

Circular industries future 2030 expansion road map and MoU_D.2.1.3. Report for A.2.1.



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A. Executive Summary

The Circular Industries Future 2030 Expansion Roadmap and Memorandum of Understanding (D2.1.3) provide the strategic and operational framework for the long-term expansion of the Circular Innovation Development Corridors (CIDs) and cooperation among Digital Innovation Hubs across Central Europe. The deliverable combines a joint 2030 strategy, a practical action plan and a formal MoU signed by 28 DIHs. It builds on evidence gathered through industry interviews, STRATLAB activities, pilot actions and transnational cooperation throughout the SMART CIRCUIT project.

The analysis identifies key barriers to circular transition, including regulatory complexity, financial risks, limited SME capabilities, and fragmented value chains. At the same time, it highlights significant opportunities in resource efficiency, digital traceability, industrial symbiosis, and the development of new circular business models. Advanced digital technologies such as IoT, AI, blockchain, and digital twins are recognised as critical enablers for bridging the gap between circular ambition and practical implementation.

In response, the Roadmap establishes a common direction for expanding the CID/DIH network, translating EU priorities into regional action and maintaining transnational cooperation after project completion. Its strategy and action plan focus on three priorities:

- expanding and coordinating the CID/DIH network through the governance framework established by the MoU,
- aligning regional priorities and RIS3 implementation with European circular economy and digital transformation objectives, and
- using the project's validated services, service portfolios and four Flagship Solution Models as practical tools for implementing and scaling the Roadmap.

The MoU is a central element of the deliverable. Signed by 28 DIHs across Central Europe and relevant macro-regional territories, it formalises the expanded CID/DIH network and establishes a long-term framework for governance, collaboration, knowledge exchange, cross-border brokerage and joint initiatives. Together, the Roadmap and MoU connect regional implementation with European policy frameworks, including the Circular Economy Action Plan, the European Green Deal, the EU Industrial Strategy and the Digital Europe Programme.

The action plan translates the strategy into concrete objectives, responsibilities, milestones, governance arrangements and key performance indicators up to 2031. The four Flagship Solution Models, validated services, service portfolios, STRATLABs and

Technology Mobility Missions support its implementation by providing tested methods and practical pathways for replication across regions and sectors.

From an SME perspective, the roadmap offers practical support mechanisms that reduce adoption risks, improve access to digital and circular technologies, and enable companies to test, validate, and scale innovative solutions through DIH services and transnational cooperation.

Overall, the deliverable establishes an evidence-based framework for expanding the CIDC/DIH network, coordinating implementation of the Circular Industries Future 2030 strategy and sustaining cooperation through the MoU. Its supporting tools help translate this framework into practical action for circular and digital industrial transformation across Central Europe.

1. Project overview

The SMART CIRCUIT project aims to strengthen the role of European Digital Innovation Hubs (DIHs) as key enablers of the transition towards a digitally driven circular economy in Central Europe. Its primary objective is to accelerate the adoption of advanced digital technologies in the manufacturing sector, contributing to a more resource-efficient, resilient, and competitive industrial ecosystem. The project promotes transnational cooperation and fosters collaboration among businesses, research organisations, public authorities, and innovation support entities.

At the core of the project is the development of integrated support systems that facilitate knowledge exchange, strategic planning, and the practical implementation of circular solutions. These systems are designed to build capacities, reduce existing barriers, and improve access to financing opportunities, while promoting circular principles across key industrial value chains, including electronics and ICT, textiles, and construction, as well as cross-sectoral solutions adapted to regional specificities.

To ensure long-term impact, the project establishes the SMART CIRCUIT NET (hereafter referred to as the CIRCUIT), a transnational network supporting the uptake of digital and technology-based circular solutions in manufacturing. The CIRCUIT brings together 12 regional DIH ecosystems from the project partnership, organised into four Task Forces, along with a broad group of stakeholders and experts, including 21 associated partners, technical experts, and 16 additional Digital Innovation Hubs. The network is formally established through the Consortium Agreement and further strengthened through a Memorandum of Understanding, ensuring continued cooperation beyond the project duration.

In brief, SMARTCIRCUIT is structured through 3 Work Packages:

- WP1 focuses on **capacity building mechanism** & the CIRCUIT aims to build knowledge, competencies & dialogue in the DIH's internal network + builds processes to gather experts & knowledge + CE success stories on digital/technology driven circular economy (& supporting policy/financing instruments). CIRCUIT activity in A.1.1 focuses on shoring up internal & local ecosystem capacities and capabilities and creating a dialogue space for exchange at a local/regional level.

- WP2 focuses on **enhancing the exchange between DIH eco-systems** to build the trust & understanding needed to develop transnational CIDCs & bring **outside** policy/strategy learning. CIRCUIT activity in A2.1 focuses on establishing transnational links between DIH ecosystems beyond the consortium's boundaries (predominantly using study visits or 'transnational mobility missions' undertaken by the CIVIES & interested consortium members) to build these links & gain new insights.
- WP3 focuses on **creating a strong industry strategy** to connect players in a transnational, aligned and thematically relevant way. CIRCUIT Activity in A3.1 focuses on creating better cohesion in the consortium to promote thematic exchange that is targeted to industry need in the area of digitally-driven circularity as it relates to the chosen 3 value-chains of the project.

2. Scope of the document

The Circular Industries Future 2030 Expansion Roadmap provides the common strategy and action plan for the long-term expansion and coordination of the Circular Innovation Development Corridors (CIDCs). The CIDCs connect Digital Innovation Hubs that cooperate across borders to support digitally enabled circular transformation. The accompanying MoU formalises the expanded network, its shared objectives and its cooperation framework.

The Roadmap links project results and territorial needs with relevant policy and strategic frameworks, including the Circular Economy Action Plan, Research and Innovation Strategies for Smart Specialisation (RIS3), the European Green Deal and the Territorial Agenda 2030. It also connects the expanded CIDC/DIH network with the Danube, Adriatic-Ionian, Baltic Sea and Alpine macro-regions. Validated services, service portfolios and Flagship Solution Models are included as implementation tools that support the actions defined in the Roadmap.

3. Audience

This document is primarily addressed to the project consortium, which is responsible for strengthening an effective and well-connected network of European Digital Innovation Hubs. It is also intended for stakeholders indirectly involved in the project, as they play an important role in supporting its wider objectives and long-term impact.

The document provides a basis for further reflection on the project's strategic vision and on the specific objectives of the Task Forces, particularly in terms of the value they bring to stakeholders relevant to RIS3 implementation. The strategy is developed by the full consortium, with the support of all involved stakeholders throughout the project duration, especially the Associated Partners and the associated Digital Innovation Hubs.

4. Change control procedure and structure

This report has been prepared by Krakow Technology Park (KPT, Partner 1), acting as the Deliverable Responsible. The document is subject to the standard project change control procedure. Partners are invited to provide written feedback on the content of the report, including its definitions and tools, within one week of its circulation.

In line with the standard procedure, if any partner considers that the deliverable should be revised, the request should be submitted to the Work Package Leader and the Lead Partner. In this case, KPT acts as the Deliverable Responsible and TUKE as the Work Package Leader. They are responsible for collecting and consolidating feedback from the partners, as well as for integrating and sharing the final agreed changes.

B. Introduction and purpose of the document

1. Background and project context

The SMART CIRCUIT project supports the transition towards a digitally driven circular economy in Central Europe by testing and implementing solutions across regional innovation ecosystems. The project is structured around three core work packages, which together enable the development, validation, and scaling of circular solutions. These activities are closely linked to regional Smart Specialisation Strategies (RIS3) and the European Digital Innovation Hubs (EDIHs), ensuring alignment between regional priorities and broader European policy frameworks.

Through its implementation, the project tests solutions within selected regions and value chains, including construction, textiles, and ICT/electronics, as well as cross-sectoral services. The approach combines capacity building, strategic dialogue, and practical piloting, allowing stakeholders to co-create and validate services that support the uptake of digital and circular solutions in industry.

Work Package 2 focuses on strengthening strategic cooperation between stakeholders and supporting the integration of circular economy principles into regional and European strategies. It enables continuous dialogue between policy, industry, and innovation actors, helping to reduce barriers and improve access to funding and cooperation mechanisms. In this aim, WP2 focuses on enhancing the exchange between DIH ecosystems to build the trust & understanding needed to develop transnational circular innovation & development corridors (CIDs) & bring outside policy/strategy learning. CIRCUIT activity in A2.1 focuses on establishing transnational links between DIH ecosystems beyond the consortium's boundaries (predominantly using study visits or 'transnational mobility missions' undertaken by the CIVIES & interested consortium members) to build these links & gain new insights.

In this context, Output 2.3 delivers the Circular Industries Future 2030 Expansion Roadmap and MoU. Its main components are a joint strategy, a practical action plan and a framework for expanding and coordinating the CIDC/DIH network across nine countries and twelve regions. The MoU formalises this cooperation, while the project's validated

services, service portfolios and four Flagship Solution Models provide practical tools for implementing and scaling the Roadmap.

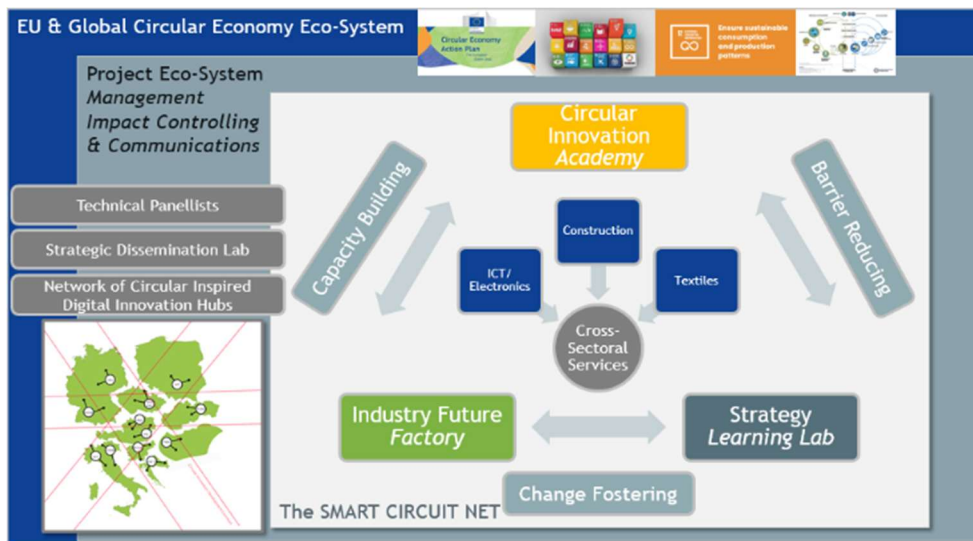


Figure 1 | SMART CIRCUIT Eco-System Overview (source: Project Generated, 2023)

2. Contribution from activity description and cross-project knowledge

The Circular Industries Future 2030 Expansion Roadmap (D2.1.3) sets out a common strategic direction and practical action plan for expanding the CIDC/DIH network and sustaining cooperation on digitally driven circular economy solutions in Central Europe. It defines how Digital Innovation Hubs cooperate across borders, coordinate implementation and connect regional priorities with European circular and digital objectives.

D2.1.3 consolidates project learning into three closely linked components: the Circular Industries Future 2030 strategy, its action plan and the Memorandum of Understanding governing expansion of the CIDC/DIH network. The Roadmap draws on D2.4.3 strategic and policy recommendations, while the MoU confirms the participating DIHs' commitment to continued cooperation and implementation.

The Roadmap builds on lessons from transnational cooperation, stakeholder engagement, pilot activities and the 12 Transnational Mobility Actions summarised in D2.1.2. The service portfolios developed under A3.1, the DIH policy-bridge brokerage approach under A2.4 and the four Flagship Solution Models are incorporated as supporting implementation tools. They demonstrate how the Roadmap's strategic priorities can be applied, replicated and scaled across industrial value chains and territories.

Figure 2 provides a visual overview of the interplay of the CIRCUIT activities, with the key Pilot established in WP2:

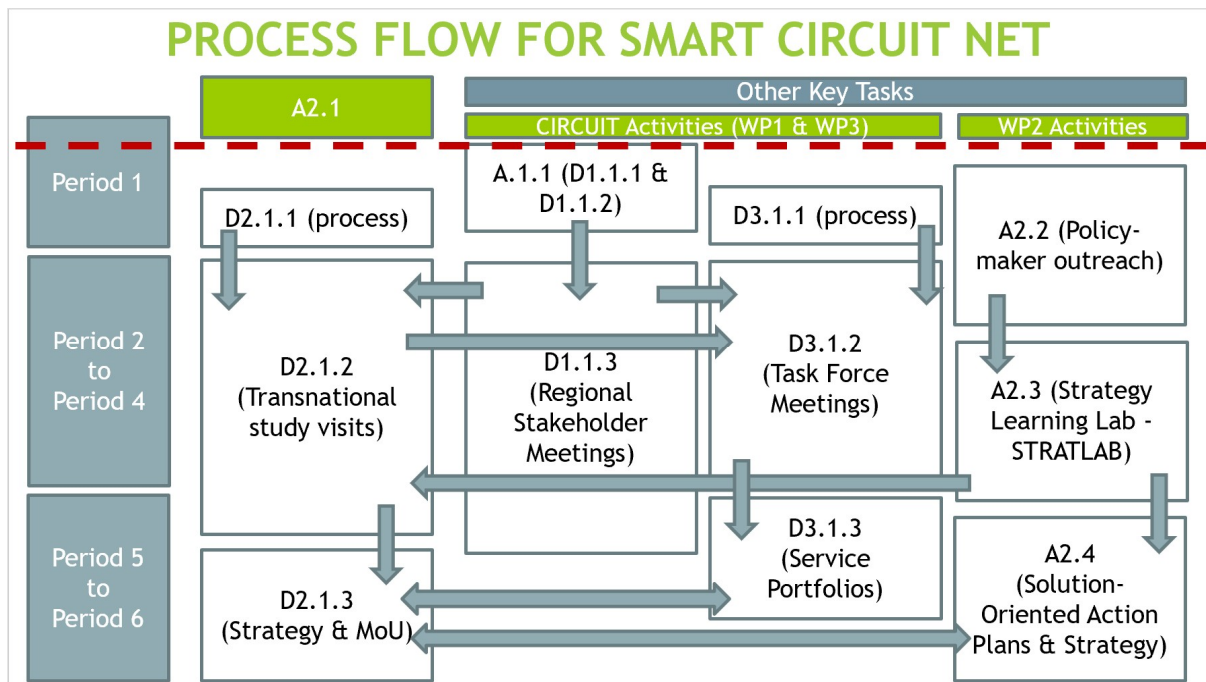


Figure 2 - SMART CIRCUIT NET - A WP2 Perspective on Process Flow (Source: Project Generated, 2023)

The objective of the Circular Industries Future 2030 Expansion Roadmap is to provide a common framework for expanding and sustaining the Circular Innovation Development Corridors (CIDs), which connect DIHs committed to cross-border cooperation on digitally driven circularity. D2.1.3 therefore combines three main elements:

- a joint **strategy for 2030** operative alignment of Central Europe digital innovation hubs,
- an **action plan** outlining concrete steps and responsibilities,
- a **Memorandum of Understanding** that ensures commitment and continuity of cooperation beyond the project duration.

Together, these elements establish a coordinated, durable and scalable framework for circular innovation in Central European manufacturing. The four Flagship Solution Models, validated services and service portfolios support implementation of the action plan and demonstrate practical routes for replication and uptake.

The Roadmap also aligns the expanded CIDC/DIH network with European policy frameworks and macro-regional cooperation, strengthening its territorial reach, transferability and long-term relevance.

3. Cross-territory synthesis and key transnational insights

The analysis of industry interviews and STRATLAB outcomes across participating regions reveals a strong convergence in both the barriers and opportunities related to the circular transition.

Across all territories, **regulatory complexity and uncertainty emerge as the most significant barriers**, particularly for SMEs that often lack the internal capacity to interpret and implement evolving EU requirements. Financial constraints and

investment risks represent an additional critical challenge, especially in relation to high-cost circular technologies and process transformations. Furthermore, **limited skills and organizational readiness continue to hinder the effective adoption of circular practices**.

At the same time, **several common opportunity areas are identified**. **Resource efficiency, waste reduction, and circular product design are consistently recognized across sectors as key drivers of transformation**. **Digital technologies** play a crucial enabling role, particularly in improving traceability, optimization, and regulatory compliance. There is also a **strong and growing need for enhanced collaboration across value chains and regions**, particularly in areas such as **industrial symbiosis** and the **development of secondary material markets**.

The results of STRATLAB activities confirm that these challenges and opportunities are systemic rather than sector-specific. They demonstrate that an **effective circular transition requires coordinated action between policymakers, industry, and intermediary organizations**. In this context, **Digital Innovation Hubs are recognized as trusted intermediaries, although their visibility and effectiveness vary across regions**. The transnational perspective further highlights that circular value chains frequently extend beyond regional and national boundaries. As a result, scaling circular innovation requires strengthened interregional cooperation, shared infrastructures, and coordinated policy frameworks.

Overall, these findings indicate that the circular transition in Central Europe is not limited by a lack of awareness, but rather by implementation capacity. Consequently, policy efforts should focus on reducing systemic barriers, strengthening ecosystem capabilities, and enabling the cross-regional scaling of successful solutions.

4. Scope, target audience and geographic focus

This document focuses on Central Europe while considering its integration within wider European macro-regional frameworks, including the Danube Region, Alpine Region, Adriatic-Ionian Region, and Baltic Sea Region. The target audience includes policymakers, Digital Innovation Hubs (DIHs and EDIHs), SMEs, research and technology organisations, clusters, and innovation support entities involved in digital and circular transformation. The roadmap supports strategic planning, policy alignment, and implementation of circular economy solutions, contributing to stronger interregional cooperation and alignment with European priorities. D2.1.3 specifically focuses on PP regions and 16 additional DIH territories.

5. Circular Economy in Europe

5.1. Role of circularity in European industrial transformation

SMART CIRCUIT was designed to contribute to the European Circular Economy Action plan, cornerstone of the European Green Deal and adopted by the European Commission in March 2020. Its goal is to accelerate Europe's transition toward a circular economy, a system where resources are used efficiently, waste is minimized, and products and materials are kept in use for as long as possible. The plan focuses on sustainable product design, reducing waste, and empowering consumers to make greener choices. Key initiatives include stricter eco-design requirements, promoting repair and reuse, and ensuring that materials like plastics, textiles, and electronics are recycled or repurposed. By fostering innovation and creating

new business models, the plan aims to decouple economic growth from resource consumption, ultimately contributing to climate neutrality by 2050.

Therefore, circularity plays a key role in transforming European industry by enabling more efficient use of resources, reducing environmental impact, and strengthening the resilience of value chains. This transition is further accelerated by the integration of digital technologies, which support monitoring, optimisation, and the redesign of production systems. In this context, the SMART CIRCUIT project is structured around four Task Forces representing key industrial value chains: Construction, Textiles, ICT/Electronics, and cross-sectoral services. Each Task Force is responsible for developing and testing tailored service portfolios that support SMEs in adopting circular and digital solutions adapted to their specific sectoral needs (gathered in D3.1.3).

Across all sectors, several common challenges hinder the large-scale adoption of circular economy solutions. These include limited access to funding, a lack of digital and circular skills, regulatory complexity, and insufficient cooperation between stakeholders. Together, these barriers slow down the transition process and limit the capacity of enterprises, particularly SMEs, to implement innovative solutions.

At the same time, significant opportunities exist for strengthening cross-country cooperation, particularly through the role of European Digital Innovation Hubs. The European Digital Innovation Hubs (EDIHs) play a crucial role in advancing the circular economy across Europe by bridging the gap between digital technologies and sustainable business practices. Funded under the Digital Europe Programme, EDIHs provide tailored support, especially to SMEs, startups, and public sector organizations, to adopt digital solutions like AI, IoT, and blockchain. These technologies enable better resource tracking, predictive maintenance, and supply chain optimization, all of which are essential for circular economy models. Acting as intermediaries, EDIHs facilitate knowledge transfer, support joint service development, and enable the scaling of solutions across regions and value chains. Their networked approach ensures that digital transformation aligns with Europe's broader environmental and economic goals and directly contribute to building more integrated and effective innovation ecosystems that support the transition towards a digitally driven circular economy in Europe.

5.2. EU policy-to-RIS3 translation map by 2030

5.2.1. Purpose of the translation map

A central challenge in Smart Specialisation implementation is that European Union policy priorities are often formulated at a high strategic level, whereas RIS3 implementation must operate through concrete regional choices, instruments, projects, and institutional coordination mechanisms. A policy-to-RIS3 translation map is therefore necessary in order to bridge the distance between broad EU ambitions and territorially embedded action. In the context of the 2030 horizon, this translation is particularly important because regions are expected to align their smart specialisation priorities with the green and digital transitions, industrial resilience, circular economy objectives, SME competitiveness, skills development, and interregional collaboration. The European Commission's Smart Specialisation framework explicitly presents S3 as a place-based instrument for innovation-led transformation, while the current ERDF architecture embeds smart specialisation within "a smarter Europe" and links it to research and innovation capacity, advanced technologies, skills, entrepreneurship, and SME growth.

To integrate a circular focus into RIS3s, the translation task is not merely administrative, it is strategic. Regions must determine how overarching EU objectives such as circularity, sustainable products, industrial transition, and innovation ecosystems can be transformed

into a limited number of regionally credible priority domains and then further converted into instruments and actions that are feasible for SMEs, clusters, public authorities, and knowledge organisations. In this sense, the translation map is both a governance tool and an implementation logic. It helps ensure that RIS3 priorities are not abstract thematic labels, but operational pathways through which EU policy intent is made actionable at territorial level. The Joint Research Centre's recent work on sustainability-oriented smart specialisation and transformative territorial innovation supports precisely this interpretation of RIS3 as a mechanism for translating broad transition agendas into place-based innovation portfolios. RIS3 priorities (i.e. region-specific) can be found on the S3 CoP Observatory built in collaboration among DG REGIO G1, DG REGIO country-desks and the S3CoP Secretariat. This European online platform identifies S3 priorities directly from regions' and member states' S3 documents.

Region	Main S3 / RIS3 specialisations
Małopolska (PL)	Life sciences; sustainable energy; ICT & multimedia; chemistry; electrical engineering & machinery; metals & non-metallic materials; creative & leisure industries https://ec.europa.eu/regional_policy/assets/s3-observatory/regions/pl21.html
Burgenland (AT)	Renewable energy & green technologies; sustainable mobility; health & active ageing; digitalisation; circular economy; food & agriculture https://era.gv.at/policies/regional-dimension/knowledge-innovation-driven-regional-growth-and-smart-specialisation
Oberösterreich / Upper Austria (AT)	Advanced manufacturing & Industry 4.0; mechatronics; materials & plastics; mobility technologies; medical technology; energy/environmental technologies; digital innovation https://www.s3cn.eu/files/s3cn/uploads/files/16618569845947-269-s3cn-at121-comparative-analysis-ver-final-en-rev2.pdf
Oberbayern / Upper Bavaria (DE)	Aerospace; mobility & automotive; ICT & AI; biotech & health; advanced manufacturing; energy systems; cultural & creative industries https://www.stmwi.bayern.de/publikationen/innovationsstrategie-2021-2027
Freiburg (DE)	Green technologies; renewable energy; environmental technologies; bioeconomy & forestry; smart mobility; medical technology; digitalisation https://ec.europa.eu/assets/rtd/ris/2025/ec_rtd_ris-regional-profile-de.pdf
Liguria (IT)	Blue economy & maritime technologies; logistics & smart ports; life sciences; energy & environment; ICT; security technologies
Friuli-Venezia Giulia (IT)	Smart manufacturing; maritime technologies; agrofood; health & life sciences; culture & tourism; digital technologies; sustainable energy
Vzhodna Slovenija / Eastern Slovenia (SI)	Smart materials; mobility; circular economy; agrofood; health technologies; sustainable tourism; digital transformation

Region	Main S3 / RIS3 specialisations
Nyugat-Dunántúl / Western Transdanubia (HU)	Automotive & mobility; mechatronics; health industry; wood & furniture industry; tourism; environmental technologies https://nkfih.gov.hu/english/national-smart-specialisation-strategy
Východné Slovensko / Eastern Slovakia (SK)	Automotive & engineering; ICT; energy & low-carbon technologies; health & biotech; digital industry; sustainable mobility
Jihovýchod / Southeast Czechia (CZ)	Advanced engineering; electronics & photonics; cybersecurity & ICT; life sciences; aerospace; precision manufacturing https://ris3.gov.cz/en
Grad Zagreb (HR)	ICT & smart city technologies; health & biotech; energy & environment; mobility; creative industries; advanced manufacturing https://razvoj.gov.hr/o-ministarstvu/djelokrug-1939/eu-fondovi/financijsko-razdoblje-eu-2021-2027/nacionalna-razvojna-strategija-republike-hrvatske-do-2030-godine/4276

Table 3. S3 priorities in Smart Circuit regions

By 2030, this translation map should enable regions to move from passive policy alignment to active strategic positioning. In practical terms, that means selecting those EU priorities that are most relevant to the regional industrial base and innovation ecosystem, identifying the related RIS3 domains, and deploying instruments that support testing, uptake, scaling, and interregional connectivity. The present chapter therefore proposes a structured mapping from EU priorities to RIS3 domains and then to operational instruments and actions, with a specific emphasis on circular transformation and SME-oriented value chains.

5.2.2. Translation logic: from EU priorities to regional delivery

The logic of translation can be understood as a three-step sequence. **The first step is the identification of EU strategic priorities that are relevant to the region's transformation pathway.** These include the European Green Deal, the Circular Economy Action Plan, the New European Bauhaus, the Ecodesign for Sustainable Products Regulation, the New European Innovation Agenda, the European Research Area, and ERDF/Cohesion Policy priorities for a smarter and greener Europe. These frameworks define the European Union goals for 2030 in terms of sustainability, competitiveness, technological upgrading, circular value creation, and territorial cohesion. The Circular Economy Action Plan, for example, explicitly links circularity to a cleaner and more competitive Europe and prioritises sectors such as electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients. The Commission's circular economy pages also note that many of the legal acts foreseen under the second Circular Economy Action Plan have already been adopted, while the ESPR, in force since July 2024, now serves as the cornerstone of EU sustainable product policy.

The second step is the definition of RIS3 priority domains. These are not identical to EU priorities. Rather, they are regionalised domains of action shaped by entrepreneurial discovery, existing industrial capabilities, scientific assets, and territorial opportunity structures. For instance, the EU priority of sustainable products may translate regionally into advanced materials, circular manufacturing, repair systems, secondary raw materials,

construction circularity, packaging innovation, or bio-based product design, depending on the regional economic profile. Smart specialisation does not require regions to copy EU thematic lists; it requires them to interpret EU priorities through their own economic and innovation structures. This is consistent with the original RIS3 logic and with the contemporary S3 community framework, which continues to emphasise competitive advantage discovery, regional differentiation, and strategic focus of the regions as presented in Table 3.

The third step is the selection of instruments and actions. This is where strategic alignment becomes real implementation. Instruments may include grants, innovation vouchers, demonstrators, pilot lines, cluster collaboration, living labs, public procurement, skills programmes, test-before-invest services, digital infrastructure, interregional partnerships, and blended finance. Actions are the specific interventions through which these instruments are deployed in targeted value chains and SME ecosystems. The quality of RIS3 implementation by 2030 will depend not simply on whether regions name the right priorities, but on whether they choose instruments appropriate to the maturity level of the circular solutions they seek to support and support innovation support actors such as the EDIHs, clusters, development agency to deliver these support actions. The New European Innovation Agenda and the Regional Innovation Valleys initiative reinforce this emphasis on innovation ecosystems, interregional scaling, and ecosystem-oriented action rather than isolated projects.

5.2.3. EU policy-to-RIS3 translation map by 2030

The following mapping presents a practical translation architecture for a circularly oriented RIS3.

- **Green Deal and Circular Economy transition**

At EU level, the Green Deal and the Circular Economy Action Plan establish the macro-priority of decoupling growth from resource use, reducing waste, improving product sustainability, and retaining value in the economy for longer. This is not framed solely as environmental correction but also as an industrial and competitiveness agenda. The Circular Economy Action Plan explicitly describes circularity as part of a cleaner and more competitive Europe.

At RIS3 level, this priority translates into domains such as circular manufacturing, industrial symbiosis, waste-to-resource innovation, remanufacturing, repair ecosystems, secondary raw materials, sustainable packaging, construction material recovery, circular bioeconomy, and circular consumer or industrial products. The exact combination should be selected according to the regional production structure and innovation base.

The most suitable instruments and actions include circular innovation vouchers for SMEs, collaborative pilot projects between firms and research organisations, industrial symbiosis brokerage, cluster-based circular transition programmes, circular product redesign support, living labs for testing circular business models, and demonstrators for reuse, remanufacturing, and by-product valorisation. Regions can also establish mapping exercises for material flows and circular opportunity areas, which in turn support more targeted calls for projects. This translation is particularly relevant for manufacturing-intensive regions and for territories where industrial residues, construction materials, agro-industrial side streams, or packaging waste represent significant unrealised value.

- **Sustainable product policy and ESPR implementation**

The ESPR, which entered into force on 18 July 2024, is now a central element of EU circular economy policy. The Commission describes it as the cornerstone of its approach to more

environmentally sustainable and circular products. In April 2025, the Commission adopted the 2025-2030 working plan for ESPR and energy labelling, prioritising product groups such as steel and aluminium, textiles with a focus on apparel, furniture, tyres, and mattresses for future ecodesign and sustainability requirements.

For RIS3, this priority translates into domains such as eco-design capability, sustainable materials engineering, product durability and reparability, digital product information, circular compliance services, design for disassembly, and product-service systems. Regions with strong manufacturing, design, furniture, textile, engineering, or materials capabilities can convert this EU policy trend into concrete innovation niches.

Appropriate instruments include eco-design support schemes for SMEs, design and engineering laboratories, technical assistance for compliance-readiness, prototyping grants for circular product redesign, digital traceability pilots, and partnerships between manufacturing firms, technology providers, and universities. Regional clusters may also create circular design competence centres or product sustainability advisory platforms that help firms anticipate EU market requirements rather than respond reactively. By 2030, this translation pathway should help regional firms shift from compliance pressure to first-mover advantage.

- **SME competitiveness and smart economic transformation under ERDF**

The ERDF regulation for 2021-2027 places smart economic transformation at the centre of Policy Objective 1 and specifically supports research and innovation, advanced technologies, digitalisation, growth and competitiveness of SMEs, skills for smart specialisation, industrial transition, entrepreneurship, and connectivity of innovation ecosystems. This makes RIS3 not only a research planning framework but also a regional economic transformation instrument.

At RIS3 level, this translates into priority domains that combine circular transition with productivity and competitiveness, such as advanced manufacturing, resource-efficient production, digital process optimisation, sustainable materials processing, circular services, repair-based local enterprise models, and innovation-intensive supplier upgrading.

The relevant instruments and actions include SME innovation grants, test-before-invest facilities, cluster acceleration services, circular transition advisory schemes, digital and green innovation hubs, technology extension services, and challenge-based calls that encourage SMEs to collaborate with research institutions and lead firms. This translation pathway is especially important because many SMEs do not engage with circularity unless it is explicitly connected to business performance, cost reduction, market access, and resilience. A RIS3 that operationalises ERDF priorities well can frame circularity as a competitiveness strategy rather than a standalone sustainability requirement.

- **Innovation ecosystems, deep tech and Regional Innovation Valleys**

The New European Innovation Agenda aims to strengthen innovation ecosystems across the Union, accelerate deep-tech innovation, and reduce the innovation divide. One of its flagship initiatives is the Regional Innovation Valleys programme, which is designed to connect more and less innovative regions and to address key societal challenges through cross-regional

innovation collaboration. Among the thematic challenge areas highlighted in the Regional Innovation Valleys framework is the objective of achieving circularity.

At RIS3 level, this priority translates into domains such as cross-regional circular value chains, advanced recycling technologies, digital material traceability, bio-based industrial solutions, green chemistry, circular construction ecosystems, and data-driven platforms for resource exchange. The defining feature here is not only the thematic area, but the ecosystem logic: priorities should be capable of benefiting from interregional complementarities.

The most suitable instruments include interregional partnership calls, joint demonstrators, shared pilot infrastructures, matchmaking for complementary value chains, co-investment platforms, and ecosystem governance structures that connect clusters, universities, start-ups, public authorities, and corporate actors across regions. Regions should also use RIS3 implementation to prepare participation in European Innovation Ecosystems actions, Interregional Innovation Investments, and Regional Innovation Valleys partnerships. By 2030, the capacity to scale circular innovation through interregional networks will be a key differentiator between isolated regional experimentation and genuinely European-level smart specialisation.

- **European Research Area and knowledge valorisation**

The broader EU research and innovation strategy and the European Research Area emphasise stronger R&I systems, cross-border knowledge circulation, better valorisation of research results, and greater impact of research on societal and economic transformation. The Commission's R&I strategy frames research and innovation as drivers of the green and digital transitions and of European resilience, while the ERA agenda seeks a more integrated European market for knowledge, talent, and innovation.

In RIS3 terms, this translates into priority domains where regional research strengths can be connected more directly to industrial and societal application. In a circular focus, these may include applied materials science, circular biotechnology, industrial digitalisation for resource optimisation, life-cycle assessment services, materials recovery technologies, or circular design methods.

The relevant instruments and actions include proof-of-concept funding, translational research partnerships, living labs, university-industry collaborative projects, knowledge transfer offices specialised in green and circular innovation, doctoral and postdoctoral placements in firms, and regional challenge programmes that orient research actors toward RIS3 missions. This translation is essential because many RIS3 strategies underperform when research excellence remains disconnected from SME adoption and value-chain upgrading. By 2030, successful RIS3 regions will likely be those that build stronger interfaces between research organisations and circular industrial transformation.

- **Industrial modernisation and strategic value chains**

The S3 Thematic Platforms continue to support interregional cooperation in areas such as agri-food, energy, industrial modernisation, and the sustainable blue economy. These platforms are particularly relevant because they provide a structured environment for regions to translate broad transition agendas into cooperation around industrial transformation, investment pipelines, and shared opportunity areas.

For RIS3, this priority translates into value-chain-oriented domains such as circular machinery systems, sustainable mobility components, advanced resource-efficient production, industrial data systems, low-carbon materials, circular agri-food chains, and sector-specific circular product innovation. The point is not simply to support green projects, but to modernise strategic value chains through circular, digital, and advanced manufacturing capabilities.

Appropriate instruments include sector-specific roadmaps, cluster-led investment agendas, supplier upgrading programmes, demonstration factories, interregional pilot investments, standardisation support, and collaborative training programmes. This translation route is especially suitable where a region has established industrial clusters but needs to reposition them toward circularity and resilience.

5.3 Practical mapping by thematic domain

To make the translation map more operational, the following section presents the policy-to-RIS3 pathway in a compact, implementation-oriented format.

- **Circular products and eco-design**

The EU policy driver is the Circular Economy Action Plan together with the ESPR and its 2025-2030 implementation logic for repairable, durable, and more sustainable products.

This translates in RIS3 terms into priority domains such as eco-design, advanced materials, circular product engineering, product traceability, and sustainable manufacturing services. The corresponding instruments and actions include design vouchers, prototyping funds, product redesign labs, material testing facilities, design-for-disassembly demonstrators, SME advisory services on circular product requirements, and collaboration platforms connecting firms with universities, designers, and material experts.

- **Secondary raw materials and industrial symbiosis**

The EU policy driver is the circular economy objective of keeping resources in use for longer and creating value from by-products, end-of-life materials, and industrial residues.

This translates into RIS3 domains such as material recovery, industrial symbiosis, waste valorisation, recycling technologies, circular construction materials, and secondary input markets.

The related instruments and actions include regional material flow analysis, by-product exchange platforms, industrial symbiosis brokerage services, demonstration projects for recovered materials, regulatory sandboxing where appropriate, and pilot investments in sorting, preprocessing, or reuse infrastructure.

- **SME upgrading and circular business models**

The EU policy driver is ERDF support for SME competitiveness, entrepreneurship, smart specialisation, and industrial transition.

This translates into RIS3 domains such as circular service models, product-service systems, leasing, repair and maintenance businesses, remanufacturing, digital monitoring for asset life extension, and low-waste production systems.

The most relevant actions include SME transition audits, innovation vouchers, mentoring, test-before-invest services, access-to-finance blending, circular accelerator programmes, and capacity-building modules for business model redesign.

- **Interregional scaling and ecosystem connectivity**

The EU policy driver is the New European Innovation Agenda, especially Regional Innovation Valleys and the ecosystem strengthening agenda.

This translates into RIS3 domains that require complementarities across territories, such as deep-tech circular innovation, circular bioeconomy systems, digital material passports, regional innovation valleys around circularity, and collaborative platforms for scale-up.

The corresponding actions include interregional project pipelines, co-funded demonstrators, cluster-to-cluster cooperation, common investment agendas, matchmaking around complementary specialisations, and joint governance structures that support cross-border scaling.

5.3.1. Recommended instrument mix for a circular RIS3 by 2030

A practical translation map should not end with thematic alignment alone. It should also recommend an instrument mix suited to different phases of innovation maturity.

For early-stage exploration, regions should prioritise entrepreneurial discovery workshops, foresight, market intelligence, opportunity mapping, and small-scale experimentation grants. These instruments are useful where circular domains are emerging but not yet consolidated.

For validation and demonstration, the most relevant tools are pilot lines, living labs, shared testing facilities, demonstrator projects, technology extension services, and collaborative applied research. These are needed when circular solutions are technically promising but not yet ready for broad SME deployment.

For adoption and diffusion, regions should use vouchers, advisory services, cluster-led programmes, procurement support, SME training, and challenge-based calls. At this stage, the aim is to lower the barriers that prevent firms from incorporating circular solutions into routine operations.

For scaling and system transformation, the preferred instruments include blended finance, interregional partnerships, standardisation support, regulatory alignment, strategic public procurement, investment platforms, and participation in EU ecosystem initiatives. This stage is decisive because it determines whether RIS3 circularity remains project-based or becomes economically embedded by 2030.

5.4. What this translation map implies for RIS3 governance

The existence of a translation map also has direct implications for governance. First, RIS3 governance bodies must be capable of reading EU policy not as a compliance checklist but as a strategic resource. Second, monitoring systems must track not only project outputs but the quality of translation itself: whether EU priorities are actually generating focused regional domains and whether those domains are linked to credible instruments. Third, entrepreneurial discovery processes must be repeated and updated as EU frameworks evolve, particularly in fast-moving areas such as sustainable products, digital product information, industrial resilience, and ecosystem-based innovation. The JRC's work on implementing smart specialisation and on green transition-oriented S3 highlights the growing importance of governance quality, monitoring, enabling conditions, and policy learning.

For a circular RIS3, governance should therefore bring together not only public authorities and research actors, but also cluster organisations, manufacturing firms, recyclers, digital solution providers, designers, financial intermediaries, and procurement actors. Circularity is inherently systemic, which means that no single department or funding stream can deliver it alone. The policy-to-RIS3 translation map should therefore function as a shared implementation architecture across the regional innovation ecosystem.

5.5. Concluding synthesis

By 2030, the success of RIS3 implementation in Central Europe will depend increasingly on the capacity of regions and countries to translate EU-level transition agendas into selective, place-based, and instrument-backed innovation priorities. This is important because there is not one single RIS3 for Central Europe. Rather, RIS3 frameworks are defined at regional or national level, depending on each country's governance system. The policy-to-RIS3 translation map proposed in this chapter provides a mechanism for working across this diversity. It shows that EU priorities such as circular economy, sustainable products, SME competitiveness, innovation ecosystems, knowledge valorisation, and industrial

modernisation do not automatically generate regional transformation. They must first be interpreted through territorial assets and value chains, then converted into RIS3 priority domains, and finally supported through targeted instruments and actions. For a RIS3 Circular Focus, this translation process is especially important because circularity is not a single sector, but a transformation logic that cuts across sectors and activities, including manufacturing, construction, bioeconomy, services, design, and digital systems. A well-designed translation map helps regions avoid generic green rhetoric and instead build operational pathways from EU ambition to territorial action. In that sense, the map is not only a descriptive tool. It is an implementation framework for ensuring that, by 2030, EU policy priorities are visible in the real behaviour of SMEs, in the structure of value chains, and in the competitive positioning of regional and national innovation ecosystems as it was demonstrated through the SMART CIRCUIT journey and concluded in document (D.2.1.3).

6. Pillars action

The SMART CIRCUIT project follows a “test and scale” approach, where pilot actions serve as a foundation for developing scalable circular solutions. Pilots are implemented across sectors and regions, enabling validation of services, identification of barriers, and testing of cooperation models. The results are consolidated into strategic recommendations and integrated into the roadmap to support long-term implementation.

6.1. Pillar action 1: Policy Strategy Lab (STRATLAB)

In the SMART CIRCUIT framework, STRATLABs are explicitly conceived to create multi-directional dialogue between DIHs, manufacturing enterprises, and policy makers, with a very concrete purpose: reduce implementation barriers and leverage opportunities for public and private investment so that circular solutions can be adopted more effectively in manufacturing. STRATLABs are framed as a structured way to broker mutual understanding and collective approaches that translate into implementation capacity and investment leverage. Circular transition is hindered by a mismatch between: policymakers need awareness (territorial readiness, status quo of transition, digital infrastructure needs, policy effectiveness review, action planning for implementation), and what SMEs and industrial actors need from policy (financial support and incentives, regulatory guidance, collaboration mechanisms, training/education, consultancy, networking, market awareness). The “idea” is therefore to place the STRATLAB at the intersection of these two needs pools, so that dialogue is not abstract, but directly anchored in identified barriers, preparedness factors, and support instruments.

A central hypothesis is that DIHs can serve as mediators between SMEs and policymakers, and that they can offer concrete services to help bridge this gap. STRATLABs are designed as the controlled setting where that hypothesis is tested through service presentation and stakeholder feedback, rather than assumed. This is why STRATLABs are tightly coupled to a service portfolio: the “lab” is the environment where DIHs show, test, and then refine their offer for policymakers (and indirectly for SMEs) based on stakeholder reactions and additional requests. However, trust in DIHs’ services and effectiveness is not particularly high. Therefore, STRATLABs deliberately include the objective of positioning DIHs and their services within the territory, to improve perceived trustworthiness and effectiveness among stakeholders. This positioning is meant to occur through: tangible service demonstrations (e.g., mini-trainings, best-practice showcases), and structured stakeholder interaction (roundtable/workshop) that clarifies expectations and feasibility of cooperation.

The STRATLAB concept explicitly includes bringing outside policy/strategy learning into regional ecosystems and showing policymakers success stories (methods & instruments) from other territories to promote implementation and investment leverage in manufacturing value chains. In other words, STRATLABs are designed as a mechanism for territorial comparison and transfer, where instrument exchange and good practices from elsewhere are used to unlock local action.

The STRATLAB pilots are framed as the first iteration of a longer trajectory: the project intends to expand lessons from the pilot phase into a permanent regional (supported by transnational impulses) multi-directional method that continues to reduce implementation barriers and promote alignment/synergy in leveraging investment to adopt circularity in the CE manufacturing ecosystem. This is linked to the ambition to bridge Circular to RIS3 strategies, and to define the DIH ecosystem's role in a longer-term "policy-bridge brokering system."

6.2. STRATLAB Methodology

The methodology for STRATLAB in SMART CIRCUIT is defined as a structured, consortium-wide process intended to ensure that all PPs implement Activity A2.3 consistently, so that results can be capitalised at transnational level and used as a foundation for scale-up. The guidance document is explicitly presented as a "pre-requisite" for partners, because A2.3 is treated as an interlinked element of the wider project logic and is expected to remain coherent with upstream evidence sources and deliverables. STRATLAB has four goals:

- to establish a platform for discussion and showcase best practices across various regions and stakeholders.
- to position DIHs and showcase to all stakeholders, especially policymakers, their significant influence, extensive network of shareholders, and effective services.
- to present new service offers to stakeholders and test them.
- to engage stakeholders in the topic of circularity and create a space for them to address their needs and contribute to the service portfolio additionally.

These goals are delivered through 3 phases:

Phase 1. STRATLAB design and organisation of the 12 Regional Strategy Learning Labs:

The methodology starts by treating each STRATLAB as a learning-by-doing pilot that must be evidence-anchored, service-oriented, and comparable across regions. Partners first conduct a content review to consolidate what must be addressed in the lab: the main implementation barriers and readiness factors reported by policymakers, and the support expectations expressed by SMEs regarding regulation, skills, finance, and adoption pathways. This evidence base is then translated into an actionable focus for each territory so that the lab agenda is tied to concrete needs. On this basis, each Project Partner and its associated DIH define a service portfolio intended to support policymakers and to improve the policy-industry interface. Services are selected from a common set of service families (e.g., training, networking, best-practice showcasing, guidance on instruments and finance, tools/platforms, tech consulting) and are mapped against two needs pools (policymakers and SMEs). The methodological requirement is that selected services are made testable within the STRATLAB action phase; therefore, the portfolio must be feasible to deliver, positionable for the target audience, and suitable for future replication and continuity. Partners then formalise stakeholder targeting and event architecture. STRATLAB is designed to convene triple-helix stakeholders via the DIH ecosystem (policy, business,

RTOs/BSOs), with a defined minimum participation threshold, so that policy discussion remains connected to implementation reality and market constraints. Event structuring is standardised through common templates and a consortium co-creation step (during the Freiburg partner meeting), where partners validate objectives (SMART), format, target groups, agenda blocks, enabling technologies/materials, and outreach logic.

Phase 2. STRATLAB implementation and reporting on the 12 Regional Strategy Learning Labs:

Each partner implements its regional STRATLAB by embedding the selected services into the agenda and explicitly testing them with stakeholders. A recommended functional sequence is applied: introduction and framing; testing/demonstration of the services; a roundtable for structured dialogue and feedback; a workshop for co-creative problem solving; and networking to strengthen trust and continuity. Methodologically, partners must preserve evidence of the dialogue: key discussions are recorded and synthesised, and short surveys may be used to capture structured feedback on service relevance and gaps. Immediately after the event, partners submit a standardised STRATLAB report. Reporting is structured to capture (i) the service portfolio tested and stakeholder feedback, including additional services requested and portfolio updates; (ii) event design variables (format, participant types, structure); and (iii) key takeaways and forward topics to inform the next STRATLAB cycle.

Phase 3. Transnational consolidation through the Policy-Learnings Report and Circular Industries Futures Panel:

The methodology culminates in transnational synthesis: regional outputs are consolidated into a comparable dataset, cleaned and analysed, and then translated into cross-territory lessons, service portfolio refinement, and recommendations for scale-up. A dedicated transnational panel is used to disseminate results, exchange best practices, validate the DIH role in policy learning, and define forward actions that support the transition from pilot STRATLABs to a more permanent engagement solution.

6.3 STRATLAB main outcomes and recommendations for SMART CIRCUIT operating model for scale-up

STRATLAB / Organisation		Main outcomes and recommendations
HGK VZ - DIH Connect		Validated an LCA-oriented digital support service for assessing environmental impacts across product/service life cycles. Stakeholders confirmed the relevance of LCA for compliance and sustainability planning, while emphasising the need for more practical guidance and SME capacity building. Recommendations include expanding LCA training modules, step-by-step implementation guidance, and focusing future STRATLABs on green/digital skills, regulations, and funding opportunities.
PROFACTOR AI5production	- EDIH	Confirmed the value of low-threshold “test-before-invest” services supporting SME experimentation with digitalisation. Stakeholders appreciated quick feasibility checks, simplified programming, and flexible automation support with low investment risk. Recommendations include formalising pilot-company onboarding, strengthening financing advisory services,

STRATLAB / Organisation	Main outcomes and recommendations
INTEMAC - EDIH-DIGIMAT	and focusing future STRATLABs on funding instruments and technology adoption pathways. Raised awareness and advanced discussion on ESG readiness. Stakeholders highlighted growing ESG pressures from supply chains and finance requirements, even without mandatory reporting obligations. Recommendations include workshops on ESG reporting and data quality, stronger stakeholder involvement, practical ESG implementation guidance, and peer-learning approaches.
COMET - EDIH IP4FVG	Strengthened policy-SME dialogue and validated consultation workshops and trend-monitoring services supporting policy design. The event enabled cross-sector exchange and highlighted the value of demonstrations for showcasing digital sustainability. Recommendations include regular roundtables, improved SME support communication, and future STRATLABs focused on financial frameworks and scalable digital circularity tools.
PBN Association - am-LAB	Confirmed that digital skills are essential for circular transition and that SMEs require practical support in applying digital tools. Interactive workshops and cross-sector cooperation were highly valued. Recommendations include mentorship schemes, webinars on digital trends, stronger university collaboration, and future STRATLABs focused on networking and SME funding opportunities.
Fraunhofer IWU - Circular Saxony	Focused on best-practice exchange and network activation for circular transition. Stakeholders highlighted the importance of implementable examples and design-for-circularity challenges. Recommendations include integrating creative industries, refining long-term networking services, and focusing future STRATLABs on regulation-to-action guidance and circular product design cases.
Krakow Technology Park - Hub4Industry	Developed structured capability-building activities including academies, readiness audits, webinars, and consultancy. Discussions confirmed strong links between digital transformation and circularity. SME participation was limited, reducing direct business feedback. Recommendations include stronger SME engagement, joint SME-policy maker STRATLABs, and future focus on upskilling, funding access, and regulation support.
SIIT - DIH LIGURIA	Promoted co-creation between SME needs and policy frameworks through World Café methodology. Stakeholders valued direct SME-policy interaction and requested stronger collaboration mechanisms and measurable policy-impact monitoring. Recommendations include developing matchmaking tools, policy-monitoring instruments, and support for EU funding applications.
TECOS d.o.o. - DIH	Focused on implementation support for circular product development through rapid prototyping and material/process optimisation. Stakeholders highlighted the importance of fast validation and voucher-like funding mechanisms. Recommendations include refining prototyping services,

STRATLAB / Organisation	Main outcomes and recommendations
TUKE - EDIH Cassovium	exploring voucher schemes, and strengthening international collaboration on circular innovation. Consolidated the STRATLAB format by bringing together SMEs, policymakers, and DIH actors in a structured engagement setting. Outcomes included improved mapping of SME constraints to DIH services. Recommendations include integrating future STRATLABs into larger regional events, formalising feedback procedures, and focusing future cycles on financing, capacity, and market-access challenges.
Forschung Burgenland GmbH - DIH-Süd / DIH-Ost / EDIH	Presented consultancy-oriented DIH services supporting digitalisation and circular economy integration. Stakeholders stressed the high costs of circular innovation and the need for financing mechanisms, practical examples, and improved communication. Recommendations include enhancing communication materials, tailoring CIA content locally, and developing actionable financing guidance modules.
mTEC Südwest - Zentrum Klima.Neutral.Digital	Focused on regional coordination and capacity building for climate-neutral and digital transformation. Stakeholders expressed interest in cooperation among service providers and requested more operational best-practice examples. Policymaker participation was limited. Recommendations include organising future STRATLABs offline, engaging policymakers earlier, and implementing company-based workshops and measurable cooperation actions.

6.4. Pillars Action 2: Industry Pilots - Four Flagship Solution Models

This section showcases the four Flagship Solution Models, presenting the transnational solution for each Task Force. The Transnational Solution consists of a roadmap developed based on the PPs' piloting activities and key takeaways; Transnational Flagship projects submitted to ensure the continuation of the project's results, with a minimum of two PPs or partnering regions from Smart Circuit participating; individual Flagships where PPs build on the Smart Circuit results and are the only ones participating from the consortium, ensuring an even broader transfer of results; and finally, a plan to take up the service portfolios, ensuring that the knowledge generated in the project is embedded in the regional ecosystem and that the PPs continue to support SMEs in addressing circular challenges.

The section is split into four parts:

- Textile Flagship Solution Model
- Construction Flagship Solution Model
- ICT/Electronics Flagship Solution Model
- Cross-Sectoral Flagship Solution Model.

Textile Flagship Solution Model

This section outlines the Textile Flagship Solution Model, starting with an analysis of the main feedback on the challenges faced by textile manufacturing SMEs. This analysis led to the development of a decision-making matrix for selecting the most suitable technologies to address the identified challenges, which in turn informed the development of Textile Service Portfolios. These portfolios were tested through the FACTORY pilots and culminated in a final Flagship Project that ensures the continued transfer of knowledge and best practices through new initiatives.

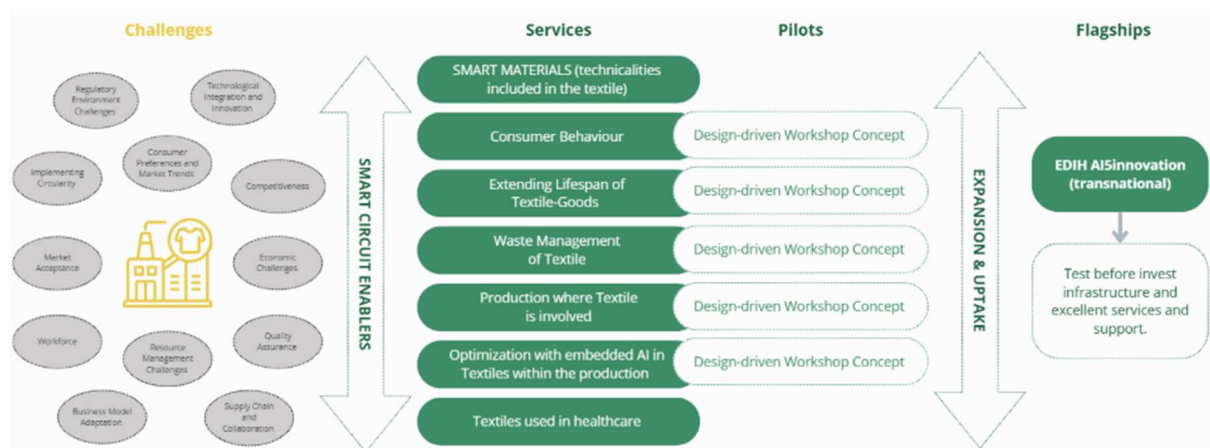


Illustration 2 Textile Flagship Solution Model (source: Author generated, 2025)

The Transnational Solution, which addresses the challenges in the textile sector, has been created based on the textile pilot and the service portfolios delivered by the Task Force. This solution provides a creative approach towards involving SMEs (including the ones in rural areas) into workshops aimed at developing innovative solutions and approaches in the field of circularity:

Design-Driven Workshop Concept for Circularity in Textiles

This category showcases a design-driven workshop concept and outlines the key steps required for companies, clusters, or BSOs to deliver the solution from preparation to expected outcomes, enabling the creative co-creation of circular solutions for textile sector.

Step 1: Identification of SME Needs and Expectations

The first step is the selection of participating SMEs from different sectors to ensure diverse perspectives. Interviews are conducted with company representatives to understand their expectations, current challenges, and perceptions of circular economy concepts. This step ensures that the workshop design responds to the real challenges of SMEs, particularly limited capacity and hesitation toward large-scale solutions.

Step 2: Definition of Workshop Concept and Methodology

Based on the insights collected, a design-driven workshop concept is defined. The methodology combines scenario design, futures thinking, and experimental formats to create unconventional and motivating entry points to circularity. The focus is placed on creativity, co-creation, and practical relevance, ensuring that activities remain accessible for SMEs with limited time and resources.

Step 3: Selection of Experts, Trainers, and Locations

Relevant experts and trainers are identified to facilitate the workshops and guide the creative process. Workshop locations are selected to suit rural contexts as well and support hands-on collaboration.

Step 4: Integration of Digital Tools and AI for Ideation Support

Digital tools and AI-based approaches are prepared for integration into the workshops to support faster ideation, visualization of scenarios, and decision-making.

Step 5: Co-creative Workshop Implementation

The workshop series is implemented with participating SMEs, bringing together diverse groups to work on concrete circular challenges. Through co-creation and experimentation, participants develop initial circular solutions tailored to their specific contexts. The focus remains on small, achievable actions rather than complex transformation.

Step 6: Development of Tailored Circularity Roadmaps

Based on the outcomes of the workshops, tailored circularity roadmaps are prepared for each participating SME. These roadmaps translate creative ideas into structured next steps, providing clarity on how companies can continue their circular transition.

Challenges addressed:

Competitiveness, Market Acceptance, Workforce, Business Model Adaptation, Implementing Circularity, Supply Chain and Collaboration

The Flagship Solution Model consists of the Transnational Flagship developed by PP3/PRO and PP9/PBN, which ensures the continuation of the piloted solutions and their expansion to new stakeholders. In addition, the Solution Model outlines the services from the service portfolio to be taken up by the PPs/ASPs, ensuring that the knowledge generated within the project reaches end users and supports them in addressing circularity challenges through the use of advanced technologies.

Transnational Flagship

Flagship name: EIDH AI5innovation - European Digital Innovation Hub AI5innovation

Field/industry targeted: All with focus on production & manufacturing

Main topic: Digital transformation of SME

Status: Approved

Smart Circuit PPs involved: PP3/PRO, PP9/PBN

External DIHs/ Industry Digital Centres/ other organizations involved: EDIH Innovate, EDIH AI5production, Mechatronic-Cluster

The results the flagship builds upon, TF services or pilot results (DT3.2 / DT3.3): Trainings & Skill Development, Test before Invest

Targeted funding opportunity - source of funding: Digital Europe

Duration: 01.11.2026 - 31.10.2029

Short description: The EDIH AI5innovation has a regional focus to the north-east of Austria and mainly addresses manufacturing SMEs and mid-caps in Austria. The overall objective of the EDIH AI5innovation is to consolidate the Industry 4.0 maturity of SMEs and mid-caps in the region and transfer them to Industry 5.0 companies by providing all four foreseen service pillars of an EDIH. This will be achieved by offering established test before invest infrastructure and excellent services and support.

Budget: around 6.725.424€

Useful links: [here](#)

Long-term uptake of the service portfolios

After the project ends, PPs plan to adopt the following services from the Textile service portfolio and offer them to their ecosystem as support to enable digitally driven circularity:

LPP3/PRO: The topics and services developed by the Textile Task Force will be integrated into AI5innovation's service portfolio; however, they will be adapted to align with the EDIH's production focus.

PP4/IWU: IWU will transfer the knowledge and the design-driven workshop concept to the innovation cluster Circular Saxony and smart3 - they will use it in their daily consulting, training and inspiration work with their members from various industries.

PP5/mtSW: microTEC Südwest will provide trainings with a mix of knowledge transfer and best practice parts, e.g. as part of the microTEC SkillsLab project and/or as part of the annual event To Connect - Smart Textiles & Mikrosystemtechnik.

PP6/SIIT: SIIT plans to continue producing podcasts and refining the matchmaking process after the project's completion, ensuring that knowledge transfer between academia and SMEs becomes a long-term, sustainable practice.

PP7/COMET: COMET is committed to offered services that are aimed at enhancing SMEs efficiency and productivity by leveraging lean principles and cutting-edge digital technologies to streamline processes and minimize waste and integrating this concept in the whole EDIH ecosystem. This include the access to test bed and living lab facilities such as LEF Lean Experience Factory.

PP9/PBN: PBN will integrate the design-driven workshop concept and circular textile topics developed by the Textile Task Force into its SME support activities, including training programmes and co-creation workshops. The results will also be linked to the AI5innovation EDIH ecosystem, enabling SMEs to access digital innovation services such as test-before-invest and support for digital and circular transformation in manufacturing sectors.

PP11/INTEMAC: Intemac will build on the the knowledge obtained through textile service portfolio and where appropriate, will use this information to EDIH services to optimize the services provided.

PP12/HGK: The HGK Varaždin will continue to foster links between companies in the textile sector and the research community, particularly the Faculty of Textile Technology, Varaždin Department and will strive to initiate new projects related to emerging technologies in the textile sector, especially those supporting the transition towards a circular economy in the textile sector.

Construction Flagship Solution Model

This section outlines the Construction Flagship Solution Model, starting with an analysis of the main feedback on the challenges faced by construction manufacturing SMEs. This analysis led to the development of a decision-making matrix for selecting the most suitable technologies to address the identified challenges, which in turn informed the development of Construction Service Portfolios. These portfolios were tested through the FACTORY pilots and culminated in a final Flagship Project that ensures the continued transfer of knowledge and best practices through new initiatives.



Illustration 3 Construction Flagship Solution Model (source: Author generated, 2025)

The Transnational Solution, which addresses the challenges in the construction sector, has been created by combining the results of the Piloted solutions and the service portfolios delivered by the Task Force. This solution provides a digitally driven roadmap for the circular transformation of the construction sector:

Phase 1: Using Digital Tools to Embed Sustainability and Process Efficiency from the Production

This category focuses on helping construction companies introduce digital tools to improve transparency, coordination and sustainability during the production and planning stages. The approach emphasizes aligning technological ambition with operational feasibility to ensure that digitalization supports daily processes rather than making them more complex.

Step 1: Analysis of Production Setup and Operational Needs

A detailed analysis of the company's production environment is conducted to identify bottlenecks, data gaps, and sustainability-relevant processes. This step ensures that digital tools address real operational challenges.

Step 2: Screening and Selection of Suitable Digital Tools

Any available digital solutions (e.g. digital twins), including open-source tools, are reviewed and compared with the company's needs, level of digital maturity and budget constraints. Any unrealistic solutions are excluded.

Step 3: Testing Real-Time Data Visualization

Simple demonstrators, such as real-time dashboards, are developed to visualise production data and enhance process transparency, providing a cost-effective solution prior to investing in more complex systems.

Step 4: Gradual Introduction of Structured Systems

Based on testing results, companies are supported in implementing digital solutions, such as Manufacturing Execution Systems or digital twins, as a practical next step for data-driven production management and traceability.

Step 5: Definition of a Realistic Digitalization Roadmap

Clear next steps are defined, supporting continued digital transformation beyond the pilot and aligning sustainability goals with production efficiency.

Challenges addressed:

Technology Adoption and Integration Challenges, Resource Efficiency and Optimization, Financial and Market Challenges, Technology Adoption and Integration Challenges, Workforce Challenges.

Phase 2: Digital Monitoring and Communication of Energy Performance

This category showcases how digital tools can make energy efficiency and circular construction solutions more visible and understandable for residents, clients and stakeholders. The emphasis is on combining technical monitoring with transparent communication.

Step 1: Installation and Calibration of Monitoring Systems

Sensors and data collection systems are installed to capture real-time energy performance and environmental indicators, with careful calibration to ensure reliable results.

Step 2: Reliable Data Transfer and Validation

Data flows are stabilized and validated to account for user behaviour and external conditions. This ensures that performance indicators remain meaningful.

Step 3: Development of Simple Digital Communication Tools

A user-friendly online platform is created to display energy savings, CO₂ reduction, and financial benefits in a clear and accessible way.

Step 4: Communication of Measurable Benefits

Digital dashboards are used as communication tools to build trust and improve understanding of sustainable construction solutions among residents, clients and other stakeholders.

Step 5: Preparation for Replication

Key lessons are documented to support future deployment in additional buildings or projects.

Challenges addressed:

Reducing Environmental Impact, Resource Efficiency and Optimization, Technology Adoption and Integration Challenges, Customer and Market Readiness Challenges, Financial and Market Challenges.

Phase 3: Life Cycle Assessment as a Tool for Waste Reduction and Circular Material Use

This category focuses on using Life Cycle Assessment to identify environmental hotspots, improve waste management, and support circular material choices in construction-related manufacturing.

Step 1: Selection of Products for Assessment

Relevant construction products are selected for LCA to ensure that results are directly applicable to daily operations.

Step 2: Mapping of Material Flows and Waste Streams

Production processes are analysed to document material inputs, recycled content, waste streams, and emissions.

Step 3: Identification of Environmental Hotspots

LCA results are used to identify stages with the highest environmental impact, including handling of complex or contaminated waste.

Step 4: Definition of Circular Improvement Measures

Companies are supported to use LCA insights to define practical improvements, such as increasing the use of recycled materials, improving sorting processes, and enhancing the traceability of materials.

Step 5: Internal Awareness and Capacity Building

Employees are actively involved in the assessment process, strengthening internal understanding of circular practices and environmental performance.

Challenges addressed:

Regulatory and Standards Challenges, Reducing Environmental Impact, Waste Management Challenges, Resource Efficiency and Optimization, Customer and Market Readiness Challenges.

The Flagship Solution Model has been created to bring the Transnational Solution to the market and expand it to new regions and organizations. The Model consists of the Transnational Flagship developed by KPT and the following CE regions: Zahodna Slovenija, provincia Bolzano/Bozen, Salzburg, Košický kraj, which ensures the continuation of the piloted solutions and their expansion to new stakeholders. In addition to the transnational Flagship, LP1/KPT also submitted an individual Flagship, as the only organisation from the Smart Circuit consortium. This enables the expansion of Smart Circuit knowledge to new partners and a new region, namely the Interreg Baltic Sea Region. Finally, the Solution Model outlines the services from the service portfolio to be taken up by the PPs/ASPs, ensuring that the knowledge generated within the project reaches end users and supports them in addressing circularity challenges through the use of advanced technologies.

Transnational Flagship

Flagship name: ReConstruct4CE

Field/industry targeted: Construction

Main topic: Circular Economy in construction sector

Status: Pending approval

Smart Circuit PPs involved: LP1/KPT

External DIHs/ Industry Digital Centres involved: Slovenian National Building and Civil Engineering Institute (Slovenija (SI)), Eurac Research PP Italia (IT), Association Cluster of Information Technologies in Building Industry (PL), Future Agency of Construction PP Österreich (AT), Active Slovakian Innovation and Energy Agency (AT)

The results the flagship builds upon, TF services or pilot results (DT3.2 / DT3.3): WP1 - Circular Innovation Academy A1.4, WP2 - DIH NET, WP3 - service portfolio A3.3

Targeted funding opportunity - source of funding: Interreg CE

Duration: Autumn 2026 - 2028

Short description: ReConstruct4CE accelerates the transition to a circular economy in Central Europe's construction sector, one of the region's most resource-intensive industries. By consolidating the results of seven successful Interreg projects (including ReBuilt, BIM4CE, and VIRIDI), project turns individual tools and digital platforms into a unified regional powerhouse. Through a central "hub-of-hubs," project provides stakeholders with easy access to proven innovations, regardless of their location. The goal is to bridge the gap between urban and rural areas, making the construction industry more competitive, resilient, and climate-neutral.

Budget: 1.214.213,00 EUR

Individual Flagship

Flagship name: CIRC2Zero - Driving Collaborative Innovation towards Decarbonization and Advanced Manufacturing in SMEs across the Baltic Sea Region

Field/industry targeted: ICT/ Electronics, Construction

Main topic: Digital transformation of SME

Status: Approved

Smart Circuit PPs involved: LP1/KPT

External DIHs/ Industry Digital Centres/ other organizations involved: Linna Business Development - Finland, Tallinn University of Technology - Estonia, Tallinn Science Park Tehnopol - Estonia, K8 Institute for Strategic Aesthetics - Germany, Academy of Fine Arts Saar - Germany, Riga Technical University - Latvia, Business Union of Latvia - Latvia, Luleå University of Technology - Sweden, VMG Lignum Systems - Lithuania, "VIZULO" Ltd. - Latvia, Industriellt Utvecklingscentrum Norr AB - Sweden and associated partners (regional authorities).

The results the flagship builds upon, TF services or pilot results (DT3.2 / DT3.3): Test before invest (digital twin), trainings and skill development and a tailored program of webinars and workshops focused on Digital Twin technology in the electronic sector. Furthermore, advanced simulations enable the optimization of value chains, leading to reduced raw material consumption and improved logistical efficiency.

Targeted funding opportunity - source of funding: Interreg Baltic Sea

Duration: 01.03.2025 - 29.02.2028

Short description: The project's goal is to support small and medium-sized enterprises (SMEs) in the Baltic Sea Region (BSR) in their decarbonization process and enhance their ability to adopt modern manufacturing technologies in the in their decarbonization process and enhance their ability to adopt modern manufacturing technologies in the wood and electronics sectors. The project helps companies develop more sustainable and advanced processes, contributing to environmental responsibility and improving their market competitiveness. A key element of the project is the development and implementation of a Digital Twin platform, enabling businesses to simulate and optimize their production processes. As a result, the project will directly educate entrepreneurs on circular solutions, resource utilization, and sustainable practices. This initiative will also engage regional authorities, facilitating knowledge exchange and co-creation activities at the international level.

Budget: 3.296.687 EUR

Long-term uptake of the service portfolios

After the project ends, PPs plan to adopt the following services

from the Construction service portfolio and offer them to their ecosystem as support to enable digitally driven circularity:

LP1/KPT: KPT will continue offering trainings, digital maturity assessment, test-Before-Invest services through hub4industry (eDIH of KPT) to help SMEs validate circular product and process improvements in the construction-related manufacturing ecosystem. KPT has also a large ecosystem of organizations focused on construction ready to take the action to be more sustainable. However KPT will continue to strengthen cooperation between companies in the construction sector and the research community, particularly those that contribute to the shift towards a circular economy in the construction companies.

PP2/FB: FB is involved in many projects aimed at changing attitudes towards sustainability. Therefore, this focus will also be maintained in future projects. Reducing the environmental footprint and creating a digital product passport are also expected to be the focus of some of the following projects.

PP8/TECOS: TECOS will continue offering Test-Before-Invest services through DIH INDUSTRY to help SMEs validate circular product and process improvements in the construction-related manufacturing ecosystem. The uptake will focus on rapid prototyping and testing/validation of design changes and material substitutions,

alongside guidance on design for disassembly, repair and longer product lifetime. Where feasible, TECOS will further develop these elements and transfer the Factory approach through relevant national networks.

PP10/TUKE: TUKE will continue offering trainings and expert consultation services focusing on digital and circular assessments and innovation piloting and scaling up for industry, and will continue in preparation and implementation of innovation projects supporting the industry and society in digital and circular transition, especially in the domains of digital monitoring of energy performance and Life-cycle Assessment as a tool for waste reduction and circular material use for environmental impacts improvement

PP11/INTEMAC: Intemac will further provide Test-Before-Invest support under EDIH DIGIMAT, enabling SMEs to assess and de-risk circular upgrades in products and manufacturing processes within the construction manufacturing value chain. The service portfolio will emphasize accelerated prototyping together with practical testing and verification of revised designs and alternative material solutions. It will also include advisory support focused on designing for easy disassembly, enhanced repairability, and increased product durability.

PP12/HGK: The HGK Varaždin will continue to strengthen cooperation between companies in the construction sector and the research community, particularly those that contribute to the shift towards a circular economy in the construction companies. In this regard, attention will be given to the promotion and further enhancement of the Light LCA and other services offered by DIH Connect Varaždin, as useful instruments for helping companies evaluate and improve the environmental performance of their products and processes.

Electronics Flagship Solution Model

This section outlines the ICT/Electronics Flagship Solution Model, starting with an analysis of the main feedback on the challenges faced by ICT/Electronics manufacturing SMEs. This analysis led to the development of a decision-making matrix for selecting the most suitable technologies to address the identified challenges, which in turn informed the development of ICT/Electronics Service Portfolios. These portfolios were tested through the FACTORY pilots and culminated in a final Flagship Project that ensures the continued transfer of knowledge and best practices through new initiatives.



Illustration 4 ICT/Electronics Flagship Solution Model (source: Author generated, 2025)

The Transnational Solution, which addresses the challenges in the ICT/electronics sector, has been created by combining the results of the Piloted solutions and the service portfolios delivered by the Task Force. This solution provides a digitally driven roadmap for the circular transformation of the ICT/electronics sector:

Phase 1: SMEs Capacity Building on Circular Topics Through Workshops

This category focuses on enhancing SMEs' understanding of the principles of the circular economy, ESG requirements and pathways to climate neutrality, through structured, practice-oriented capacity-building activities. The approach involves workshops, learning networks and facilitated peer exchanges to ensure that companies progress from awareness to concrete strategic and operational action.

Step 1: Building Internal Expertise Within Support Organizations

Before engaging SMEs, internal teams within clusters, technology parks, and other BSOs are trained on circular economy frameworks such as 6R (Reduce, Reuse, Recycle, Recover, Rethink, Redesign), ESG integration, sustainability reporting standards (e.g. CSRD, VSME), etc. This creates a shared knowledge base and ensures consistency and quality in external delivery.

Step 2: Introductory Workshops for SMEs on a Chosen Circular Economy Topic

Short, targeted workshops to introduce SMEs to the concepts of the circular economy, its regulatory drivers and the practical implications for ICT and electronics SMEs. The format is adapted according to company maturity level, with separate sessions for start-ups, growing SMEs and more established companies.

Step 3: Diagnostic and Readiness Assessments

Participating companies carry out structured diagnostics, such as 6R analyses and ESG readiness checks, to identify gaps in data, processes and governance. These assessments provide a basis for prioritizing actions and investments.

Step 4: Co-creation of Company-Specific Roadmaps

Based on diagnostic results, SMEs are supported in co-creating tailored roadmaps for circular transformation, climate neutrality, sustainability reporting, etc. The learning-by-doing approach ensures ownership and relevance.

Step 5: Peer Learning and Learning Networks

Where possible, SMEs are brought together in small learning networks to share experiences, visit production sites and discuss specific challenges. This trusted environment reduces engagement barriers and encourages continuous improvement.

Challenges addressed:

Challenges in Circular Practices Implementation, Regulatory Compliance and Standards, Stakeholder Engagement, Environmental Impact and Sustainability, Customer Acceptance, Market Dynamics and Competitiveness

Phase 2: Tech Matchmaking Between SMEs and Innovation Providers

This category connects SMEs with universities, research organizations and ICT solution providers to help companies identify and address the right technological challenges, and to give them access to relevant knowledge and innovation. The focus is on structured matchmaking formats that facilitate meaningful collaboration and go beyond one-off contacts.

Step 1: Mapping Innovation Suppliers and SMEs Needs

Research groups, PhD projects, ICT solution providers, and digital solution portfolios are systematically mapped, together with SME challenges related to digitalisation, circularity, and sustainability.

Step 2: Awareness-Raising on Collaboration Models

SMEs are introduced to collaboration formats such as joint R&D, pilot projects, and Horizon Europe partnerships through workshops, podcasts, and practical examples. This helps to simplify cooperation with universities and research organizations.

Step 3: Structured Matchmaking Formats

Matchmaking is implemented through needs-based calls, tech challenges, or facilitated brokerage events. SMEs bring concrete problems, while ICT providers and research teams propose solutions in a transparent and co-creative format.

Step 4: Facilitation of Negotiation and Partnership Building

Dedicated facilitation helps to align expectations, timelines, IP issues and resource commitments. Tools such as negotiation simulations and templates can help to reduce disagreement between partners.

Step 5: Post-Match Support and Follow-Up

Following the matchmaking process, companies receive support to help them progress from the conceptual stage to implementation. This support includes technical validation, funding alignment and coordination between partners.

Challenges addressed:

Technological Innovation and Integration, Market Dynamics and Competitiveness, Stakeholder Engagement, Cost Management and Investment, Supply Chain Disruptions.

Phase 3: Assisting Companies in Testing and Implementing Advanced Solutions

The focus of this category is to reduce the risks associated with adopting advanced technologies and circular solutions by providing access to testing, prototyping, demonstrations and hands-on training. The aim is to transition innovations from the conceptual stage to real-world application in a controlled environment.

Step 1: Identification of Use Cases and Pilot Scenarios

Together with SMEs, define concrete use cases, such as circular product redesign, automated testing, robotics integration, or material flow optimization.

Step 2: Rapid Prototyping and Testing

Short design-prototype-test loops are used to validate concepts at an early stage, before significant investment is made. These loops include reverse engineering, additive manufacturing and modular design approaches.

Step 3: Demonstrators and Training-Based Implementation

Demonstrators, such as automated testing cells or robotic assistants, are used to train staff and validate workflows in realistic environments. Skills development is integrated into the implementation process.

Step 4: Integration into Production and Operations

Validated solutions are adapted for integration and scaling within existing production systems, documentation practices and digital infrastructures.

Step 5: Evaluation and Replication

Results are evaluated in terms of performance, sustainability impact, and usability. Successful solutions are documented as best practices that can be replicated for other SMEs and regions.

Challenges addressed:

Technological Innovation and Integration, Environmental Impact and Sustainability, Cost Management and Investment, Challenges in Circular Practices Implementation, Stakeholder Engagement, Supply Chain Disruptions, Security Threats and Cybersecurity, Market Dynamics and Competitiveness.

Phase 4: Sustainability Communication and Website Usability

This category ensures that SMEs communicate their sustainability and circular economy efforts in a clear, credible, and engaging way. By improving website usability and monitoring user impressions, companies can strengthen trust, transparency, and market positioning.

Step 1: Assessment of Current Sustainability Communication

Company websites are analysed to gain an understanding of how sustainability information is presented and structured, and how it is perceived by users.

Step 2: Usability and Perception Testing

Advanced methods such as eye-tracking and emotional analysis are used to identify which content attracts attention, triggers engagement, or causes confusion.

Step 3: Development of Practical Recommendations

Companies receive concrete, actionable recommendations based on test results to improve the clarity, credibility and emotional impact of their sustainability communications.

Step 4: Monitoring and Continuous Improvement

Companies are encouraged to regularly monitor user behaviour and feedback. This allows sustainability communication to evolve alongside regulatory and market developments.

Challenges addressed:

Customer Acceptance, Market Dynamics and Competitiveness, Stakeholder Engagement, Environmental Impact and Sustainability, Regulatory Compliance and Standards

The Flagship Solution Model has been created to bring the Transnational Solution to the market and expand it to new regions and organisations. The Model consists of the Transnational Flagship developed by PP8/TECOS and PP9/PBN, which ensures the continuation of the piloted solutions and their expansion to new stakeholders. In addition to the transnational Flagship, PP6/SIIT also submitted an individual Flagship, as the only organisation from the Smart Circuit consortium. This enables the expansion of Smart

Circuit knowledge to new partners and a new region, in this case at the regional level. Finally, the Solution Model outlines the services from the service portfolio to be taken up by the PPs/ASPs, ensuring that the knowledge generated within the project reaches end users and supports them in addressing circularity challenges through the use of advanced technologies.

Transnational Flagship

Flagship name: SPIRAL - Systemic Pathways for Innovative Remanufacturing Loops

Field/industry targeted: ICT/ Electronics and Household appliances Sector / ICT / Electronics (AI platforms, digital manufacturing & remanufacturing)

Main topic: The project builds a pan-EU ecosystem for de- and remanufacturing of household appliances, anchored by the SPIRAL label.

Status: Submitted, pending approval

Smart Circuit PPs involved: PP8/TECOS, PP9/PBN

External DIHs/ Industry Digital Centres involved: Core consortium incl. Elettrotecnica ROLD (coord.), POLIMI, ARÇELIK, ENVIE, CCIS (Slovenia), CHALMERS, AFIL, Intellico, LOMARTOV, others.

The results the flagship builds upon, TF services or pilot results (DT3.2 / DT3.3):

New project application SPIRAL builds on the SMART CIRCUIT Circular Industry Factory results, notably the D3.1.3 service portfolios and the piloted solutions, including TECOS' "Fast Prototyping and Development of Circular Products" test-before-invest approach, partner PBN reinforces uptake through its communication and digital campaign experience and the wider CIRCUIT DIH ecosystem for replication and market uptake.

Targeted funding opportunity - source of funding: HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-01

Duration: 48 months.

Short description: SPIRAL project proposal aims to establish a pan-European, multi-stakeholder ecosystem for demanufacturing and remanufacturing of household appliances, anchored by the SPIRAL label and supported by distributed HUBs. The project develops and demonstrates an AI-based decision-support platform (ARI) using multi-criteria decision-making that integrates environmental, social, and economic dimensions (including LCA/LCC/S-LCA), and validates remanufacturing/repurposing approaches in real operational environments, progressing from TRL5 to TRL7 across three circular flows (household-to-household, household-to-other-sectors, and other-sectors-to-household).

Budget: Total eligible costs: €7,737,750

Requested EU contribution (max grant): €6,929,925

Individual Flagship

Flagship name: MASE EOS - Eco-design for sustainable and recyclable

Field/industry targeted: ICT/Electronics

Main topic: Digital Product Passport and carbon footprint monitoring

Status: Submitted, pending approval

Smart Circuit PPs involved: PP6/SIIT

External DIHs/ Industry Digital Centres involved: EDIH CETMA DIHSME

The results the flagship builds upon, TF services or pilot results (DT3.2 / DT3.3): Waste reduction, Digital Product Passport

Targeted funding opportunity - source of funding: MASE (Ministry of Environment)

Duration: 01.01.2026 - 31.12.2026

Short description: Use of innovative materials (highly recyclable or involving innovative processes) to build wind turbine blades, manage their recycling to reuse the materials both to make other wind turbine blades and in other supply chains such as the construction or space sectors.

Budget: 4.400.000 EURO

Useful links: [here](#)

Long-term uptake of the service portfolios

After the project ends, PPs plan to adopt the following services from the Electronics service portfolio and offer them to their ecosystem as support to enable digitally driven circularity:

LP1/KPT: Test before invest (digital twin), trainings and skill development and a tailored program of webinars and workshops focused on Digital Twin technology in the electronic sector. Furthermore, advanced simulations enable the optimization of value chains, leading to reduced raw material consumption and improved logistical efficiency.

PP2/FB: Promoting sustainable consumption will be the focus of future projects, building on the success of previous initiatives. Digital twins will also be a key component of these projects and projects aiming at enhancing resource efficiency. PP5/mtSW: microTEC Südwest will provide trainings with a mix of knowledge transfer and best practice parts, e.g. as part of the [microTEC SkillsLab](#) project.

PP6/SIIT: Through their DIHs, SIIT Ligurian Technological District Integrated Intelligent Systems offers the maturity as sessment; extends it toward an environment assessment. In the future, based on results, it is considered to customize parts of CIA modules for DIHs/users.

PP7/COMET: through its EDIHs COMET will provide a living lab facility to test before invest digital and advanced manufacturing technologies like robotics, AI-integrated systems, and digital twins in a risk-free environment.

PP8/TECOS: TECOS will continue providing the “Fast Prototyping and Development of Circular Products” service as a permanent Test-Before-Invest offer for ICT/electronics SMEs within DIH INDUSTRY. The service will include rapid prototyping/rapid tooling, reverse engineering where relevant, validation of bio-based/recycled materials

for housings and components, and practical guidance for design-for-repair and design-for-disassembly. In parallel, TECOS will actively explore follow-up initiatives and joint applications with Smart Circuit partners and other DIHs/EDIHs to scale the uptake and market readiness of the flagship solutions.

PP9/PBN: PBN will integrate the ICT/Electronics service portfolio into its digital innovation ecosystem and SME support activities, including workshops, matchmaking events and technology demonstrations. The knowledge generated in the project will also support the uptake of the SPIRAL flagship initiative, helping SMEs explore circular manufacturing, digital product lifecycle management and remanufacturing opportunities in the electronics sector.

PP10/TUKE: TUKE will continue offering trainings and expert consultation services focusing on digital and circular assessments and innovation piloting and scaling up for industry, and will continue in preparation and implementation of innovation projects supporting the industry and society in digital and circular transition, especially in the domains of monitoring of waste flows, assistance in improvement of operations and delivering the environmental impacts improvement.

PP11/INTEMAC: To ensure the continuity and long-term impact of the results achieved within the electronics sector service portfolio, we will place a strong emphasis on fostering sustainable consumption in upcoming projects. Building on previous successes, we will further integrate digital twins as a core element of our approach, particularly in initiatives aimed at increasing resource efficiency and optimizing the use of materials and energy.

Cross-sectoral Flagship Solution Model

This section outlines the Cross-sectoral Flagship Solution Model, starting with an analysis of the main feedback on the challenges faced by SMEs from different sectors from 9 EU countries. This analysis led to the development of a decision-making matrix for selecting the most suitable technologies to address the identified challenges, which in turn informed the development of Cross-sectoral Service Portfolios. These portfolios were tested through the FACTORY pilots and culminated in a final Flagship Project that ensures the continued transfer of knowledge and best practices through new initiatives.



Figure 9 Cross-sectoral Flagship Solution Model (source: Author generated, 2025)

The Transnational Solution, which addresses the challenges in the Cross-sectoral sector, has been created by combining the results of the Piloted solutions and the service portfolios delivered by the Task Force. This solution provides a digitally driven roadmap for the circular transformation applicable for different manufacturing sectors:

Phase 1: Capacity Building, Skills Development and Circular Roadmapping

This category addresses the early stages of circular transition, where companies require structured guidance, skills development, and clarity on regulatory and strategic requirements. It builds on pilots focused on training, diagnostics, ESG readiness, eco-design, and sustainability communication.

Step 1: Needs identification and baseline diagnostics

Companies get the support with structured assessments of sustainability, ESG readiness, and circular maturity (e.g. ESG audits, VSME and CSRD readiness checks, simplified LCA screenings, and co-developed diagnostic tools).

Step 2: Targeted training and skills development

Based on identified gaps, SMEs get the focused training on ESG reporting, EU regulatory frameworks, circular economy principles (including 6R), eco-design, sustainability marketing, climate neutrality, and similar topics. Training formats combine workshops, practical examples, and peer exchange across sectors.

Step 3: Roadmapping and strategy definition

Companies get the support to translate assessment results into concrete roadmaps, defining priorities for circular business models, product redesign, reporting obligations, and internal capacity development. Eco-design strategies, ESG action plans, and sustainability communication guidelines are formalized at this stage.

Step 4: Communication and internal alignment

Support is provided to prepare clear and credible sustainability communication, particularly product-level environmental information, traceability elements, and circular service options. This ensures internal understanding and prepares companies for customer and market-facing communication.

Challenges addressed:

Technological Innovation and Integration, Environmental Impact and Sustainability, Cost Management and Investment, Challenges in Circular Practices Implementation, Stakeholder Engagement, Supply Chain Disruptions, Security Threats and Cybersecurity, Market Dynamics and Competitiveness.

Challenges addressed:

Regulatory Environment and Compliance, Lack of Qualified Workforce and Training, Environmental Challenges, Customers Awareness and Preferences, Competitiveness.

Phase 2: Networking, Matchmaking and Project Initiation

This category helps companies transition from individual readiness to collaborative action. The focus is on building trust, enabling cooperation and initiating concrete circular projects across value chains and sectors.

Step 1: Structured networking and facilitated exchange

SMEs are brought together through moderated meetings, workshops, and company visits. These settings allow participants to present challenges, exchange practices, and explore synergies across sectors such as manufacturing, construction, energy, food, and ICT.

Step 2: Expert matchmaking and knowledge transfer

Companies are connected with research organizations, technology providers, DIHs and other SMEs. Their areas of expertise include materials, plastics, composites, energy systems, digital tools, circular process design, etc.

Step 3: Project scoping and initiation

Identified collaboration opportunities are translated into concrete project ideas, circular value chains or pilot initiatives. This involves defining shared objectives, outlining resource requirements and pinpointing digitisation or automation enablers.

Step 4: Embedding continuity through clusters and hubs

To ensure follow-up, replication, and long-term cooperation beyond individual meetings, networking activities are integrated in existing structures such as clusters, innovation hubs, and EDIHs.

Challenges addressed:

Lack of Cooperation, Sustainable Supply-Chain Management, Market Dynamics, Financial Challenges, and Competitiveness.

Phase 3: Digital Tools for Monitoring, Assessment and Decision Support

This category focuses on supporting SMEs with practical digital tools that translate sustainability and circularity goals into measurable insights. The emphasis is on assessment, monitoring, and data-driven prioritization rather than full-scale automation.

Step 1: Introduction of accessible assessment tools

SMEs apply lightweight digital tools such as circular and digital maturity assessments, simplified LCA tools, and ESG diagnostics to identify gaps and opportunities.

Step 2: Linking assessments to learning and services

Assessment results are directly connected to tailored training modules, advisory services, and DIH service catalogues, covering topics such as circular business models, impact management, IoT, AI, BIM, digital twins, etc.

Step 3: Data visualization and sustainability dashboards

Companies are supported in visualizing key sustainability indicators through dashboards and basic data pipelines, enabling clearer internal decision-making and prioritization of actions.

Step 4: Preparation for compliance and reporting

Tools and guidance help companies prepare for regulatory requirements and future reporting by structuring data, clarifying indicators, and improving understanding of environmental and digital performance.

Phase 4: Testing and Validation of Advanced Technologies Before Investment

This category enables companies to experiment with advanced digital and manufacturing technologies in controlled environments, reducing investment risks and supporting informed decision-making before full deployment.

Step 1: Test-before-invest environments and prototyping

SMEs get the support to test solutions such as energy and environmental monitoring platforms, modular tooling concepts, rapid prototyping methods, and digital twin-ready design tools, etc. without large upfront investments.

Step 2: Integration of digital and circular functionalities

Tested solutions combine digitalization with circular objectives, including energy and resource monitoring, automated material calculations, waste reduction, traceability, and preparation for environmental reporting.

Step 3: Operational validation and skills transfer

During testing phases, employees receive targeted training to ensure the practical usability of new tools and systems, reduce resistance to change, and build internal capacity.

Step 4: Decision support for scaling and implementation

Based on testing results, companies assess cost-benefit ratios, environmental gains, and operational impacts, supporting informed decisions on scaling, further investment, or adaptation.

Challenges addressed:

Technology Dynamics, Adoption and Risks, Financial Challenges, Sustainable Resource Management, Environmental Challenges and Competitiveness.

The Flagship Solution Model has been created to bring the Transnational Solution to the market and expand it to new regions and organisations. The cross-sectoral solution model differs from sector-specific ones. Each PP contributes to the cross-sectoral Flagship by: (1) submitting projects during the Smart Circuit project duration, building on the knowledge and results gathered within the project, or (2) transferring the knowledge and results of Smart Circuit to other ongoing projects.

To ensure knowledge exchange and cooperation, PPs will continue meeting after the project ends, once per year, bringing knowledge and results from other projects, capitalizing on Smart Circuit results and creating a baseline for the submission of new projects. PPs will meet annually for five years after the project ends. During each meeting, PPs will discuss their current topics of interest, share knowledge and resources gathered in other projects, invite each other to events and conferences, and participate in ideation workshops that will help them build consortia for new projects, especially for the next programme period.

Each year, one of the WP/WS leaders will be responsible for scheduling and facilitating the meeting, creating a structure for online brainstorming and information exchange. **Year 2027: KPT; Year 2028: mtSW; Year 2029: TUKE; Year 2030: TECOS; Year 2031: PBN.**

All PPs confirm their participation and commit to these meetings by signing LoCs (more details in Section 4). All PPs agree on the most suitable period/month for these meetings, and each year the meeting should be held in the same month. KPT is responsible for ensuring that these meetings are organized. PPs may also invite

associated partners or other organizations to join these meetings in order to extend partnerships and potential consortia for new projects.

PPs will bring knowledge from the following cross-sectoral projects:

LP1/KPT
Flagship name: EDIH #2
Description: Enhancement and professionalization of services provided by the EDIH, including the integration of solutions developed and validated through Task Forces and pilot projects within SMART CIRCUIT.
Duration: 01.10.2026 - 30.09.2029
Funding source: Digital Europe
Status: Approved
PP2/FB
Flagship name: REUSE
Description: The main objective of the REUSE project is to increase skills and knowledge through a cross-border mentoring program that aims to increase the use of technological and non-technological solutions for introducing the cascade use model for residual raw materials from production processes.
Duration: 01.11.2023 - 31.10.2026
Funding source: EFRE SI-AT
Status: Ongoing
PP3/PRO
Flagship name: EDIH AI5innovation
Description: AI5innovation is a forward-looking initiative focused on turning cutting-edge AI into practical, real-world solutions. It brings together technology, creativity, and business expertise to help organizations explore, build, and scale AI-driven products—responsibly, securely, and with measurable impact.
Duration: 01.11.2025 - 31.10.2028
Funding source: EU, Federal Ministry of Economy, Energy and Tourism
Status: Ongoing
PP4/IWU
Flagship name: CIRCULAR SAXONY (second period)
Description: To establish a circular economy in Saxony, the CIRCULAR SAXONY innovation cluster, which is funded by the Free State of Saxony, has been initiated. The aim is to design the entire value chain of products and services in a sustainable manner in order to address resource issues and reduce the costs of transitioning to

climate neutrality. Together with stakeholders from industry, science, and politics, the circular economy is to be translated from rhetoric into practice within the framework of topic-specific working groups.

Duration: 15.03.2026-14.03.2032

Funding source: SAB - Sächsische Aufbaubank

Status: Pending approval

PP5/mtSW

Flagship name: microTEC SkillsLab (re-named from Microtec Academy)

Description: This project aims to develop and test training measures, particularly for different target groups from microelectronics/microsystems technology-related organizations. Technological focal points include digitalization, AI, Industry 4.0, robotics, photonics and quantum technologies. The application scenarios address resource efficiency, energy transition, advanced production technology or the circular economy as well as the healthcare industry.

Duration: 16.07.2025 - 30.09.2028

Funding source: EFRE BW

Status: Ongoing

PP6/SIIT

Flagship name: CISUTAC

Description: CISUTAC aims to remove current bottlenecks in order to increase textile circularity in Europe. The objective is to minimise the sector's total environmental impact by developing sustainable, novel, and inclusive large-scale European value chains. CISUTAC covers a relevant part of the textile sector and shows how to close loops at product and at material level.

Duration: 01.09.2022 - 30.09.2026

Funding source: Horizon Europe

Status: Ongoing

PP7/COMET

Flagship name: RE-INCITE

Description: RE-INCITE tackles the challenge of establishing and implementing circular economy practices in the Alpine region. The project aims to create a new cross-sectorial and cross-border governance nucleus that might serve as a new role model connecting clusters and municipalities. It helps regional public authorities to implement (macro)-regional CE strategies.

Duration: 24 months (01.01.2025 - 31.12.2026)

Funding source: Interreg Alpine Space

Status: Ongoing
PP8/TECOS
Flagship name: ADDCIRCLES
Description: The main goal of the ADDCIRCLES project is to empower regional businesses and networks for additive manufacturing (AM). The project aims to promote the implementation of AM in a way that improves resource efficiency in production, while also encouraging recycling and the use of natural materials. This goal will be achieved through the establishment of cross-border value chain cooperation networks and two pilot projects that facilitate knowledge transfer at various stakeholder levels.
Duration: 01.11.2023 - 31.10.2026
Funding source: Interreg SI-AT
Status: Ongoing
PP9/PBN
Flagship name: INNOSKILLS-CE
Description: This project focuses on supporting the manufacturing sector in Central Europe through skills development, training strategies and pilot actions. It brings together organisations from Italy, Hungary and Poland to address labour-market needs, improve digital and innovation-related competencies, and test new training solutions for SMEs. PBN contributes by developing learning management systems, training modules and supporting pilot testing.
Duration: 01.02.2025 - 31.01.2027
Funding source: Interreg CE
Status: Ongoing
PP10/TUKE
Flagship name: REUSE2030
Description: The REUSE2030 project analyses current waste streams and circular practices in the mechanical sector. This leads to a new digital circular inventory, which empowers mechanical companies to autonomously choose sustainable practices. The inventory is complemented by a newly developed zero carbon toolkit. Both tools are tested in companies and inform a new strategy with circular solutions to reduce the mechanical sector's waste streams.
Duration: June 2024 - November 2026
Funding source: Interreg CE
Status: Ongoing
PP11/INTEMAC
Flagship name: CROSS-IN

Description: CROSS-IN applies a downstream capitalisation and policy-uptake approach, transferring results from five Interreg projects to strengthen innovation capacities in the automotive and mobility ecosystem.

In line with EU competitiveness recommendations, the project acts as a “twin-transition accelerator”, translating European R&D assets into SME practice. Its ecosystem approach connects SMEs, OEMs, clusters, research and creative industries into a learning community. CROSS-IN strengthens innovation capacities, improves transformation readiness and creates long-term linkages across Central Europe. SMEs benefit from accessible tools, creative training formats and a trusted expert network that remains active beyond the project’s lifetime. By embedding all results into the CROSS-IN Transformation Platform, the project ensures that knowledge and success stories remain openly available. Transnational cooperation is at the heart of CROSS-IN - enabling regions to benchmark automation maturity, share solutions and jointly bridge the innovation gap between industrial centres and border regions.

Duration: 24 months

Funding source: Interreg CE

Status: Pending approval

PP12/HGK

Flagship name: CE-PACT

Description: CE-PACT aims to raise awareness and build policymakers’ capacities to enhance circular economy policy frameworks and support measures across 6 CE regions. By adapting and uptaking solutions, action plans, and strategies from Interreg (3 CE & 2 CBC) projects, it drives a coordinated policy boost for circularity while reducing regional disparities. As a result, innovation actors (SMEs, RTOs, etc.) are empowered by policy to develop circular solutions and value chains, driving a greener, more resilient CE.

Duration: October 2026 - September 2028

Funding source: Interreg CE

Status: Pending approval

Long-term uptake of the service portfolios

After the project ends, PPs plan to adopt the following services from the Cross-sectoral service portfolio and offer them to their ecosystem as support to enable digitally driven circularity:

LP1/KPT: The topics and services developed by the Task Force will be integrated into hub4industry service portfolio; however, they will be adapted to align with the EDIH’s production focus. Thanks to the Smart Circuit projekt and pilots 2 specific services were included under portfolio. 1st service offering workshop to train SME employees to

implement Industry 4.0 solutions aligned with Circular Economy principles and ESG reporting requirements. The program focuses on identifying specific green innovation opportunities within the enterprise to enhance sustainability. Participants gain the practical skills needed to integrate advanced technologies with eco-friendly business strategies. 2nd service is a comprehensive audits and a strategic roadmap to transition from linear to circular business models. It focuses on redesigning core processes by integrating modern Industry 4.0 technologies to drive sustainable growth. The final output is a tailored transformation concept that aligns future operations with circular economy principles.

PP2/FB: Following the conclusion of the project, the services circular, consumption and behavioural change will be continued at FB. The same will apply to the repair, reuse and second life services.

PP3/PRO: The topics and services developed by the Task Force will be integrated into AI5innovation's service portfolio; however, they will be adapted to align with the EDIH's production focus.

PP4/IWU: IWU will transfer the knowledge and collected experiences of the cross-sectoral pilot back to the innovation cluster Circular Saxony to refine and expand the range of services they will use it in their daily consulting, training and inspiration work with their members from various industries.

PP5/mtSW: microTEC Südwest will provide trainings with a mix of knowledge transfer and best practice parts, e.g. as part of the microTEC SkillsLab project.

PP6/SIIT: SIIT foresees using the cross-sectoral pilot as the baseline for developing the official Sustainability Maturity Assessment of DIH Liguria, ensuring continuity and long-term impact.

PP7/COMET: COMET will keep providing also by leveraging on the competences of its partner and main shareholder Polo Tecnologico Alto Adriatico ESG audits aimed at assessing environmental, social and governance criteria, enhancing sustainability practices and regulatory compliance.

PP8/TECOS: TECOS will keep the cross-sectoral prototyping and circular product development service available to SMEs beyond the three main value chains, providing quick feasibility checks, prototype validation and actionable circular design recommendations (resource efficiency, durability, repairability, disassembly). The service will be embedded in DIH INDUSTRY as a practical **Test-Before-**

Invest environment and promoted via relevant national networks to support broader replication of the Factory approach.

PP9/PBN: PBN will transfer the cross-sectoral knowledge and circular innovation approaches developed within SMART CIRCUIT to the INNOSKILLS-CE project, integrating them into training modules and pilot learning activities for manufacturing SMEs. Through its digital innovation ecosystem and regional stakeholder network, PBN will further promote skills development and knowledge exchange supporting circular and digital transformation across multiple manufacturing sectors.

PP10/TUKE: TUKE will continue offering trainings and expert consultation services focusing on digital and circular assessments and innovation piloting and scaling up for industry, and will continue in preparation and implementation of innovation projects supporting the industry and society in digital and circular transition, especially in the domains digital and circular skills development and circular roadmapping; Networking, matchmaking and project initiations; Digital tools for monitoring, assessment and decision support.

PP11/INTEMAC: The topics and services developed by the Task Force are expected to be reflected in the EDIH DIGIMAT service portfolio, as they build on existing EDIH activities. Where relevant, they may be further adjusted to better correspond with the EDIH's production-oriented focus.

PP12/HGK: HGK VZ, linking companies, academia and the policy level, will continue to support the adoption of circular economy principles in the business sector and to provide cross-sectoral services aimed at helping companies improve their environmental performance.

6.5. Pillars Action 3: Extended Network

Objectives and scope

The objective of Pilot Action 3 is to establish and expand a transnational network of Digital Innovation Hubs that supports the uptake of digitally driven circular economy solutions in Central Europe. The scope includes strengthening cooperation between DIHs across nine Central European countries and extending this collaboration to additional European regions. This is achieved through the development and implementation of a common strategic framework, including a joint strategy, action plan, and a Memorandum of Understanding that ensures long-term commitment beyond the project duration.

The Memorandum of Understanding (MoU) is established as a strategic cooperation framework aimed at accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regional ecosystems through digital innovation. It targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners, creating a formal basis for continued collaboration beyond the duration of the SMART CIRCUIT project. MoU in Annex is signed among 28 DIHs by 31.03.2026

Its main objective is to strengthen cooperation and joint action in support of Europe's twin transitions – digital and green – by promoting the development, deployment, and scaling of digital solutions that enable more resource-efficient, resilient, and sustainable business models. In this context, the MoU reflects a shared commitment to supporting the adoption of circular economy principles, fostering innovation, and contributing to Europe's broader climate neutrality, sustainability, and competitiveness objectives.

The scope of the MoU extends across Central Europe and selected macro-regional territories, including the Danube, Alpine, Baltic Sea, and Adriatic-Ionian regions. It builds on the SMART CIRCUIT partnership, which brings together 12 experienced organisations acting as or closely cooperating with Digital Innovation Hubs across nine countries.

Through the involvement of additional DIHs, the MoU also supports the expansion of Circular Innovation and Development Corridors (CIDs), enabling wider dissemination of project results, stronger interregional cooperation, and the long-term continuation of jointly developed services and support mechanisms.

More specifically, the MoU aims to establish and expand strategic collaborations for the circular economy, ensure the capitalisation and exploitation of project results, support practical knowledge transfer, and provide a framework for implementing and periodically updating the joint Strategy and Action Plan. It also supports communication, visibility, and the use of learning-oriented monitoring mechanisms, such as peer exchange and feedback processes, to strengthen impact and ensure continuous improvement.

6.6. Network development approach and stakeholder engagement

The network is developed through a collaborative and co-creation approach involving project partners, associated partners, and Digital Innovation Hubs. Each partner works closely with at least one additional DIH to exchange knowledge and align activities across regions. The process is supported by Task Forces, which guide strategic planning and ensure alignment with project objectives and stakeholder needs. Engagement is further strengthened through continuous dialogue, joint activities, and the involvement of stakeholders from policy, research, and industry, ensuring that the network reflects real market and regional needs.

The development of the extended SMART CIRCUIT network is based on a collaborative and multi-stakeholder approach that reflects the project's transnational and ecosystem-based logic. At the centre of this approach are Digital Innovation Hubs, which act as connectors between industry, research, policy, and innovation support organisations. Through their intermediary role, they help translate strategic objectives into practical solutions and ensure that the needs of SMEs and regional stakeholders are reflected in the cooperation model.

The network is built on the active engagement of project partners, associated partners, external experts, and additional Digital Innovation Hubs from both Central Europe and other European macro-regional territories (for instance through the Transnational Mobility Missions). This broad partnership structure allows the project to combine regional experience with transnational learning and strengthens the capacity of the network to scale successful solutions across different contexts. Stakeholder engagement is not limited to formal participation, but includes ongoing dialogue, joint planning, co-creation processes, and shared implementation efforts.

An important feature of the network development approach is its focus on knowledge exchange and mutual learning. Through cooperation within CIDs, participating organisations are able to share best practices, compare approaches, and jointly identify opportunities for innovation and service development. This exchange is particularly relevant in the context of circular economy transformation, where many challenges and solutions are systemic in nature and require coordinated action across value chains and territories.

The engagement model also reflects the practical role of DIHs in supporting SMEs. By providing access to digital tools, expertise, testing facilities, training opportunities, and financial guidance, DIHs help companies reduce the risks associated with transformation and increase their readiness to adopt circular solutions. In this sense, the network not only supports strategic cooperation, but also provides an operational layer through which regional stakeholders can access concrete support services.

Overall, the network development approach strengthens transnational cooperation by connecting complementary ecosystems, facilitating stakeholder participation, and creating a structured environment for long-term collaboration. It also reinforces the role of DIHs as trusted intermediaries capable of supporting both local implementation and interregional scaling.

The Parties, being connected European digital organizations, recognize the importance of fostering collaboration and innovation in Circular Innovation & Development Corridors in the following areas of mutual interest:

- **Facilitating Multi-Stakeholder Engagement:** DIHs bring together diverse actors—businesses, research institutions, policy-makers, and local communities—within CIDs. This collaboration enables knowledge sharing and joint projects that help embed circular economy practices across different sectors and regions. By aligning local expertise with broader EU circular goals, DIHs create a cohesive network where digital tools enhance sustainable development.
- **Providing Access to Technology and Expertise:** DIHs enable small and medium-sized enterprises (SMEs) to access cutting-edge digital tools essential for circular economy practices. Technologies such as AI, big data, and IoT
- help optimize resource use, reduce waste, and track material flows within CIDs. DIHs provide SMEs and regional stakeholders with access to these technologies, along with guidance on how to implement them effectively.
- **Developing Digital Skills for Circular Economy:** DIHs play a crucial role in training stakeholders on digital skills relevant to the circular economy. They offer workshops, training programs, and resources that help workers and businesses within CIDs adopt digital solutions that support circularity, such as resource-tracking software, waste reduction analytics, and renewable energy integration.
- **Driving Regional Innovation and Competitiveness:** By acting as innovation hubs, DIHs promote regional competitiveness within CIDs by supporting companies that develop or adopt sustainable solutions. For instance, they may support innovation in recycling, sustainable manufacturing, and logistics, which are key to closing resource loops and achieving circularity across sectors such as construction, textiles, and electronics.
- **Facilitating Access to Funding and Partnerships:** DIHs help CIDs secure funding for circular economy projects by connecting regional stakeholders with EU funds, grants, and private investors. DIHs also encourage cross-border partnerships, enabling companies and research institutions to collaborate on large-scale, transnational projects that contribute to both digital and green transitions.

6.7. Lessons learned and added value for scaling

The development of the extended network highlights the importance of structured cooperation, clear roles, and continuous stakeholder engagement. A key lesson learned is that combining regional experience with transnational collaboration enhances the quality and relevance of developed solutions. The network creates added value by enabling knowledge transfer, sharing best practices, and supporting the scaling of circular solutions across regions. It also strengthens the capacity of DIHs to deliver coordinated services and contributes to long-term sustainability by building strong partnerships beyond the project.

6.8. Cooperation and capitalisation activities

The Parties agree to undertake a coordinated set of cooperation and capitalisation activities that strengthen the development of the CIDCs and contribute to shared priorities such as innovation, sustainable growth, and the circular economy. This cooperation shall rely on complementary sectoral and technological strengths, and shall be grounded in mutual commitments and clearly defined roles, as outlined below.

- **Joint Initiatives:** The Parties agree to collaborate on joint initiatives within the CIDCs, focusing on innovation, sustainable development, and circular economy principles.
- **Information Sharing:** The Parties will share relevant information, expertise, and resources to support the development and success of CIDCs.
- **Project Development:** Collaborative projects may include research, innovation programs, and development activities that align with the goals of CIDCs.
- **Access to digital technologies and infrastructure,** allowing for cross regional test before invest services, basing on sectoral and technological complementarities.
- **EU/local approach,** leveraging cross regional services and opportunities coming from the existing EU manufacturing regional networks our Regions belongs to, as well as Digital Innovation Hubs networks and EU projects network.
- **Expansion Plan:** The Parties commit to jointly developing an expansion plan for CIDCs, identifying potential regions, industries, and strategies for growth.

7. Memorandum of Understanding (MoU) to anchor SMART CIRCUIT DIH Network

MoU Objectives

Digital Innovation Hubs(DIHs) and European Digital Innovation Hubs (EDIHs) play a key role by providing SMEs with technology testing, expertise, and financial advice, enabling green and digital transformation, that is why SMART CIRCUIT aims to expand DIH networks into additional European regions (Danube, Alpine, Baltic Sea, Adriatic & Ionian),

forming Circular Innovation and Development Corridors (CIDs) to share best practices and strengthen circular manufacturing.

A joint Memorandum of Understanding aims to support the integration of green and digital transitions, connecting less developed areas with advanced ones. CIDs will reduce emissions, improve logistics, and promote sustainable transit, especially in freight and heavy industries. Supported by EU initiatives like the European Green Deal, these efforts drive investments in green infrastructure and renewable energy to achieve climate neutrality.

The implementation of the Memorandum of Understanding (MoU) is organised as a structured cooperation mechanism that supports the long-term continuation of the SMART CIRCUIT network and its Circular Innovation and Development Corridors. The MoU formalises collaboration between the participating Digital Innovation Hubs and their partners, providing a shared framework for coordinated action, knowledge exchange, and service development. 28 connected DIHs sign a Memorandum of Understanding (MoU) to establish collaboration in the Circular Innovation & Development Corridors (CIDs), the DIHs come from CE & EU (4 Macro-Regional Territories).

Cooperation under the MoU is organised around a set of common commitments agreed by the signatories. These include the joint development of circular economy initiatives, the exchange of relevant information and expertise, the capitalisation of project results, and the implementation of practical mechanisms for knowledge transfer. The parties also commit to maintaining communication and visibility activities, supporting policy and strategic alignment, and contributing to learning-oriented monitoring processes that help assess progress and improve performance over time.

In practical terms, the cooperation mechanism relies on a combination of strategic and operational elements. Strategically, the MoU is linked to the joint Strategy and Action Plan, which define common objectives, thematic priorities, and implementation directions. Operationally, the cooperation is supported through joint initiatives, project development activities, access to shared digital technologies and infrastructures, and the possibility of delivering cross-regional test-before-invest and innovation support services. This allows the MoU to function not only as a declaration of intent, but as an instrument that supports concrete follow-up actions.

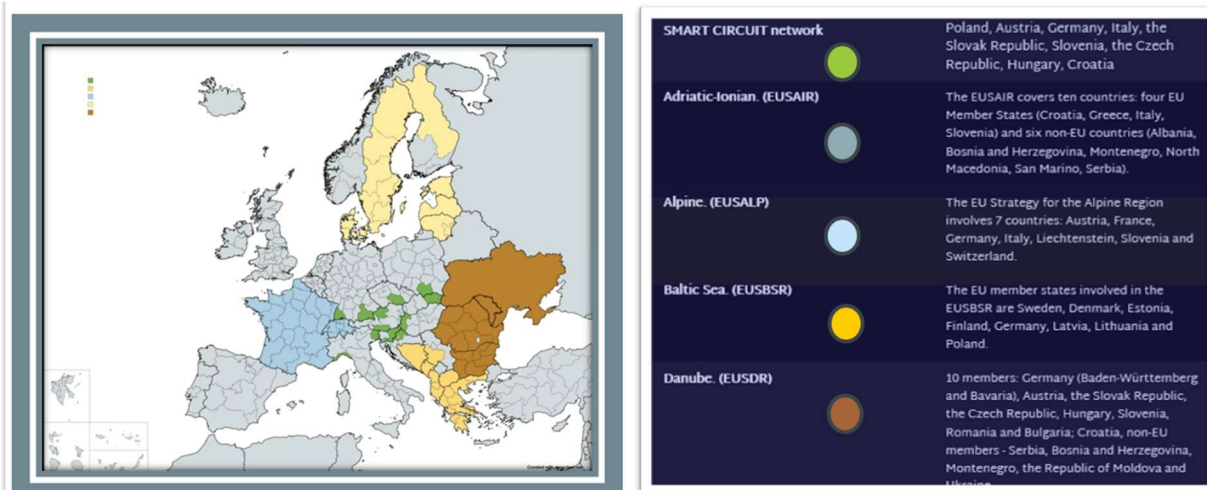
The organisation of cooperation also reflects the complementary strengths of the participating partners. Each organisation contributes expertise, services, and networks relevant to its regional and sectoral context, while benefitting from the wider transnational framework. This creates a cooperation model based on mutual benefit, shared ownership, and distributed responsibility.

A key implementation element is the expansion plan for CIDs, which aims to identify new regions, industries, and cooperation opportunities that can be integrated into the network over time. This gives the MoU a dynamic character, enabling the network to evolve in response to changing policy priorities, technological developments, and stakeholder needs.

In this way, the MoU serves as a practical governance and implementation mechanism for sustaining and scaling the SMART CIRCUIT cooperation model. It ensures continuity beyond the project duration, supports stronger interregional linkages, and creates

a stable foundation for further joint activities contributing to circular and digital transformation in Central Europe and beyond.

CIDCs network represents a **unique model of cross-border cooperation in the field of digital innovation, combining regional competencies, sectoral specializations**, and a shared vision of sustainable technological development in the heart of Europe.



NETWORK OVERVIEW: ORGANISATIONS, COUNTRIES & NUTS REGIONS

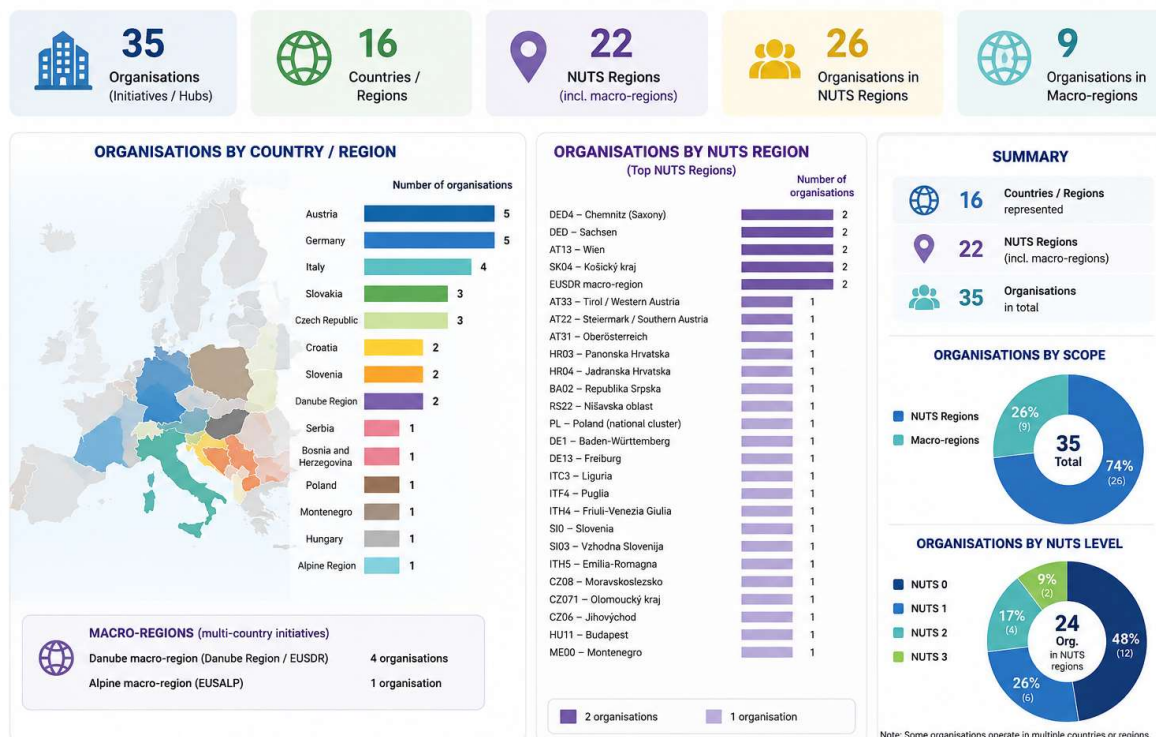
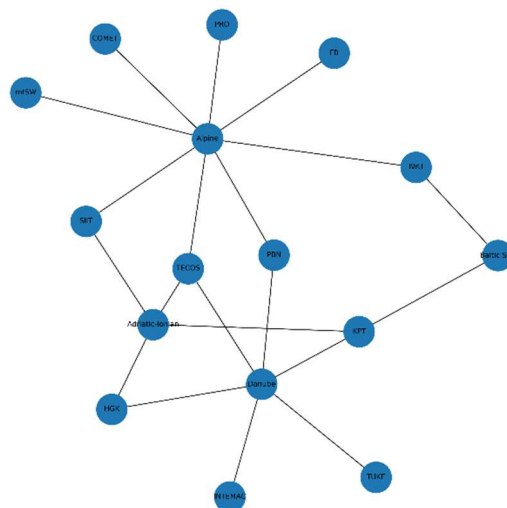


Table presenting a MoU outreach by countries and NUTS

The table presents the structure of cooperation between project partners and Digital Innovation Hubs (DIHs/EDIHs) within the SMART CIRCUIT project. It shows how each

partner is connected to both regional and external innovation ecosystems, as well as how these connections are positioned within European macro-regional frameworks.

Each partner is linked to a specific region and country, and cooperates with at least one regional DIH or EDIH. In addition, partners establish connections with external DIHs located in other countries, which supports transnational collaboration and knowledge exchange. The table highlights that the project operates across multiple European macro-regional strategies, including the Danube Region, Alpine Region, Adriatic-Ionian Region, and Baltic Sea Region. This demonstrates the wide geographical coverage and the strategic positioning of the project within key European cooperation areas. A key pattern visible in the table is that partners often act as connectors between regions. For example, some partners are linked to multiple macro-regions through their external DIHs, which strengthens cross-regional cooperation and enables the transfer of knowledge and solutions between different innovation ecosystems. The involvement of both regional and external DIHs reflects the project's approach to building Circular Innovation Development Corridors. These corridors are based on strong partnerships between innovation actors and support the development and scaling of digitally driven circular solutions across value chains and territories. Overall, the table illustrates a multi-level cooperation model that combines regional anchoring with transnational outreach. This structure enhances the capacity of the network to support circular economy transformation, ensures alignment with European strategies, and facilitates long-term collaboration beyond the project duration.



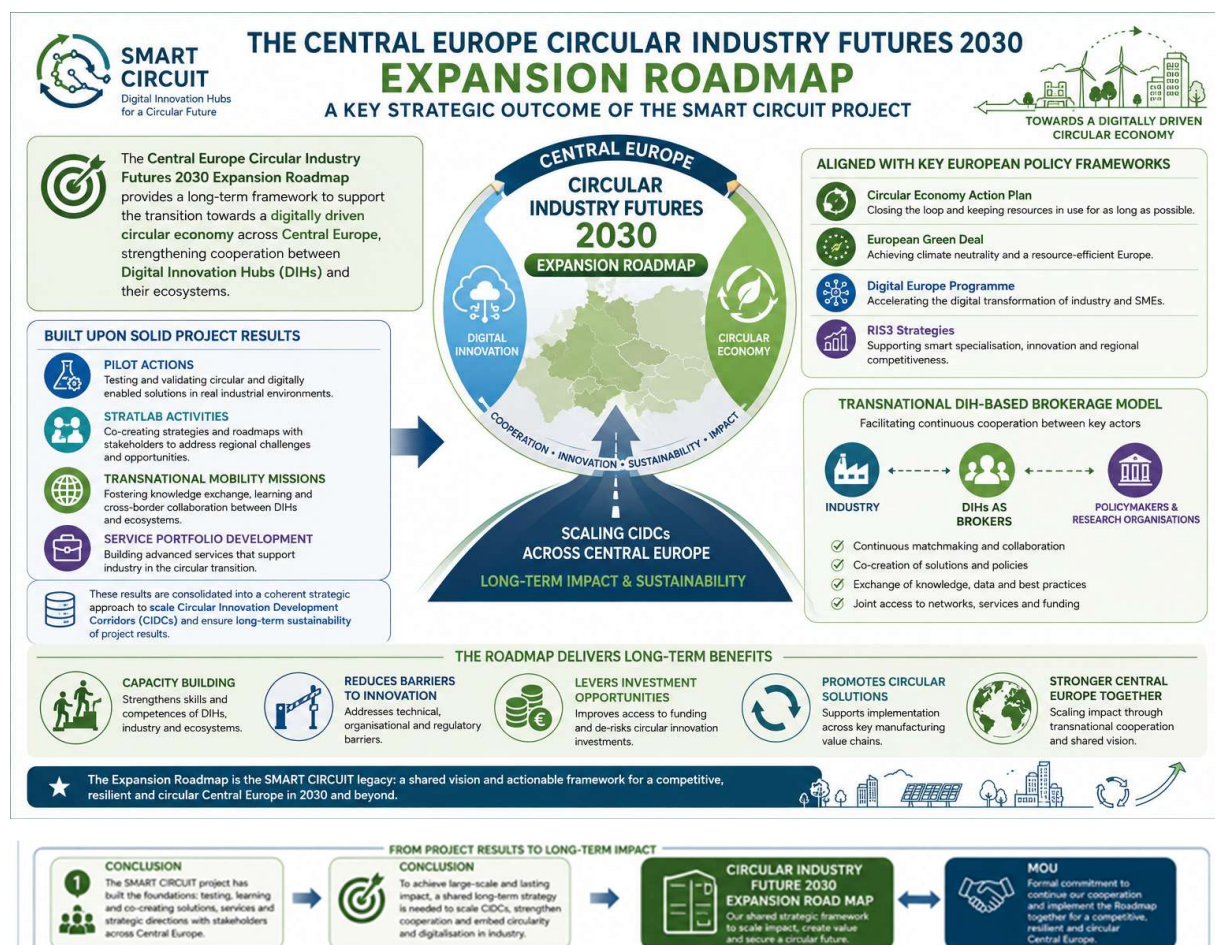
8. Expansion Roadmap 2030

8.1. Vision and strategic positioning

The Central Europe Circular Industry Futures 2030 Expansion Roadmap represents a key strategic outcome of the SMART CIRCUIT project. It provides a long-term framework to support the transition towards a digitally driven circular economy across Central Europe, strengthening cooperation between Digital Innovation Hubs (DIHs) and their ecosystems.

The Roadmap consolidates evidence from pilot actions, STRATLABs, transnational mobility missions and service development into a joint strategy and action plan for expanding the Circular Innovation Development Corridors. These project results serve as implementation evidence and practical tools within the broader framework established by the Roadmap and MoU.

The strategy is aligned with key European policy frameworks, including the Circular Economy Action Plan, the European Green Deal, the Digital Europe Programme, and RIS3 strategies. It establishes a transnational DIH-based brokerage model that facilitates continuous cooperation between industry, policymakers, and research organisations. Through this approach, the roadmap supports capacity building, reduces barriers to innovation, leverages investment opportunities, and promotes the implementation of circular solutions across key manufacturing value chains.



Visualisation of expansion roadmap (chat generated)

8.2 Strategic Framework of the Roadmap

The roadmap defines a structured strategic framework to guide the development and scaling of circular economy solutions in Central Europe. It provides a comprehensive foundation that integrates policy alignment, stakeholder engagement, and implementation mechanisms.

The strategy outlines the broader context of European and regional policies, identifying how existing frameworks support the transition towards circularity. It defines target groups, including SMEs, DIHs, policymakers, research organisations, and innovation intermediaries, ensuring that the roadmap responds to the needs of all relevant stakeholders.

A key element of the framework is the identification of challenges and gaps that hinder the adoption of digitally driven circular solutions, such as limited access to finance, lack of skills, and fragmented cooperation structures. Based on this analysis, the roadmap defines clear objectives supported by measurable targets, enabling monitoring of progress over time.

The framework also establishes governance processes and cooperation structures, ensuring effective coordination between partners and stakeholders at transnational, national, and regional levels. A clear implementation timeline provides guidance for short-, medium-, and long-term actions leading up to 2030.

8.3 Task Force-Based Strategy Structure

The strategy is structured around four Task Forces representing key industrial value chains: Construction, Textiles, ICT/Electronics, and cross-sectoral services. This structure reflects the project's approach to addressing sector-specific challenges while ensuring coherence at the system level.

The cross-sectoral Task Force defines a common operational framework for all participating DIHs, establishing shared principles for cooperation, service delivery, and stakeholder engagement. This horizontal layer ensures alignment across all activities and enables the development of integrated solutions.

Each sectoral Task Force develops a tailored strategy through co-creation processes involving project partners, DIHs, and external stakeholders. These processes allow for the identification of sector-specific needs, barriers, and opportunities, ensuring that the strategy reflects real industrial conditions and supports practical implementation.

This Task Force-based structure enables both specialisation and integration, facilitating knowledge exchange between sectors while supporting targeted interventions within each value chain.

8.4 Action Plan

Implementation of the Roadmap is supported by the four Flagship Solution Models developed within WP3 (D3.4.2). They form part of the Roadmap's operational toolbox and demonstrate how its strategic objectives can be applied within specific value chains.

The models draw on pilot-tested services from the Textiles, Construction, ICT/Electronics and Cross-sectoral Task Forces. They provide practical examples of test-before-invest, training, matchmaking and advisory support, while the Roadmap and MoU remain the overarching framework for network expansion, governance and coordinated action.

The Action Plan therefore builds on these Flagship Models by defining the next steps required for their scaling, replication, and integration into regional and transnational ecosystems.

The strategic framework is operationalised through a comprehensive action plan that translates high-level objectives into concrete and implementable actions. The action plan serves as a practical tool for partners and stakeholders, guiding the implementation of the roadmap and ensuring measurable progress.

It defines clear roles and responsibilities among stakeholders, including project partners, Associated Partners, DIHs, policymakers, research organisations, and industry representatives. This clarity ensures effective coordination and accountability across all levels of implementation.

The action plan includes a set of tangible actions to be implemented within a defined timeline, supporting the deployment of circular solutions and the strengthening of cooperation mechanisms. It also incorporates risk mitigation measures to address potential barriers and ensure successful implementation.

The action plan uses the four Flagship Solution Models developed in WP3 (D3.4.2) as implementation examples. Each model demonstrates a practical form of transnational cooperation and supports replication of circular services across value chains and regions within the expanded CIDC/DIH network.

In addition to joint actions, the plan also captures individual initiatives developed by partners within their respective ecosystems, ensuring that both collective and local efforts contribute to the overall strategic objectives.

Action Categories and Implementation Levels

To ensure clarity and scalability, actions within the roadmap are categorised according to their nature and scope. This categorisation supports better coordination, monitoring, and replication of activities.

Actions are distinguished between one-off and ongoing initiatives, allowing differentiation between short-term interventions, such as events or workshops, and long-term collaborations, such as joint projects or service development. Furthermore, actions are classified according to the type of engagement, including educational activities, technical and market-oriented actions, and strategic or policy-related initiatives.

The roadmap also defines key milestones aligned with the development cycle towards 2030, enabling structured monitoring of progress and impact.

Implementation takes place at multiple levels, reflecting the multi-layered nature of the project. Transnational actions support cross-border cooperation and knowledge exchange, national actions ensure alignment with country-specific priorities, and regional or local actions enable direct engagement with stakeholders and implementation within specific ecosystems.

8.5 Vision for future cooperation by 2030 and beyond - EDIHs & DIHs for circular & digital Europe

The Roadmap applies a phased approach up to 2031. The first phase consolidates project results and activates the cooperation and governance arrangements established by the MoU. The next phase expands the CIDC/DIH network and implements the action plan through joint initiatives and supporting tools, including validated services, service portfolios and Flagship Solution Models. The final phase embeds cooperation mechanisms and circular solutions within regional and transnational innovation ecosystems.

Project partners in order to secure longevity of SMART CIRCUIT results defined the Future Cooperation Model for maintaining EDIHs & DIHs network named Circular Innovation & Development Corridors (CIDCs). For the organisation of 1st project meeting in autumn 2026 is responsible KPT (Lead Partner).

The recently introduced Open Letter on the Future of the EU Budget (2028-2034) by key European innovation, regional development, and Smart Specialisation organisations presents a new perspective on the future of European competitiveness, cohesion, and innovation governance.

The document highlights growing concerns regarding the potential weakening of place-based innovation policies within the future Multiannual Financial Framework (MFF) architecture and calls for stronger recognition of territorial innovation ecosystems as key drivers of Europe's resilience and strategic autonomy.

The Open Letter introduces new perspectives related to:

- Strengthening Smart Specialisation Strategies (S3) as a core European innovation policy instrument supporting regional transformation, industrial transition, and interregional cooperation;
- Protecting place-based innovation approaches against increasing centralisation of investment and governance mechanisms under the proposed National and Regional Partnership Plans (NRPPs);
- Reinforcing multi-level governance, ensuring meaningful participation of regions, local ecosystems, and territorial actors in the design, implementation, and monitoring of innovation investments;
- Supporting interregional cooperation and European value chains through instruments such as the Interregional Innovation Investments (I3) mechanism and Regional Innovation Valleys;
- Recognising regional ecosystems as strategic assets for Europe's competitiveness, industrial resilience, digital transformation, and green transition;
- Strengthening the role of quadruple helix collaboration, including research organisations, industry, public authorities, and civil society in innovation governance and entrepreneurial discovery processes;
- Ensuring better alignment between European, national, and regional innovation priorities, enabling territories to contribute directly to EU strategic objectives;
- Promoting stronger SME participation in innovation ecosystems and supporting the market uptake of innovations through cross-border cooperation and ecosystem integration;
- Maintaining cohesion as a competitiveness driver, ensuring that no region is left behind in Europe's digital and green transitions.

Key organisations and networks supporting these perspectives include:

- EURADA (European Association of Development Agencies)
- Friends of Cohesion Policy coalition
- Regional innovation agencies and Smart Specialisation stakeholders
- European regional and local authorities
- Innovation ecosystem organisations involved in S3, I3, and Horizon Europe initiatives

The Open Letter positions Smart Specialisation and territorial innovation ecosystems not only as cohesion policy tools, but as essential instruments for delivering Europe's future industrial competitiveness, strategic autonomy, and innovation leadership.



Organisations signing the Open letter on the Future of the EU Budget (2028-2034)

Stronger Together - Impacting the Future

The future cooperation model establishes a long-term collaboration framework between European Digital Innovation Hubs (EDIHs) and Digital Innovation Hubs (DIHs) to accelerate the transition towards a digitally driven circular economy across Central Europe.

The model is based on a jointly signed Memorandum of Understanding (MoU) that formalises cooperation, defines shared objectives, and creates a sustainable governance structure for future collaboration.

Future collaboration between EDIHs and DIHs will be based on the integration of complementary strengths, specialised services, and access to wider European innovation networks. By aligning strategies, roadmaps, and investment priorities, partners will provide stronger support for industry, SMEs, and public authorities, while generating greater impact across Central Europe and beyond. The cooperation model will be enabled by trust, transparency, and open innovation. Partners will actively share knowledge, pool resources, and work together to create joint impact across regional and transnational ecosystems.

Through this collaboration, EDIHs and DIHs will scale Circular Innovation Development Corridors (CIDCs), deliver integrated digital and circular solutions, and leverage funding and

investment opportunities. The partnership will also support policy dialogue, influence systemic change, and ensure the long-term sustainability and replication of project results.

RACI matrix: roles and responsibilities

The implementation of the roadmap relies on a clearly defined distribution of roles and responsibilities among project partners and stakeholders. Krakow Technology Park (KPT), as lead partner, oversees the coordination of the roadmap and ensures its alignment with project objectives and European policy frameworks.

Task Force Leaders are responsible for guiding the implementation of sector-specific strategies and action plans, while all project partners contribute to service delivery, stakeholder engagement, and knowledge exchange. Digital Innovation Hubs play a central role in operational implementation, acting as facilitators and brokers between industry, research, and policy actors.

General RACI Structure for Future Cooperation

Task / Responsibility Area	Lead Partner	WP1 Leader	WP2 Leader	WP3 Leader	Task Force Leaders	Communication / Dissemination
Strategic coordination and governance	A	C	C	C	I	I
Implementation of roadmap activities	A	R	R	R	C	I
Coordination of Circular Innovation Development Corridors (CIDCs)	C	R	R	C	R	I
Stakeholder engagement and quadruple helix cooperation	C	C	R	R	R	C
SME support and service deployment	I	R	R	C	R	I
RIS3 and policy alignment	A	C	R	C	C	I
Cross-border cooperation and networking	A	R	C	R	C	C
Monitoring, KPI evaluation, and reporting	A	R	C	C	I	I
Communication, dissemination, and visibility	I	I	I	C	C	A/R
Sustainability and long-term cooperation mechanisms	A	C	R	R	C	C

RACI matrix

RACI Legend

- R - Responsible: Executes and implements activities

- A - Accountable: Overall ownership and final decision-making responsibility
- C - Consulted: Provides expertise and contributes to implementation
- I - Informed: Kept updated on progress and outcomes

The Memorandum of Understanding further formalises these roles and ensures continued cooperation beyond the project duration.

The Memorandum of Understanding establishes a formal commitment between EDIHs and DIHs to continue cooperation beyond the SMART CIRCUIT project and jointly implement the Circular Industry Futures 2030 Expansion Roadmap.

The MoU:

- Establishes a long-term partnership and governance framework
- Defines shared objectives, roles, and ways of working
- Commits partners to joint actions, resource sharing, and mutual support
- Enables continuous cross-border collaboration and ecosystem integration
- Drives long-term impact for industry, society, and the environment

8.6. KPIs and Monitoring

To ensure effective implementation and measurable impact, the roadmap includes a set of key performance indicators (KPIs). These indicators support monitoring of progress and evaluation of results over time, setting objectives to be achieved by 2030.

Key indicators include the number of DIHs involved in the network, the number of SMEs supported, the number of implemented services and joint initiatives, and the level of cross-border cooperation. Additional indicators focus on the adoption of circular solutions and the integration of digital technologies within industrial processes.

Monitoring mechanisms are supported by continuous feedback loops involving stakeholders, enabling adaptive management and continuous improvement of the strategy and action plan.

The KPI framework translates strategic objectives into measurable indicators, ensuring effective monitoring and evaluation of the roadmap implementation. It enables tracking of progress across key areas, including cooperation, service deployment, SME support, and policy alignment. The framework also supports adaptive management through regular reporting and stakeholder feedback. As the coordinator and caretaker of the roadmap implementation process, KPT will support the effective delivery, monitoring, and long-term sustainability of the Circular Industries Future 2030 Expansion Roadmap. KPT will help ensure that the roadmap remains results-oriented, measurable, and aligned with the strategic objectives to be achieved by 2030.

To ensure effective implementation and measurable impact, the roadmap includes a set of Key Performance Indicators (KPIs). These indicators will support the monitoring of progress and the evaluation of results over time, setting clear objectives to be achieved by 2030.

Strategic objective	Action area	Key actions	KPI / indicator	Target by 2030	Responsible actors
Strengthen DIH cooperation	Network development	Maintain the existing network and expand it through MoUs and new partnerships	Number of DIHs actively participating in the network	At least 28 active DIHs	KPT, project partners, DIHs
Scale circular solutions	Service deployment	Implement, replicate and scale circular service portfolios and flagship solutions	Number of circular services implemented or replicated by DIHs	At least 12 services	Task Forces, DIHs
Increase SME uptake	SME support	Deliver training, advisory, assessment and pilot services to SMEs	Number of SMEs receiving support through roadmap-related activities	At least 200 SMEs	DIHs, project partners
Enhance transnational collaboration	Circular Innovation Development Corridors	Establish and expand cooperation between DIHs, SMEs and other innovation actors across borders	Number of documented cross-border collaborations or joint initiatives	At least 20 collaborations	Project partners, DIHs
Align activities with EU, national and regional strategies	Policy integration	Integrate roadmap priorities and circular solutions into RIS3 and relevant national or regional strategies	Number of countries in which roadmap priorities are reflected in relevant policy or strategic initiatives	At least 9 countries	Policy actors, project partners
Build organisational and technical capacity	Skills development	Organise training, workshops, peer-learning and knowledge-transfer activities	Number of capacity-building activities delivered	At least 30 activities	Circular Industries Academy, DIHs
Improve access to finance	Investment support	Facilitate access to EU programmes, national funding and private investment mechanisms	Number of roadmap-related initiatives that secure external funding	At least 10 funded initiatives	DIHs, investors, funding bodies
Ensure long-term sustainability	Governance and cooperation	Maintain the MoU-based cooperation framework and implement the agreed governance model	Share of participating DIHs actively contributing to at least one network activity annually	At least 80% of participating DIHs annually	KPT, DIHs
Promote digital and circular innovation	Technology uptake	Support SMEs in adopting circular solutions enabled by AI, digital twins, data platforms and other digital technologies	Number of circular or digitally enabled solutions adopted or piloted by supported SMEs	At least 50 solutions	SMEs, DIHs
Monitor implementation and impact	Evaluation and feedback	Operate a monitoring system, collect stakeholder feedback and periodically review the action plan	Number of consolidated monitoring reports and review meetings	One monitoring report and at least one review meeting per year	KPT, Task Force Leaders

9. Trends and innovation

The future development of circular industries in Central Europe will be influenced by a set of interrelated technological, market, and policy trends that are expected to shape industrial transformation in the coming years. Among the most significant of these is the increasing deployment of digital twins and artificial intelligence, which support process optimisation, predictive analysis, and more efficient use of resources across manufacturing systems. These technologies enable companies to improve operational performance while simultaneously reducing material losses, energy consumption, and waste generation.

In parallel, circular product design and eco-design are becoming increasingly important in response to evolving market expectations and regulatory developments at European level. The transition towards more durable, repairable, reusable, and recyclable products is expected to create new opportunities for innovation, particularly in sectors with high resource intensity. This trend is further reinforced by the gradual introduction of digital product passports, which improve traceability, transparency, and data availability across value chains, thereby supporting more informed decisions regarding product lifecycle management.

Another important trend concerns the growing role of data-driven resource management, which allows enterprises to monitor inputs, outputs, and material flows more effectively. This contributes not only to improved environmental performance but also to greater economic efficiency and resilience. At the same time, platform-based collaboration models are becoming more relevant, as they facilitate cooperation between industry, research organisations, public authorities, and intermediary actors such as Digital Innovation Hubs. Altogether, these trends create favourable conditions for innovation, competitiveness, and the broader deployment of digitally enabled circular solutions across sectors and territories.

10. Risks and mitigation

The implementation of the roadmap may be affected by a number of risks and barriers that need to be carefully considered and addressed in order to ensure its effectiveness and long-term sustainability. One of the most relevant risks is regulatory uncertainty, as evolving European and national policy frameworks may influence both the pace and direction of implementation. In addition, many SMEs continue to face limited organisational and financial capacity, which may constrain their ability to engage in digital and circular transformation processes. This challenge is particularly visible in regions where innovation support structures are less developed or where enterprises have limited prior experience with circular solutions.

A further barrier concerns insufficient access to financial resources, which may reduce the capacity of stakeholders to invest in innovation, testing, and scaling activities. Low levels of stakeholder engagement may also weaken the effectiveness of cooperation

mechanisms and limit the sustainability of the transnational network established through the project. Without continued participation and ownership from relevant actors, the implementation of the strategy may remain fragmented or inconsistent across territories.

To mitigate these risks, the roadmap is designed in strong alignment with existing European and regional policy frameworks, including RIS3 and the Circular Economy Action Plan, in order to ensure strategic coherence and policy relevance. The support services provided by Digital Innovation Hubs constitute an important mitigation mechanism, as they help enterprises and other stakeholders access expertise, guidance, and practical support. Financial advisory services and tailored support instruments are also essential to address investment barriers and improve implementation capacity. Finally, continuous stakeholder engagement, including structured dialogue, knowledge exchange, and joint planning processes, remains a critical condition for ensuring ownership, adaptability, and long-term impact.

Objective to achieve	Associated risk	Likelihood and impact	Mitigation measure to hinder it
Ensure effective implementation of the roadmap	Regulatory uncertainty due to evolving EU and national policy frameworks	Likelihood: Medium / Impact: High	Align the roadmap with EU and regional frameworks, including RIS3, the Circular Economy Action Plan, the European Green Deal, and relevant national strategies.
Support SMEs in digital and circular transformation	Limited organisational and financial capacity of SMEs	Likelihood: High / Impact: High	Provide tailored DIH support services, mentoring, technical guidance, and capacity-building activities.
Strengthen innovation support across regions	Uneven development of innovation support structures and limited SME experience with circular solutions	Likelihood: Medium / Impact: Medium-High	Use DIHs and EDIHs as regional support intermediaries to provide access to expertise, tools, testing environments, and good practices.
Enable investment in innovation, testing, and scaling	Insufficient access to financial resources	Likelihood: High / Impact: High	Provide financial advisory services, support access to EU and regional funding, and connect stakeholders with investors and funding bodies.
Maintain strong transnational cooperation	Low level of stakeholder engagement and ownership	Likelihood: Medium / Impact: High	Organise continuous stakeholder engagement, structured dialogue, knowledge exchange, and joint planning processes.
Ensure long-term sustainability of project results	Fragmented or inconsistent implementation across territories	Likelihood: Medium / Impact: High	Establish a shared governance model, clear responsibilities, monitoring mechanisms, and follow-up cooperation through the MoU.
Scale Circular Innovation Development Corridors (CIDs)	Limited coordination between industry, DIHs, policymakers, and research organisations	Likelihood: Medium / Impact: High	Use a DIH-based brokerage model to facilitate matchmaking, cooperation, joint services, and cross-border collaboration.
Promote long-term impact and adaptability	Changing market, policy, or technological conditions may reduce roadmap relevance	Likelihood: Medium / Impact: Medium	Review and update the roadmap regularly through stakeholder feedback, monitoring results, and alignment with emerging policy and market needs.

11. Final recommendations and key takeaways

Links between the SMART CIRCUIT Roadmap and the Open Letter on the Future of the EU Budget (2028-2034) published 16th March 2026

The SMART CIRCUIT Circular Industries Future 2030 Expansion Roadmap is strongly aligned with the principles and policy recommendations presented in the Open Letter on the Future of the EU Budget (2028-2034): Ensuring Europe's Innovation and Competitiveness Leadership. Both documents emphasise the importance of preserving and strengthening Europe's place-based innovation model through Smart Specialisation Strategies (S3), interregional cooperation, and multi-level governance.

The roadmap directly supports the vision outlined in the Open Letter by reinforcing the role of Digital Innovation Hubs (DIHs) and European Digital Innovation Hubs (EDIHs) as regional innovation intermediaries capable of translating European strategic priorities into practical actions at territorial level. Through the development of Circular Innovation Development Corridors (CIDs), the roadmap promotes structured interregional cooperation, industrial transition, and cross-border innovation ecosystems fully consistent with the objectives of S3 and the Interregional Innovation Investments (I3) approach.

The SMART CIRCUIT strategy also reflects the Open Letter's concern regarding the potential weakening of territorial innovation instruments under the future MFF architecture. The roadmap demonstrates how regional ecosystems, local stakeholders, SMEs, research organisations, and policymakers can jointly contribute to Europe's competitiveness, resilience, and strategic autonomy through coordinated place-based innovation approaches. In this context, the roadmap reinforces the importance of maintaining Smart Specialisation as a core implementation mechanism connecting regional strengths with European industrial and innovation priorities.

Moreover, the roadmap operationalises many of the principles highlighted in the Open Letter:

- strengthening quadruple helix cooperation,
- supporting entrepreneurial discovery and stakeholder engagement,
- facilitating interregional value chains,
- enabling SME participation in digital and circular transformation,
- and promoting bottom-up innovation cooperation across territories.

The governance model proposed within SMART CIRCUIT, including the transnational DIH brokerage structure and Memorandum of Understanding (MoU), contributes to the protection of multi-level governance principles by ensuring active regional participation, shared ownership, and long-term cooperation mechanisms.

Finally, the KPI framework and monitoring system embedded in the roadmap support evidence-based policy implementation and adaptive management, further aligning with the Open Letter's call for stronger coordination, measurable impact, and strategic coherence between European, national, and regional innovation investments.

Overall, the SMART CIRCUIT roadmap can be considered a practical demonstration of how Smart Specialisation, interregional cooperation, and territorial innovation ecosystems contribute directly to Europe's long-term competitiveness, cohesion, industrial resilience, and twin digital and green transitions.

In the short term, priority should be given to consolidating cooperation within the SMART CIRCUIT network and ensuring the effective implementation of the action plans developed under the roadmap. Particular attention should be paid to the activation of the Memorandum of Understanding, as this represents the main formal mechanism for securing continuity of cooperation beyond the project duration. These early steps are essential to maintain momentum, ensure clarity of roles, and support the first stage of operational follow-up.

Medium- and long-term implementation centres on expanding the Circular Innovation Development Corridors and embedding the Roadmap's cooperation mechanisms within wider regional and transnational innovation ecosystems. Tested solutions and service portfolios support this process as implementation tools. Integration with regional Smart Specialisation Strategies strengthens policy anchoring, while engagement of additional regions and DIHs increases the network's territorial reach and added value.

At the same time, attention should be given to ensuring the financial sustainability of future activities. This includes continued participation in European funding schemes, development of new joint initiatives, and integration of services into the long-term operational portfolios of the participating Digital Innovation Hubs. In this way, the roadmap can serve not only as a strategic reference document, but also as a practical foundation for continued cooperation, innovation uptake, and circular industrial transformation in Central Europe up to 2030 and beyond.

The long-term sustainability of the Roadmap is secured primarily through the MoU-based CIDC/DIH cooperation framework, annual coordination and alignment with Digital Europe, Horizon Europe, Interreg and other relevant funding instruments. The Flagship Solution Models and DIH service portfolios support implementation by keeping tested project solutions available for replication and uptake.

KEY TAKEAWAYS FOR IMPLEMENTATION

The policy-to-RIS3 translation map demonstrates that successful circular transition depends on three core factors:

- (1) clear identification of regionally relevant priority domains aligned with EU policies,
- (2) selection of appropriate instruments depending on innovation maturity,
- (3) strong coordination between policy, industry, and innovation ecosystems.

For SMART CIRCUIT, this translation is guided by the Circular Industries Future 2030 Expansion Roadmap and implemented through the expanded, MoU-based CIDC/DIH network. DIH-led service portfolios, pilot results and Flagship Solution Models serve as practical tools for applying the Roadmap's priorities at regional level. Project partners support these interconnected ecosystems at European, national and regional levels through continued coordination and cooperation.

Annex1. Signed Memorandum of Understanding

List:

The full signed Memorandum of Understanding (all pages) presented in Annex 1 include the cover page, the page identifying the parties signing the MoU, and the final page with signatures. The complete individual MoUs are uploaded to JEMS as a ZIP file.

PP	DIH/EDIH name	Macro region
KPT	Science Technology Park Niš	EUSDR (Dnube Region)
	B2GreenHub	EUSDR (Slovenia)
	DIH Agrifood	EUSAIR (Croatia)
	Digital Innovation Hub ONEX	EUSBSR (Bosnia and Herzegovina)
	Sustainable Infrastructure Cluster	EUSAIR (Poland)
FB	DIH-SUD	EUSALP (Austria)
	Virtual Vehicle Research (EDIH Applied CPS)	EUSALP (Austria)
PRO	Crowd in Motion	EUSALP (Austria)
IWU	smart3	EUSALP (Saxony, Germany)
	Circual MTC	EUSALP (Saxony, Germany)
mtSW	EDIH Südwest/Hahn-Schickard	EUSALP (Baden-Wutemberg, Germany)
	DIGIHUB Südbaden 2.0/bwcon	EUSALP (Baden-Wutemberg, Germany)
SIIT	DIH Liguria	EUSALP (Liguria, Italy)
	EDIH CETMA DIH	EUSAIR (Puglia, Italy)
COMET	EDIH IP4FVG	EUSALP (Friuli Venezia Giulia, Italy)
	EDIH NEURAL	EUSALP (Veneto, Italy)
TECOS	DIH SLOVENIA	EUSALP (Slovenia)
	SRC-EDIH Evropsko Digitalno Inovacijsko središče (EDIH)	EUSALP (Slovenia)
PBN	AI5production	EUSALP (Austria)
	RE:LAB CNA INNOVAZIONE	EUSALP (Italy)
TUKE	DIH-HIVE	EUSDR (Czech Republic)
	Innovation Centre of the Olomouc Region	EUSALP (Czech Republic)
	AI EDIH Hungary	EUSDR (Hungary)
	Expandi 4.0	EUSDR (Slovakia)
INTEMAC	EDIH CyberSecurity Hub	EUSDR (Czech Republic)
	EDIH-DIGIMAT	EUSDR (Czech Republic)
HGK	DIH AgriFood Croatia	EUSAIR (Croatia)
	Science Technology Park Montenegro-MontEDIH	EUSAIR (Montenegro)

1. KPT - Science Technology Park Niš



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum) serves to establish the cooperation between the signatories of this agreement:

Krakow Technology Park as coordinator of the Smart Circuit project consortium,

and

Science and Technology Park Nis, Aleksandra Medvedeva 2A, Nis, Serbia, as coordinator of the Serbian European Digital Innovation Hub on AI (S4AI HUB) project consortium,

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions — digital and green — the signatories commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green, and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd.
2. Research Burgenland GmbH
3. PROFACTOR GmbH
4. Fraunhofer IPA
5. microTEC South West e.V.
6. SIT Ligurian Technological District Integrated Intelligent Systems
7. COMET Scrl – Friuli Venezia Giulia Mechanical Engineering Cluster
8. TECOS, Slovenian tool and die development centre
9. Pannon Business Network Association
10. Technical University of Kosice
11. Intemat Solutions Ltd
12. Croatian Chamber of Economy Varaždin County Chamber

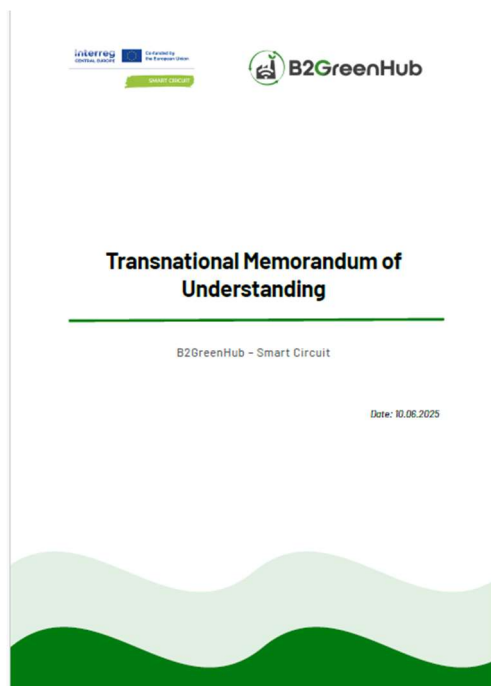
4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

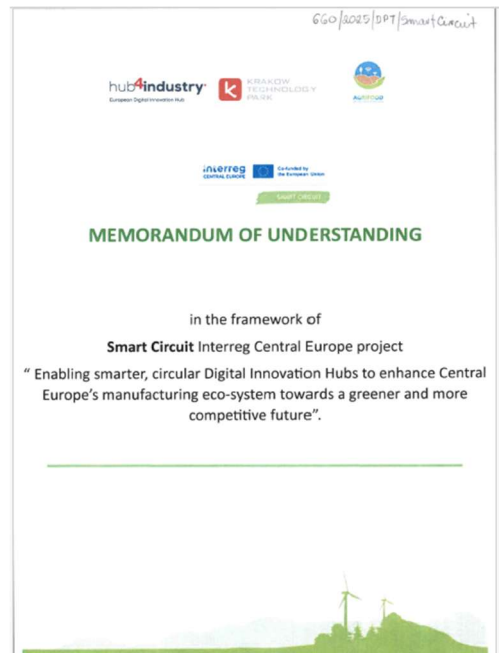
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- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This MoU will come into effect on the date of signing and will remain in force for a period of date of signing until 31.03.2028. The Parties may extend this agreement through mutual consent.
- Either party may terminate this MoU by providing written notice to the other party with 30 days' notice.

For _____ Name of the partner: Andreja Kulig Prezors	For Serbian European Digital Innovation Hub on AI Digital Innovation Consortium Science and Technology Park Nis, Serbia Managing Director PhD Milan Randjelovic
Date: _____ Signature: Kryštof Jančubas Wiceprezors Zarzadu	Date: 06.11.2025 Signature: PSM

2. KPT - B2GreenHub



3. KPT - EDIH AGRIFOOD CROATIA



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Krakow Technology Park as coordinator of the Smart Circuit project consortium

and

(E)DIH AGRIFOOD

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions – digital and green – the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

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Smart Circuit Project Partners:

1. Krakow Technology Park Rd. (Krakow) Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWI (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIT Liguria Technological District Integrated Intelligent Systems (SIT Distretto Tecnologico Liguria - Sistema Intelligenti Integrati)
7. COMET Sori - Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Sori - Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarske Slovenije)
9. Panon Business Network Association (Panon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Interne Solutions Ltd (Interne Solutions s.r.o.)
12. Croatian Chamber of Economy Varaždin County (Chamber HGA VZ Hrvatska gospodarska komora)

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For Krakow Technology Park
Name of the party:

Date:
Signature:

Name: Andrej Kulig
Title: president of the board

Name: Krystian Jarubas
Title: vice-president of the board

For (E)DIH AGRIFOOD
Name of the party:

Date:
Signature:

Name: Dan Iel Copot
Title: DIH AGRIFOOD Manager

4. KPT - DIGITAL INNOVATION HUB ONEX



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Krakow Technology Park as coordinator of the Smart Circuit project consortium

and Digital Innovation Hub ONEX as coordinator of EDH consortium ONEX DIGI-HUB

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

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This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

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Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IVU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIIT Ligurian Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Intemac Solutions Ltd (Intemac Solutions s.r.o.)
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For Krakow Technology Park
Name of the partner

Date:
Signature:
Name: Andrzej Kulig
Title: president of the board

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Name: Krystian Jarubas

Title: vice-president of the board

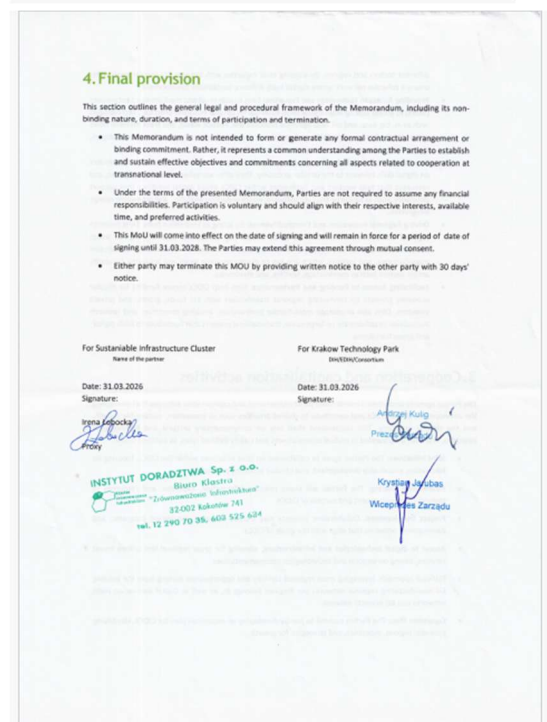
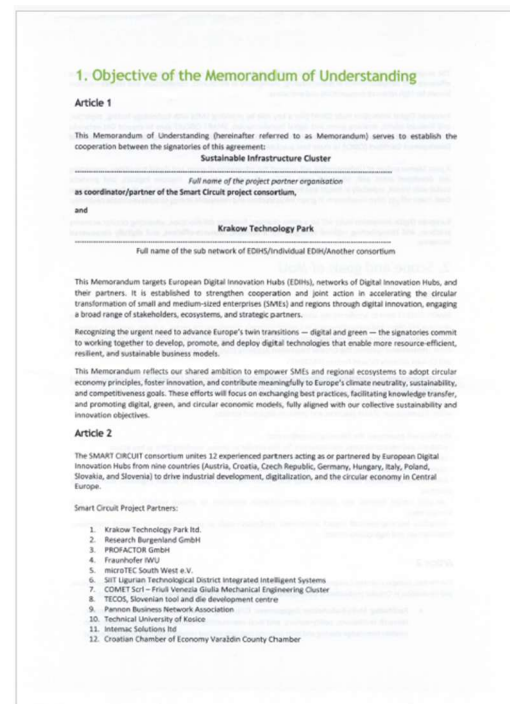
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Dokument jest prawdziwy
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CEST

For Digital Innovation Hub ONEX
Name of the partner

Date: 23rd July 2023
Signature:
Dr Bojan Cudic

Bojan Cudic

5.KPT - SUSTAINABLE INFRASTRUCTURE CLUSTER



6. FB – DIGITAL INNOVATION HUB SUD



MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



1. Objective of the Memorandum of Understanding

Article 1

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FORSCHUNG BURGENLAND GMBH

Full name of the project partner organisation

as coordinator/partner of the Smart Circuit project consortium,

and

DIGITAL INNOVATION HUB SJD

Full name of the sub network of EDIHs/individual EDIHs/other consortium

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

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3. PROACTOR GmbH (PROACTOR GmbH)
4. Fraunhofer IWV (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. BIT Liptovian Technological District Integrated Intelligent Systems (BIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Sori – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Sori – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical university of Košice (Technická univerzita v Košiciach)

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For FORSCHUNG BURGENLAND
Name of the partner
GmbH

Date:
Signature:

Forschung Burgenland GmbH
Campus I | A-7000 Eisenstadt
Tel: 05 7705 5400
forschung.hochschule-burgenland.at



For Digital Innovation Hub Süd
DIHSÜD Consortium

Date:
Signature:

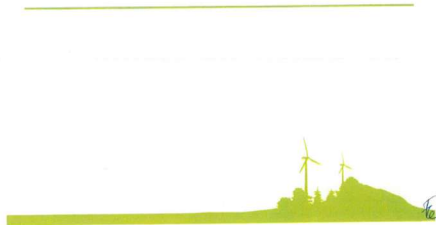
7. FB - VIRTUAL VEHICLE Research GmbH EDIH Applied CPS

MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

"Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe's manufacturing eco-system towards a greener and more competitive future".



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Forschung Burgenland GmbH

Full name of the project partner organisation

as coordinator/partner of the Smart Circuit project consortium,

and

Virtual Vehicle Research GmbH

EDIH Applied CPS

as coordinator of the EDIH APPLIED AI project consortium

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions – digital and green – the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Kraljick Technology Park Ltd. (Kraljick Park Technology sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. InnoTEC South West e.V. (InnoTEC Südwest e.V.)
6. BIT Ligurian Technological District Integrated Intelligent Systems (BIT Distretto Tecnologico Liguria - SistemIntelligenti integrati)
7. COMET Sot - Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Sot - Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)

- EU/local approach, leveraging cross regional services and opportunities coming from the existing EU manufacturing regional networks our Regions belongs to, as well as Digital Innovation Hubs networks and EU projects network
- **Expansion Plan:** The Parties commit to jointly developing an expansion plan for CDCs, identifying potential regions, industries, and strategies for growth.

4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This Memorandum will come into effect on the date of signing and will remain in force for a period of date of signing until 31.03.2028. The Parties may extend this Agreement through mutual consent.
- Either party may terminate this MoU by providing written notice to the other party with 30 days' notice.
- The signature of a Party affixed either as a scanned image of a handwritten signature (e.g., in PDF format) or via an electronic signature (e.g., through DocuSign or a similar platform) shall have the same legal force and effect as an original handwritten signature for the purposes of validity, enforceability, and admissibility. Delivery of the signed version of this Memorandum by email or through an electronic signature system shall be deemed equivalent to delivery of a physical original (hard copy). No hard copy shall be required unless explicitly requested by a Party.

Forschung Burgenland GmbH

For _____
Name of the partner

Date:
Signature:

For _____
Name of the partner

Date:
Signature:

21.4.2026
Mag. Ulrike Tischmayr
Dr. Gerhard Zimppa

Virtual Vehicle Research GmbH

Leobersdorf, Austria

www.virtual-vehicle.com

8. PRO - CROWD in MOTION



MEMORANDUM OF UNDERSTANDING

in the framework of
Smart Circuit Interreg Central Europe project

"Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe's manufacturing eco-system towards a greener and more competitive future".



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement.

PROFACTOR GmbH

Full name of the project partner organisation
as coordinator/partner of the Smart Circuit project consortium,

and

Crowd in Motion / Salzburg Research Forschungsgesellschaft m.b.H.

Full name of the sub network of EDIHs/individual EDIH/another consortium

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

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Article 2

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Smart Circuit Project Partners:

1. Kralow Technology Park Ltd. (Kralowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWI (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIT Ligurian Technological District Integrated Intelligent Systems (SIT Distretto Tecnologico Liguria Sistemi Intelligenti Integrati)
7. COMET Sori – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Sori – Cluster Metalmeccanica Friuli Venezia Giulia)
8. TRCDS, Slovenia tool and die development centre (TRCDS, Razpisni center erojstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózati Egyesület)

4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

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For PROFACTOR GmbH
Name of the person:

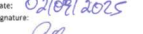
Date: _____

Signature: 

PROFACTOR GmbH
Im Stadl 01 | 4407 Kapfenberg | Austria
Tel: +43(0)732 885-0 | Fax: +43(0)732 786 197
info@profactor.at | www.profactor.at

For Crowd in Motion
Name of the person:

Date: 02/09/2025

Signature: 

salzburg research
Salzburg Research Forschungsgesellschaft mbH
Karl-Lueger-Strasse 29 | 5020 Salzburg, Austria
T +43 (0)62 208-238-11 | F +43 (0)62 208-238-1222
info@salzburgresearch.at | www.salzburgresearch.at

9. IWU - Circural MTC



MEMORANDUM OF UNDERSTANDING

in the framework of
Smart Circuit Interreg Central Europe project
“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
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For Fraunhofer IWU
Name of the partner:

Date: 12.01.2026

Signature: *A. A. L.*

For Circular MTC e.V.
DIN/EDIN/Consortium:

Date: 24/11/2025

Signature: *O. S.*



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Fraunhofer Institute for Machine Tools and Forming Technology IWU

Full name of the project partner organisation

as coordinator/partner of the Smart Circuit project consortium,

and Circular MTC e.V. (Leader of the Innovation Cluster Circular Saxony)

Full name of the sub network of EDIHs/Individual EDIH/Another consortium

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Sp. z o.o. (Krakow Technology Park Sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Southwest e.V.)
6. SIIT Ligurian Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl - Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl - Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Ranjski center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózati Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)

10. IWU - SMART 3



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Fraunhofer Institute for Machine Tools and Forming Technology IWU

Full name of the project partner organisation
as coordinator/partner of the Smart Circuit project consortium,

and **smart3 e.V.**

Full name of the sub network of EDIHs/Individual EDIH/Another consortium

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

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Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgentland GmbH (Forschung Burgentland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SITI Ligurian Technological District Integrated Intelligent Systems (SITI Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl - Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl - Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)

4. Final provision

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For **Fraunhofer IWU**
Name of the partner

Date: **12.01.2026**

Signature: **A. A. M. L.**

For **smart3 e.V.**
Name of the partner

Date: **12.01.2026**

Signature: **[Handwritten Signature]**

11. mtSW - bwcon DIGIHUB



MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

microTEC Südwest e.V.
as partner of the Smart Circuit project consortium

and

bwcon GmbH, Seyffertstrasse 34, 70197 Stuttgart
as coordinator of the DigIHUB Südbaden 2.0

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

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Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIIT Ligurian Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metalmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
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For microTEC Südwest e.V.
as project partner of SMART CIRCUIT

Michael Gutowski (CEO)

Date:

Signature:

For bwcon
as coordinator of the Digital Hub Südwest 2.0

Jürgen Jähnert

Date: 7.10.2025

Signature:

12. mtSW - EDIH Sudwest



MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.

1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

microTEC Südwest e.V.
as partner of the Smart Circuit project consortium
and

Hahn-Schickard-Gesellschaft für angewandte Forschung e.V. (Hahn-Schickard)
as coordinator of the European Digital Innovation Hub Südwest (EDIH Südwest)

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe’s twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

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Article 2

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Smart Circuit Project Partners:

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2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIT Ligurian Technological District Integrated Intelligent Systems (SIT Distretto Tecnologico Liguria Sistemi Intelligenti Integrati)
7. COMET Scrl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Scrl – Cluster Metalmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)

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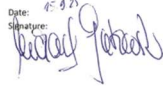
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For microTEC Südwest e.V.
as project partner of SMART CIRCUIT

Michael Gutowski (CEO)

Date:

Signature:



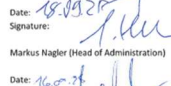
microTEC Südwest e.V.
Emmy-Noether-Straße 2
D-79110 Freiburg
Tel. 0761 38 69 09-0
office@microtec-suedwest.de

For Hahn-Schickard
as coordinator of the EDH Südwest

Clemens Pecha (CFO)

Date:

Signature:



Markus Nagler (Head of Administration)

Date:

Signature:



Hahn-Schickard-Gesellschaft
für angewandte Forschung e.V.
Wilhelm-Schickard-Str. 10
78052 Villingen-Schwenningen

13. SIIT - DIH LIGURIA

   MEMORANDUM OF UNDERSTANDING in the framework of Smart Circuit Interreg Central Europe project “Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”. 	- This Memorandum will come into effect on the date of signing and will remain in force for a period of date of signing until 30.04.2026. The Parties may extend this Agreement through mutual consent. - Either party may terminate this MoU by providing written notice to the other party with 30 days’ notice. - The signature of a Party affixed either as a scanned image of a handwritten signature (e.g., in PDF format) or via an electronic signature (e.g., through DocuSign or a similar platform) shall have the same legal force and effect as an original handwritten signature for the purposes of validity, enforceability, and admissibility. Delivery of the signed version of this Memorandum by email or through an electronic signature system shall be deemed equivalent to delivery of a physical original (hard copy). No hard copy shall be required unless explicitly requested by a Party. <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"> For Smart Circuit Represented by Giulia Berzagatta Date: 10/01/2026 Signature:  </td> <td style="width: 50%;"> For DIH Liguria represented by Dr. Lorenzo Costa Date: 10/01/2026 Signature:  </td> </tr> </table>	For Smart Circuit Represented by Giulia Berzagatta Date: 10/01/2026 Signature: 	For DIH Liguria represented by Dr. Lorenzo Costa Date: 10/01/2026 Signature: 
For Smart Circuit Represented by Giulia Berzagatta Date: 10/01/2026 Signature: 	For DIH Liguria represented by Dr. Lorenzo Costa Date: 10/01/2026 Signature: 		

14. SIIT - CEHMA DIHSME



MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

SIIT SpA as partner of the Smart Circuit project consortium, with head office in Genoa, Italy, (hereinafter referred to as SIIT) represented for the purposes of the signing of this Memorandum of Understanding by the Project Manager, Giulia Barbagelata, who is handling the activities and Liaisons of Smart Circuit project on behalf of SIIT.

and

EDIH CETMA DIHSME

European Digital Innovation Hub titled “CETMA Digital Innovation Hub for SME” (hereinafter referred to as CETMA DIHSME), with head office in Brindisi, Apulia Region – Italy, led by CETMA Technologies Design and Materials European Research Centre, represented for the purposes of the signing of this Memorandum of Understanding by the General Manager, Dr. Marco Alvini (first party of the present MoU).

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe’s twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe’s climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

The project accelerates the adoption of digital and tech-driven circular economy solutions, improving resource efficiency and competitiveness in manufacturing, particularly in electronics, construction, and textiles—sectors known for high resource consumption and emissions.

European Digital Innovation Hubs (EDIHs) play a key role by providing SMEs with technology testing, expertise, and financial advice, enabling green and digital transformation. SMART CIRCUIT aims to expand EDIH networks into additional European regions (Danube, Alpine, Baltic Sea, Adriatic & Ionian), forming **Circular Innovation and Development Corridors (CIDCs)** to share best practices and strengthen circular manufacturing.

1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

SIIT SpA as partner of the Smart Circuit project consortium, with head office in Genoa, Italy, (hereinafter referred to as SIIT) represented for the purposes of the signing of this Memorandum of Understanding by the Project Manager, Giulia Barbagelata, who is handling the activities and Liaisons of Smart Circuit project on behalf of SIIT.

and

EDIH CETMA DIHSME

European Digital Innovation Hub titled “CETMA Digital Innovation Hub for SME” (hereinafter referred to as CETMA DIHSME), with head office in Brindisi, Apulia Region – Italy, led by CETMA Technologies Design and Materials European Research Centre, represented for the purposes of the signing of this Memorandum of Understanding by the General Manager, Dr. Marco Alvini (first party of the present MoU).

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe’s twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe’s climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

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The project accelerates the adoption of digital and tech-driven circular economy solutions, improving resource efficiency and competitiveness in manufacturing, particularly in electronics, construction, and textiles—sectors known for high resource consumption and emissions.

European Digital Innovation Hubs (EDIHs) play a key role by providing SMEs with technology testing, expertise, and financial advice, enabling green and digital transformation. SMART CIRCUIT aims to expand EDIH networks into additional European regions (Danube, Alpine, Baltic Sea, Adriatic & Ionian), forming **Circular Innovation and Development Corridors (CIDCs)** to share best practices and strengthen circular manufacturing.

- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This Memorandum will come into effect on the date of signing and will remain in force for a period of date of signing until 30.06.2026. The Parties may extend this Agreement through mutual consent.
- Either party may terminate this MoU by providing written notice to the other party with 30 days’ notice.
- The signature of a Party affixed either as a scanned image of a handwritten signature (e.g., in PDF format) or via an electronic signature (e.g., through DocuSign or a similar platform) shall have the same legal force and effect as an original handwritten signature for the purposes of validity, enforceability, and admissibility. Delivery of the signed version of this Memorandum by email or through an electronic signature system shall be deemed equivalent to delivery of a physical original (hard copy). No hard copy shall be required unless explicitly requested by a Party.

For Smart Circuit
Represented by Giulia Barbagelata

Date: 10/01/2026

Signature:

For EDIH CETMA DIHSME
represented by Dr. Marco Alvini

Date: 12/01/2026

Signature:

15. COMET – EDIH IP4FVG



MEMORANDUM OF UNDERSTANDING

in the framework of
Smart Circuit Interreg Central Europe project
“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

COMET Srl – Cluster Metallmeccanica Friuli Venezia Giulia as partner of the **Smart Circuit** project consortium,
and

IP4FVG – EDIH Industry Platform for Friuli Venezia Giulia EDIH

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe’s twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe’s climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIT Ligurian Technological District Integrated Intelligent Systems (SIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Intemac Solutions Ltd (Intemac Solutions s.r.o.)
12. Croatian Chamber of Economy Varazdin County (Chamber HGK VZ Hrvatska gospodarska komora)

4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This Memorandum will come into effect on the date of signing and will remain in force until the IP4FVG-EDIH consortium will be operational. The Parties may extend this Agreement through mutual written consent and either party may terminate this MoU by providing written notice to the other party with 30 days’ notice.
- The signature of a Party affixed either as a scanned image of a handwritten signature (e.g., in PDF format) or via an electronic signature (e.g., through DocuSign or a similar platform) shall have the same legal force and effect as an original handwritten signature for the purposes of validity, enforceability, and admissibility. Delivery of the signed version of this Memorandum by email or through an electronic signature system shall be deemed equivalent to delivery of a physical original (hard copy). No hard copy shall be required unless explicitly requested by a Party.

For COMET Srl
Cluster Metallmeccanica Friuli Venezia Giulia

Date:
Signature:

Firmato digitalmente da
SERGIO BAREL

C = IT
Data e ora della firma: 27/10/2025 08:54:39

For IP4FVG – EDIH
Industry Platform 4 Friuli Venezia Giulia EDIH
Coordinator

Date: 23rd October 2025

Signature:  Martina Tencori
23.10.2025 12:35:45
GMT+02:00

16. COMET - EDIH NEURAL



MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

COMET Scrl – Cluster Metallmeccanica Friuli Venezia Giulia as partner of the Smart Circuit project consortium, and

SMACIT aspa – Competence Center, as coordinator of the NEURAL EDIH/SoE Consortium

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe’s twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe’s climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIT Ligurian Technological District Integrated Intelligent Systems (SIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Scrl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Scrl – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Internac Solutions Rd (Internac Solutions s.r.o.)
12. Croatian Chamber of Economy Varaždin County (Chamber HGK VZ Hrvatska gospodarska komora)

4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This Memorandum will come into effect on the date of signing and will remain in force for a period of date of signing until 31.03.2028. The Parties may extend this Agreement through mutual consent.
- Either party may terminate this MoU by providing written notice to the other party with 30 days’ notice.
- The signature of a Party affixed either as a scanned image of a handwritten signature (e.g., in PDF format) or via an electronic signature (e.g., through DocuSign or a similar platform) shall have the same legal force and effect as an original handwritten signature for the purposes of validity, enforceability, and admissibility. Delivery of the signed version of this Memorandum by email or through an electronic signature system shall be deemed equivalent to delivery of a physical original (hard copy). No hard copy shall be required unless explicitly requested by a Party.

For COMET Scrl
Cluster Metallmeccanica Friuli Venezia Giulia

For NEURAL EDIH/SoE
DIN/EDIH/Consortium

Date:
Signature:

Date: 16.12.2025
Signature:

Firmato digitalmente da
SERGIO BAREL
C = IT
Data e ora della firma: 24/03/2026 14:53:24

17. TECOS - DIH SLOVENIA

DIGITALNO
INOVACIJSKO
STIČIŠČE SLOVENIJE Co-funded by
the European Union

MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”.



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

TECOS, Razvojni center orodjarstva Slovenije as partner of the Smart Circuit project consortium,
and

Digitalno inovacijsko stičišče Slovenije – DIH SLOVENIJE

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

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The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.v. (microTEC Südwest e.v.)
6. SIT Ligurean Technology Cluster (Integrated intelligent Systems (SIT Distretto Tecnologico Ligure Systemi Intelligenti))
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development center (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Intemac Solutions Ltd (Intemac Solutions s.r.o.)
12. Croatian Chamber of Economy Varaždin County (Chamber HGK VZ Hrvatska gospodarska komora)

4. Final provision

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- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This Memorandum will come into effect on the date of signing and will remain in force for a period of date of signing until 31.03.2026. The Parties may extend this Agreement through mutual consent.
- Either party may terminate this MoU by providing written notice to the other party with 30 days' notice.
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For: **TECOS, Razvojni center orodjarstva Slovenije**
Name of the partner

Date: 24.7.2025

Signature: Dr. Aleš Manžič



For: Digitalno Inovacijsko stišišče Slovenije – DIH
SLOVENIJE

Date: 24.7.2025

Signature:



18. TECOS - SRC-EDIH Evropsko Digitalno Inovacijsko središče (EDIH)



4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
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1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

TECOS, Razvojni center orodjarstva Slovenije as partner of the Smart Circuit project consortium, and

SRC-EDIH Evropsko Digitalno Inovacijsko središče (EDIH)

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

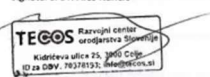
Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIIT Ligurian Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metalmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Intemac Solutions Ltd (Intemac Solutions s.r.o.)
12. Croatian Chamber of Economy Varazdin County (Chamber HGK VZ Hrvatska gospodarska komora)

For: TECOS, Razvojni center orodjarstva Slovenije
Name of the partner

Date: 24.7.2025

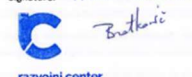
Signature: Dr. Aleš Hančič


TECOS Razvojni center
orodjarstva Slovenije
Kudrjeva ulica 25, 1000 Celje
SI 2000 Celje, 76270133, info@tecos.si

For: SRC-EDIH Evropsko Digitalno Inovacijsko
središče (EDIH)
DIH/EDIH Consortium

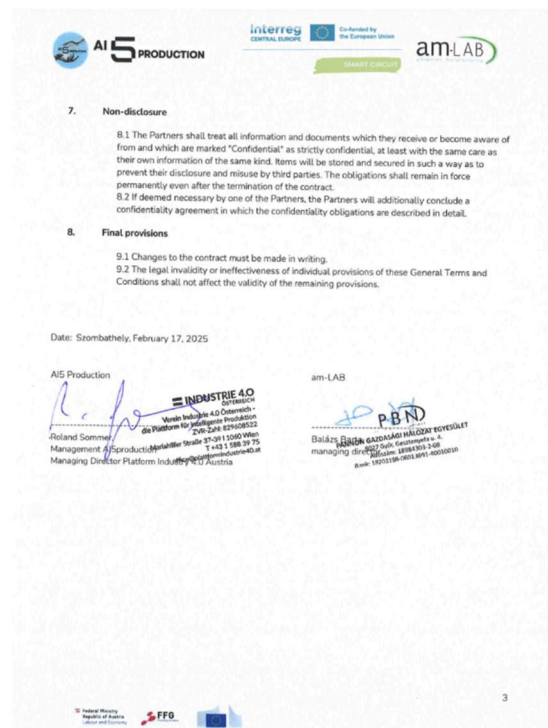
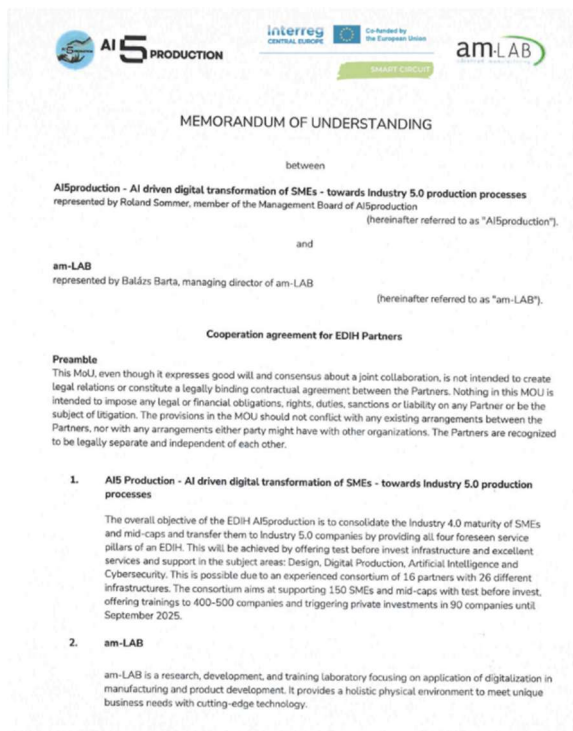
Date: 24.7.2025

Signature: FRANK BEATKOVIČ

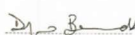
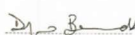
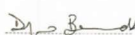


razvojni center
novo mesto ...

19.PBN - AI5production



20.PBN - RE:LAB CNA INNOVAZIONE

    MEMORANDUM OF UNDERSTANDING between am-LAB (Digital Innovation HUB of Pannon Business Network Association) represented by Balázs Rarta, managing director of Pannon Business Network Association (hereinafter referred to as "am-LAB"), and CNA INNOVAZIONE - Area trasferimento tecnologico e innovazione di CNA Emilia-Romagna represented by Diego Benatti, Secretary General of CNA Emilia-Romagna (hereinafter referred to as "CNA INNOVAZIONE"). Cooperation agreement for DIHPartners Preamble This MoU, even though it expresses good will and consensus about a joint collaboration, is not intended to create legal relations or constitute a legally binding contractual agreement between the Partners. Nothing in this MoU is intended to impose any legal or financial obligations, rights, duties, sanctions or liability on any Partner or be the subject of litigation. The provisions in the MoU should not conflict with any existing arrangements between the Partners, nor with any arrangements either party might have with other organizations. The Partners are recognized to be legally separate and independent of each other. 1. am-LAB am-LAB is a research, development, and training laboratory focusing on application of digitalization in manufacturing and product development. It provides a holistic physical environment to meet unique business needs with cutting-edge technology. 2. CNA INNOVAZIONE An accredited regional centre focused on strengthening links between research institutions and industry. It helps companies introduce not only technological innovations but also organisational, managerial, and financial improvements. It also supports joint research projects and collaboration between SMEs and research partners.	    9.1 The Partners shall treat all information and documents which they receive or become aware of from and which are marked "Confidential" as strictly confidential, at least with the same care as their own information of the same kind. Items will be stored and secured in such a way as to prevent their disclosure and misuse by third parties. The obligations shall remain in force permanently even after the termination of the contract. 9.2 If deemed necessary by one of the Partners, the Partners will additionally conclude a confidentiality agreement in which the confidentiality obligations are described in detail. B. Final provisions 9.1 Changes to the contract must be made in writing. 9.2 The legal invalidity or ineffectiveness of individual provisions of these General Terms and Conditions shall not affect the validity of the remaining provisions. Date: January 19, 2025 <table border="0" style="width: 100%;"><tr><td style="width: 50%; vertical-align: top;"> am-LAB  Balázs Rarta Managing Director Pannon Business Network Association (am-LAB) </td><td style="width: 50%; vertical-align: top;"> CNA INNOVAZIONE  Diego Benatti Secretary General CNA Emilia-Romagna (CNA INNOVAZIONE) </td></tr></table>	am-LAB  Balázs Rarta Managing Director Pannon Business Network Association (am-LAB)	CNA INNOVAZIONE  Diego Benatti Secretary General CNA Emilia-Romagna (CNA INNOVAZIONE)
am-LAB  Balázs Rarta Managing Director Pannon Business Network Association (am-LAB)	CNA INNOVAZIONE  Diego Benatti Secretary General CNA Emilia-Romagna (CNA INNOVAZIONE)		

3

21.TUKE - DIH-HIVE



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Technical University of Košice, Faculty of Economics

Address: Nemcovéj 32, 040 03 Košice, Slovakia

Represented by: doc. Ing. Michal Šoták, PhD.
Name and Surname, titles: Dean
Position:

Contact Person for MoU related activities: Ing. František Janke, PhD.
Name and Surname, titles: frantisek.janke@tuke.sk
E-mail: +421556022476
Phone:

and

European Digital Innovation Hub CASSOVIVUM

Address: Nemcovéj 32, 042 00 Košice, Slovakia

Represented by: doc. Ing. Miroslav Michalko, PhD.
Name and Surname, titles: Director
Position:

Contact Person for MoU related activities: Ing. Zuzana Fedáková
Name and Surname, titles: fedakova@edihcassovivum.sk
E-mail: +421 55 602 3656
Phone:

and

Regional Innovation Center of the Karlovy Vary Region, Digital Innovation Hub HIVE

Address: Závodní 278, 360 18 Karlovy Vary, Czech Republic

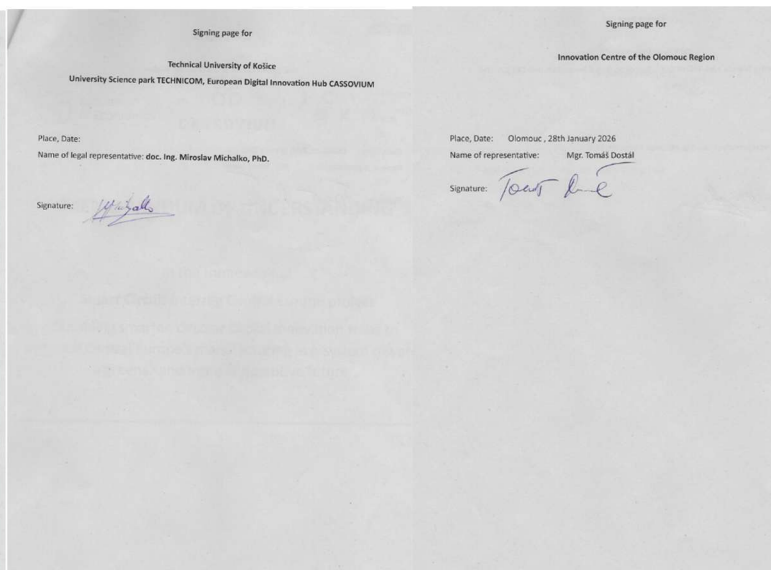
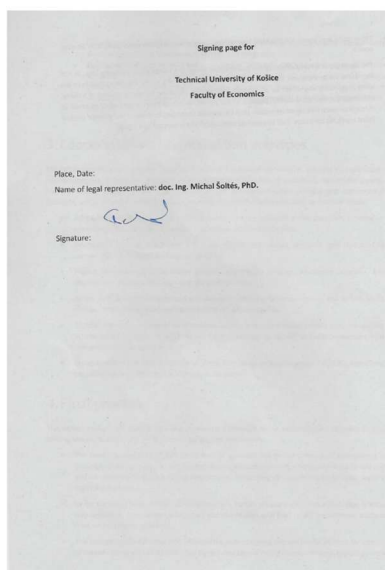
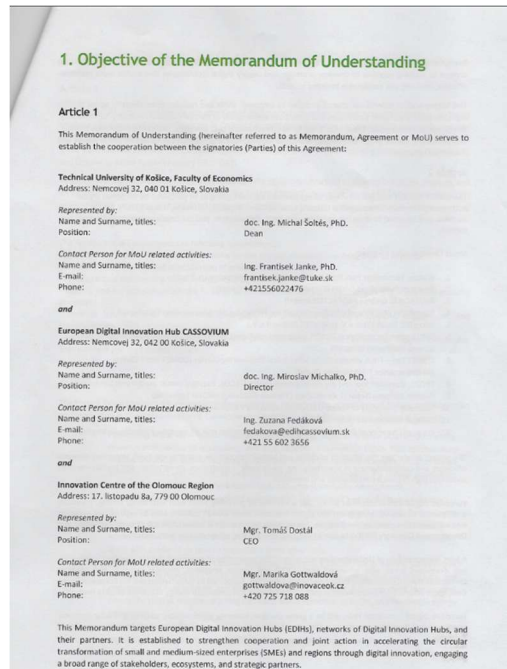
Represented by: Ing. Vlastimil Veselý
Name and Surname, titles: Director
Position:

Contact Person for MoU related activities: Ing. Marek Bureš, Ph.D.
Name and Surname, titles: marek.bures@kicv.cz
E-mail: +420 606 050830
Phone:

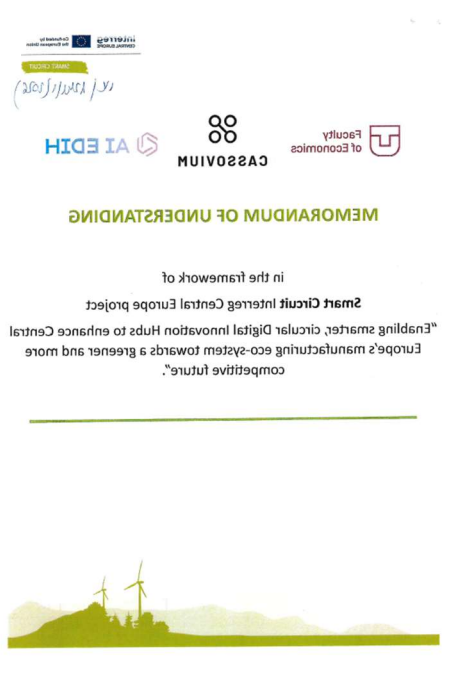
This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Signing page for Technical University of Košice Faculty of Economics Place, Date: Košice, 29 th January 2026 Name of legal representative: doc. Ing. Michal Šoták, PhD. Signature:	Signing page for Technical University of Košice University Science park TECHNICOM, European Digital Innovation Hub CASSOVIVUM Place, Date: Košice, 29 th January 2026 Name of legal representative: doc. Ing. Miroslav Michalko, PhD. Signature:	Signing page for Regional Innovation Center of the Karlovy Vary Region Digital Innovation Hub HIVE Place, Date: Karlovy Vary, 18 th February 2026 Name of legal representative: Ing. Vlastimil Veselý Signature: Karlovarské inovační centrum, příspěvková organizace IČO: 120 14 000 Závodní 278, 360 18 Karlovy Vary
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22.TUKE - Innovation Centre of the Olomouc Region



23.TUKE 3 - AI EDIH



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Technical University of Košice, Faculty of Economics
Address: Nemcovej 32, 040 01 Košice, Slovakia

Represented by:
Name and Surname, titles: doc. Ing. Michal Šoltés, PhD.
Position: Dean

Contact Person for MoU related activities:
Name and Surname, titles: Ing. František Janke, PhD.
E-mail: frantisek.janke@tuke.sk
Phone: +421556022476

and

European Digital Innovation Hub CASSOVILUM
Address: Nemcovej 32, 042 00 Košice, Slovakia

Represented by:
Name and Surname, titles: doc. Ing. Miroslav Michalko, PhD.
Position: Director

Contact Person for MoU related activities:
Name and Surname, titles: Ing. Zuzana Fedišková
E-mail: fediškova@edihcassovium.sk
Phone: +421 55 602 3656

and

Eötvös Loránd University - AI EDIH HUNGARY
Address: Egyetem tér 1-3, Budapest, 1053 Hungary

Represented by:
Name and Surname, titles: Prof. Dr. László DABÁZS, PhD.
Position: rector

Contact Person for MoU related activities:
Name and Surname, titles: László Csaba GULYÁS, PhD.
E-mail: gulyas@edih.hu
Phone: +36306383218

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

3

Signing page for
Technical University of Košice
Faculty of Economics

Place, Date: Košice, 29th January 2026
Name of legal representative: doc. Ing. Michal Šoltés, PhD.

Signature:

Signing page for
Technical University of Košice
University Science park TECHNICOM, European Digital Innovation Hub CASSOVILUM

Place, Date: Košice, 29th January 2026
Name of legal representative: doc. Ing. Miroslav Michalko, PhD.

Signature:

Signing page for
Eötvös Loránd University
AI EDIH HUNGARY

Place, Date: Budapest, 2nd February 2026
Name of legal representative: Prof. Dr. László DABÁZS

Signature:

24.TUKE - EXPANDI 4.0



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Technical University of Košice, Faculty of Economics
Address: Nemcovej 32, 040 01 Košice, Slovakia

Represented by:
Name and Surname, titles: doc. Ing. Michal Šoltés, PhD.
Position: Dean

Contact Person for MoU related activities:
Name and Surname, titles: Ing. František Janke, PhD.
E-mail: frantisek.janke@tuke.sk
Phone: +421 55 602 2476

and

European Digital Innovation Hub CASSOVIVUM
Address: Nemcovej 32, 042 00 Košice, Slovakia

Represented by:
Name and Surname, titles: doc. Ing. Miroslav Michalko, PhD.
Position: Director

Contact Person for MoU related activities:
Name and Surname, titles: Ing. Zuzana Fedáková
E-mail: fedakova@edihcassovivum.sk
Phone: +421 55 602 3656

and

Expanding Digitalization of Industry (I4.0) in Slovakia - EXPANDI 4.0
Coordinator's Address: Bajkalská 27, 827 99 Bratislava, Slovak Republic

Represented by:
Name and Surname, titles: Artur Bobovnický, PhD.
Position: Project manager

Contact Person for MoU related activities:
Name and Surname, titles: Artur Bobovnický, PhD.
E-mail: artur.bobovnický@svea.gov.sk
Phone: +421 905 985 937

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

3

Signing page for

EDIH EXPANDI 4.0

Signing page for

Technical University of Košice
Faculty of Economics

Signing page for

Technical University of Košice
University Science park TECHNICOM, European Digital Innovation Hub CASSOVIVUM

Place, Date: Bratislava, December 23, 2025

Name of legal representative: Artur Bobovnický, PhD.

Signature:

Place, Date: Košice, 29th January 2026

Name of legal representative: doc. Ing. Michal Šoltés, PhD.

Signature:

Place, Date: Košice, 29th January 2026

Name of legal representative: doc. Ing. Miroslav Michalko, PhD.

Signature:

25. INTEMAC - EDIH CyberSecurity Hub



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

INTEMAC SOLUTIONS

as partner of the Smart Circuit project consortium,
and

CzechInno

as partner of Cybersecurity Innovation Hub consortium.

CzechInno (CzechInno, Association of Legal Entities) is a Czech non-governmental non-for-profit organisation founded in 2011 to support innovative entrepreneurship in the Czech business and public sphere. In its role of an innovation matchmaker and an active part of the Czech national Innovation Entrepreneurship System, it connects in its projects companies (mainly SMEs and start-ups) with academia and public sphere and among themselves.

Cybersecurity Innovation Hub (CIH) significantly supports digital transformation and application of innovation in SMEs and public administration by building a coordinated and effective ecosystem comprising top research institutions with the necessary know-how and infrastructure, specialized business clusters, professional organizations, and public authorities. This robust ecosystem provides its beneficiaries with access to education and information on cybersecurity trends and best practices, to expert advice and state-of-the-art infrastructures to verify the suitability and security of innovative solutions under consideration and increase the availability of funds to invest in innovation. CIH also serves as a platform for cooperation and information sharing between entities in the cybersecurity market, both at the level of Czechia and the EU.

Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIIT Ugiunin Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistem Intelligenti Integrati)
7. COMET Srl - Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl - Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)

4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
- Under the terms of the presented Memorandum, Parties are not required to assume any financial responsibilities. Participation is voluntary and should align with their respective interests, available time, and preferred activities.
- This Memorandum will come into effect on the date of signing and will remain in force for a period of date of signing until 31.03.2028. The Parties may extend this Agreement through mutual consent.
- Either party may terminate this MoU by providing written notice to the other party with 30 days' notice.
- The signature of a Party affixed either as a scanned image of a handwritten signature (e.g., in PDF format) or via an electronic signature (e.g., through DocuSign or a similar platform) shall have the same legal force and effect as an original handwritten signature for the purposes of validity, enforceability, and admissibility. Delivery of the signed version of this Memorandum by email or through an electronic signature system shall be deemed equivalent to delivery of a physical original (hard copy). No hard copy shall be required unless explicitly requested by a Party.

For INTEMAC
Name of the partner

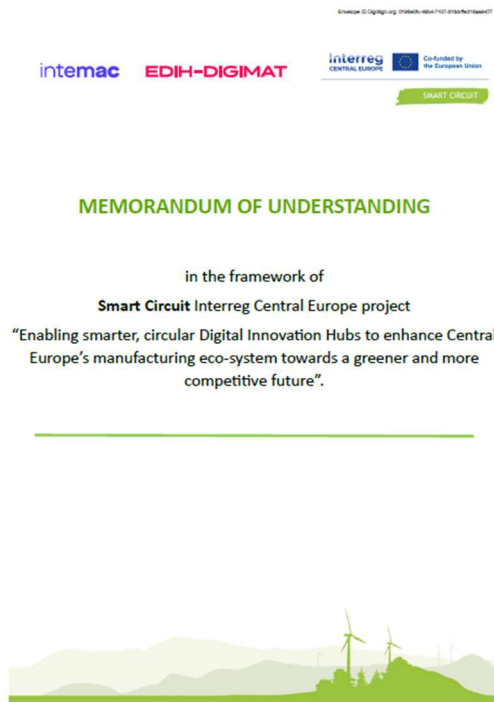
Date: 26.02.2026
Signature:

For CzechInno
Name of the partner

Date: 01/03/2026
Signature:

Teresa Samanová
Member of the Board and CEO

26. INTEMAC - EDIH-DIGIMAT



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement.

INTEMAC SOLUTIONS

as partner of the Smart Circuit project consortium,
and

EDIH-DIGIMAT

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

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Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IWU (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIIT Ligurean Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Sori – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Sori – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózati Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Intemac Solutions Ltd (Intemac Solutions s.r.o.)

4. Final provision

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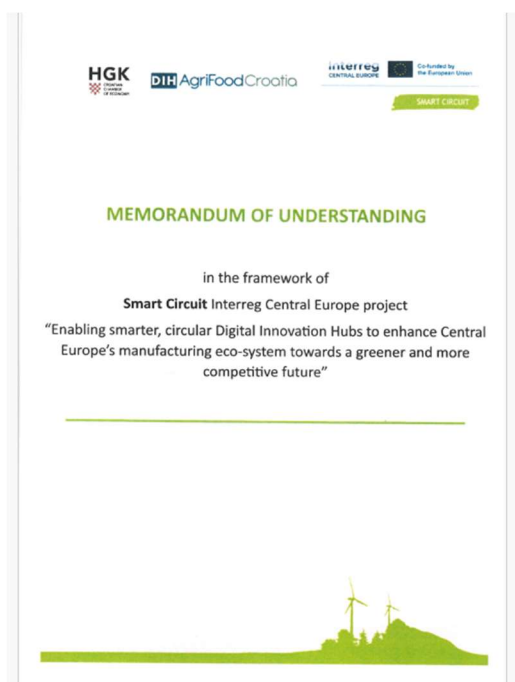
For INTEMAC

Name of the partner
Mgr. et Mgr. Jindřich Weiss
Date: 26.8.2023 09:06:49
Signature: 02:02198450-7581-7230-4708-047819236439
eDocuSign.org

For EDIH-DIGIMAT

Director/Consortium
Vesna Vefeloud
Date: 26.8.2023 09:06:49
Signature: 02:02198450-7581-7230-4708-047819236439
eDocuSign.org

27.HGK VZ - DIH AgriFood Croatia



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Croatian Chamber of Economy – Varaždin County Chamber,
as a partner of the Smart Circuit project consortium,
and
DIH AgriFood Croatia
(Full name of the sub-network of DIHs/Individual DIHs/Another consortium)

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

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Article 2

The SMART CIRCUIT consortium unites 12 experienced partners acting as or partnered by European Digital Innovation Hubs from nine countries (Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia) to drive industrial development, digitalization, and the circular economy in Central Europe.

Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer RWI (Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIIT Lipuran Technological District Integrated Intelligent Systems (SIIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metalmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center orodjarstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)
10. Technical University of Kosice (Technická univerzita v Košiciach)
11. Intersec Solutions Ltd (Intersec Solutions s.r.o.)
12. Croatian Chamber of Economy Varaždin County Chamber (Hrvatska gospodarska komora Županijska komora Varaždin)

4. Final provision

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For
Croatian Chamber of Economy
Varaždin County Chamber
Name of the Smart Circuit project partner
Mr Tomislav Cesarec, President
Date: 02.12.2025
Signature:

For
DIH AgriFood Croatia
DIH/EDH Consortium
MARTIN BURBACH, MANAGING DIRECTOR
Date: 02.12.2025
Signature:

28.HGK VZ - Science Technology Park Montenegro-MontEDIH



SMART CIRCUIT

MEMORANDUM OF UNDERSTANDING

in the framework of

Smart Circuit Interreg Central Europe project

“Enabling smarter, circular Digital Innovation Hubs to enhance Central Europe’s manufacturing eco-system towards a greener and more competitive future”



- **EU/local approach**, leveraging cross regional services and opportunities coming from the existing EU manufacturing regional networks our Regions belongs to, as well as Digital Innovation Hubs networks and EU projects network.
- **Expansion Plan**: The Parties commit to jointly developing an expansion plan for CDCs, identifying potential regions, industries, and strategies for growth.

4. Final provision

This section outlines the general legal and procedural framework of the Memorandum, including its non-binding nature, duration, and terms of participation and termination.

- This Memorandum is not intended to form or generate any formal contractual arrangement or binding commitment. Rather, it represents a common understanding among the Parties to establish and sustain effective objectives and commitments concerning all aspects related to cooperation at transnational level.
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For
Croatian Chamber of Economy
Varaždin County Chamber
Name of the Smart Circuit project partner

Mr Tomislav Cesarec, President

Date: 03.12.2025
Signature:

For
Science and technology park of Montenegro

Ms Valentina Radulović, executive director of STP
MNE

Date: 03.12.2025
Signature:



1. Objective of the Memorandum of Understanding

Article 1

This Memorandum of Understanding (hereinafter referred to as Memorandum, Agreement or MoU) serves to establish the cooperation between the signatories (Parties) of this Agreement:

Croatian Chamber of Economy – Varaždin County Chamber,
as a partner of the Smart Circuit project consortium, and

Science and technology park of Montenegro,
as a partner of the MontEDIH project (Montenegrin European Digital Innovation Hub)

This Memorandum targets European Digital Innovation Hubs (EDIHs), networks of Digital Innovation Hubs, and their partners. It is established to strengthen cooperation and joint action in accelerating the circular transformation of small and medium-sized enterprises (SMEs) and regions through digital innovation, engaging a broad range of stakeholders, ecosystems, and strategic partners.

Recognizing the urgent need to advance Europe's twin transitions — digital and green — the signatories (Parties) commit to working together to develop, promote, and deploy digital technologies that enable more resource-efficient, resilient, and sustainable business models.

This Memorandum reflects our shared ambition to empower SMEs and regional ecosystems to adopt circular economy principles, foster innovation, and contribute meaningfully to Europe's climate neutrality, sustainability, and competitiveness goals. These efforts will focus on exchanging best practices, facilitating knowledge transfer, and promoting digital, green and circular economic models, fully aligned with our collective sustainability and innovation objectives.

Article 2

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Smart Circuit Project Partners:

1. Krakow Technology Park Ltd. (Krakowski Park Technologiczny sp. z o.o.)
2. Research Burgenland GmbH (Forschung Burgenland GmbH)
3. PROFACTOR GmbH (PROFACTOR GmbH)
4. Fraunhofer IPA (Fraunhofer Industrielle Produktion zur Förderung der angewandten Forschung e.V.)
5. microTEC South West e.V. (microTEC Südwest e.V.)
6. SIT Ligurian Technological District Integrated Intelligent Systems (SIT Distretto Tecnologico Ligure Sistemi Intelligenti Integrati)
7. COMET Srl – Friuli Venezia Giulia Mechanical Engineering Cluster (COMET Srl – Cluster Metallmeccanica Friuli Venezia Giulia)
8. TECOS, Slovenian tool and die development centre (TECOS, Razvojni center prodajstva Slovenije)
9. Pannon Business Network Association (Pannon Gazdasági Hálózat Egyesület)

Annex 2. Open Letter on the Future of the EU Budget (2028-2034) published March 2026



Open Letter on the Future of the EU Budget (2028–2034)

Ensuring Europe's innovation and competitiveness leadership

Brussels, March 2026

To the European Commission, the European Parliament and the European Council,

Europe stands at a critical point. As negotiations on the 2028–2034 Multiannual Financial Framework (MFF) advance, the choices made in the coming months will determine whether the European Union strengthens its long-term competitiveness through its territories, or whether it drifts towards a more centralised, place-neutral investment model that risks weakening both its cohesion and innovation capacity.

We welcome the ambition of the MFF proposal to reinforce Europe's industrial base, research and innovation capacity, and strategic autonomy. We recognise that achieving these objectives requires targeted investments in excellence and strong European value chains. However, we are deeply concerned that the current architecture, particularly the proposed National and Regional Partnership Plans (NRPPs), risk marginalising the very territorial actors and policy tools that have proven essential to delivering these objectives.

At the heart of this concern lies the uncertain future of Smart Specialisation Strategies (S3).

- **Smart Specialisation: A Proven Instrument at Risk**

Over the last decade, Smart Specialisation Strategies have become the backbone of Europe's place-based innovation policy. Introduced as an ex-ante conditionality in 2014 and later as an enabling condition, S3 has enabled regions to prioritise investment, mobilise stakeholders through entrepreneurial discovery processes, and build innovation ecosystems aligned with real economic potential rather than just abstract benchmarks.¹

A Commission study² screened and assessed 185 S3 strategies across the EU (2014–2020 cycle), showing how 77% of S3 strategies (2014–2020) were based on an Entrepreneurial Discovery Process (EDP) specifically set up for the S3. This is proof of how the S3 has also contributed to the diffusion of joint inclusive and evidence-based policy approaches across Europe's territories.

More importantly, S3 has never been a purely regional tool. It has functioned as a multi-level governance framework, also providing evidence of the quadruple helix participation. In the same study was presented that stakeholder involvement included research sector (90%), private sector (90%), public sector (89%), civil society (53%) across the strategies screened, linking EU objectives with national strategies and regional capabilities, and enabling interregional cooperation among European value chains.³

S3 has been instrumental in enabling initiatives under the European Innovation Ecosystems programme of Horizon Europe, including the Regional Innovation Valleys which successfully connect different regional ecosystems over burning European challenges. Additionally, the Interregional Innovation Investments (I3) Instrument, one of the few EU tools explicitly designed to translate S3 priorities into cross-border, market-oriented innovation projects, particularly for SMEs and emerging industrial ecosystems has proven its value,⁴ helping regions cooperate on complementary strengths, scale innovations, and reducing fragmentation in strategic sectors.

Yet under the current MFF proposal, S3 faces strategic ambiguity and risks being reduced to an optional territorial reference. At the same time the I3 is no longer clearly visible as a dedicated programme.⁵ This creates a serious risk that place-based innovation will be diluted within larger, centrally managed funding envelopes, unless robust safeguards ensure that territorial strategies meaningfully inform investment decisions.

- **A Structural Shift Away from Place-Based Policy**

The proposed consolidation of cohesion, agricultural and related funds into a single national planning framework represents a profound shift in EU governance. While presented as simplification, the NRPP model significantly strengthens national discretion over territorial and

¹ European Commission, Strengthening Innovation in Europe's Regions: Strategies for Smart Specialisation, COM (2012) 341 final.

² European Commission, Prognos AG, Study on prioritisation in Smart Specialisation Strategies in the EU, Final Report, 2021

³ European Court of Auditors, Smart Specialisation: A New Approach to Regional Innovation, Special Report, 2025

⁴ European Commission, Interregional Innovation Investments Instrument – Implementation Overview, 2024

⁵ EURADA, A Seat at the Table, But No Fork? Regions in the Revised NRPP Framework, Policy Paper, December 2025

thematic allocations, with limited safeguards to ensure meaningful regional influence.⁶ Although recent amendments have reinforced the legal language on partnership and multi-level governance, the core architecture remains largely national, and experience shows that formal consultation requirements alone are insufficient to prevent recentralisation.⁷

Experience from other centrally driven instruments shows that formal consultation requirements alone are insufficient to prevent recentralisation.

This shift risks eroding the partnership principle enshrined in the EU Treaties, marginalising regional innovation strategies in favour of national priorities, and widening territorial disparities by favouring already-strong ecosystems. Such an approach runs counter to Europe's competitiveness needs. Industrial and technological capabilities are territorially embedded, and Europe's strength lies in the coordination of its diverse regional specialisations.

S3 provides the only EU-wide methodology capable of aligning regional strengths with EU strategic priorities, supporting diversification into related technologies, and enabling structured interregional cooperation based on complementarity rather than duplication. I3 operationalises this model by building European value chains from the bottom up. Only by tailoring measures to territorial realities and harnessing comparative advantages, EU can unlock its full innovation potential, deliver meaningful impact and capitalise on its territorial innovation ecosystems to boost competitiveness through interregional collaboration. Weakening these instruments would therefore undermine the EU's own objectives on industrial resilience, open strategic autonomy and innovation diffusion.⁸

Our Policy Recommendations

To ensure that the MFF 2028–2034 delivers competitiveness with cohesion, we call on the co-legislators to:

1. Safeguard and reinforce S3

- **Maintain S3 as a mandatory strategic reference within NRPPs, ensuring that regional and sub-national innovation strategies are used as an essential input into national planning, regardless of the level at which funds are implemented, requiring Member States to demonstrate how regional S3 priorities contribute to EU-level objectives under a harmonised methodological framework.** Regional and sub-national authorities should, where possible, continue to adopt and implement regional/local S3s. The core pillars of Smart Specialisation should be preserved (Entrepreneurial Discovery Processes, industrial transition and interregional cooperation) while avoiding fragmentation and ensuring comparability across Member States.
- **Recognise S3 as a multi-level governance and investment coordination framework, not merely a territorial planning tool under Cohesion Policy.** S3 priorities should be systematically recognised and mobilised across EU funding instruments, including Horizon Europe, the European Competitiveness Fund and other centrally managed programmes, to improve coherence along the full innovation and industrial value chain, following the

⁶ EURADA, From Partnership to Partnership? Regions in the 2028–2034 EU Budget, Policy Paper, July 2025.

⁷ European Commission, Amended Non-Paper on NRPP Governance, Autumn 2025.

⁸ Friends of Cohesion Policy, Joint Statement on the Future of Cohesion Policy post-2027, 2025

example of European Innovation Ecosystems (EIE) action under the current Horizon Europe Programme. This multi-level approach would bridge top-down EU strategic goals with bottom-up regional innovation, integrating local strengths into Europe's broader competitiveness. In short, S3 must be treated as a core delivery engine for EU industrial strategy, ensuring place-based innovation remains central to Europe's twin transitions and strategic autonomy.

- **Smart Specialisation must also retain a clear pathway for interregional implementation and market uptake.** Instruments translating S3 priorities into concrete cross-border innovation projects, particularly for SMEs and emerging industrial ecosystems. Interregional cooperation mechanisms such as I3 helps bring innovations to market (TRL6–9) and operates interregionally to build European value chains rooted in regional S3 priorities. In the post-2027 framework, such interregional instruments should remain clearly identifiable and adequately resourced, with simplified and inclusive access conditions, a clear intervention logic and robust impact evaluation.

2. Protect multi-level governance in the new MFF

- **Introduce binding requirements for genuine regional involvement in the design, implementation and monitoring of NRPPs.** The legislation should explicitly mandate that regional authorities *"shall be fully involved in the preparation, implementation and evaluation"* of each plan, and require Member States to document how regional input was incorporated (*"regional checks"*). Robust monitoring mechanisms are needed to ensure these provisions are not reduced to a box-ticking exercise. Genuine shared management means regional voices must count, not just be heard.
- **Prevent the effective recentralisation of cohesion-type investments, ensuring that simplification enhances, rather than weakens, territorial effectiveness.** Simplification should not come at the expense of the partnership principle or regional empowerment. Sidelining regional and local actors in favour of national plans would undermine Cohesion Policy (critics warn it could weaken local authorities and widen disparities) and a broad coalition of Member States and MEPs has already opposed such overcentralisation, calling for a region-focused approach to ensure *no territory is left behind*.

In conclusion this is a call for a Balanced and Future-Proof Budget

The future EU budget must not force a false choice between competitiveness and cohesion. Europe's ability to innovate, transition and remain globally competitive depends on mobilising all its territories: urban, rural, coastal and industrial.

Smart Specialisation and Interregional Innovation are not legacy cohesion tools. They are strategic assets for Europe's future and essential for boosting competitiveness.

We urge the European Commission, the European Parliament and the European Council to ensure that the final MFF framework reflects this reality, and that Europe's regions remain actors, not bystanders, in shaping Europe's economic future.