NAVIGATION CREWS

IN 10 TECHNOLOGY PRIORITY AREAS

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

Interreg
CENTRAL EUROPE
S3HubsinCE

European Union
European Regional
Development Fund

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WHAT IS THE PROJECT ABOUT?

Europe's potential to specialise in digital solutions on a global scale is not fully exploited. The main barriers are market fragmentation, lack of uniform regulations and procedures. **Digital Innovation Hubs (DIH**), a new EU initiative supporting digitalisation of the industry is here to help. The **DIHs** are complex services hubs, where businesses, and especially SMEs and start-ups, can improve their competences in streamlining production processes, products, and services by implementing digital technologies.

Regional **DIHs** 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. 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**. The **DIHs** act as local digital one-stop-shops for entrepreneurs, supporting them in access to knowledge, expertise, and know-how on international level and by offering them opportunities to work together. For the regional authorities, the **DIHs** act as local digital think tanks and technology radars offering them support in implementing regional smart specialisation processes.

MAIN GOALS

• creation of Navigation Crews operating as a transnational network of experts focused on key technology priority areas, most relevant for all regions

• promotion of market-focused excellence and value creation by a programme of transnational exchange between **Digital Innovation Hubs**

• implementation of policy planning oriented on the future and based on closer-to-market activities using transnationally proved experiences

RESULTS

● definition of strategic, future oriented 10 technology priority areas for CE regions
● for 10 technology priority areas, creation and implementation of joint strategies & action plans, transfer & cooperation actions, training & mobility activities
● cooperation among mature and growing DIHs at the European level (Austria, Germany, Italy, Poland, Slovenia, Hungary, Croatia)
● IT based platform for collaborative exchange of knowledge & innovation
● common transnational methodology on regional innovative eco-systems boosting cooperation between policy-makers, the academia, and business
● roundtables with top thematic experts and consultants
● international investment forum addressed to SMEs representing the 10 technology priority areas
● transnational policy & technology blueprint for CE Regional Innovation Strategies
● foundation for future foresight and identification of champion institutions and SMEs from 10 technology priority areas

WHAT ARE NAVIGATION CREWS?

Navigation Crews are strategic task forces based around the 10 Technology Priority Areas (TPAs) selected for Central Europe. They were created by experts and practitioners coming from partners teams and partnership ecosystem to form a transnational network of innovative actors. Their purpose is to strengthen regional innovation ecosystems through enhanced knowledge exchange and joint planning of concrete, market-focused, bottom-up actions. Ten Navigation Crews have been assembled, each of them is focused on a different TPA.

Navigation Crews identified within **S3HubsinCE**:

- Data Analytics, Complex Simulation, and Modelling
- Machine vision
- Predictive maintenance
- Factory and process automation
- DI&I Machinery

- Advanced and smart materials
- Industrial Internet of Things (IIoT)
- Digital marketing
- Innovation in circular economy
- Design & engineering for additive manufacturing

The need to focus on 10 TPAs and to select specific Navigation Crews was driven by the following objectives:

- improving regional competitiveness and industrial efficiency of the SMEs in order to expand the markets
- spreading an innovation culture to generate an innovative entrepreneurial mentality
- raising awareness and developing skills around the main issues of advanced production and reorienting SMEs to review their business models
- overcoming the gap between SMEs and large companies in digitalisation

• supporting re-industrialisation in emerging countries
• creating Open Innovation Communities, where enterprises can share their knowledge and experience on innovative subjects

Each Navigation Crews has appointed:
• the Leader managing and driving the Navigation Crew
• Contributor(s) actively involved in the activities
• Learner(s) acquiring new skills from the leaders and contributors.

Project partner structure and the participation of contributors and learners in the Navigation Crews offers a good mixture of general know-how and specific knowledge.

The subjects chosen by the Navigation Crews are related to the fields of innovative technology and are highly relevant at regional level so as to increase stakeholder competitiveness in the regions covered by the programme.

Each Navigation Crew highlights the priorities of their planned work, and approved common strategy, main goals and action plans. The activities planned for pilot actions will become reality in the following step.

PLANING   FORMATION   DEVELOPMENT   STRATEGY   ACTIONS

DATA ANALYTICS, COMPLEX SIMULATION AND MODELLING
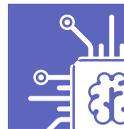
DEFINITION

Data Analytics, Complex Simulation, and Modelling are strategic subjects in all regions involved in the project. Nevertheless, all the SMEs seem to face the same challenges: lack of knowledge, limited practical approaches in transferring know how, demonstrators, use cases. The crew's mission is to understand how these topics will affect future business in the SMEs and to support DIHs in assisting SMEs in realising this and, possibly, in the process of adopting appropriate technologies.

MISSION STATEMENT:

Sharing the latest knowledge on Data Analytics, Complex Simulation, and Modelling with SMEs and acceleration of their common understanding via "demonstrators" provided by relevant regional players (DIHs, Research Centres, LABs, Technology Providers, and industry stakeholders).

OBJECTIVES, GOALS

The main objectives are:
● setting up a robust European network of experts and SMEs
● achieving a comprehensive understanding of SME needs in Data Analytics, Complex Simulation, and Modelling
● acting as a known observatory, showroom of existing demonstrators in the field of Data Analytics, Complex Simulation, and Modelling
● establishing formal cooperation between DIHs and EU initiatives in Data Analytics, Complex Simulation, and Modelling

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MACHINE VISION

DEFINITION

Artificial Intelligence is a strategic subject in all regions involved in the project. In business context, Machine Vision is a particularly interesting area of AI technologies. Nevertheless, all SMEs seem to face the same challenges: lack of knowledge, limited practical approaches in transferring know how, demonstrators, use cases. The crew's mission is to understand how these topics will affect SMEs' tomorrow' business and to support DIHs to assist SMEs in this awareness and – possibly – technology adoption process.

MISSION STATEMENT:

Sharing the latest knowledge on Machine Vision with SMEs and acceleration of their common understanding via "demonstrators" provided by relevant regional players (DIHs, Research Centres, LABs, Technology Providers & industry stakeholders).

OBJECTIVES, GOALS

The main objectives are:
● setting up a robust European network of experts and SMEs
● achieving a comprehensive understanding of SME needs in machine vision
● acting as a known observatory of existing demonstrators in the machine vision
● establishing formal cooperation between DIHs and EU initiatives in machine vision

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PREDICTIVE MAINTENANCE

DEFINITION

Artificial Intelligence is a strategic subject in all regions involved in the project. In business context, Predictive Maintenance is a particularly interesting area of AI technologies. Nevertheless, all the SMEs seem to face the same challenges: lack of knowledge, limited practical approaches in transferring know how, demonstrators, use cases. The crew's mission is to understand how these topics will affect future business in the SMEs and to support DIHs in assisting SMEs in realising this and, possibly, in the process of adopting appropriate technologies.

MISSION STATEMENT:

Sharing the latest knowledge on Predictive Maintenance with SMEs and acceleration of their common understanding via "demonstrators" provided by relevant regional players (DIHs, Research Centres, LABs, Technology Providers & industry stakeholders).

OBJECTIVES, GOALS

The main objectives are:
● setting up a robust European network of experts and SMEs
● achieving a comprehensive understanding of SME needs in Predictive Maintenance
● acting as a known observatory of existing demonstrators in the Predictive Maintenance
● establishing formal cooperation between DIHs and EU initiatives in Predictive Maintenance

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FACTORY AND PROCESS AUTOMATION

DEFINITION

Factory automation is defined as the use of control systems for operation of machinery and processes. It is widely employed in the manufacturing of chemicals, plastics, fertilisers, paper products, automobile components, aircraft production, and food processing. The benefits of automation include increased productivity, improved quality and consistency, and reduced human labour costs.

MISSION STATEMENT:

Through the experience and knowledge of its members, the Crew supports DIH as a knowledge hub in factory and process automation, whilst supporting SMEs by providing them with unique customised services.

OBJECTIVES, GOALS

The main objectives are:
● to become a platform connecting experts with SMEs, and a reference point for connecting respective DIHs
● to develop services based on SME needs
● to collect examples of best practice for demonstration purposes
● to become a member of formal networks of DIHs and other digital innovation platforms specialised in automation, and thus contribute knowledge and expertise.

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DI&I MACHINERY

DEFINITION

The machinery is a vital manufacturing sector in Central Europe, and is predominantly composed of small and medium-sized companies. As such it is a key play in the environment but lacks competencies in innovation, research, and development. Generally, companies from this sector also lack the understanding of impacts of digitalisation. The function of a Navigation Crew is to combine knowledge and expertise all around Central Europe and help DIHs so that they could support such companies.

MISSION STATEMENT:

The Crew supports SMEs by sharing experience and knowledge in order to accelerate their adoption and increase competence in implementing digital innovation tools. The Crew also involves relevant stakeholders in the respective regions as to improve access to digital innovation. The highly capable knowledge and experience providers guarantee uniqueness of the solutions.

OBJECTIVES, GOALS

The main objectives are:
● to become a platform connecting experts with SMEs, and a reference point for connecting regional competencies for respective DIHs, and developing a complete offer for companies
● to collect examples of best practice for demonstration purposes
● to support SMEs in the creation of in-house groups of practitioners
● to become a member of formal networks of DIHs and other digital innovation platforms specialised in the adoption of digital innovation in the machinery sector.

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ADVANCED AND SMART MATERIALS

DEFINITION

A Navigation Crew provides the understanding of how new materials and materials technologies, e.g. smart materials, will affect most future products of the businesses of tomorrow. We will provide know how in the field of smart materials, a list of experts in the field, and examples of applied best practices. We will inform about future developments and innovative trends in smart or functional materials. We want to identify the respective needs for stakeholders and connect with other partners and service providers to initiate future projects. A Navigation Crew consists of materials engineering experts and non-experts in a specialised field. Navigation Crew partners with no technical know-how of smart materials will contribute as mediators between their established innovation networks, and provide the necessary liaison for transfers to happen.

MISSION STATEMENT:

We share the latest knowledge on these technology domains with SMEs and accelerate their common understanding thanks to our connections to high quality stakeholders such as DIHs, Research Centres, MakerSpaces, FabLabs and Technology Providers. We also provide best smart structures practices in many industrial sectors, e.g. medical applications and production technologies. Materials sciences are highly interdisciplinary, and cover many application sectors and key enabling technologies.

OBJECTIVES, GOALS

Our vision is to become a one-stop-shop for smart materials applications (smart structures) by making institutional players (especially enterprises) aware of the potential of materials, an area whose future developments and innovative trends we will report on. In the long run, we want to be an integrating partner who connects business, education, and policy-making actors in order to conduct the transfer of practice-oriented and interdisciplinary know-how with them.

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INDUSTRIAL IOT

DEFINITION

A Navigation Crew provides the better understanding of how the Industrial Internet of Things (IIoT) will affect most future products and manufacturing as part of future businesses in companies. We want to identify the respective stakeholders' needs and connect them with regional partners and service providers to initiate projects. We strive to be a centre of competence by bundling and strengthening the information and initiatives of different actors in the IIoT. Navigation Crew consists of IIoT experts and non-experts in a specialised field. Navigation Crew partners with no technical know-how of the IIoT will contribute as learners and mediators between their established innovation networks, and provide the necessary liaison for transfers to happen.

MISSION STATEMENT:

We share the latest knowledge on these technology domains with SMEs and accelerate their common understanding thanks to our connections to high quality stakeholders such as DIHs, Research Centres, LABs, and Technology Providers. We also provide best IIoT practices in many industrial sectors, e.g. manufacturing and production technologies. The IIoT is highly interdisciplinary, and covers many application sectors and key enabling technologies.

OBJECTIVES, GOALS

Our vision is to become a one-stop-shop for IIoT applications by making institutional players (especially enterprises) aware of the potential of the IIoT, an area whose future developments and innovative trends we will report on. In the long run, we want to be an integrating partner who connects business, education, and policy-making actors in order to conduct the transfer of practice-oriented and interdisciplinary know-how with them.

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NAVIGATION CREWS

DIGITAL MARKETING

DEFINITION

The relationship between digital technologies and marketing is a key asset for the growth of SMEs. The boundaries between the fields of operation of a company (e.g. production, customer service, logistics, etc.) blur, and the digitalisation in marketing helps to optimise the links between those fields. Marketing is now more than just a business tool, it needs to be included in the overall business strategy. This highlights the importance of subject of digital marketing. This Navigation Crew focusses on digital marketing in Social Media Management / Marketing, Search Engine Optimisation (SEO), and Online Market Research.

MISSION STATEMENT:

We support the implementation of digital technologies in digital marketing, and inform our stakeholders about innovative methods and future developments. We assure this thanks to our network of highly qualified partners, notably DIHs, Research Centres, and Technology Providers. In doing so, we want to be a flexible partner easy to contact even for the smallest companies and institutional and/or policy stakeholders.

OBJECTIVES, GOALS

We want to support our stakeholders in the identification of the specific needs in digital marketing, provide independent knowledge, connect to regional partners and service providers, and inform about future developments and innovative trends. Additionally, we would like to build strong cooperation among DIHs on a transnational level to allow enterprises to improve their understanding of the future impact of digital marketing on their businesses.

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INNOVATION IN A CIRCULAR ECONOMY

DEFINITION

Circular economy is intensifying in various fields, ranging from repairs instead of scraping, via re-use of parts of existing products in new products, upcycling of parts of existing products in new applications, to recycling of materials. This challenge covers almost all fields related to consumer products, and is therefore relevant for all the manufacturing industries. The knowledge of this subject in enterprises is currently low if not absent. Moreover, the interaction along the supply chain is far from being sufficiently addressed in the area. Many products are designed for inherent obsolescence and are difficult to repair or unrepairable by design. Circular economy is a strategic initiative for the transition of European economy to global resource-saving behaviours on the level of the European Union.

MISSION STATEMENT:

The Crew performs the following:
● builds awareness among the existing network of enterprises within the crew
● provides structured engineering and design guidelines for products and services based on practices and developments in the area
● integrates structured engineering and design guidelines in education and training offers for enterprises and training/education organisations
● provides manufacturing and respective engineering services.

OBJECTIVES, GOALS

The main objectives are:
● structured engineering and design guidelines for supporting of circular economy
● structured business model support for relevant enterprises
● curricula for education/training on structured engineering and design guidelines for supporting circular economy

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DESIGN & ENGINEERING FOR ADDITIVE MANUFACTURING

DEFINITION

Nowadays, enterprises struggle with appropriate consideration of the principles of additive manufacturing in their product development process. Consequently, for instance economic benefits of 3D-printing are not yet sufficiently understood and thus utilized. Moreover, 3D-printing (or more general "additive manufacturing") is not useful for all purposes. It is essential to consider the strengths of additive manufacturing already during the design and engineering phase of new products to make full use of the potential.

MISSION STATEMENT:

The Crew performs the following:
● builds awareness among the existing network of enterprises within the crew
● provides structured engineering and design guidelines for products and services based on practices and developments in the area
● integrates structured engineering and design guidelines in education and training offers for enterprises and training/education organisations
● provides a network of existing regional, national, and transnational infrastructure for additive manufacturing and respective engineering services.

OBJECTIVES, GOALS

The main objectives are:
● structured engineering and design guidelines for supporting of additive manufacturing
● structured business model support for relevant enterprises
● curricula for education/training on structured engineering and design guidelines for supporting design and engineering
● development of a digital platform connecting FabLab infrastructure, manufacturing service providers, and design and product engineering experts to the public
● creation of a transnational network of companies and experts
● identification of company needs at European level to start new collaborations.

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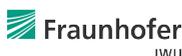
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More information about the project and our activities:
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