are target groups of the project?
Tick the answer relevant for your flagship project</td><td colspan="3">Choose as many which will apply
☐ Large Enterprises
☒ SME
☐ Higher Education & Research Organisation</td></tr>
</table>

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	☐ Business Support Organisation ☐ Schools and Training Institutes
Evaluate the Manufacturing Value Chain by choosing the area of manufacturing which is impacted by this challenge.	**Choose as many which will apply** ☒ Research & Development ☐ Design ☐ Procurement ☒ Manufacturing ☐ Distribution ☐ Marketing / Sales ☐ Service and Repair ☐ De or Re-Manufacturing ☐ Recycling and End of Life Management
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C32 - Other (please clarify below)Textile**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Lack of competences
What are the key goals to achieve this project? What are the specific objectives?	The partners will focus on implementing their internationalisation, the key objective is to support SMEs in the global competition in providing SMEs with internationalisation customized services to enter new international markets and in organising a delegation of SMEs supported by the partners in the four targeted countries. They will have the opportunity to meet with the main local actors in their fields thanks to partnerships already and will get the chance to showcase their products and services. EU-ALLIANCE will promote its services offering towards all SMEs and encourage them to participate in the activities, particularly those which have not previously been involved in defence or dual-use programmes. The approach designed by the partners seek to support beginners in the export markets as well as experienced SMEs.
What is the methodology utilised to implement the solution?	The approach designed by the EU-ALLIANCE use case seeks to ensure strong synergies between cluster and SME policy support programmes from DG GROW and KET policies supported by DG Research and Innovation and play a key role in supporting the European growth and competitiveness agenda by providing SMEs with the qualified networks, tools and support to deliver their products and services at an international level. The approach will also build on the interregional innovation collaboration encouraged by DG Regio (S3P Industrial Modernisation, Vanguard etc).
What´s your intended impact of the flagship project? What results are	Increase of competence and connections at international level

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expected as an outcome of the project?	
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The consortium worked with the support of a Consultant
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	EU-ALLIANCE aims to support SMEs internationalisation in the fields of technical textile, connectivity and advanced materials to address dual use markets in four targeted countries: The United States, Canada, Japan and Indonesia. It gathers 6 clusters specialized in each covered thematic: technical textile and advanced materials (Techtera, CS-POINTEX and NTT), defence and security (NDIV) and connectivity (SIIT and Systematic). The different partners are complementary to each other in terms of skills, networks, SME members and international experiences to set up the most efficient partnership possible and demonstrate their abilities to work together in a cross sectoral environment. In this regard, the use case will clearly intensify cluster and business network collaboration across borders and across sectoral boundaries.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	Key performance indicators were fixed in the proposal phase.
How is your flagship connected with other flagship projects? What are the most important connection points?	Similarly to other flagship projects, this one aims at improving the connection among international industries.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	It is based on SIIT previous ALLIANCE project
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	It is built on those premises.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	By aiming at increaising the competitiveness
How is the project compatible with strategies and policies pursued on the regional / national / European	Achieving the EU's climate and environmental goals requires a new industrial policy based on the circular economy. In this sector, textile and electronics are two major sectors

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level? (Please reference your preparatory discussions)	targeted and that we should collectively address, and which are at the heart of our use case targeted markets. EU-ALLIANCE partners will engage its SMEs strategies keeping in mind this objective. The activities will promote the recycling business opportunities our companies could benefit from in addressing this thematic. The transition is an opportunity to foster sustainable and job-intensive economic activity. The recycling possibilities are a way to increase growth and develop a positive brand image, which is vital in our competitive world. At the international level, it can be a topic of innovative and research use cases. At the same time, it will show that our companies offer state of the art of the technologies and address all the challenges related to their production and supply chain valorisation
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	To survive in a global and competitive market, SMEs need to conduct research and development activities and to look at the export to extend their opportunities. But they have to face many barriers as funding issues, lack of human resources, difficulties in analyzing new export markets, large expenses to engage for international travels, assessment of their capabilities compare to the market, competitive analysis, difficulties to identify the entry points in the targeted country: organizations; persons; companies and get local assistance in the country. EU-ALLIANCE will provide key support services to SMEs regarding these issues to remove the entry barriers.

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3.8. Partner 8 - PTP

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4. Template for Flagship Flagship				
Title of Organisation:	PTP: Pomurje Technology Park			
Date of Reporting				
Administrative details over the Flagship Flagship:				
Title of Flagship Flagship (acronym):	Rising competences in less developed regions focused on small scale food product & service providers through new transnational mentoring services			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	The overall Flagship objective is improving competences and skills in LESS DEVELOPED RURAL REGIONS which are characterized by lack of development capacities, high unemployment, brain drain and emigration. The Flagship is therefore focused on improving regional support ecosystems and their involvement into developed joint transnational mentoring services to transform small scale rural Food & drink products &services into digital and circular attractive. Innovativeness is shown by DEVELOPED TRANSNATIONAL MENTOR SERVICES jointly offered to small scale food product & service providers, where regional support ecosystem and their mentors will have access to wide range of specialized digital & circular toolkits and access to pool of international experts to support digital & circular transition.			
CAMI4.0 Technology Focus - Primary	*Intelligent Production Systems*			
PP's CAMI4.0 Tin Role	*Core*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☒ *Intelligent Production Systems* ☒ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☒ *Artificial Intelligence*			
Flagship Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship Flagship*	PP Name	Org Type	Org Role	NUTS2 Region
	Pomurje technology park	**Business Support Organisation**	Knowledge Supplier	Vzhodna Slovenija (SI03)
	CNA Emilia - Romagna	**Business Support Organisation**	Knowledge Enabler	Emilia-Romagna (ITH5)
	Polish Foundation of the Opportunities	**Business Support Organisation**	Knowledge Supplier	Lubelskie (PL81)

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	Industrialization Centres "OIC Poland" in Lublin			
	South Transdanubian Regional Innovation Agency	**Sectoral Agency**	Knowledge Facilitator	Dél-Dunántúl (HU23)
	Burgenland Business Agency	**Sectoral Agency**	Knowledge Supplier	Burgenland (AT11)
	Regional advisory and information agency of Rožňava.	**Business Support Organisation**	Knowledge Receiver	Východné Slovensko (SK04)
	Innovation Centre INION	**Business Support Organisation**	Knowledge Supplier	Severozápad (CZ04)
Duration of Flagship Flagship / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
			36 months	
	5) Integration of new joint services into the partners business models		M19	M24
	(1) Building sustainable transnational partnership network		M1	M12
	2) Improving regional ecosystems support capacity,		M13	M36
	3) pool of mobile digitization and circular experts		M19	M36
	4) knowledge transfer of technology solutions from developed regions to less developed regions		M12	M36
Define the budget of your Flagship Flagship:	What is the fiscal value of the Flagship?		1,579,144.78	

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	What are the different financing unit of the Flagship?	
	What are the funding program(s) used? What are the other potential funding sources?	Cooperating for a smarter central Europe / Interreg Central Europe
List all the evidence documents you can provide regarding your flagship Flagship (MOU, submission document…)	Application form	
Challenge addressed by the flagship Flagship		
Which challenges have to be overcome in the context of the Flagship? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The common challenges are focused to less developed rural regions which are facing the lack of knowledge and competencies in the transition of traditional sectors (food & drink production) and lack of provision of specialized services needed for improvements in the field of digital & circular transition where traditional food sector should search higher added value possibilities. To this end, support ecosystems in those regions are not well developed and are not providing appropriate digital & circular transition service support, especially to small scale-food & drink production-oriented companies, which are usually forgotten. The key problem facing these regions is the lack of knowledge and competencies in the transition of traditional sectors to the provision of specialized services, which must also introduce changes and improvements in the field of digitization & circular economy, to which traditional food sector should be connected to search higher added value. As there is a strong trend of brain drain in all less developed partner regions, regional SMEs are facing the problem of competent knowledge and skills to be able to support digital & circular transition of local SMEs. To this end, more developed regions have a well-developed support ecosystem, which helps these SMEs to develop new services, but unfortunately in most of the regions where partners come from, this support ecosystem is not well developed and is not providing appropriate digital & circular transition service support, especially to small scale-food & drink production-oriented companies, which are usually forgotten. Additionally, regional policy measures are focused only on infrastructure & equipment investment support and are not specialized to multi-disciplinary support services.	
Who are target groups of the Flagship? Tick the answer relevant for your flagship Flagship	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation*	

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	☒ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☒ *Design* ☒ *Procurement* ☒ *Manufacturing* ☒ *Distribution* ☒ *Marketing / Sales* ☒ *Service and Repair* ☒ *De or Re-Manufacturing* ☒ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	***C32 - Other (please clarify below) No specific sector is identified, the flagship will cover number of mentioned above.***
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	As existing support institutions in partner regions are underpinned by the expertise required by the digital and circular support services in terms of smart specialization, it is NECESSARY FIRST TO RAISE THE LEVEL OF KNOWLEDGE OF REGIONAL PARTNERS while they will be involved to implement mentoring services in their regions.The BASIC HYPOTHESIS that will be tested within the Flagship through pilot activities is that efficient transnational joint mentoring services cannot be implemented without competent regional mentors coming from existing regional support ecosystems, who are equipped and trained to use jointly developed digital & circular transition support toolkits.
What are the key goals to achieve this Flagship? What are the specific objectives?	The overall objective is improving competences and skills in LESS DEVELOPED PILOT REGIONS which are characterized by lack of development capacities, high unemployment, brain drain and emigration. The Flagship is therefore focused on improving regional support ecosystems and their involvement into developed joint transnational mentoring services to transform small scale rural food & drink products and services into digital and circular attractive
What is the methodology utilised to implement the solution?	Considering described territorial challenges and provision of sustainability of joint mentoring services after the end of the Flagship, the IMPLEMENTING APPROACH is based on selection of appropriate partners who: (1) are coming from less developed regions within each country, (2) are members of business support ecosystem in own region with direct access to target SMEs; (3) are interested to offer SMEs new services through a joint mentoring program and (4) can provide competent regional mentors with appropriate knowledge & skills. INNOVATIVENESS is shown by JOINTLY DEVELOPED TRANSNATIONAL MENTOR SERVICES for small scale food product & service providers, where regional support ecosystem will have access to wide range of specialized

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	digital & circular toolkits and pool of international experts to support digital & circular transition. Innovativeness is also shown through: (1) Building sustainable transnational partnership network; (2) Improving regional ecosystems support capacity, (3) integrated cross- sectoral expert approach (pool of mobilized digitization and circular experts), (4) knowledge transfer of technology solutions from developed regions to less developed regions and (5) Integration of new joint services into the partners business models.
What´s your intended impact of the flagship Flagship? What results are expected as an outcome of the Flagship?	Main outputs and results: Joint transnational mentorship program strategy & action plan, jointly developed Digital & Circular Transformation Toolkits, Joint single database to support transnational mentor services, New joint transnational set of mentoring services taken up by 7 regional partners, Joint sustainability & transferability strategy for mentorship program
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	Flagship is covering an issue of transnational relevance and addressing development needs and territorial challenges shared across the regions participating in the Flagship. Those identified problems cannot be solved efficiently by individual regions alone because: (1) There is a common interest of partners for which transnational cooperation leads to more innovative and efficient solutions, (2) Solutions are jointly developed by organizations in different regions working together in a Flagship showing a clear transnational added value going beyond the mere addition of results independently achievable in involved regions, (3) Flagship demonstrates an integrated approach to regional development by combining thematic (digitalization & circular solutions) and territorial dimensions (knowledge transfer from more developed regions into the less developed ones) (4) Flagship outputs are embedded in a transnational working approach (transnational training and mentoring services) (5) All partners actively participate in the Flagship according to their functions and competences, to achieve the collective Flagship results.With JOINT MENTORING SERVICES and »pool of international experts« regional SMEs will improve skills and receive comprehensive approach to addressing specific problem while they will get competent partners in the field of digitization & circular transition. Additional benefit is also coming from transnational partner network, which allows local SMEs to be more visible on international market and with that offers much better conditions for success and business expand. With these positive impacts on added value generation there will be positive effects on new rural businesses, new employments, brain-drain stop and tendencies to in-migration will be leveraged.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	Implementation approach is focused to test jointly developed tools & new transnational joint services with selected competent regional mentors and integrate them into the partners business models. As existing support institutions in partner regions are underpinned by the

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	expertise required by the digital and circular support services in terms of smart specialization, it is NECESSARY FIRST TO RAISE THE LEVEL OF KNOWLEDGE OF REGIONAL PARTNERS while they will be involved to implement mentoring services in their regions. The BASIC HYPOTHESIS that will be tested within the Flagship through pilot activities is that efficient transnational joint mentoring services cannot be implemented without competent regional mentors coming from existing regional support ecosystems, who are equipped and trained to use jointly developed digital & circular transition support toolkits. Considering described territorial challenges and provision of sustainability of joint mentoring services after the end of the Flagship, the IMPLEMENTING APPROACH is based on selection of appropriate partners who: (1) are coming from less developed regions within each country, (2) are members of business support ecosystem in own region with direct access to target SMEs; (3) are interested to offer SMEs new services through a joint mentoring program and (4) can provide competent regional mentors with appropriate knowledge & skills. INNOVATIVENESS is shown by JOINTLY DEVELOPED TRANSNATIONAL MENTOR SERVICES for small scale food product & service providers, where regional support ecosystem will have access to wide range of specialized digital & circular toolkits and pool of international experts to support digital & circular transition. Innovativeness is also shown through: (1) Building sustainable transnational partnership network; (2) Improving regional ecosystems support capacity, (3) integrated cross- sectoral expert approach (pool of mobilized digitization and circular experts), (4) knowledge transfer of technology solutions from developed regions to less developed regions and (5) Integration of new joint services into the partners business models.
How is the Flagship being monitored throughout its lifespan (development & implementation) and who is responsible?	Pomurje technology park as owner of ISO 9001:2015 quality management certificate will transfer the knowledge into the Flagship consortium. Main Flagship quality objectives are: (1) Quality products (developed tools) and services for target groups; (2) Customer (target groups) satisfaction; (3) Increased productivity & cost optimization; (4) Removes silos/better teamwork. APPROACH: To assure high quality of deliverables and outputs specific guidelines and metrics will be used. Quality control on periodic Flagship review meetings (each 6 months) will be organized and will help the Flagship team to predict and verify the achievement of goals and identify the need forcorrective actions. Quality control done by “Steering Committee” will monitors specific Flagship outputs and determines compliance with applicable standards. Control will also identify Flagship risk factors, their mitigation, and looks for ways to prevent and eliminate unsatisfactory performance. Flagship team will use the following QUALITY MANAGEMENT TOOLS to ensure quality objectives which are going to be monitored on an ongoing basis during periodical meetings: (1) Flagship Dashboard (in excel) – clear overview of planed Flagship activities, deadlines for each deliverable, overview of implemented tasks and submitted results from each partner, achieved indicators. (2) Financial Monitoring Tool (in excel) – clear overview of planned and reported costs for each Flagship partner with possible cost category shifts. The partners will

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	also use in their work: Affinity diagrams – to organize and consolidate ideas based on brainstorming sessions. Process decision program charts - to see the steps required for completing a process, analyzing the impact & plan scenarios. Prioritization matrices - helps to identify what issues may arise and determine what problems to solve first to meet certain objectives. Network diagrams - visual illustration of the Flagship scope and the critical path. Matrix diagrams - shows the relationships between objectives, factors, and causes that exist between rows and columns that make up the entire matrix.
How is your flagship connected with other flagship Flagships? What are the most important connection points?	Yes. (Mobile) Pool of mentors from other program areas, cross-sectoral topics and use of available network of knowledge.
On what did you capitalize to build this flagship Flagship? Does it expand previous Flagships, programs, initiatives and good practices?	DIH2 is a network of 26 European Digital innovation hubs where SME support services based on robotic solutions are offered to manufacturing companies in their digital transition. Sinergy: usable technology transfer process could be adapted into the mentoring program and some technology solution providers are appropriate for good practice transfer. The CEUP2030 is collection of CE area good practices in digital topics, where policy recommendations are based on real use cases which serve as basis for future RIS3 trends in 4 digital topics: Automation & Robotics, AI, Intelligent Production Systems and New/Smart materials. Synergy: RISE is a concrete uptake Flagship of these topics with mentors and tools in remote/rural areas.
Strategic/ Policy Impact:	
How does the flagship Flagship meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	As mentioned above the CEUP2030 is collection of CE area good practices in digital topics, where policy recommendations are based on real use cases which serve as basis for future RIS3 trends in 4 digital topics: Automation & Robotics, AI, Intelligent Production Systems and New/Smart materials. Synergy: RISE is a concrete uptake Flagship of these topics with mentors and tools in remote/rural areas. The flagship's objective is the establishment of four cross-border operating "Scaleup Labs" based on the" living lab" concept to support qualifying start-up & scale-up SMEs in achieving "Proof of Scalability". Labs are focused on 4 topics (Smart region, Health, Agile Manufacturing, AgTech). Synergy: Some scaleups developed technology solutions which could be applicable for Agritourism. Those technology providers (and solutions) will be connected with target groups and joint single database
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The Flagship will help deliver on three key priorities: maintaining European industry's global competitiveness and a level playing field, at home and globally, and helping to make Europe climate-neutral by 2050 and shaping Europe's digital future.
How is the Flagship compatible with strategies and policies pursued on	EU Green Deal Strategy and Flagship RISE pursue the same goals: Promoting the circular economy, fresh air, clean water, healthy and affordable food, using cleaner energy,

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the regional / national / European level? (Please reference your preparatory discussions)	more sustainable, recyclable, and reusable products, green jobs suitable for the future, reduced the environmental and climate footprint of the food system, sustainable fork-for-fork supply chain, reduce air, water and soil pollution and improved waste management. The objectives of the flagship are congruent with the development goal Circular Economy (Strong and sustainable local economies) as well as Balanced Europe (promote polycentric development models that offer a role for all places). Flagship objectives are congruent with the Priority Area 8 where Flagship will contribute to improved competitiveness of less developed areas. Several Flagship partners are located in the EUSDR area (Slovenia, Hungary, Slovakia, Austria, Czech Republic) therefore Flagship results will be communicated in respective countries. Flagships stimulate innovation through interaction between different actors and create a strong synergy with complementary sectors along the value chain what is congruent with EUSAIR strategy. Flagship partners located in the EUSAIR area (Slovenia & Italy) will communicate Flagship results in respective area.
How this Flagship is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	By developing the competencies of companies will be maintaining European industry's global competitiveness and a level playing field, at home and globally

Template for Flagship Flagship	
Title of Organisation:	PTP: Pomurje Technology Park
Date of Reporting	
Administrative details over the Flagship Flagship:	
Title of Flagship (acronym):	GREEN 4.0 Smart and green innovation approaches for scaling up digital transformation opportunities in CE
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	Flagship scope is to improve regional ecosystems innovation capacities for supporting transition to sustainable business models in CE manufacturing sector, by piloting customized innovation models which create new regional and transnational value chains, links manufacturing companies with solution providers and private equity, increase knowledge and user acceptance regarding smart manufacturing (green industry, digitalization) and transfer piloted programs and tools to RIS3 authorities.
CAMI4.0 Technology Focus - Primary	*Smart and Advanced Materials*
PP's CAMI4.0 Tin Role	*Core*

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CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☒ *Intelligent Production Systems* ☒ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☒ *Artificial Intelligence*			
Flagship Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship Flagship*	PP Name	Org Type	Org Role	NUTS2 Region
	Pomurje Technology Park	**Business Support Organisation**	Knowledge Facilitator	Vzhodna Slovenija (SI03)
	Bautzen Innovation Centre	**Business Support Organisation**	Knowledge Supplier	Dresden (DED2)
	University of Applied Sciences FH Kufstein Tirol	**Higher Education & Research**	Knowledge Supplier	Tirol (AT33)
	University of Ljubljana	**Higher Education & Research**	Knowledge Supplier	Zahodna Slovenija (SI04)
	Univerzita Jana Evangelisty Purkyně v Ústí nad Labem	**Higher Education & Research**	Knowledge Supplier	Severozápad (CZ04)
	Innovation Centre of Usti Region (registered association)	**Sectoral Agency**	Knowledge Supplier	Severozápad (CZ04)
	Intellimech Consortium	**Higher Education & Research**	Choose an item.	Lombardia (ITC4)

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	Krakow Technology Park ltd.	**Business Support Organisation**	Choose an item.	Małopolskie (PL21)
	IFKA Public Benefit Nonprofit Ltd.	**National Public Authority**	Choose an item.	Budapest (HU11)
Duration of Flagship Flagship / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
			36 months	
	1) Smart and green manufacturing new value chains models		M18	M30
	2) Digital Transformation Sites		M24	M36
	3) Open Innovation Toolkits,		M12	M36
	4) Private Equity tool		M6	M24
Define the budget of your Flagship Flagship:	What is the fiscal value of the Flagship?		2,253,720.00	
	What are the different financing unit of the Flagship?			
	What are the funding program(s) used? What are the other potential funding sources?		Cooperating for a smarter central Europe	
List all the evidence documents you can provide regarding your flagship Flagship (MOU, submission document…)	Application form			
Challenge addressed by the flagship Flagship				
Which challenges have to be overcome in the context of the Flagship? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	Flagship is tackling the following identified specific needs and challenges in project regions: - Significant increase in the price of building materials (e.g. wood, steel), which are also difficult to obtain and delivery times have increased. - Imbalances in raw material markets and price competition among exporters - lack of suitable products and services enabling change smart and green manufacturing requires an introduction of innovative business models, technology, and products. It means the need to develop new CE region value chains – for example the recyclable materials or the product			

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	rental and repair sector. These new developments are found in early stages of implementation in most of the project regions and in some cases, just not are available on a large scale. - insufficient knowledge and awareness of circular economy & difficulties with change habits, educational activities are necessary - Need for improved cooperation and connection between larger companies and SME's and between manufacturing SME's and solution developer SMEs. Lack of connections and transparency in the relationship between entrepreneurs leads to difficulties in solution/product development processes, in changing the business model, or reluctance to cooperate with competitors or suppliers for fear of failure or loss the company's competitive position. - Automating and digitalizing industrial production processes for reducing the negative effects of demographic change and lack of skilled workers - Lack of skilled workers - the companies themselves have difficulties in obtaining skilled personnel; however, the problem is also felt with the suppliers; the quality of the work (e.g. with professionals) has declined noticeably, so that improvements have to be demanded on an ongoing basis. - For car manufacturers, the topic of sustainability is important and is becoming particularly important; here, the industry assumes that there will be legal regulations on how car parts must be installed (e.g. modules that include several parts - i.e. the assembly process will change and, in addition, the quality of the work (e.g. by professionals) will have to be constantly improved), the assembly process will change and in addition the modules should be designed in such a way that they can be put to a second and even third use) --> thus the topic of "green transformation" is very important here; this affects all companies in the value chain (even the SMEs) - sustainability will have to be traceable; companies that cannot guarantee this will no longer be accepted as suppliers - In the IT sector, hardware is currently difficult to obtain and then also at higher prices - lack of instruments that encourage the implementation of green solutions (financial support is not encouraging to appropriate CE behaviours and decisions).
Who are target groups of the Flagship? Tick the answer relevant for your flagship Flagship	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☒ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☒ *Design* ☒ *Procurement*

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	☒ *Manufacturing* ☒ *Distribution* ☒ *Marketing / Sales* ☒ *Service and Repair* ☒ *De or Re-Manufacturing* ☒ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	***C32 - Other (please clarify below)No specific sector is identified, the flagship will cover number of mentioned above.***
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Flagship aims to tackle the low innovation capacity in developing, deploying and scale up new market supply and value chains in 7 CE Regions from Slovenia, Czech Republic, Hungary, Austria, Italy and Germany in order to exploit the opportunities related to smart manufacturing through digital and green transformation (speed up the transition and growth from Industry 2.0 to Industry 4.0).
What are the key goals to achieve this Flagship? What are the specific objectives?	Flagship scope is to improve regional ecosystems innovation capacities for supporting transition to sustainable business models in CE manufacturing sector, by piloting customized innovation models which creates new regional and transnational value chains, links manufacturing companies with solution providers and private equity, increase knowledge and user acceptance regarding smart manufacturing (green industry, digitalization) and transfer piloted programs and tools to RIS3 authorities.
What is the methodology utilised to implement the solution?	Flagship innovative approach is based on the capitalization of existing knowledge, solutions and outputs achieved by project partners through the implementation of synergic projects focused on smart and green manufacturing, on innovative products/solutions development, on business models generation and on support services for supporting digital and green transition to Industry 4.0. Other key components of our innovative approach are the following: 1. Design, test and deploy a user acceptance model for improving SME's capacities and willingness to adopt digital technologies and green business models for speeding their transition of smart innovative factories and new value chains. 2. Aggregating and integrating existing regional infrastructure of of labs, testbeds, living labs, prototyping, and testing facilities in Transnational Digital Transformation Sites 3. PRO.net platform was developed to support cross-border interactions between start-ups /scaleups and investors coming from different regions. 4. Linking and engaging big and SMEs manufacturing companies (solution seekers) with IT and green tech SME's (solutions developers), and with private equity investors in joint co-creation processes by developing and applying open

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	knowledge, open innovation toolkits and private equity investment readiness tool within innovation programs methodology, thus leading to the generation of 2 smart and green manufacturing new value chains models.
What´s your intended impact of the flagship Flagship? What results are expected as an outcome of the Flagship?	As a result, companies will have improved capacities of innovating, developing and applying a smart & green solutions/technologies. In three years of cooperation we expect to co-create and co-develop innovative products and services that generates creation of new sustainable supply chain models using open innovation approaches.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	Flagship innovative approach is based on the capitalization of existing knowledge, solutions and outputs achieved by project partners through the implementation of synergic projects focused on smart and green manufacturing, on innovative products/solutions development, on business models generation and on support services for supporting digital and green transition to Industry 4.0 Transnational cooperation framework will generate and deploy an interactive digital toolkit composed of open innovation maps, open innovation tools and private equity investment readiness tool, integrated as dedicated section in PRO.Net platform which will allow companies to use this toolkit for open business modelling, Industry 4.0 product development process stages, solutions development, experimentation, and investment readiness in terms of private equity injections. Transnational cooperation is a key factor of flagship successful contribution on generating and piloting 2 smart and green manufacturing new value chains in projects region. Global supply & value chains disruptions caused by COVID 19, scarce resources and energy crises can be tackled only by generating and validating new interregional value chains models in smart and green manufacturing. Practically to solve the global supply chains fragmentations and disruptions through the creation of internal supply and value chains inside EU market. This can be successfully achieved only through a transnational cooperation framework which provides the tools, processes and capabilities for changing business models and speed the transition to Industry 4.0.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	Flagship will generate and deploy an interactive digital toolkit composed of open innovation maps, open innovation tools and private equity investment readiness tool, integrated as dedicated section in PRO.Net platform which will allow companies to use this toolkit for open business modelling, Industry 4.0 product development process stages, solutions development, experimentation, and investment readiness in terms of private equity injections. Therefore, project actions are supporting the development and adoption of innovative smart and green technologies for 7 pre-defined sectorial clusters. FLAGSHIP Innovation Platform which integrates existing digital services and new product development, investment readiness and open innovation tools developed under the project providing open co-creation capabilities to generate, test and pilot smart and green manufacturing new value chains models in 7 pre-defined

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	sectorial clusters between manufacturing companies and solution providers. FLAGSHIP develops, and pilots 2 smart and green manufacturing new value chains based on supply-demand co-creation approach in prototyping, business modelling, product development processes applied through innovation programs under Transnational Digital Transformation Sites in 7 pre-defined sectorial manufacturing clusters. GREEN 4.0 is linking and engaging big and SMEs manufacturing companies (solution seekers) with IT and green tech SME's (solutions developers), and with private equity investors in joint co-creation processes by developing and applying open knowledge, open innovation toolkits and private equity investment readiness tool within innovation programs methodology, thus leading to the generation of 2 smart and green manufacturing new value chains models.
How is the Flagship being monitored throughout its lifespan (development & implementation) and who is responsible?	LP has strong experience of cooperation with PPs in development and delivery of manufacturing supply-demand matching services, business development, business modelling, business scale up, product development processes, innovation management, digital services and transformation, MVP validation, business acceleration and training programs related to smart manufacturing and Industry 4.0. Project partnership is built upon quadruple helix approach and based on previous cooperation between LP and consortium partners. In this context, the project consortium engages 6 Associated Strategic Partners, respectively: 5 manufacturing companies' networks from Austria and Germany, as well as a Regional Development Agency from Usti Region (Czech Republic) who is already cooperating with Usti Innovation Agency for RIS3 management and for implementation of an EC Digital Innovation HUB (DIH). LP has strong experience of cooperation with PPs in development and delivery of manufacturing supply-demand matching services, business development, business modelling, business scale up, product development processes, innovation management, digital services and transformation, MVP validation, business acceleration and training programs related to smart manufacturing and Industry 4.0. Project partnership is built upon quadruple helix approach and based on previous cooperation between LP and consortium partners. In this context, the project consortium engages 6 Associated Strategic Partners, respectively: 5 manufacturing companies' networks from Austria and Germany, as well as a Regional Development Agency from Usti Region (Czech Republic) who is already cooperating with Usti Innovation Agency for RIS3 management and for implementation of an EC Digital Innovation HUB (DIH).
How is your flagship connected with other flagship Flagships? What are the most important connection points?	The most common points are the transfer of examples of good practice, also common are inter-organizational and international connections and access to expertise, technologies and knowledge. At TIN coordination, the common issues and challenges of leading companies are, above all, enabling SMEs to participate in the exchange of research and knowledge results, building strong networks and communities with technical concepts, and internationalization.

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On what did you capitalize to build this flagship? Does it expand previous Flagships, programs, initiatives and good practices?	Flagship has united the expertise, background, and complementary expertise from 7 Central Europe regions/countries – Slovenia, Czech Republic, Italy, Austria, Germania, Poland, and Hungary. The consortium consists of different complementary knowledge, infrastructure, and expertise between 3 universities (Austria, Slovenia and Czech Republic), 4 business support organizations (technology parks, clusters, incubators, manufacturing companies' consortium from Italy, Slovenia, Austria and Germany), 1 innovation agency from Czech Republic handling RIS3 strategy implementation as well as RIS3 funding schemes for 2021-2027 and 1 national agency/authority from Hungary under the coordination of Ministry for Innovation and Technology which connects supply and demand side of the economy in the fields of circular economy, industry 4.0, social enterprises and social innovation and supporting SMEs through services.
Strategic/ Policy Impact:	
How does the flagship Flagship meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	We can say that the establishment of network and communities who target and work and for transferring good practices from CEUP2030. The CEUP2030 is collection of CE area good practices in digital topics, where policy recommendations are based on real use cases which serve as basis for future RIS3 trends in 4 digital topics: Automation & Robotics, AI, Intelligent Production Systems and New/Smart materials. Synergy: RISE is a concrete uptake Flagship of these topics with mentors and tools in remote/rural areas. The flagship's objective is the establishment of four cross-border operating "Scaleup Labs" based on the" living lab" concept to support qualifying start-up & scale-up SMEs in achieving "Proof of Scalability". Labs are focused on 4 topics (Smart region, Health, Agile Manufacturing, AgTech). Synergy: Some scaleups developed technology solutions which could be applicable for Agritourism. Those technology providers (and solutions) will be connected with target groups and joint single database.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	EU Strategy for the Danube Region Strategy - GREEN 4.0 is contributing to achieving the objectives of the following EUSDR policy actions: PA1B sustainable energy, PA5 environmental risks, PA7 knowledge society, and PA8 competitiveness of enterprises GREEN 4.0 will generate and deploy an interactive digital toolkit composed of open innovation maps, open innovation tools and private equity investment readiness tool, integrated as dedicated section in PRO.Net platform which will allow companies to use this toolkit for open business modelling, Industry 4.0 product development process stages, solutions development, experimentation, and investment readiness in terms of private equity injections. European Green Deal Strategy - GREEN 4.0 is contributing to achieving the objectives of the following Green Deal policy areas: clean energy, sustainable industry, eliminating pollution and sustainable finance. GREEN 4.0 is linking and engaging big and SMEs manufacturing companies (solution seekers) with IT and green tech SME's (solutions developers),

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	and with private equity investors in joint co-creation processes by developing and applying open knowledge, open innovation toolkits and private equity investment readiness tool within innovation programs methodology, thus leading to the generation of 2 smart and green manufacturing new value chains models. Territorial Agenda 2030 Strategy - GREEN 4.0 is contributing on achieving the objective of territorial cohesion between EU regions. Through its Policy Learning Center outputs, GREEN 4.0 is promoting a balanced and harmonious territorial development between and within countries, regions, cities and municipalities, as well as ensuring a future for all places and people in Europe. Project is setting up a Policy Learning Centre for improving CE regions ecosystem capacity to learn, transfer and replicate GREEN 4.0 innovation platform with its entire capabilities and tools by designing new policy instruments supporting sustainable manufacturing new value chains.
How is the Flagship compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	Lombardy Roadmap for Research and Innovation on Circular Economy - It provides a framework for the development of a sustainable, low carbon, resource efficient and competitive strategy for the transition to a more circular economy in the Lombardy Region, under a smart specialization perspective. Circular Economy has been introduced as one of the main drivers to foster the development of mature into emerging industry in the Region. Accordingly, the Roadmap has been recognized as an opportunity to define a structured strategy to boost circular economy in the region starting from the needs and the priorities collaboratively pointed out by diverse regional stakeholders. Ministry of Health RS: Evaluation of the project Transforming existing networks and introduction of the providers for community care and programmes for older people (2020-2022) - The know-how gained in the field of evaluation of pilot projects and evaluation of the work of staff involved in long-term care can be built upon and used in the context of evaluating different aspects of digital transformation.
How this Flagship is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	By developing the competencies of companies will be maintaining European industry's global competitiveness and a level playing field, at home and globally

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3.9 Partner 9 – PBN

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Template for Flagship Project				
Title of Organisation:	PBN: Pannon Business Network Association			
Date of Reporting	23rd Nov 2021			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	Purchase of autonomous production line (Teaching and Learning Factory) and smart material board and further developments			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	The Teaching and Learning Factory "TLF" (aka: cyberphysical factory) is a manufacturing unit with online, remote access to broaden cross-border services directly related to digitization competencies of the partners. The topics data science, autonomous robotics and 3Dprinting are integrated, enabling stakeholders to provide internationally competitive research and training infrastructure. With further future actions, connectivity will be ensured, contributing to its sustainability for the 2021-2027 period. This TLF has been purchased by PBN, and it will arrive to our premises in the beginning of December. Firstly, cyberphysical features will be installed, and it is followed by the development and application of experimentation and research modules enabling concrete services towards the relevant ecosystem members. Moreover, the TLF is concentrating on additional exploitation modules, to extend the cyberphysical facility into a strategic, cross-border opportunity as well. In parallel with the TLF purchase and development, PBN has also purchased a smart material board, which can be considered as a complementary element of the TLF.			
CAMI4.0 Technology Focus - Primary	*Intelligent Production Systems*			
PP's CAMI4.0 Tin Role	*Core*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☒ *Smart and Advanced Materials* ☒ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	Forschung Burgenland	Business Support Organisation	Knowledge Facilitator	AT 11: Burgenland

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	Óbuda University	Higher Education & Research	Knowledge Supplier	HU 11: Budapest
	SMC Hungary Ltd.	Large Enterprise	Knowledge Supplier	HU12: Pest
	Scientific Association for Mechanical Engineering	Business Support Organisation	Knowledge Facilitator	HU 11: Budapest
	am-LAB DIH	Business Support Organisation	Knowledge Receiver	HU22: NyugatDunántúl
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	IMPROVE! project implementation (AT-HU cross border cooperation)		01/01/2020	31/12/2022
	IMPROVE! WPT5 (EMBED!) approval by the Managing Authority→ This WP consists the TLF implementation and concerning activities		13/04/2021	13/04/2021
	IMPROVE! EMBED WPT5 implementation (the subactivities of the WP are described in the following rows)		13/04/2021	ongoing, until 31/12/2022
	Development of physical manufacturing components with TLF features		April 2021	Dec 2021
	Experimentation and research modules developed and applied		December 2021	April 2022
	Sustainability and exploitation of the cross-border CF		March 2021	December 2022
	Smart Material board purchase procedure		July 2021	October 2021
Define the budget of your Flagship project:	What is the fiscal value of the project?		The amount of the TLF is 154989,97 EUR (including VAT) which consists of 4 modules One further element of the TLF will be rented in the amount of 1045 EUR	

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		(excluding VAT) • Smart Material board 4950 EUR (excluding VAT) • Apart from the above mentioned "equipment costs" staff costs were/are also used to manage the cooperation and the activities both in the TLF and the smart material board.
	What are the different financing unit of the project?	The TLF with 4 modules have been financed by the IMPROVE! project, whereas the Smart Material board has been purchased using the budget in the 4STEPS project • The staff costs are also financed from the project above • Own resource has been also used to finance the rental fee of one TLF element mentioned above.
	What are the funding program(s) used? What are the other potential funding sources?	IMPROVE! project including the EMBED! WPT5→ Interreg VA Austria-Hungary Cooperation Programme 2014- 2020 • 4STEPS Project→ Interreg Central Europe Programme
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Managing Authority official letter to approve the EMBED! (WP5) in the IMPROVE project • The Application Form of the IMPROVE project including the EMBED! WPT5 as well	
Challenge addressed by the flagship project		
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	Production is growing in complexity and flexibility, where digitalization enabled mass customization. Meanwhile earlier the important feature was to produce at full capacity of the machines, by now it changed to full agility to meet individual customer needs as quickly as possible. From a technical point of view data storage, data transmission and data processing have become significantly cheaper and accessible, enabling broad utilization of smart solutions in the manufacturing process. All these phenomena led to sensors being integrated into the production lines, so anything can be measured, customized and optimized. Motivation: The joint services offered by the IMPROVE consortium can be implemented in the physical, tangible integrated format in the TLF and smart material board as a complementary element.	

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Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☒ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☒ *Distribution* ☐ *Marketing / Sales* ☒ *Service and Repair* ☐ *De or Re-Manufacturing* ☒ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	C32 - Other (please clarify below) TLF, and smart material board are applicable in the above mentioned manufacturing sector- no specific one can be chosen.
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Regarding the TLF: The collected data from the TLF can be stored on the cloud, and the virtual twin or clone of the physical manufacturing unit can be developed. It is called the cyberphysical character of the factory. Once the CF is created, it enables either simulations on it – like what would happen, when the assembly line is modified, or the flow of manufacturing is changed -, or machine settings can be altered, and then downloaded to the physical unit. It assists manufacturing when the trained staff is not available on site. The final stage is the automated manufacturing, without human intervention. Therefore, the TLF shall integrate different Industry 4.0 solutions in one manufacturing demonstration line. It has to be able to demonstrate on site the automated production and remote access. Regarding Smart Material board: A further focus of the experiments is the representation of the energy required to address the material. For this purpose, the two controllers, which represent the environmental parameters temperature and current are used. For a comprehensive view of the effects, the relevant parameters current temperature and resistance are optically displayed on the board.
What are the key goals to achieve this project? What are the specific objectives?	The aim of PBN is to provide a holistic set of tools covering the entire production process, in addition to the former isolated digitalisation development solutions, suitable for both educational and demonstration purposes and for the implementation of specific R & D projects.

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What is the methodology utilised to implement the solution?	In the framework of the EMBED! WP in the IMPROVE! project the following activities and sub-activities have been defined, approved, and has been being implemented. T5.1 Development of physical manufacturing components with CF features o T5.1.1 Specification of CF o T5.1.2 Installation of the CF physical elements o T5.1.3 Development of CF cyber elements T5.2 Experimentation and research modules developed and applied o T5.2.1 Training and demonstration modules developed o T5.2.2 Validation of the CF concept o T5.2.3 Research agenda T5.3 Sustainability and exploitation of the cross-border CF o T5.3.1 Additional cross-border integration by future investment o T5.3.2 New features added to CF o T5.3.3 Definition of DIH flagship projects
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The implementation of the TLF and the Smart Material board has awareness-raising, data processing, technical feasibility check, artificial intelligence application and cybersecurity concerns. As a further impact the current competencies and knowledge of the partners and stakeholders can be integrated and developed in one manufacturing production line. Due to the implementation of the TLF and the Smart Material board, companies, universities, policy actors and further stakeholders might be invited to our premise for training in order to widen their knowledge/upgrade the skills in these fields and they might also utilise these experience in future cooperations. From the IMPROVE! point of view, it can guarantee and ensure the sustainability and follow-up of cooperations between the IMPROVE! project and further stakeholders.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	Regarding the purchase of the TLF, the public procurement procedure took longer and was more difficult than we had expected. e.g: It was also difficult to find the appropriate supplier who can provide the necessary modules of the TLF and have open database. Finally, we carried out the public procurement and found the appropriate supplier, and contracted them.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	As described above, in the framework of the EMBED! WPT5 of the IMPROVE project activities and sub-activities have been defined and the implementation is being carried out accordingly.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	PBN is the Lead Partner of the IMPROVE! project so, we as LP have been monitoring the activities in connection with the TLF and the smart material board.
How is your flagship connected with other flagship projects? What are the most important connection points?	Surely, the implementation/purchase and activities of the TLF and the Smart Material board are interconnected. They might also have connection with the other flagship of PBN(smart senior room establishment) since health related R&D activities might be also carried out with the help of the TLF and the smart material board.
On what did you capitalize to build this flagship project? Does it expand	The manufacturing unit was requested in the extension of the IMPROVE! project, so the experience and network

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previous projects, programs, initiatives and good practices?	gained/established in the IMPROVE! are being capitalised in the extension part.
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The implementation of the TLF and the Smart Material board and the upcoming activities are totally in line with the IPS topic's objectives defined in the Strategy: e.g: It contributes to smart sustainable manufacturing, production in the domain of big data. As it was also anticipated in the Strategy, PBN has already built the (transnational) network in connection with these technologies, and we are also planning to organise workshops and invite stakeholders in order to teach them about these technologies.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	It can directly be concluded from the previous experiences that in order to assist companies in the digitalization journey in the programme area, the focus has to be on skills development and concrete applications and pilot-actions. From the Improve! partnership competency map, PBN has an artificial intelligence team, while FB has a digital marketing and future cybersecurity orientation. Both skills are essential for the implementation of the TLF concept. Once the TLF is created, several (type of) stakeholders can gain competitive advantage through trainings in order to have experience in the operation of the TLF. In the similar content, (TLF) a new project proposal was submitted in the EIT Programme- with PBN as a direct PP- and it was approved, so it will start on 1st January 2022 until 31st December 2022. Due to this project, new project partners from CE (Czech Republic, Germany, Austria) will be directly involved and gain experience in the field of TLF, and smart material board.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	LOCAL: The project is compatible with the recently approved (September 2021) local strategy, called SZOMBATHELY2030 since the vision of the strategy is to contributing to the improvement of the standard of living in Szombathely and its region by focusing on education and research-anddevelopment by promoting industrial transformation and specializing on complex rehabilitation within the health industry. Regarding the key elements, the strategy consists the followings which are relevant to this flagship: • Supporting industrial transformation for existing companies • Strengthening R&D and education to increase added value • Building on Óbuda University in manufacturing technology with a focus on health industry • Building common inclusive research and test infrastructure to facilitate synergies • Involving international actors to attract knowledge • Development of a test environment in the field of complex rehabilitation National/European level • The flagship is also in line with the recently published (July 2021) S3 Strategy since it also advocates intelligent production systems and the implemented TLF together with the smart material board might be considered as relevant application areas. • The flagship also corresponds with the main priorities of the EU level Programmes like Digital Europe and the upcoming calls in the Interreg Programmes.
How this project is going to answer the new challenges raised by the European Commission as a focus	The TLF and smart material board implementation and activities might contribute to the following priorities. (CE priorities are listed) • Priority 1 - Cooperating for a smarter central Europe • In some extents the flagship is also contributing to Priority 2 „Cooperating for a greener central

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area for the programming period 2021-2027?	Europe“ since the activities to be carried out in connection with the TLF and the smart material board will intend to manage with zero waste and recycling.

Template for Flagship Project				
Title of Organisation:	PBN: Pannon Business Network Association			
Date of Reporting	23rd Nov 2021			
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):	Establishment and development of a smart senior room			
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	Szombathely City – and Western Hungary – are dominantly oriented on automotive industry. It results in a onelegged, labour-intensive positioning, that makes the region vulnerable. With the lead of PBN efforts were made to exploit the potential of digitalization to a achieve paradigm shift. These actions were supported by universities, companies and the municipality, and after a 6-months preparation the work was culminated in a strategic program, called Szombathely2030. As first step, analysis was provided by PBN to care organizations, including seniors, formal and informal caregivers. It was concluded that complex and integrated solutions are needed. As a result, PBN elaborated and communicated a concept of smart senior room. Social care educational institutes – secondary and university level, as well –, social care organization also expressed their motivation to utilize the infrastructure for demonstration and training use, and questionnaires also confirmed the societal need for such a possibility to learn. The physical smart senior room being established, can serve as a potential vision for the citizens and inspiration for companies. It includes elements based on preliminary research. The key areas will be senior safety, socializing, self-monitoring and communication.			
CAMI4.0 Technology Focus - Primary	*Artificial Intelligence*			
PP’s CAMI4.0 Tin Role	*Core*			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☐ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary):	PP Name	Org Type	Org Role	NUTS2 Region

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Name all the stakeholder involved in your flagship project	Municipality of Szombathely	Local Public Authority	Knowledge Enabler	HU22: NyugatDunántúl
	University of Pécs (Medical University Local Institute)	Higher Education & Research	Knowledge Facilitator	HU22: NyugatDunántúl
	Óbuda University (Technical Univesrity)	Higher Education & Research	Knowledge Facilitator	HU11: Budapest
	am-LAB	Business Support Organisation	Knowledge Facilitator	HU22: NyugatDunántúl
	Pálos Károly Szociális Szolgáltató Központ és Gyermekjólé ti Szolgálat (“ Károly Pálos Social Service Center and Child Welfare Service” - Social Care Service Provider Company)	Infrastructure and (Public) Service Provider	Knowledge Supplier	HU22: NyugatDunántúl
	Chamber of Commerce and Industry	Business Support Organisation	Knowledge Enabler	HU22: NyugatDunántúl
	Eötvös Loránd University	Higher Education & Research	Knowledge Facilitator	HU22: NyugatDunántúl

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	Scientific Association for Mechanical Engineering	Business Support Organisation	Knowledge Enabler	HU11: Budapest
	Meddevice Ltd	SME	Knowledge Supplier	HU12: Pest
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date
	Request for change towards LP/JS/MA in the relevant EU projects (Interreg CE: 4STEPS and CHAIN REACTIONS projects Interreg Europe: INTENCIVE project) where the smart senior room (later abbreviated as SSR) devices are planned to be purchased		01/2021	02/2021
	Negotiating with the LP/JS to accept the concept of the SSR and the equipment lists to be purchased (INTENCIVE, CHAIN REACTIONS, 4STEPS		02/2021	07/2021
	Elaboration of the SZOMBATHELY2030 Local Strategy (PBN with stakeholders) 2 main focuses have been defined in the strategy (Industrial digitalization+ complex rehabilitation)		01/2021	09/2021 (Joint signature and cooperation agreement in 09.2021)
	Qualitative and quantitative research among seniors, regarding their demand and needs		03/2021	04/2021
	Desk research of the available smart devices to be purchased		05/2021	08/2021
	Purchase of the smart items (approx. 50 devices) (get to know their functions and connectivity options) + updated visualisation of the SSR		09/2021	10/2021
	SSR implementation (painting, design,..) + disposition the items into the SSR		10/2021	11/2021

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	Data Utilisation from the devices (e.g: AI related predictive functions based on the measured data),	11/2021	ongoing
	Establishment of demo people dataset("avatars") Integration of households with seniors to enable testing in valid living environment – living lab. Invitation of different target groups to SSR: Training and demonstration to various stakeholders (companies, universities,	12/2021	ongoing
Define the budget of your Flagship project:	What is the fiscal value of the project?	On the one hand staff cost of numerous employees is required in connection with the SSR activities. On the other hand, the price of devices, which have been being purchased, has been already determined in the request for change, and negotiation with the project monitoring institutions (LP/JS/MA). The following equipment prices have been officially approved separately in each of the project. • INTERREG CENTRAL: 4STEPS project: 7500 EUR • INTERREG CENTRAL: Chain Reactions project: 8500 EUR • INTERREG EUROPE: INTENCIVE project: 10 000 EUR	
	What are the different financing unit of the project?	Mentioned above (3 projects can be considered as financing units)	
	What are the funding program(s) used? What are the other potential funding sources?	Apart from the above mentioned funding programs (Interreg CE, Interreg Europe), further programs might also appear as funding source to further develop the SSR. (e.g: Interreg Danube, Horizon, national funding source..)	

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List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Smart Senior Room_explanation pdf→ contains the overall concept of SSR, mentioning the interconnectivity among the 3 projects mentioned above • PBN_health_ecosystem_development 14th Oct 2021.
Challenge addressed by the flagship project	
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	Szombathely City – and Western Hungary – are dominantly oriented on automotive industry. It results in a onelegged, labor-intensive positioning, that makes the region vulnerable. With the lead of PBN efforts were made to exploit the potential of digitalization to a achieve paradigm shift. PBN aims to reflect demand on digitalization in social care, by combining previously accumulated knowledge in this highly demanded area and implement an extension of the am-LAB infrastructure. The main aim of the smart senior room (which has been also determined in the recently approved local strategy document called Szombathely2030) is to contribute to the improvement of the standard of living in Szombathely and its region by focusing on education and research-anddevelopment by promoting industrial transformation and specializing on complex rehabilitation within the health industry.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☒ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☒ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☒ *Design* ☒ *Procurement* ☐ *Manufacturing* ☐ *Distribution* ☒ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**Manufacture of medical devices**
Solution to Address the Challenge	
	The Szombathely2030 Strategic Program (approved by the municipality and other stakeholders in September 2021)

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What is the solution which your Flagship proposes to address the identified challenge?	clearly defines complex rehabilitation as main objective/focus of the city/region. In the framework of the establishment/development of the smart senior room, senior households will be involved to enable testing in valid living environment so called living lab. Based on the smart devices different data can be monitored in real-time manner, and based on the data and their correlation, AI related, predictive measures might be recommended to the patients. Medical device testing will be also feasible via external quality control company with pharma experience. Data science, data visualization and integration will be also carried out by the engineer team of PBN/am-LAB. External doctors and medical experts will be also supporting our data analysis work in order we can provide the most suitable feedback and recommendation to the seniors and caregivers.
What are the key goals to achieve this project? What are the specific objectives?	The smart senior room is a complex microenvironment, integrating multiple elements dedicated to senior people, formal, informal care providers. It focuses on both the individual and on the infrastructure, all elements showcased as a single platform accordingly: Demonstration and training environment which might inspire the different target groups It might also function as a test facility, and it will also provide prototype development research infrastructure.
What is the methodology utilised to implement the solution?	Ecosystem involvement The definition and then the establishment (implementation) of the smart senior room required a long procedure and several discussions with relevant ecosystem players. We built a new local and international eco-system towards Health Sector Manufacturing, and we carried out several discussions with them, and as a result the concept and the details of the smart senior room could be defined. In parallel, PBN- together with several other ecosystem playerswas actively contributing to the elaboration of the local strategy, called Szombathely2030, which was accepted jointly by the contributors and the municipality in September 2021. On the one hand, the recently adopted strategy is focusing on the improvement of the standard of living in Szombathely and ist region and it also specializes on complex rehabilitation within the health industry. The strategy explicitly, in a dedicated session, advocates the health sector and it supports the care system of the senior citizens. The smart senior room and its functions are clearly defined in this dedicated session. As a result, we are convinced that the building of the ecosystem (local and international) was crucial to move forward, and therefore the health sector and the functions of the smart senior room are playing a significant role in the newly adopted strategy. The specific steps taken in connection with the smart senior room establishment have been already defined and detailed in the “milestones” session above.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The main aim of the smart senior room is to contribute to the improvement of the standard of living and specializing on complex rehabilitation within the health industry. The intended impacts are the followings: • Prevention→ Due to the different smart devices (being purchased) numerous data will be available of the seniors and following data analysis methods different recommendations, feedbacks might be given to the senior people, in order to prevent them from the

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	serious problems • Solutions and application towards M(obile)-health and development of self-examination, medical data collection and monitoring, automated medical solutions and consulting, online services, intelligent decision making • Creation of a constant care system, which will contribute to higher level of activity of seniors in social and economic activities • Preparing senior for this role can reduce the burden of increasing health and social care, whereas improve functional abilities and increase productivity, and it might also have psychological benefits as well (positive and optimistic way of thinking)
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	In the definition of the concept of the smart senior room we had to build the local and international ecosystem. In the beginning of this ecosystem building it was difficult to reach the decision makers at each institution, but following several discussions we managed to contact them, and since then we have been in continuous contact with the players. As a result, we could widen our perspectives regarding the health sector and the establishment of the senior room. In the elaboration phase of the SZOMBATHELY2030, the discussions with the different kind and level of stakeholders were not always smooth, however we could mitigate this issue with having periodic (approx. monthly) online/hybrid meetings with the relevant institutions. From the projects point of view, it was also difficult to have our requests- in connection with smart senior room establishmentaccepted by the JS/MA, but after several clarification rounds (email, online discussions from January to June 2021) we managed to provide a clear and comprehensible description regarding the interconnectivity of the requests, and also the equipment lists in each of the project were approved. Following the approval of the requests we hired new technical employees, who are now focusing on the activities and devices of the smart senior room.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	Request for change towards LP/JS/MA in the relevant EU projects, and negotiating with them: • It was a rather long procedure, since we requested this change in three currently running EU projects(mentioned above) and firstly the different LPs had to submit the changes separately, then several joint discussions were held in order to clarify the connection and complementarity of the requests. We also had to differentiate the requested equipment lists, which also took some time. All the activities requested in the 3 EU projects have been integrated into a new local action plan, called Szombathely2030. This plan was elaborated (with the active contribution of PBN) in the first half of 2021, and it was finally approved and accepted by the municipality and the stakeholders. The plan and its elements were also presented to the representative of the national government who also advocates the projects defined in the material. In parallel with the elaboration and finalisation of the SZOMBATHELY2030 Program we carried out a qualitative and quantitative research among local seniors and caregiver. (Main results: 6% of the seniors move out daily ;25% can't leave his/her home at all ;90% live alone among the interviewed 65+; 10% of 65+ seniors are in the public care system. We also conducted a comprehensive desk research of the available smart devices to be purchased. We examined their functions, their prices, their connectivity with others.

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	The devices were divided into categories (smart home, selfmonitoring, safety..) and in each of the 3 funding projects we prepared the equipment lists accordingly and sent them to JS. Following the approval of the requests and equipment lists in each project, we started to purchase the devices, (approx. 50 devices) and we got to know their functions. In parallel with the purchase we continuously updated the design of the smart senior room. From November 2021, the smart senior room itself has been being implemented and the already purchased devices have been located there. Dedicated staff members started to create demo people (so called avatars) based on the data which can be utilised from the devices. In parallel with the establishment of the smart senior room, the new department of PBN has just appeared, called at.home. In the upcoming months (probably from January 2022) senior households and different target groups shall be invited to the room in order to get acquainted with the devices and their functions.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	Regarding the elaboration of the SZOMBATHELY2030 strategic document, and its flagship projects, (including the establishment of the smart senior room as well) with the active (organisational) contribution of PBN, periodic (approx. monthly) meetings (online/offline/hybrid) were taken place, where status and the next steps of the strategy implementation were also agreed upon among the participant stakeholders. Parallelly, internal (with PBN colleagues) discussions were also held on a two-weekly basis, where the specific activities, milestones (see above) have been defined, discussed and monitored. Both of the above mentioned discussions shall continue in the next phases of implementation as well.
How is your flagship connected with other flagship projects? What are the most important connection points?	As mentioned above, the smart senior room establishment has been also defined as a key element in the SZOMBATHELY2030 strategy. It has also connection with PBN's other flagship project. (TLF & smart material implementation and developments in the AI topic)
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	In the framework of the smart senior room establishment flagship, we requested modification change in three of our currently running projects, in order to make it financially feasible. (Interreg CE: 4STEPS, CHAIN Reactions, + Interreg Europe: INTENCIVE). In the INTENCIVE project (started from August 2019), we had the possibility to study and experience European good practices for smart senior room Before these requests, PBN had been managing projects in the AAL Programme, where we could gain and widen our knowledge in senior care and different smart applications targeted to elderlies.
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The smart senior room contributes to the goals/addresses the challenges defined in the WPT1 Strategy (D.T1.3.2): Advanced Analytics→ Based on the medical data gained from different devices in the smart senior room, advanced data analysis and predictive functions can be carried out. As it was also anticipated in the strategy, thematic workshops will be also held, where the different stakeholders can be inspired and can widen their knowledge in connection with the smart

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	devices and as a result, further cooperation (development) actions might be also carried out.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The physical smart senior room being established, can serve as a potential vision for the citizens and inspiration for companies. The advanced data analysis to be carried out, might be also utilised in e.g: health-related companies, but also companies from other field might also inspire the significance and value of the data.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	Local level: The project is compatible with the recently approved (September 2021) local strategy, called SZOMBATHELY2030 since the vision of the strategy is to contributing to the improvement of the standard of living in Szombathely and its region by focusing on education and research-and-development by promoting industrial transformation and specializing on complex rehabilitation within the health industry. Regarding the key elements, the strategy consists the followings which are relevant to this flagship: • Complex rehabilitation focus for new companies • Strengthening R&D and education to increase added value • Building on Óbuda University in manufacturing technology with a focus on health industry • Building on the health competences of the University of Pécs • Building common inclusive research and test infrastructure to facilitate synergies • Involving international actors to attract knowledge • Development of a test environment in the field of complex rehabilitation National/European level • The flagship is also in line with the recently published (July 2021) national level S3 Strategy, since it also advocates the R&D and innovvation in the health sector, which will be beneficial not only the for the healthrelated institutions (e.g: universities, companies) but also for the patients as well. • The flagship also corresponds with the main priorities of the EU level Programmes like Digital Europe and the upcoming calls in the Interreg Programmes.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The flagship project contributes to the industrial revolution in the health sector, since due to the flagship the e-health and mhealth solutions will be enhanced. As a result, the human wellbeing will be improved which is crucial in every programming document in the upcoming period. Solutions and applications will be also popularised in the field of self-examination, with medical data collection and monitoring, automated medical solutions and consulting, online services as well as with intelligent decision making.

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3.10 Partner 10 – Hamag

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Template for Flagship Project	
Title of Organisation:	HAMAG: Croatian Agency for SMEs, Innovations and Investments
Date of Reporting	10/3/2022
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	Adriatic multifunctional smart buoys INTERREG Italy - Croatia
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*	North Adriatic coast is frequently polluted by jelly fish. The pollution causes problems, in Istra region which derives most of its income from tourism and fishery. Apart from the jelly fish pollution in Istria, fifty miles towards south, on the island of Krk there is pipe gas plant and port of Rijeka, the biggest port in the Adriatic. In the central Adriatic,in Šibenik area, used to be heavy industry which polluted the soil by heavy metals, still present in the soil and affecting the local ecosystem. Industrial pollution undermines the prospects of eco agriculture, tourism and fishery. That also affects the whole eco chain in the Adriatic region. One of the ways to tackle that issue is deployment of the underwater robots which will clean the seafloor and monitor the level of pollution. The robots can also measure all relevant parameters important for the numerous marine research which is conducted in the research stations on the both side of the Adriatic. One approach to the issue of pollution includes the deployment of multifunctional smart buoys - innovative technology being developed for long-term operation and persistent deployment in marine environments. This usecase features a static buoy gathering, analysing, and storing measurements of various environmental values (for both water and air) using built-in sensors while ensuring long-term autonomy of up to several months by employing energy consumption optimisation algorithms as well as renewable energy sources. Communication-wise, the buoy represents a node in a smart city network with real-time remote access, suggesting application in tourism-heavy areas, providing continuous remote access to water quality, sea state, beach, harbor, and waterway data.
CAMI4.0 Technology Focus - Primary	*Automation & Robotics*
PP's CAMI4.0 Tin Role	*Learner*
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☒ *Artificial Intelligence*

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Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
	Department of robotics, University of Zagreb, Faculty of electrical engineering and computing - FER	Higher Education & Research	Knowledge Supplier	
	Alutech - Development innovative agency Šibenik	Regional Public Authority	Knowledge Facilitator	
	HAMAG-BICRO	National Public Authority	Knowledge Receiver	
	Consiglio Nazionalle delle Ricerche Institute of Marine Engineering (CNRINM) University of Calabria	Higher Education & Research	Knowledge Supplier	
	Innovation Centre Nikola Tesla Zagreb	Business Support Organisation	Knowledge Supplier	
	University of Dubrovnik	Higher Education & Research	Knowledge Supplier	
	Milestone		Start date	End Date

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Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	1. Road map on sensor nodes positions	1.6.2023	1.10.2023
	1. Research study	1.10.2023	1.2.2024
	3. Test plan describing the system testing	1.7.2024	1.10.2024
	4. Dissemination project plan	1.10.2024	1.2.2025
	5. Project conference and round table involving all ecosystem stakeholders	1.5.2025	
	Project duration	1.6.2023	1.6.2025
Define the budget of your Flagship project:	What is the fiscal value of the project?	Approximately 1 000 000 Euros – to be established	
	What are the different financing unit of the project?	To be established	
	What are the funding program(s) used? What are the other potential funding sources?	INTERREG Initiative Blue Innovation (2021- 2027) as a part of the Program Blue funded blue growth pilot projects between Italy and Croatia which stimulated sustainable development linked to the marine and maritime areas and activities. The INTERREG ItalyCroatia program for 2021 -2027 was submitted to the EC on 8 the March 2022 and will be adopted within five months.	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)			
Challenge addressed by the flagship project			
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	The project addresses sustainable blue economy. The aim is to fully recover sea flora and fauna as well as to maintain clean and healthy environment necessary for the fishery and tourism. Advanced technologies in the areas of underwater communication and aquatic robotics are necessary to achieve this goal. This project aims to clean the seafloor in the Adriatic and preserve health flora and fauna which are necessary for the fishery and tourism. In this flagship the focus is on a heterogeneous marine robotic system consisting of a modular autonomous catamaran coupled with an ROV (remotely operated underwater vehicle) which helps to solve		

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	the above stated issues. This system could be set up on the three nodes: north, middle and south coastline, on the both sides of the Adriatic.
Who are target groups of the project? Tick the answer relevant for your flagship project	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME* ☐ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☒ *Research & Development* ☐ *Design* ☐ *Procurement* ☐ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	**C32 - The use case will be specialized in aqua robotics. In terms of industry sectors, it will bring benefit to:** **1) Marine ecology-Clean seafloor** **2) Fishery** **3) Tourism**
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	In terms of technologies, the focus will be on the application of aqua robotics to preserve marine environment, fishery and enhance tourism. Also, it will use wind and solar energy, i.e., green energy solutions. During the project it will be developed and implemented heterogeneous marine robotic system consisting of a modular autonomous catamaran coupled with an ROV (remotely operated underwater vehicle).
What are the key goals to achieve this project? What are the specific objectives?	The key goal is to develop and implement marine robotic system consisting of a modular autonomous catamaran coupled with an ROV (remotely operated underwater vehicle) on the three Adriatic nodes: north mid and south in both sides of Adriatic – Croatian and Italian.
What is the methodology utilised to implement the solution?	Remotely operated vehicle; catamaran Korkyra w.r.t, Blueye PRO ROV, solar and wind energy.
	The impact is mainly on application and deployment of the high technologies, i.e., AR and AI. In particular, the buoy

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What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	concept explores wind and solar energy harvesting methods, anchoring solutions, and a LoRaWAN (Long Range Wide Area Network) connection for long-range connectivity in the desired Internet of Things/smart city context. Operating as a remote marine platform performing water quality measurements, the buoy uses existing in-situ sensors such as those for detecting oils, chlorophyll, green algae, and rhodamine; sensors for measuring water turbidity and conductivity (salinity); as well as Colored Dissolved Organic Matter (CDOM) and pH sensors. Algorithms based on the buoy's inertial measurements are used to estimate wave height and sea state.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	The challenge is to connect all stakeholders in blue ecosystem which will ensure permanently clean and unpolluted sea which is necessary requirement for tourism and fishery, and agriculture, industries that local communities are depended upon. The other challenge is to overcome legal obstacles and paper work required to set up test environment for water robots. We contacted researchers and stakeholders that have been involved into similar projects for advice.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	The project will have following milestones: 1. Road map describing how to set up six sensor nodes in Adriatic – 3 in Croatian, three in Italian side, which collect required data 2. Research study describing technical components and deployment of the robotic system that cleans seafloor 3. Test plan describing the system testing 4. Project conference and round table involving all ecosystem stakeholders 5. Dissemination project plan
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	The project development and implementation will be monitored by University of Zagreb, Faculty of electrical engineering and computing - FER and Consiglio Nazionalle delle Ricerche Institute of Marine Engineering (CNR-INM) University of Calabria.
How is your flagship connected with other flagship projects? What are the most important connection points?	The project is not connected with other flagship projects.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	This project follows the INTERREG B-Blue, Smart Factory Hub and CEUP2030 projects where HAMAG has been a project partner. B-Blue is the project under Blue Med Initiative which promotes coordination among blue economy actors among Mediterranean countries. It also corresponds and continuous INTERREG ItalyCroatia project: INNOVAMARE – Developing innovative technologies for sustainability in Adriatic Sea and HORIZON project SeaClear. The main objective of INNOVAMARE is to develop and establish an innovation ecosystem model in the area of underwater robotics and sensors for monitoring and surveillance sector, bringing cross-border collaboration between science and private sectors on a higher level, while SeaClear - SEarch,

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	identificAtion and Collection of marine Litter with Autonomous Robots — aims to solve, with the help of robots and artificial intelligence, one of the most important environmental problems: ocean litter. The Croatian partner on both project is University of Dubrovnik, which is the partner on this project as well. Smart Buoys will follow up these projects in a way that it will cover in its scope, not only South Adriatic, such is the case in INNOVAMARE and SeaCLear projects, rather it targets North, Central and South Adriatic in both coasts Italian and Croatian. This way, this flagship enables that whole Adriatic is covered by underwater robots to clear the seafloor. But the novelity that this project brings is that apart from underwater robots, it collects data on smart buoys about sea and air temperature, humidity etc. which are used for Smart cities concept.
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The project is in align with Industry 4.0, AR and AI. It is mainly focused on deployment of new technologies and linkage between AR and AI.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The project further develops robotic systems deployed for seafloor cleaning and brings new solution in AR and AI that enables growth of blue economy which is top priority in coastal regions of Italy and Croatia and in South Europe in general.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	The project is in align to program Interreg Italy - Croatia 2016 -2020 Priority: 1.1 – Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area – Blue technology. It is expected that this axis will be continued in Interreg program Italy-Croatia 2021-2027. The project is in align to A European Green Deal.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The project primarily targets the challenges of blue economy – deploying new technologies to ensure clean and sustainable Mediterranean region.

Template for Flagship Project	
Title of Organisation:	HAMAG: Croatian Agency for SMEs, Innovations and Investments
Date of Reporting	8/3/2022
Administrative details over the Flagship project:	
Title of Flagship Project (acronym):	CROBOHUB++: CROatian Industry and Society Boosting – European Digital Innovation HUB
Short Description of Flagship	In align to the Digital Europe Program, Croatian Ministry of Economy released the call in November 2020 to elect the best consortium which will be established as a digital hub for the

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Describe the challenge addressed in Maximum 1000 characters	North Croatia region. CROBOHUB++ vision is to act as a major digital innovation center in the North Croatia. It will offer a mix of business, technology services, access to funding, skills and training to its users, provided by the different partners in the CROBOHUB++ consortium. Services are based on detected needs thru already established DIH CROBOHUB and survey of the Croatian Digital Index (HDI) that had 300 companies in their questionnaire. Based on this we have defined main needs for services as improvement of organization and business model for implementation of digital transformation, improving operational efficiency and reducing cost, ensuring the quality of manufactured products, responding faster to the changing market requirements and customer demands, sustainable use of resources, data driven public administration, sustainable and clean energy, networking for exchange of digital technologies, opening markets, precision farming, transforming services, engaging stakeholders, enabling employees. The CROBOHUB++ consortium gathers all key triple helix eco innovation system stakeholders. Namely they are: University of Zagreb, Faculty of Electrical Engineering and Computing (FER) which is a leading partner; Innovation center Nikola Tesla; SRCE (University Computing Centre); HAMAG-BICRO (Croatian Agency for SMEs, Innovations and Investments); Croatian Chamber of Economy (HGK) and University College ALGEBRA, specialized in IT programmes. It is specialized in three key areas: 1) Artificial intelligence, 2) High Performance Computing, 3) Cyber security and robotics, and their application in the fields of agriculture, manufacturing and green energy.
CAMI4.0 Technology Focus - Primary	*Artificial Intelligence*
PP's CAMI4.0 Tin Role	*Learner*
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☒ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☐ *Artificial Intelligence*

Project Partners Pool (feel free to create more rows if necessary):	PP Name	Org Type	Org Role	NUTS2 Region

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Name all the stakeholder involved in your flagship project	Croatian Chamber of Economy	National Public Authority	Knowledge Facilitator	HR04 Continental Croatia
	SRCE University Computing Centre	Infrastructure and (Public) Service Provider	Knowledge Enabler	HR04 Continental Croatia
	ALGEBRA University college	Education / Training Centre and School	Knowledge Supplier	HR04 Continental Croatia
	FER - Faculty of Electrical Engineering and Computing, University of Zagreb	Education / Training Centre and School	Knowledge Supplier	HR04 Continental Croatia
	ICENT	Higher Education & Research	Knowledge Enabler	HR04 Continental Croatia
	HAMAG-BICRO	Business Support Organisation	Knowledge Receiver	HR04 Continental Croatia

Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone	Start date	End Date
	Report on business, digital skills and technologies trainings for SMEs and public sector for the first year	1.6.2023	1.6.2024
	Report on business, digital skills and technologies trainings for SMEs and public sector for the second year	1.6.2024	1.6.2025
	Two years networking, matchmaking, collaboration EDIH activities report	1.6.2023	1.6.2025
	Testing before investing activities in AI, Cybersecurity and HPC – first year technical services	1.6.2023	1.6.2024
	Testing before investing activities in AI, Cybersecurity	1.6.2024	1.6.2025

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	and HPC - second year technical services		
	First year access to finance, business and digital transformation services report	1.6.2023	1.6.2024
	Second year access to finance, business and digital transformation services report	1.6.2024	1.6.2025
Define the budget of your Flagship project:	What is the fiscal value of the project?	2.733.901,00 €	
	What are the different financing unit of the project?		
	What are the funding program(s) used? What are the other potential funding sources?	Digital Europe Program - 50% Croatian Ministry of economy - 50%	
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)	Submitted proposal		
Challenge addressed by the flagship project			
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*	European Digital Innovation Hub (EDIH) CROBOHUB ++ as an ecosystem of excellence addresses three key areas of the Digital European Program (DEP): 1. Artificial intelligence, 2. Cybersecurity, 3. High-performance computing. Our intention is to form the core of a coherent package of services that will support SMEs that intend to harness the digital and green transformation with focus on the following sectors: 1. Manufacturing industry, 2. Digitized agriculture, 3. Energy and environment as well as to help 4. Public administration to become more agile and data driven. EDIH CROBOHUB++ will be a non-for-profit hub intervening in the NUTS2 region HR04 "Continental Croatia" with national scope. The support will be provided in the following technologies: Blockchain, Computer vision, Digital simulations, Embedded control and automation systems, Internet of things, Robotics and smart sensors. The support will take the form of various types of services as Financial and business consulting, Knowledge and technology transfer, Pre-investment testing: integration and adaptation of technologies, digital testing, demonstration activities, Networking between companies or with users and technology suppliers and training & skills development in different digital & business competencies.		
Who are target groups of the project?	***Choose as many which will apply*** ☒ *Large Enterprises* ☒ *SME*		

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Tick the answer relevant for your flagship project	☐ *Higher Education & Research Organisation* ☒ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☐ *Research & Development* ☐ *Design* ☐ *Procurement* ☒ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☒ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	C32 - Other (please clarify below) The project targets (1) manufacturing industry, (2) digitized agriculture, (3) energy and environment, and on the other hand public administrations. These sectors are chosen because according to our past work as well as strategical documents in Croatia and EU level there is large number of companies in need and lacking digital and green transformation. These industries together with services that support them make around 40% of Croatia GDP.
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	Digital transformation in Croatia is slow and only 18% of companies have a digital transformation strategy which proved to be a major shortcoming in business in the first wave of the coronavirus epidemic, said in a survey of the Croatian Digital Index (HDI) that had 300 companies in their questionnaire. Many companies – as many as 94% – see digital transformation as an opportunity for progress. Number of companies that consider digital transformation to be their top priority is growing to 41% from last year's 33%. Our target groups are set on one hand on private companies, small/start-ups and mid-caps with focus on following sectors (1) manufacturing industry, (2) digitized agriculture, (3) energy and environment, and on the other hand public administrations. These sectors are chosen because according to our past work as well as strategical documents in Croatia and EU level there is large number of companies in need and lacking digital and green transformation. These industries together with services that support them make around 40% of Croatia GDP. HGK has made analysis in their digital base and it defined that there are 30.000 companies in these 3 sectors that are potential users of our services. If we scale survey numbers on this data, we can say that 41% of them have digital transformation as top priority. According to this data and defined KPIs of CROBOHUB ++ our aim is to reach around 25% of potential users/companies in 3-year period as realistically set goal. Private companies will be easily accessed thanks to the participation in CROBOHUB++ of the Croatian Chamber of Economy.

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What are the key goals to achieve this project? What are the specific objectives?	Key goals are: 1) deliver services as financial consulting, Knowledge and technology transfer, Pre-investment testing: integration and adaptation of technologies, digital testing, demonstration activities, Networking between companies or with users and technology suppliers and training & skills development in different digital & business competencies that will enable digital and green transformation of SMEs, small-midcaps and public sector in Croatia and EU; 2) provide services based on a specific focus/expertise in Artificial intelligence, Cybersecurity and high performance computing; 3) attract and enable different stakeholders to use developed EDIH network and services for faster and more coherent digital and green transformation; 4) make synergies with EEN network thru partners HAMAG-BICRO and HGK who are EEN Network for Croatia; 5) EDIHs will maintain structured long-term relationships with the relevant local and regional actors – 25 DIHs for robotics and 24 DIHs for artificial intelligence. Partner SRCE is part of the network of European centers of competence for high-performance computing and this will continue through EDIH CROBOHUB++.
What is the methodology utilised to implement the solution?	The methodology used to develop this flagship was brainstorming between partners and listening to a needs of target groups that will be end users. With that in mind, we had developed project proposal in which we would like to stimulate the digital transformation of companies and public sector.
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	The project will improve the competitiveness of the local economy by stimulating the digital transformation of companies and the public sector through the support for innovative digital solutions by accompanied institutions. The support will be both a business support to help the companies find new opportunities or improve their own capabilities, and technical support directly addressing their R&D needs to access to skills or equipment/infrastructure. The EDIH CROBOHUB++ will improve its offer by acquiring new knowledge through its participation in various European initiatives on HPC, AI, cybersecurity or robotics. This participation will ensure European initiatives have a local active representative in Croatia. CROBOHUB++ is specialised in sectors and technologies that directly address the local needs while building on the local strengths.
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	We manage well development phase as we have regular meetings with other PP and it was very clear from the beginning which role on the project we would be assigned to. There were no difficulties during the project proposal preparation phase.
Describe the implementation plan and milestones for the Flagship. Please connect to the five milestones raised at the start of this document.	There are six WP in the project: 1) project management, 2) dissemination of the project results, 3) skills and training services, 4) technical services based on DEP areas,

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	5) access to finance, business and digital transformation services and 6) networking, matchmaking and collaboration. WP 3, 4 and 5 are related to the above-mentioned milestones and they make the core of the project.
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	Project manager and WP leaders monitored development of each WP and of overall activities in the development phase.
How is your flagship connected with other flagship projects? What are the most important connection points?	It follows the same Joint strategy in Industry 4.0. There is no particular connection to any other flagship project.
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	We have been involved for over decades in EEN project and we have many national projects aimed to provide financial support to SMEs. Also, we are involved into EUREKA and EUROSTARS programs. All those have helped us to gain experience and expertise required for this flagship project.
Strategic/ Policy Impact:	
How does the flagship project meet the goals exposed in the Joint Strategy document? (please refer to the WPT1)	The project is in align to common Strategy for Industry 4.0. Also, it is in line with the Digital Europe Program objectives, which aims to improve European competitiveness in the global digital economy and achieve technological sovereignty. The DEP will encourage investment in supercomputing, artificial intelligence, cybersecurity, advanced digital skills, and ensuring the widespread application of digital technologies in industry and society.
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	The flagship will encourage investment in supercomputing, artificial intelligence, cybersecurity, advanced digital skills, and ensuring the widespread application of digital technologies in industry and society.
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	It is in align of the Strategy of smart specialisation on the regional level, and Strategy of digitalisation. The flagship is based on the Program Digital Europe.
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	The project speeds up digitalisation of the SMEs and transition to green economy.

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4. Synthesis of Flagships

The purpose of this document was to collect and report all the activities performed in AT3.3.2 for the definition of a Cooperation and Capitalisation grid around CEUP2030 partnership on the identified CAMI4.0 topics. This document includes a short summary of 20 flagships identified among partners in each 4 CAMI topics.

IPS	Individual Flagships
PP2 - PRO	Human Centered AI Based Production Optimization (HAIPrO) project
PP3 - PIA	Testbed Exchange
PP4- IWU	Smart Circuit project
PP5 - KIT	NEXT4FUN (Next Generation InkJet-based Process Chain for 3D/4D Multi-material Functional Printing) project
PP9 - PBN	Autonomous production line (Teaching and Learning Factory) and smart material board

Table **3**: PPs individual flagships on IPS topics.

The *main challenge* addressed in all the PPs individual flagships on IPS topics was the exploitation of enabling I4.0 technologies and thereby production optimisation in manufacturing sector for large as well as SMEs. All PPs developed solutions based on AI tools and advanced manufacturing processes such as 3D Printing through the development and execution of advanced R&D projects, the running of testbeds and the set-up of pilot lines for advanced manufacturing.

All PPs' individual flagships were involved in the promotion of advanced manufacturing processes and aimed at increasing the reach and penetration of these new technologies amongst SMEs as well as large industries. This *main commonality* has been implemented either through the creation of research and innovation projects aimed at creating the next generation of young specialists or through creating pilot lines for improving the transfer of knowledge to SMES and for reskilling.

On the other side, the flagship types of action are different: some are proposals for running funded research and development projects using national and/or international funding programmes while others are innovation/coordination support action projects focusing on different aspects such as network creation, technology transfer, technology development and applied research. The differences between different project types and organisation types makes it difficult to elaborate one topic that may interest all partners and core TIN members. However, the common focus on upskilling and reskilling of SMES represented the opportunity to elaborate a common joint strategy.

The common flagship is aimed at **creating a network addressing the diverse challenges in the field of** CAMI4.0 topics. Map 1 presents a cross-border core network with a specific thematic focus within the area of Intelligent Production Systems *including members of the CEUP partnership as well as external triple helix stakeholders* that will work closely with policy makers in order to solve the challenges through the creation of R&D projects or through the creation of networks for promoting SME uptake of CAMI 4.0 topics via national and transnational frameworks, such as Interreg programmes. The created technology-oriented cross-border networks' main focus is on promoting central European manufacturing competitiveness through strengthening innovation capacities in Central Europe.

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Map:1. Intelligent production system network

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A&R	Individual Flagships
PP1 - KPT	Hub4Industry
PP2 - PRO	CoRTeam project
PP3 - PIA	Share4.0 – SK-AT
PP5 - KIT	BIOSAM (Biologicalisation for Sustainable Advanced Manufacturing)
PP10- HAMAG	Adriatic multifunctional smart buoys

Table 4: PPs individual flagships on A&R topics.

The *main challenge* addressed in all the PPs individual flagships on A&R topics was the setup of collaboration between different regional hubs, favouring the networking and the exploitation of the existing infrastructures dedicated to the development of automation & robotic solutions. According to this, the proposed methodology was focused on the testing of technologies for different applications.

All PPs' individual flagships focused on interregional collaboration and creation of a A&R network to favour the sharing of knowledge and the exchange of best practices between the innovation actors and the manufacturing stakeholders. Together with this, other *main commonalities* were the development and implementation of innovative technological solutions and the re-skilling of human resources through educational initiatives able to show the benefits and improve stakeholders' competencies.

On the other side, the *major difference* among PPs' individual flagships is the variety of Automation & Robotics applications targeted. If the A&R working group just focuses on the specific technology similarities, limited achievements could be obtained, but it could also become the opportunity for cross-fertilization among different sectors, exploiting the development of innovative solutions as inputs for some current challenges in other applicative domains.

Map 2 presents a cross-border core network with a specific thematic focus within the area of Automation and robotic *including members of the CEUP partnership as well as external triple helix stakeholders* that will work closely with policy makers in order to solve the challenges through the creation of R&D projects or through the creation of networks for promoting SME uptake of CAMI 4.0 topics via national and transnational frameworks.

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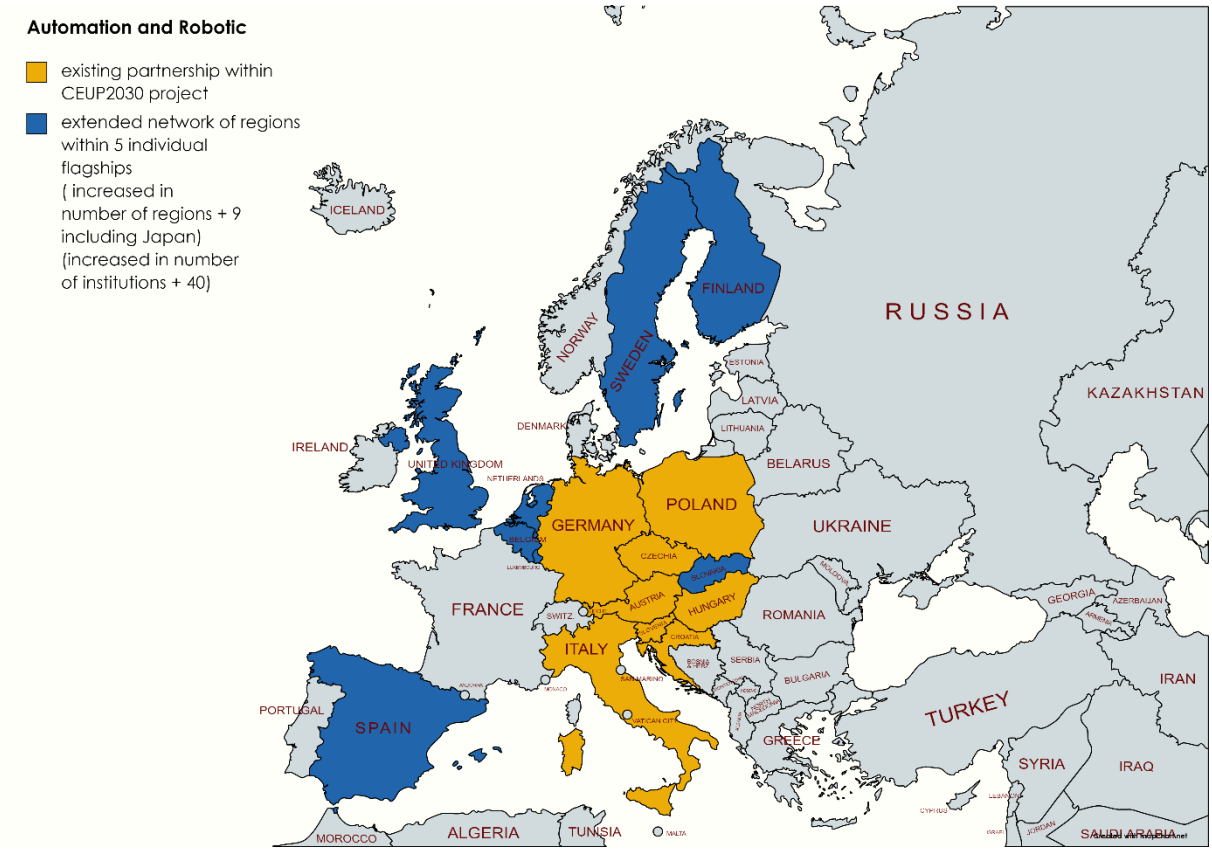

Map:2. Automation and robotic network

SM	Individual Flagships
PP1 - KPT	3DoP project
PP5 - IWU	STEPUP smart[3] project
PP6- AFIL	Strategic Community "Advanced Polymers"
PP7 - SIIT	EUAlliance
PP8 - PPT	Smart and green innovation approaches for scaling up DT opportunities in CE

Table 5: PPs individual flagships on SM topics.

Considering all these commonalities among the individual flagships on SM topics, a joint strategy in smart materials should be based on the establishment of network and communities who target and work with new materials in some form, depending on where the expert area of the respective project partner is. In this way, all PPs flagship projects could contribute to establish smart and new materials in the innovation and research environment of the future.

On the other side, the major difference among PPs' individual flagships is the *interpretation and definition of a NEW and SMART materials*. Some partners highlighted the circular aspect, others focused on textiles and again others talked about functional materials which merge structure and function with reduced complexity. However, even if the exact field may be different, the methodologies and ways of fostering the uptake of new materials are similar and underline the importance of such approaches.

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Map 3 presents a cross-border core network with a specific thematic focus within the area of smart materials *including members of the CEUP partnership as well as external triple helix stakeholders* that will work closely with policy makers in order to solve the challenges through the creation of R&D projects or through the creation of networks for promoting SME uptake of CAMI 4.0 topics via national and transnational frameworks.

Map:3. Smart materials network

AI	Individual Flagships
PP6 - AFIL	AI ROADMAP
PP7 - SIIT	FORGING project
PP8 - PTP	National Demo-Center initiative for advanced technologies in Agrofood processing industry
PP9 - PBN	Establishment and development of a smart senior room
PP10-HAMAG	CROBOHUB++: CROatian Industry and Society Boosting –European Digital Innovation HUB

Table 6: PPs individual flagships on AI topics.

Different sectors have been addressed and all flagships on AI topics do not exclude the implementation of innovative AI-driven solutions for applications different from the initial ones. In case of technological spaces for testing, for example, the activities could start from a specific sector (e.g., the smart senior room dealing with health care), but could then be

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adjusted and expanded to Advanced Manufacturing sectors and topics. This demonstrates the **transversality and the interdisciplinarity of AI-driven solutions** in each flagship.

For the development of all flagships, PPs involved triple-helix representatives to give concreteness to the specific actions and activities to be developed. The commitment of both industrial and academic stakeholders is needed to bring innovation in real industrial applicative use-cases, while policy makers could collect the current barriers and develop supporting tools within the future strategic programs. The exploitation of synergies and possible collaborations with existing activities on AI topics is also promoted, trying to reunite regional significant stakeholders in one single Hub/innovation space or organizing a series of consultations, workshops, and meeting to discuss on the topic. Considering the nature of CEUP2030 Consortium where partners are associations and regional clusters, the raise of awareness is one of the key aspects to be considered when defining a Joint Strategy. It could represent the main challenge to be addressed in an interregional perspective, promoting and supporting the collaborations and the sharing of results and best practices within the participating regions.

Map:4. Artificial intelligence network

The CEUP2030 project, thanks to the cooperative teamwork able to identify the pressing issues and topics that need to be addressed in such an international network and cooperation, provided a good base for designing the common flagship as several partners already had connections that facilitated the new network creations. Additionally, the CEUP PPs have expertise in all aspects of the triple helix stakeholder group which made the creation of this network possible. Map 5 shows the entire geographical scope of the newly developed initiatives within 20 flagships.

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Map 5: Network of regions within 20 flagships

These action-oriented pilot projects or "RIS3 alignment Instruments" are used as a basis of providing evidenced-based recommendations to policy-makers, who are interested in ensuring that long-term development fit of policy-instruments sustainably meet the challenges and opportunities facing Central European manufacturing. Across the project, the validation process takes place refining and integrating the partner's vision with the needs, concerns and future foresight knowledge of various stakeholders. Through this process, each partner developed two RIS3 Alignment Instrument Pilot Projects (Twenty total). These pilot projects acted as optimal models to promote cross-regional development and transnational collaboration in the area of Advanced Manufacturing and Industry 4.0. With these models the Partners moved their reflections on excellent outcomes from the previous programming period, to a series of action-oriented pilots which engage with critical development. Together the Partners and their stakeholder network generated a sustainable transnational RIS3 ecosystem, aligned for action in the coming programming period.

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3. Conclusion

The purpose of CEUP 2030 is to improve policy-making, by exploiting and upstreaming available outputs and results from excellent work delivered in the programming period 2014 to 2020, to create new recommendations for policies and strategies to enhance Central Europe's Advanced Manufacturing and Industry 4.0 capacities. In order to harness the power of the pooled critical mass of trained stakeholders, and effectively empower people to work together to improve sustainable linkages among actors of the innovation systems for strengthening regional innovation capacity in Central Europe, the partners have endeavoured to create **Cooperation and capitalisation grid among policies for 2021-2027.** This report, represents the part of the **joint transnational CAMI4.0 strategy for 2021-2027** and should be read in association with the document D.T3.3.3 Policy Framework 2: Setting up a joint transnational CAMI4.0 strategy for 2021-2027.

To develop the Cooperation and capitalisation grid, Partners drew inspiration from the work they have been involved in over the past programming period, in keeping with the vision of the Interreg Central Europe's experimental call on result capitalisation. The Partner's also took an opportunity to benchmark to the development of future programmes and strategies from the European Commission associated to the topic of Advanced Manufacturing, pulling inspiration from the European Green Deal, the Digital Skills Agenda and the Digital Europe Programme.

From this starting point, the Partners built 40 policy pilot action use-cases, 10 for each CAMI4.0 topic, which were tested, debated and upgraded during the WPT3 RIS3 Round Tables. Action Plans were designed for a quick start of cooperation in the project on the CAMI4.0 topics, along with a future-robust approach which developed into the Policy Implementation Framework for CAMI4.0 (WPT3). The Action Plan was based a portfolio of policy-oriented use-cases pitched by each Partner to meet the specific objectives for the Trend and Innovation Networks, and overall anticipate and fast-track policy strategies to promote aligned S3/RIS3 for CAMI4.0 Excellence.

In order to determine the strategic orientation of the TIN, the partners analysed the strengths, weaknesses, opportunities and threats they perceive associated to the topic of each CAMI4.0., their organisation and the working partnership. Following a detailed review of Partner inputs associated to the topic of CAMI4.0., along with bilateral and multilateral discussions, the following objectives, were determined:

- Flagship-Projects - identification and analysis of upcoming project calls, and for the development of relevant use cases and demonstrator ideas within the four main subtopics for creating project proposals and consortiums together with the PP and stakeholders.
- Transregional network building - usage of national and regional policy makers to find out current links between regions and establish new ones.
- Active participation - establishing a way to have constant dialog and communication between PP, Stakeholders within the TIN so as not to lose momentum.
- Workshops Organisation - organisation of the dedicated workshops as required by the projects

With these objectives the partners explained how they took advantage of the Partnership's strengths, and capitalize on emerging opportunities to overcome potential weaknesses and

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mitigate threats. In addition to the project orientated objectives provided above, the working group of each CAMI4.0. were determined to focus on the megatrend of sustainability, and keep the thematic focus area of CAMI4.0. and its sub-topics orientated around this trend.

The Consortium made the effort to build a diverse portfolio of flagships which are an accurate reflection of the needs of the CEUP 2030 stakeholders. By deriving a fine balance between technology-oriented cooperation and policy-making, the stakeholders capitalized on good practice and upgrade knowledge. The Consortium aims to support policy-oriented stakeholders utilize the derived knowledge from the use-case development, to promote policy which enables the uptake and adoption of advanced manufacturing and industry 4.0 technology across the central Europe manufacturing eco-system.

4. Next steps

With the publication of this report, the **joint transnational CAMI4.0 strategy for 2021-2027,** is finalised. Thanks to CEUP2030 project, partners built action-oriented pilot projects to promote and capitalize on cross-regional collaboration good practice to promote regional innovation smart-specialisation added value in key technology areas: Intelligent Production Systems, Smart Materials, Robotics and Automation, and finally Artificial Intelligence.

The CEUP 2030 Partnership would like to invite all interested stakeholders to join in the process of developing initiatives created within 20 flagships on the topics highlighted within this report. More detail can be found on the project's website, by contacting the Lead Partner, Krakow Technology Park, or by contacting the Partner operating in the region or country of your interest.

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5. Annexes

Template regarding the RIS3 Policy Instrument Pilot Projects ("Flagships")

Every Partner had to fulfil 2 templates (1 per Flagship project).

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Template for Flagship Project				
Title of Organisation:	Wählen Sie ein Element aus.			
Date of Reporting				
Administrative details over the Flagship project:				
Title of Flagship Project (acronym):				
Short Description of Flagship *Describe the challenge addressed in Maximum 1000 characters*				
CAMI4.0 Technology Focus - Primary	Choose an item.			
PP's CAMI4.0 Tin Role	Choose an item.			
CAMI4.0 Technology Focus - Secondary	***Choose as many secondary influencing technologies that apply;*** ☐ *Intelligent Production Systems* ☐ *Automation & Robotics* ☐ *Smart and Advanced Materials* ☐ *Artificial Intelligence*			
Project Partners Pool (feel free to create more rows if necessary): *Name all the stakeholder involved in your flagship project*	PP Name	Org Type	Org Role	NUTS2 Region
		Choose an item.	Choose an item.	

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		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
		Choose an item.	Choose an item.	
Duration of Flagship Project / of each milestones (Intended Start and End): *At least 5 Milestones should be identified*	Milestone		Start date	End Date

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Define the budget of your Flagship project:	What is the fiscal value of the project?		
	What are the different financing unit of the project?		
	What are the funding program(s) used? What are the other potential funding sources?		
List all the evidence documents you can provide regarding your flagship project (MOU, submission document…)			
Challenge addressed by the flagship project			
Which challenges have to be overcome in the context of the project? What´s the motivation to foster your flagship? *Describe the challenge addressed in Maximum 700 characters*			
Who are target groups of the project?	***Choose as many which will apply*** ☐ *Large Enterprises*		

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Tick the answer relevant for your flagship project	☐ *SME* ☐ *Higher Education & Research Organisation* ☐ *Business Support Organisation* ☐ *Schools and Training Institutes*
Evaluate the Manufacturing Value Chain by *choosing the area of manufacturing which is impacted by this challenge.*	***Choose as many which will apply*** ☐ *Research & Development* ☐ *Design* ☐ *Procurement* ☐ *Manufacturing* ☐ *Distribution* ☐ *Marketing / Sales* ☐ *Service and Repair* ☐ *De or Re-Manufacturing* ☐ *Recycling and End of Life Management*
Choose the manufacturing sector which faces the specific challenge. If other, please clarify	Choose an item.
Solution to Address the Challenge	
What is the solution which your Flagship proposes to address the identified challenge?	

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What are the key goals to achieve this project? What are the specific objectives?	
What is the methodology utilised to implement the solution?	
What´s your intended impact of the flagship project? What results are expected as an outcome of the project?	
How did you manage the development phase? What were the difficulties met and how did you mitigate them?	
Describe the implementation plan and milestones for the	

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Flagship. Please connect to the five milestones raised at the start of this document.	
How is the project being monitored throughout its lifespan (development & implementation) and who is responsible?	
How is your flagship connected with other flagship projects? What are the most important connection points?	
On what did you capitalize to build this flagship project? Does it expand previous projects, programs, initiatives and good practices?	
Strategic/ Policy Impact:	
How does the flagship project meet the goals	

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exposed in the Joint Strategy document? (please refer to the WPT1)	
How does the Flagship impact the competitive advantage of Central Europe's manufacturing eco-system?	
How is the project compatible with strategies and policies pursued on the regional / national / European level? (Please reference your preparatory discussions)	
How this project is going to answer the new challenges raised by the European Commission as a focus area for the programming period 2021-2027?	

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