



S3HubsinCE Project

**Digital
Innovation
Hubs**





INTRODUCTION

Regional Digital Innovation Hubs in Central Europe build their competences through S3HubsinCE: a project for exchanging experience and good practices between project partners operating in business, research and science, and regional authorities. S3HubsinCE project has started on 01.03.2019. Partners from Austria, Croatia, Germany, Hungary, Italy, Poland, and Slovenia have come together to join forces and create a transnational support structure based on regional DIHs. This publication is the second one created under the S3HubsinCE project and focuses on regional DIHs from Central Europe.

Each of the 10 project partners established a regional DIH: a complex services hub, where businesses, especially SMEs and start-ups, can improve their competences in streamlining production processes, products, and services by implementing digital technologies.

The regional DIHs support the Navigation Crews expert groups in the implementation of joint strategies for the support of the technology priority areas for Central Europe.

To showcase learning and exchange, transfer, and cooperation to develop closer-to-market activities across Central Europe, the partners created a Digital Innovation Hub Network. It represents a Central European network of organisations which champion research and innovation - enterprises, and higher education and research organisations who embody best-in-class principles of promoting central European competitiveness. These “RIS3 Champions” undertake joint pilot projects and support actions thanks to the support of Digital Innovation Hub.



In the course of the project, the S3HubsinCE partners planned and initiated transnational cooperation actions (10 Pilot Actions and 50 Support Actions) to develop and strengthen a transnational network of Digital Innovation Hubs.

As a result 10 Digital Innovation Hub Pilot Action concepts were developed, and 60 pilot actions were planned by partners within the S3HubsinCE project team. All Project Partners contributed to the development of actions, notably the 33 Transfer & Cooperation actions focused on developing new projects to generate closer-to-market, value-creation opportunities for RIS3-critical organisations.

To promote onward sustainability and stewardship of these actions digital communication tools have been introduced. The first, ASANA, is an internal project tool used for detailed project action planning and provision of updates. It allows the Partners to work together and inform one another about implementation timelines. The second, DIHNET.eu/S3HubinCE online community is a public tool, which all stakeholders can join to receive information about the Digital Innovation Hubs connected within the network, and the actions that each Partner and Digital Innovation Hub team organise to make exchange of research and development of innovation ecosystem possible.

Map of transnational Digital Innovation Hubs for RIS3 Action provides a visualisation of all the official Digital Innovation Hubs that have been brought into the Partnership as part of the DIH Pilot Action.

Interreg
CENTRAL EUROPE



S3HubsinCE

European Union
European Regional
Development Fund



DIGIHUB
BURGUNDIEN

INNOSAX
Center for Innovation & Entrepreneurship

hub4**industry**

DIHOST
DIGITAL INNOVATION HUE



KÄRNTEN
University of Applied Sciences

am-LAB
Advanced Manufacturing



ICENT

AFIL

EcipaHub

**TRANSNATIONAL DIGITAL
INNOVATION HUBS FOR
RIS3 ACTION**



WHAT IS A DIGITAL INNOVATION HUB?

The digital revolution brings opportunities for large and small companies, but many of them still find it difficult to decide in which technologies to invest and how to secure financing for their digital transformation. Within this context, Digital Innovation Hubs (DIHs) can help to ensure that every company, whether small or large, high-tech or not, can take advantage of digital opportunities.

Digital Innovation Hub (DIH) is a supporting institution that helps companies to become more competitive by improving their business, production processes, products, and services in the area of digital technologies. DIHs act as one-stop-shops, serving digitalisation of companies within and outside their region. They help customers address challenges in a business-focused way and with a common service model, offering services that would not be readily accessible elsewhere.

The services available through a DIH allow any business to access the latest knowledge, expertise, and technology for testing and experimenting with digital innovations relevant to its products, processes, and/or business models. DIHs provide connections to investors, facilitate access to the financing for digital transformations, and help to connect users and suppliers of digital innovations across the value chain. They also foster synergies between digital and other key enabling technologies (such as biotech, nanotechnologies, and advanced materials). These services are of particular relevance to companies currently at a relatively low level of digitisation that do not have the resources and/or personnel to address the digitisation challenge

DIH





The portfolio of DIHs activities covers:

- Test before invest: experimentation with new software and hardware digital technologies to understand new opportunities and return on investments, also including demonstration facilities and piloting
- Skills and training to make the most of digital innovations: train-the-trainer programmes, boot-camps, traineeships, exchange of curricula and training material
- Support to investment funding: feasibility studies, developing business plans, incubation and acceleration programmes
- An innovation ecosystem and networking opportunities through marketplaces and brokerage activities.

By introducing and implementing a common vision and framework for fostering digital transformation of European entrepreneurs, DIHs have significant impact on Regional Innovation Smart Specialisations (RIS3) as they facilitate contacts between regional authorities, suppliers, and users along the “value chain” to boost European excellence and support the transformation of European industry.

By acting locally, close to the needs and digital challenges of regional companies, DIH supports entrepreneurs in improving their competitiveness on the European and global market to ensure successful winning globally.

For more information please visit the website:

<https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs>

PORTFOLIO of innovative DIHs within S3HubsinCE Project

DATA ANALYTICS, COMPLEX
SIMULATION AND MODELLING

MACHINE VISION

PREDICTIVE
MAINTENANCE

FACTORY
AND PROCESS
AUTOMATION

DI&I MACHINERY

ADVANCED AND
SMART MATERIALS

INDUSTRIAL IOT

DIGITAL MARKETING

INNOVATION
IN A CIRCULAR
ECONOMY

DESIGN &
ENGINEERING
FOR ADDITIVE
MANUFACTURING



Smartfab Carinthia is a quite new Digital Innovation Hub coordinated by Carinthia University of Applied Sciences. Established in 2020, smartfab CARINTHIA offers an opportunity to think differently about the methods of product and service delivery to organisations of all sizes, mainly regional enterprises and schools. The current focus is on two topics jointly understood as advanced engineering techniques:

- design for additive manufacturing
- innovation in a circular economy.

THE TECHNOLOGICAL COMPETENCES OF SMARTFAB CARINTHIA:

- **Additive Manufacturing and Circular Economy** - validation in the engineering phase of new products.
- **Additive manufacturing technologies** (fused deposition modelling, stereo lithography, selective laser melting, selective laser sintering) and materials (polymers, metals, fibre materials) - technical and economic validation of the use of various technologies. Application for new product design, spare part management, and/or making of handling tools in volume production.
- **Circular economy** - modular design for repairable and reusable components, and/or recycling.

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- **Skills and training:** knowledge transfer and awareness building in courses and workshops.
- **Transfer projects:** technology transfer to enterprises based on funded research projects as well as students' master/bachelor thesis. The students' works are often the initial phase of subsequent research projects with enterprises.
- **Research and development:** results of the university's research groups - particularly of Carinthia Institute for Smart Materials and Manufacturing Technologies (www.fh-cismat.at) are published and provide the foundation for transfer projects and/or training.
- **Infrastructure and services** of Carinthia University of Applied Sciences (e.g. smartlab CARINTHIA: www.smartlabcarinthia.at) and regional partners (e.g. GPS Ausbildungszentrum Villach and Makerspace Carinthia).



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The DIH-Ost was established in 2019 as an organisation set up by the Austrian Research Promotion Agency (FFG) and the federal states of Lower Austria and the Burgenland. It offers a comprehensive range of services to support the digital transformation of small and medium-sized companies in Eastern Austria.

THE TECHNOLOGICAL COMPETENCES OF DIH-OST:

- Internet of Things (IoT), Sensor Technology and Connectivity
- Block chain and IT-security, 3D printing, Building Information Modeling (BIM)
- Modeling (BIM), Data Visualisation, Data Analysis, Augmented Reality and Virtual Reality

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- **Skills and training:** development of competencies, seminars and workshops, company specific offers, digital innovation workshops
- **Information and support for funding investments:** assessment of the location and level of digitisation, crowdsourcing and ideas competitions, funding consultancy
- **Application:** project implementation e.g. digital innovation, development of business models, use of infrastructure, usability testing



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DIGI HUB Südbaden



DIGIHUB Südbaden was established in 2018 as a result of regional cooperation based on the RegioWIN network. It brings together different market participants, projects, and digitisation initiatives of the Southern Upper Rhine and High Rhine sub-regions. The DIGI HUB supports small and medium-sized enterprises in the challenges of the digital transformation, offering them concrete and tangible assistance in digitalisation issues. DIGI HUB Südbaden shows companies how digitisation contributes to (cost) efficiency and opens implementation paths to digital transformation.

THE TECHNOLOGICAL COMPETENCES OF DIGI HUB SÜDBADEN:

- Smart production
- Construction
- Health
- Trade and tourism
- Sensor technology IoT/cps
- Security and resilience
- Smart city

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- **Skills and training:** The HUB brings together information, service, and consulting experts from industry and creative economy, academic staff, and other stakeholders to offer the broadest possible spectrum of competence and networking opportunities
- **Infrastructure and services:** The HUB has a unique inspiring home in the Creative Park in Freiburg's Lokhalle, which gathers all partners and activities. The DIH also offers an attractive infrastructure of co-working space and practical showrooms (e.g. smart digital factory).
- **Virtual test, development, and demo environments:** Some companies, universities, and research institutions in the region provide real facilities, equipment, laboratories, and workshops for demonstration purposes and development activities at different locations.



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The main goal of the InnoSax DIH is similar to those of other European DIHs: to help small and medium-sized enterprises to improve their processes, products, and services through the use of digital technologies. The Smart Production Systems Saxony - InnoSax DIH was established in 2017 and supplies industrial digitisation for Saxony together with regional industry networks and other partners from research institutions.

THE TECHNOLOGICAL COMPETENCES OF INNOSAX:

- Human-robot interaction, sensitive robotics for complex assembly tasks
- Machine concepts and body construction - flexible technologies for handling, fixtures and joining
- SmartData - Linked factory, AI, AR, IIoT, self-regulating systems, smart process chains
- Micro and precision manufacturing - cutting technologies, removal processes, micro-forming, metrology and tribometry formicrostructures.

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- **Skills and training:** workshops - transfer of knowledge on technology and digitalisation in workshops or training sessions.
- **Project pitches:** offer of the facilities and expertise for your project ideas on smart production.
- **Testbed:** the E³ research factory is the appropriate testbed for test ingcomponents for I4.0 solutions.
- **Best-Practice:** In small groups, you can learn from and with partners how to use ICT technologies efficiently in production



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Ecipa, as a service provider of CNA for the North East regions in Italy has been designated in October 2017 as the Management organisation that provides support to SMEs (mainly small and micro companies) in their digital transformation acting as a spider in the ecosystem that facilitates innovation. Since then the Ecipa Hub has been created and become part of the Smart specialisation platform managed by the EC.

THE TECHNOLOGICAL COMPETENCES OF THE ECIPA HUB

Ecipa Nordest Hub services focus mainly on: IoT, cloud computing, and 3D. The main technological competences are:

- Lean Manufacturing
- Data Analysis
- Change Management
- Customer and Employee Engagement.

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- **Skills and training:** awareness workshops about the potential of the digital transformation, education and training (short online pathways included) for SMEs who want to participate in the digital transformation
- **Virtual test, development, and demo environments:** demonstration activities to approach digital technologies practically (e.g. by prototyping).
- **Infrastructure and services:** facilitation in the adoption of digital innovation, consulting services on how to introduce digital optimisation and/or innovation.
- **Support in funding opportunities** for digital innovation.
- An innovation ecosystem and networking opportunities among relevant stakeholders.



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AFIL is a non-profit private organisation designed to foster connections between all relevant key stakeholders (competence centres, industry, users and suppliers, technology experts, and investors) able to boost Industry 4.0 revolution and facilitate the access of Lombardy's SMEs to EU value chains. Since its foundation in 2015, AFIL has developed a set of support services to increase SME innovation and thus competitiveness. Now AFIL has more than 150 members, mainly industrial companies, associations and public/private research centres.

THE TECHNOLOGICAL COMPETENCES OF AFIL:

- Digital and smart factory
- Material and surface treatment
- Additive manufacturing
- Adaptive and smart manufacturing
- De-and remanufacturing

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- **Skills and training:** workshops and events focused on specific themes to raise awareness on advanced manufacturing technologies and ensuing advantages. Road mapping for bottom-up support of policy makers in defining the research and innovation priorities. Education and skills development.
- An innovation **ecosystem and networking** opportunities. Direct contact and physical events that make stakeholders (digital IT and other SMEs, supply chains, investors, and other regions) come together, build networks, access information, share experiences, and tackle innovation-related problems.
- **Promotion of best practices:** success stories of companies having successfully implemented Advanced Manufacturing technologies to show SMEs and start-ups how they can improve their processes, products, and/or business models
- **Project ideas support: generation of stimulation for the creation of new innovative networks** that can help members develop project ideas.
- **Digital Maturity Assessment**
- **Support in funding opportunities:** access to Funding and Investor Readiness Services.



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CROBO HUB



Croatian Robotics Digital Innovation Hub (CROBOHUB), established in 2016 and hosted at the Innovation Centre Nikola Tesla Zagreb, is the key Croatian non-profit facility to support Croatian and South-East European companies in becoming more competitive by improving their business operations and production processes as well as products and services, by up taking digital technologies and robotic solutions.

THE TECHNOLOGIES COMPETENCES OF CROBOHUB:

Five thematic priority areas have been identified in the Croatian Smart Specialisation Strategy (S3) with relevant technological and production fields:

- Health and quality of life
- Energy and sustainable environment
- Transport and mobility
- Security, and
- Food and bio-economy.

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- **Skills and training:** access to the latest trends, technologies, and innovations in robotics relevant to products, processes, and/or business models; access and expertise related to pilot experiments demonstrating highly autonomous, adjustable hybrid (human-robot) logistics solutions run by the business needs of manufacturing SMEs; professional education services; education and support in intellectual property rights protection, technology transfer, and commercialisation of innovations for business and academic community; raising awareness and highlighting the importance of co-operation between the business and the academia.
- **Support in funding opportunities:** linking with investors, facilitating access to financial assets for digital transformations, matchmaking end users and suppliers of digital innovations across the value chain, and fostering synergy between digital and other key enabling technologies.
- An innovation **ecosystem and networking** opportunities: building and networking among various stakeholders within the value chain, with a special focus on support for manufacturing companies by organisation of various events, lectures, workshops and round tables, participation in national and international research, development and innovation projects in advanced robotic systems in cooperation with businesses and research institutions, and access and assistance in using the L4MS Marketplace.



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hub4industry is a group of organisations with complementary expertise and a not-for-profit objective of offering companies a set of services to support their digital transformation. The hub was established in 2019 and consists of the key orchestrator (the Kraków Technology Park) and consortium partners: T-Mobile and ASTOR technology companies; the AGH University of Science and Technology and the Kraków University of Technology; and specialists from the Construction Information Technology Cluster (BIM Klaster) and the Kosciuszko Institute. Together, we create a one-stop-shop - a point of integration and standardisation of multiple competencies in the industry of the future.

THE TECHNOLOGICAL COMPETENCES OF HUB4INDUSTRY:

- 5G Connectivity
- Robotics and automatization
- Artificial Intelligence
- Industrial IoT
- Cybersecurity
- BIM
- Cloud Computing
- Data Analytics
- 3D Printing
- VR/AR

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- **Demonstrations of new technologies** using i.e. showrooms and study visits to leading domestic and foreign manufacturers.
- **Proof of concept** for new technologies in manufacturing companies in the KPT ScaleUp acceleration programme with more than 30 pilots, including VR, AR, IIoT, big data analysis, AI, and cybersecurity.
- **Digitalisation readiness scanning** and benchmarking using ADMA methods.
- **Skills and training:** Academy of Industry 4.0 an e-learning platform for entrepreneurs, engineers, and manufacturing managers; education, workshops, meetups, webinars, etc.
- **Networking session** for industry.



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am-LAB - Advanced Manufacturing Laboratory is the brand name of Pannon Business Network Digital Innovation Hub. It is a tech-transfer spin-off company of PBN established in 2017. am-LAB is a service centre specialised in the application and presentation of most recent manufacturing technologies to develop smart end-user products in strong co-operation with their key customers. PBN was responsible for the national co-ordination and implementation of the High-Growth-Company development in the manufacturing sector, where it reached 300 SMEs operating in mechatronics, wood, and food sectors.

THE TECHNOLOGICAL COMPETENCES OF am-LAB:

- 3D scanning, modelling, 3D printing polymer
- Prototyping, reverse engineering
- 3D animation
- Augmented Reality development activities
- Collaborative robotics
- Data analysis, unique algorithm solutions
- Segmentation processes, Data visualization

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- **Training and research facility supplier** for manufacturing SMEs. Vision and strategy development for businesses, market intelligence.
- **Skills and training:** awareness creation, mentoring, education, and skills development; training is provided by junior staff members active in training material development and provision of business-oriented training content.
- **Product development, prototyping**
- **CGI animation and AR solutions** for product development and marketing activities
- **Support in funding opportunities:** access to funding and investor readiness service/ incubator/accelerator support.
- **Demonstrations of new technologies.**
- **Customer data analysis processes with unique algorithm solutions**



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Digital Innovation Hub Slovenia (DIHS) is an institution established in 2019 by Chamber of Commerce of Slovenia, with TECOS being one of the main strategic partners of the institution, supporting DIHS in providing services to companies (especially operating in the manufacturing sector) supporting their digitalisation. Located in Ljubljana, Slovenia, the DIHS operates on the national level with potential for international collaboration.

THE TECHNOLOGICAL COMPETENCES OF DIH SLOVENIA:

- Digital and industrial transformation
 - Digital competencies building
 - Data management
 - Change management.
 - Innovation in digitalisation.
- Main technologies:
- Internet of Things (e.g. connected devices, sensors and actuators networks)
 - Smart mechatronic tools
 - Cybersecurity
 - Artificial intelligence
 - Additive manufacturing

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- **Prototyping, process improvement, product development and testing facilities**
DIH Slovenia makes experimentation (Living Labs) and processes, digital business models improvement / experimentation environments available (e.g. at the Faculty of Organisational Sciences), as well as pilot and other environments (e.g. Faculty of Electrical Engineering) useful for prototyping and testing of digital products, and development available.
- **An innovation ecosystem and networking:** DIH Slovenia aims at connecting and supporting different industrial sectors, providing for a broad spectrum of needs and striving to support all industries that can seize and benefit from the opportunities of digital transformation.
- **Skills and training:** awareness creation, mentoring, education and skills development, collaborative research.
- **Support in funding opportunities:** Innovative approaches can also allow DIH Slovenia to establish a mechanism connecting new business proposals with corporate and private venture capital, and to offer technological expertise to the banking sector for making decisions about investment in digital opportunities.
- **Digital Maturity Assessment and Digital Transformation.**



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NEXT STEPS

Called action plans, instances of direct cooperation undertaken by the Digital Innovation Hubs are the core goal and the real tangible effect of the project.

Project partners have started to implement their action plans:

→ as training and mobility actions conducted regionally and abroad to train DIH operational staff and other DIH stakeholders and policy makers

→ market-focused transfer and cooperation actions to enhance the value chain of DIH stakeholders. Activities aimed to exchange know how on products, solutions, projects, services, and processes from the identified knowledge and experience range of other project partners.

As a result, ten Digital Innovation Hub Pilot Action concepts were developed, and 60 pilot actions were planned by partners within the S3HubsinCE project team.

Implementation of each partner's action will be documented to provide lessons learnt and future vision based on partner's results, and included in the Transnational Policy and Technology Blueprint. The Blueprint will provide recommendations on how to develop further the connections between regional innovation smart specialisation-critical organisations and a transnational network of Digital Innovation Hubs to promote Central European competitiveness.



S3HubsinCE Excellence

The project serves the creation of a common transnational vision and framework to foster digital transformation of European entrepreneurs, based on Digital Innovation Hubs.

By facilitating contacts between regional authorities, suppliers, and users along the value chain, the DIHs presented in this brochure have joined forces to boost European excellence and support the transformation of European industry. With dedicated staff, know-how, wide spectrum of tools and financial instruments to support companies, DIHs play a crucial role in recovery planning, and support regional, national and European policy makers to make Europe more competitive and innovative, greener, and more resilient.

Direct cooperation and action plans, undertaken by the partnering DIHs are in great demand especially nowadays, when a high number of enterprises have been devastated by the pandemic outbreak caused by Covid-19, losing clients and markets, reporting significant sales drops and deteriorating business. The goals and real tangible effects of the project will be achieved with introducing Transnational Policy & Technology Blueprint for CERIS3 Excellence.

The jointly created Constellation of CERIS3 Excellence will support promotion and dissemination of coordinated bottom-up and market-focused information and awareness raising actions, and bring networks of CERIS3 Champions closer to the target groups and market through such activities as the RIS3 Investment Forum that will be organised in Kraków in November 2021.

PARTNERSHIP



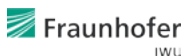
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This project is co-financed by the European Regional Development Fund through Interreg Central Europe.

More information about the project and our activities:
www.interreg-central.eu/Content.Node/s3hubsince.html