



## Smart4Europe2

### Catalysing Digitisation throughout Europe

# Deliverable 4.2

## Record of activities targeting national/regional initiatives

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<sup>1</sup> R=Report, DEC= Websites, patents filling, Ethics, ORDP: Open Research Data Pilot, etc., O=Other

<sup>2</sup> PU = Public, CO = Confidential, only for members of the consortium (including the Commission Services)

Acronyms Listed in Document	
<b>AI</b>	Artificial Intelligence
<b>AURA</b>	Auvergne-Rhône-Alpes
<b>BW</b>	Baden-Wuerttemberg
<b>CSA</b>	Coordination and Support Action
<b>COVID-19</b>	Corona Virus Disease
<b>DEI</b>	Digitising European Industry Initiative
<b>DIH</b>	Digital Innovation Hub
<b>EDIH</b>	European Digital Innovation Hub
<b>EC</b>	European Commission
<b>EEN</b>	Enterprise Europe Network
<b>ERDF</b>	European Regional Development Fund
<b>H2020</b>	Horizon 2020
<b>HE</b>	Horizon Europe
<b>HPC</b>	High-Performance Computing
<b>IA</b>	Innovation Action
<b>I4MS</b>	Innovation in Manufacturing SME
<b>RIS3</b>	Regional innovation strategy for smart specialisation
<b>RTO</b>	Research and technology organisation
<b>SME</b>	Small and medium-sized enterprise
<b>SAE</b>	Smart Anything Everywhere
<b>WP</b>	Work Package

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## Table of Contents:

0	Executive Summary .....	5
1	Introduction and Background.....	6
2	Policy background .....	8
	2.1 DIH and EDIH Background.....	10
	2.2 DIHs linkages with Smart Specialisation Strategies (S3) .....	12
3	Overview of the regions addressed.....	17
4	Case of Baden Wuerttemberg – South-Western Germany.....	18
	4.1 Description of the region .....	18
	4.2 Smart4Europe2 Links and Activities.....	19
	4.3 Record of Key Activities .....	21
5	Case of Auvergne-Rhône-Alpes (AURA) region, South-East France.....	24
	5.1 Description of the region .....	24
	5.2 Smart4Europe2 Links and Activities.....	25
	5.3 Record of Key Activities .....	26
6	Case of Lombardy region, Northern Italy .....	28
	6.1 Description of the region .....	28
	6.2 Smart4Europe2 Links and Activities.....	30
	6.3 Record of Key Activities .....	31
7	Case of Central Hungary region, Hungary .....	33
	7.1 Description of the region .....	33
	7.2 Smart4Europe2 Links and Activities.....	33
	7.3 Record of Key Activities .....	34
8	Conclusion .....	36

## List of Tables

Table 1: EC Directorates-General involved in digitisation and industrial strategies.....	9
Table 2: Smart Specialisation Areas of Baden-Wuerttemberg.....	14
Table 3: Smart Specialisation Areas of Auvergne-Rhône-Alpes.....	15
Table 4: Smart Specialisation Areas of Lombardy.....	15
Table 5: Smart Specialisation Areas of Hungary.....	16
Table 6: Record of key activities in Baden-Wuerttemberg.....	23
Table 7: Record of Key Activities in Auvergne-Rhône-Alpes.....	27
Table 8: Record of Key Activities in Lombardy.....	32
Table 9: Record of Key Activities in Central Hungary.....	35

## List of Figures

Figure 1: Overall objectives of Smart4Europe2; relevant objective for this document highlighted .....	6
Figure 2: The Smart4Europe2 ecosystem, relevant projects and initiatives for this document highlighted.....	6
Figure 3: European, national and regional digitalisation initiatives (source: EC).....	8
Figure 4: Complex and dynamic ecosystem of hubs, clusters, and networks and EU DIH Community excerpt of European, Member States, and regional level (based on DIHNET.EU outcomes).....	10
Figure 5: European overview of DIHs operational/ in preparation and EDIH candidates (source: Smart Specialisation Platform) .....	11
Figure 6: Smart4Europe2's 4 model cases for EU, national and regional collaboration.....	17
Figure 7: Distribution Digital Hubs in Germany (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Baden-Wuerttemberg (right) .....	18
Figure 8: European EDIH Ecosystem Event video.....	20
Figure 9: Distribution Digital Hubs in France (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Auvergne-Rhône-Alpes (right).....	24
Figure 10: Distribution Digital Hubs in Italy (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Lombardy (right).....	28
Figure 11: Distribution Digital Hubs in Hungary (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Central Hungary (right).....	33

## 0 Executive Summary

This report describes the Smart4Europe2 activities targeted at linking up and collaborating with national and regional Initiatives addressing digital transformation.

The Smart4Europe2 activities targeting national/regional initiatives range from bilateral meetings with policy makers and regional ministries, connecting with the DIH initiatives of the country and region, linking up with regional actors to collaborate to become a future EDIH, linking up with EEN to provide a seamless service to SMEs of the region, to organising joint meetings and events including a dedicated Ecosystem Building Event for each region.

The consortium partners are deeply rooted in the Smart Anything Everywhere Initiative, Digital Innovation Hubs as well as national/regional ecosystem. Smart4Europe2 partners have continuously exploited and deepened existing links to related initiatives, projects and other DIHs as well as initiated new cooperation opportunities within the project lifetime.

With the rise of the EU-local strategy (strong regional ecosystems interacting on a pan-European level), Smart4Europe2 was well-positioned, representing four model regions (Baden-Wuerttemberg, Lombardy, Auvergne-Rhone-Alpes, Central Hungary), to enhance and showcase such interactions. At the national/regional level, Smart4Europe2 partners took advantage of deep involvement in numerous projects, clusters, and networks. In addition, they contributed to the Digital Europe EDIH strategy, where many project partners have now also become EDIH (European Digital Innovation Hub) candidates.

In summary, Smart4Europe2 has performed the following activities during the project lifetime:

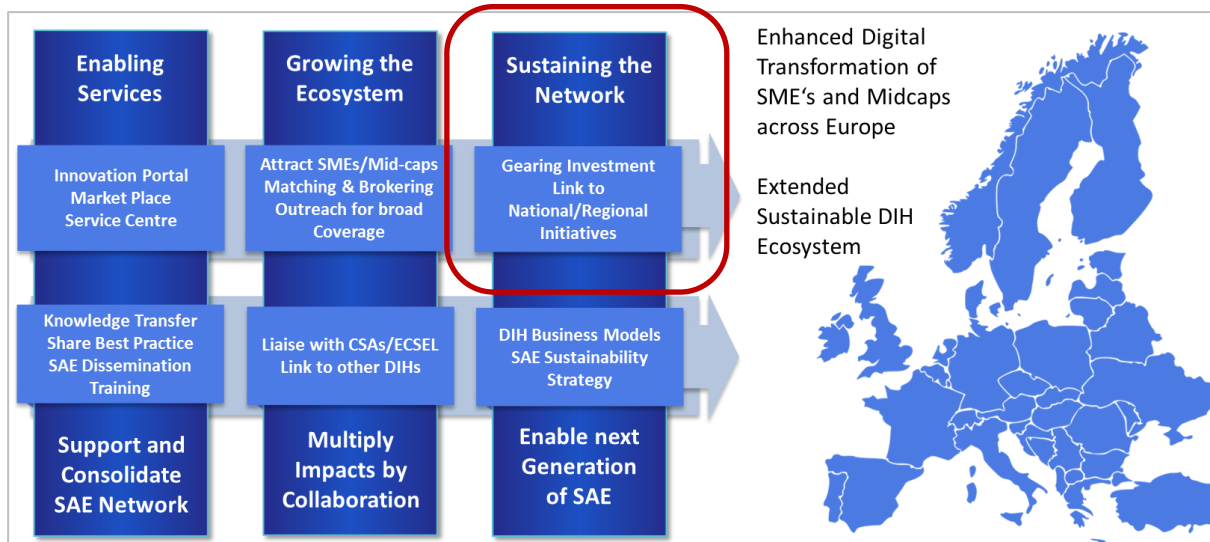
- Close connection with regional policy makers and ministries (over 25 bilateral meetings)
- Meetings with DIHs initiatives of the country / region (over 30 meetings, 15 joint events)
- Meetings with other national/regional initiatives in the context of supporting SMEs in their digital transformation (over 10 meetings / activities)
- Informing regional stakeholders/ and policy makers on (E)DIH strategy of the European Commission (over 10 information events)
- Participation in EDIH consortium building activities leading to 6 EDIH candidates with S4E2 partners contributions
- Linking up with EENs of the region (5 joint events / brokerages)
- 1 session for EDIH / EEN / Start-up Europe collaboration with over 700 participants
- Organisation of 3 Ecosystem Building Events (Lombardy, Auvergne-Rhone-Alpes, Central Hungary)
- 1 final event planned in December in collaboration with the region of Baden-Wuerttemberg.

The activities have been very impactful, as the key aim was to connect the regions with Europe (to build a local-EU Network), and at least one EDIH candidate could be established with S4E2 partner contribution within each of the four S4E2 model regions.

The feedback from activities and events were very positive. Especially the bigger Ecosystem Building Events provided an excellent opportunity for regional and EU initiatives to exchange and foster collaboration. Furthermore, various 'Letters of Support' resulted from the meetings to agree on future collaboration of evolving EDIHs.

# 1 Introduction and Background

One of the key objectives of Smart4Europe2 is to grow the SAE Ecosystem and multiply its impacts through collaboration with related national and regional initiatives (see figure 1).



**Figure 1: Overall objectives of Smart4Europe2; relevant objective for this document highlighted**

The document at hand describes how the Smart4Europe2 consortium exploited and intensified existing links, as well as initiated and conducted activities to link up with national and regional initiatives.



**Figure 2: The Smart4Europe2 ecosystem, relevant projects and initiatives for this document highlighted**

This document addresses the liaison and cooperation with national and regional initiatives addressing digital transformation of industry, especially start-ups, SMEs and mid-caps. Many digitisation initiatives already exist at national and regional level and first steps towards collaborating on a European level have already taken place.

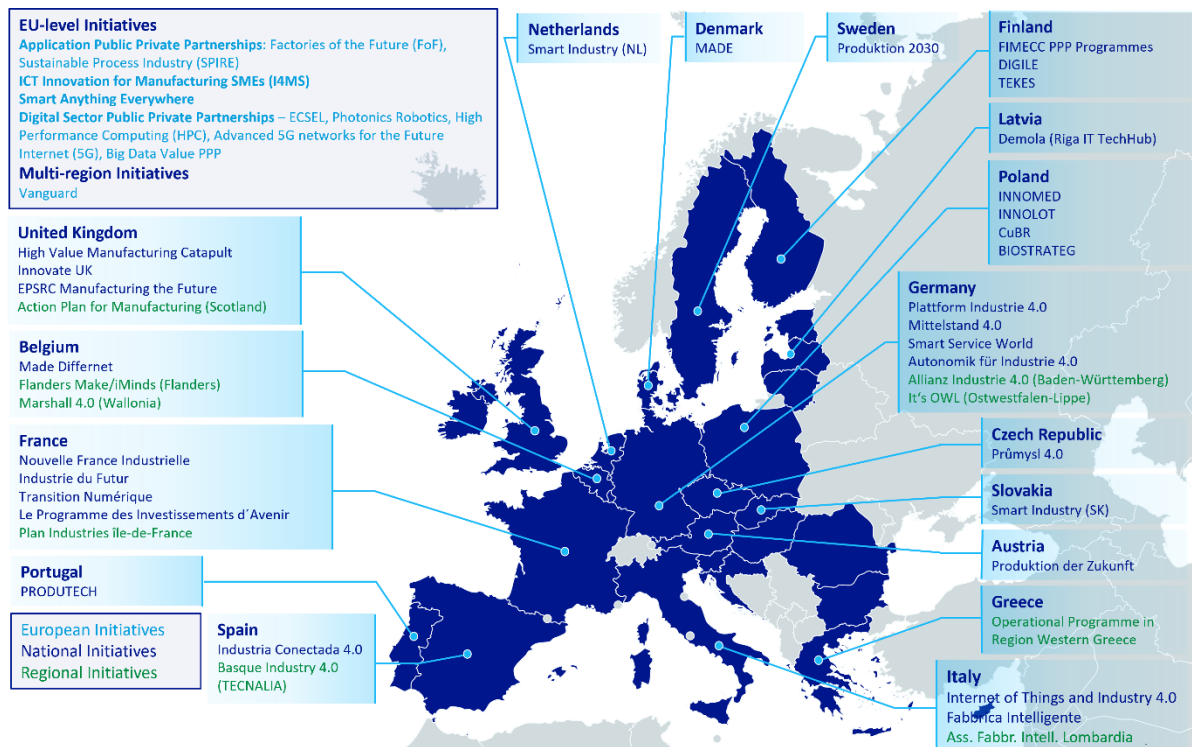
As the cooperation of relevant initiatives at regional, national as well as EU level is key to harmonising and uniting the European DIH community, a key goal of Smart4Europe2 was to bring this to the next level. The Smart4Europe2 project builds on an extensive existing network, thanks to the involvement of the project partners in thematic regional clusters, as well as national and regional initiatives. Moreover, deep links to regional policy makers, ministries, as well as Enterprise Europe Network and start-up Europe Initiative exist. Many partners act as innovation accelerators to regional start-ups, SMEs and mid-caps. National and regional initiatives include Digital Hubs Initiatives, Platform Industrie 4.0 & Alliance Industry 4.0 Baden-Wuerttemberg, Vanguard Initiative, 4 Motors, MADE Competence Center, DIH Lombardia, AFIL, MinaSmart, Minalogic Hungarian Industry 4.0 technology platform and Innomine among others.

Throughout the project, the partners leveraged existing links to include key actors from these initiatives in meetings like the Smart4Europe2 Ecosystem Building Events (D3.2). Moreover, four regions where consortium partners organisations are located (Lombardy, Baden-Wuerttemberg, Auvergne Rhône-Alpes, Central Hungary) are taken as exemplary 'model regional cases' to demonstrate a networked approach between regional policymaking, clusters and SAE. The respective partners entered into close contact with the DIHs, funding bodies and policy makers in regions to discuss win-win situations for combining European/national/regional efforts and co-investment. The European approach towards creating one EDIH per region as well as the collaboration of individual DIHs on a European level is fostered.



## 2 Policy background

Fostering digitisation in the European Union with targeted policy measures has been a key priority to support the Member States as well as companies in their efforts of digital transition over the past years. In this context, 'Europe 2020' was the EU's strategy for 2010-2020, which placed the topic at the top of the European Commission's (EC) agenda<sup>3</sup>. In particular, with 'A digital agenda for Europe' resulting from this Europe 2020's initiatives, an important step has been made towards a clear European digital strategy to deliver sustainable economic and social benefits from a European digital single market<sup>4</sup>. Through the 'Digital Single Market strategy' developed in this process, the EC and the Council launched the 'Digitising European Industry' (DEI) initiative to reinforce EU competitiveness in digital technologies and to ensure that the entire industry sector in the EU can fully benefit from digital innovations to upgrade its products, improve its processes and adapt its business models to the digital age<sup>5</sup>. It supports Member States in their efforts of developing and implementing their own digitisation strategies and aims at joining forces to create synergies and benefit from complementarities. The map below illustrates important European, national and regional digitisation initiatives.



**Figure 3: European, national and regional digitalisation initiatives (source: EC)**

The overall DEI strategy is therefore based on an ambitious collective effort involving public and private stakeholders across Europe at regional, national and EU level. Monitored and steered by the European platform of national initiatives on digitising industry, the strategy consists of four pillars: DIHs,

<sup>3</sup> European Commission, COM(2010) 245 final/2 of 26/8/2010, A Digital Agenda for Europe, Brussels.

<sup>4</sup> European Commission, COM(2015) 192 final of 6/5/2015, A Digital Single Market Strategy for Europe, Brussels.

<sup>5</sup> Council of the European Union (2015), 9340/15 of 29/5/2015, Conclusions on the digital transformation of European industry.



Partnerships and Platforms, Skills and Jobs, and Regulatory Framework. As one of the key elements of the DEI strategy the DIHs as a European network of support facilities are designed as one-stop-shops, where SMEs and mid-caps test the latest digital technologies and get training, financing advice, market intelligence and network to improve their business. In addition, the EC is working together with the Member States on the implementation of so-called European Digital Innovation Hubs (EDIHs), which are pre-selected by each member state, and focus on providing technological expertise and experimentation facilities to industry as well as the public sector through trans-regional collaboration support and shared use of expertise to strengthen pan-EU value chains.

According to the '2030 Digital Compass', more than 200 European Digital Innovation Hubs and industrial clusters across the EU support digital transformation of both innovative and non-digital SMEs, and connect digital suppliers to local ecosystems. The Commission will update its Industrial Strategy, also with a view to accelerating the digital transformation of the industrial ecosystems in support of the 2030 targets.<sup>6</sup>

At the EU level, the main EC Directorates-General (DGs), which are working on digitisation and industrial strategies and implement policy measures<sup>7</sup> were identified:

Directorate-General for Communications Networks, Content and Technology (DG CNECT)	Directorate-General for Competition (DG COMP)	Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL)
Leads and coordinates the DEI initiative. DG CNECT deals with policy and provides financial support through the EU's research and innovation programme, Horizon 2020, Horizon Europe and Digital Europe.	Responsible for establishing and implementing competition policy for the EU.	Responsible for EU policy on employment, social affairs, skills, labour mobility and the related EU funding programmes implemented by Member States and supported through the ESF under shared management.
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW)	Directorate-General for Regional and Urban Policy (DG REGIO)	Directorate-General for Research and Innovation (DG RTD)
Responsible for completing the internal market for goods and services.	Responsible for strengthening the EU's economic, social and territorial cohesion through ERDF and Cohesion Fund programmes implemented by the Member States under shared management.	The principal DG for the Horizon programmes.

**Table 1: EC Directorates-General involved in digitisation and industrial strategies**

<sup>6</sup> Digital Compass - [Register of Commission Documents - COM\(2021\)118 \(europa.eu\)](https://registerofcommissiondocuments.europa.eu/com(2021)118)

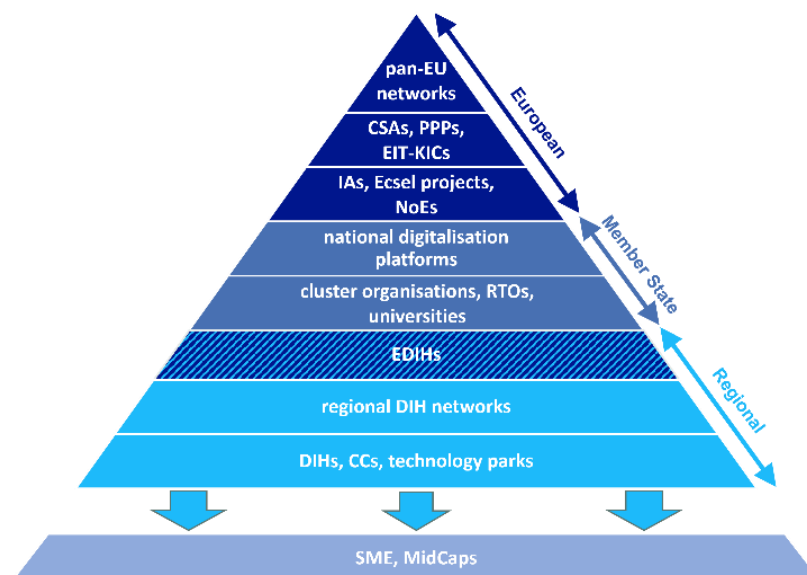
<sup>7</sup> European Court of Auditors, page 13 of 2020, Digitising European Industry: an ambitious initiative whose success depends on the continued commitment of the EU, governments and businesses, Luxembourg.

Smart4Europe2 partners have intensively participated in the DEI initiative and its working groups from the very beginning and throughout the project duration. In particular, within the work programme, through which Smart4Europe2 and its sister projects are funded, specific projects were clustered as DEI focus area projects. Through its strong networking activities Smart4Europe2 partners have many contact points, especially with the sister projects under the previous and same call (SAE call), the I4MS call as well as other Coordination and Support Actions (CSAs).

## 2.1 DIH and EDIH Background

As already mentioned, the European Commission is currently establishing a network of European DIHs where DIHs are working together to provide support for digital transformation to companies across the EU. The overall aim of the network is to offer SMEs access to expertise from an EU-wide network of hubs and provide access to the regional ecosystem and digital support close to companies in geographic proximity. Through the Digital Europe Programme and European Regional Development Funds, important amounts of funding are foreseen to strengthen a network of EDIHs that will geographically cover the whole territory of Europe. Each DIH will be at working distance of their stakeholders, speak their language, and will help organisations to become more performant by improving their business/production processes, products (and services) through digital technology.<sup>8</sup>

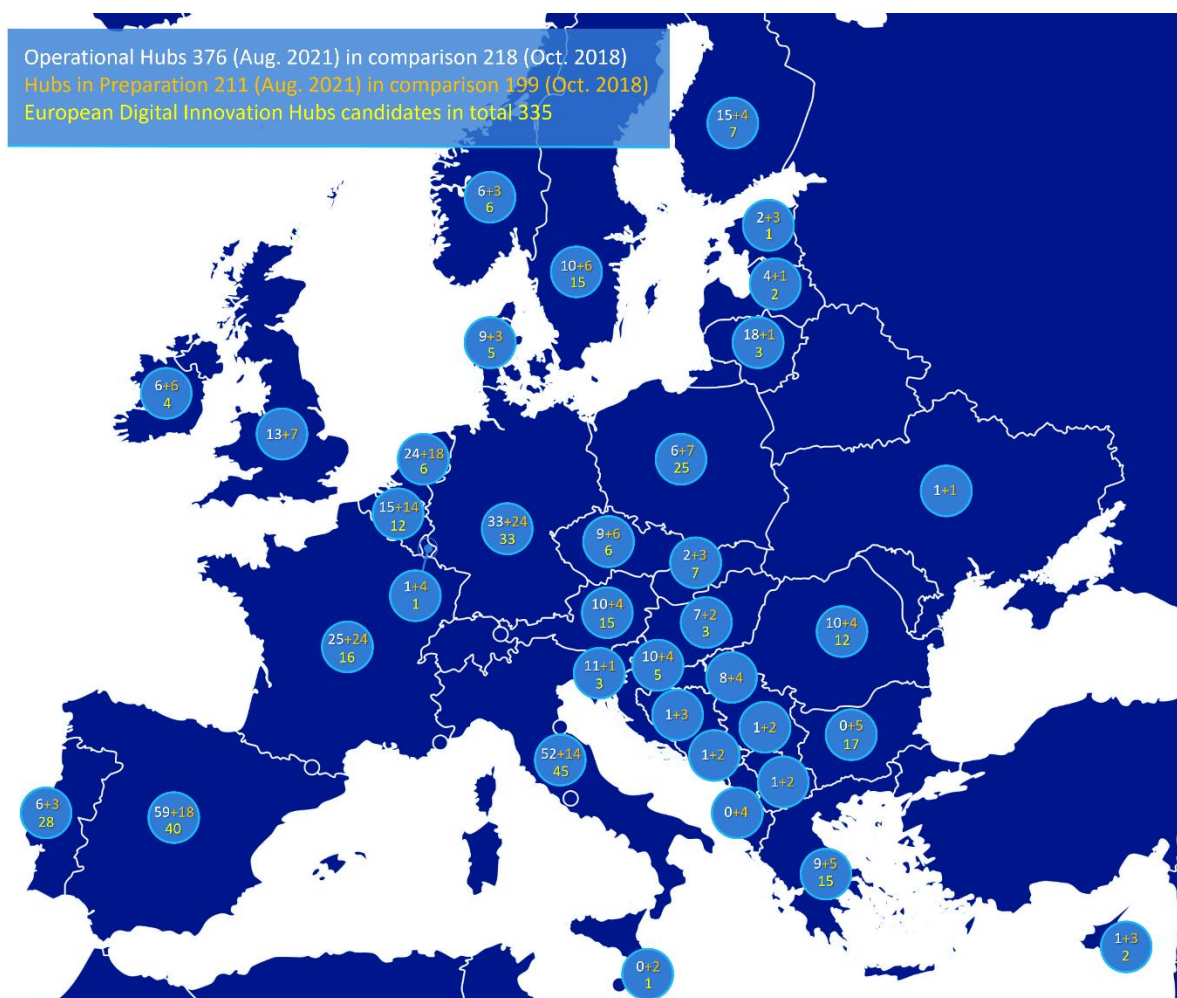
DIHs are still diverse in terms of organisation (e.g., regional bodies, clusters or research centres) and also differ with regard to the geographic scale (e.g. regional and interregional). Through their networks, DIHs engage successfully with new customers and provide services relevant to local SMEs and industry and build trustful cooperation among actors.



**Figure 4: Complex and dynamic ecosystem of hubs, clusters, and networks and EU DIH Community excerpt of European, Member States, and regional level (based on DIHNET.EU outcomes)**

<sup>8</sup> EC, Joint Research Centre, 2020, Digital Innovation Hubs as policy instrument to boost digitalisation of SMEs. A practical handbook & good practices for regional/national policy makers and DIH managers.

The Digital Europe Programme and its related EDIH documents<sup>9 10</sup> aim to have at least one DIH per region and co-fund the collaboration among the hubs. At the same time, national and regional authorities are responsible for the funding and supporting any new and existing DIHs. The EC wants to encourage with such measures primarily a well-connected and cohesive DIH network, which supports SMEs by offering access to specialised digital services based on local conditions, which can provide customised solutions to SMEs. The main advantage of such a network is to have complementary stakeholders as well as possibilities to pool resources towards a common goal and to develop a deep expertise, ease investments, and increase the quality of the services and digital infrastructures across the EU.



**Figure 5: European overview of DIHs operational/ in preparation and EDIH candidates (source: Smart Specialisation Platform)**

<sup>9</sup> **European Digital Innovation Hubs** <https://digital-strategy.ec.europa.eu/en/activities/edihs>

<sup>10</sup> European Digital Innovation Hubs in Digital Europe Programme -Draft working document – update 25-01-2021 <https://europa.eu/!Tv43JN>

The EDIHs distinguish themselves from DIHs by having a clear function on a local and European level. To fulfil this mission, the hubs are funded within the Digital Europe programme and will be made available for hubs already (or will be) supported by their Member States (or regions) to increase the impact of public funding. The initial network of EDIHs is established from a list of hubs selected by Member States, which have an essential role during the selection process.

Changing the perspective to a regional level, EDIHs improve competitiveness by stimulating digital transformation and specialisation that is based on regional strengths and addresses local needs. Therefore, the hubs are close to their customers and speak the same language. From a European perspective, EDIHs will develop their offer by gathering new knowledge and capacities through their involvement in the Digital Europe programme in the areas of Artificial Intelligence (AI), High-Performance Computing (HPC), Cybersecurity, Advanced digital skills and solutions for public sector. The aim is that networking activities of the hubs will stimulate knowledge transfer among hubs and infrastructures are opened up for a broader use outside the regional boundaries. This approach will reduce duplication and optimise investments in infrastructure. In addition, hubs will learn from other hubs through collaboration and exchanging their experience (best practices). The activities of EDIHs on a European level will open new markets for companies that are taking part in innovations by promoting excellence development locally to other regions in Europe.<sup>11</sup>

In concrete terms, as a part of broad network and collaboration activities, EDIHs learn over time to better support SMEs and the public sector by using experience and the know-how of other hubs. To provide their own customers with a wide range of services, various EDIHs can work together on the basis of a coordinated process, e.g. in terms of technology, a specific sector or common services. Certainly, forms of ad-hoc collaboration based on match-making will arise to offer support to stakeholders with high added value.<sup>12</sup> In general, many other collaboration services are conceivable on a European scale.

## 2.2 DIHs linkages with Smart Specialisation Strategies (S3)

For research and innovation, the EC implemented the so-called ‘Smart Specialisation Strategies’ (S3) in the financial period 2014-2020 under the European Regional Development Fund (ERDF). The approach aims to achieve that all regions - or for some Member States and the entire country - develop a strategy that builds on each region's unique industrial and research strengths and potentials. These long-term growth strategies focus on the regional innovation eco-system following a bottom-up approach and integrate the entrepreneurial discovery process, bringing together business, academia, civil society, and local authorities. Over 180 Smart Specialisation Strategies have been developed at regional and national level across 19 EU Member States and 7 non-EU countries; furthermore, 187 EU and 18 non-EU regions have registered.<sup>13</sup>

Besides a strong regional focus, smart specialisation is also taking place through interregional or transnational cooperation within common growth cross-border development areas (e.g., Industrial Modernisation, Energy and Agri-food). This regional cross-border cooperation (e.g., Alpine and Danube regions), leading to new EU-wide value chains, strengthens international network and deepens the

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<sup>11</sup> EC, 2020, Directorate-General for Communication Networks, Content and Technology.

<sup>12</sup> EC, 2021, Summary of Webinar on Collaboration between EDIHs.

<sup>13</sup> EC, Smart Specialisation Platform, access Sep. 2021: <https://s3platform.jrc.ec.europa.eu/>.

common activities among research, innovation and industry actors especially through joint initiatives in product development and process design. The EC implemented such common priority areas; 35 so-called S3 platforms to date, which bring together policy makers, business researchers, clusters, and civil society to enable and foster these activities. Furthermore, within the funding period 2021-2027, the EC has proposed a budget of 500 million Euro for ‘interregional innovation’.<sup>14</sup>

In other words, smart specialisation strategies have the purpose of defining regional and national priorities in areas where different fields of expertise, technologies, business sectors come together. Through a multi-stakeholder entrepreneurial discovery process, various stakeholders jointly identify and design innovation agendas for the specific focus areas. The resulting agendas may contain a wide range of domains, e.g., security, mobility, energy efficiency, etc. On a closer look at the smart specialisation strategies, it becomes apparent that many EU Member States include the topic of digitisation as a horizontal priority, which emphasises the impact of digital technologies on productivity growth and competitiveness of all businesses sectors. In particular, latest digitisation topics, e.g., artificial intelligence, big data, Internet of Things, automation and robotics, blockchain, cloud computing, etc., and resulting innovations are used to drive regional transformation of industry.

It becomes obvious, that smart specialisation priorities at regional and national, as well as interregional and cross-border level especially, have a large common basis in digital innovation topics. Therefore, fostering digital competencies among regional stakeholders ensures that the various strategies are rolled out successfully across the EU.

On the other hand, DIHs have the mission to support the competitiveness of start-ups, SMEs and mid-caps through better understanding and experimenting with digital technologies. Therefore, DIHs provide digitalisation consultancy to all sectors and contribute to the implementation of specialisation within the regions and lead or take part in establishing a S3 network towards digital innovation.

To provide digital services to local businesses, the hubs can use their broad ecosystem which is usually formed by RTOs, technological companies, universities, and governmental institutions. Through these networks, DIHs can hold several roles within the Smart Specialisation processes (e.g. as co-designers, advisors of smart specialisation, and reference point providing information on both market and digitalisation matters etc.) as well as taking the lead role for development of priority areas. The smart specialisation priorities and the specialisation areas of DIHs in the region are often complementary and missing competencies may be compensated by DIHs networks in other regions or countries.<sup>15</sup>

The Joint Research Centre of the European Commission has developed a practical handbook with good practices on investments in Digital Innovation Hubs. The handbook aims to support regional, national, and RIS3 (Regional Strategy for Research and Innovation for Smart Specialisation) implementation policymakers and/or DIH managers.<sup>10</sup>

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<sup>14</sup> EC, Joint Research Centre, 2020, Digital Innovation Hubs as policy instrument to boost digitalisation of SMEs. A practical handbook & good practices for regional/national policy makers and DIH managers.

<sup>15</sup> EC, Joint Research Centre, page 15 of 2020, Digital Innovation Hubs as policy instrument to boost digitalisation of SMEs. A practical handbook & good practices for regional/national policy makers and DIH managers.



## 2.2.1 Smart Specialisation Areas of addressed regions<sup>16</sup>

### Baden-Wuerttemberg

Sustainable mobility concepts	ICT, green IT and intelligent products	Health	Environmental technologies, renewable energies and & resource efficiency
E-mobility, alternative driving systems, innovative usage concepts and networked, resource-efficient mobility. Integration of traffic systems with the help of intelligent control systems, ecological modernisation of the state's vehicle fleet.	Cloud computing, open-source software, energy and resource efficiency, sustainable mobility and e-Health.	Medical technology, application of health care procedures in acute care, rehab and cures, as well as research into new frontiers, such as neurology or bionics.	Smarter use of scarce raw materials and energy carriers, lightweight construction, sustainable production processes in SMEs, recycling and waste management and promote the qualification of engineers and skilled workers.

**Table 2: Smart Specialisation Areas of Baden-Wuerttemberg**

### Auvergne Rhône-Alpes

Personalised healthcare for infectious and chronic diseases	Smart and energy-efficient buildings	Industrial processes and eco-efficient factory	Smart mobility systems
Diagnosis, therapy, vaccine, medical technologies, health, nutrition and some target diseases (infectious diseases, cancers, other chronic diseases and ageing).	Active management of buildings, innovative materials and integrated photovoltaic solar energy.	This covers the sectors of chemicals and the environment: low-carbon and eco-efficient processes, metrology and environmental instrumentation, recycling and waste management and bio-based chemistry.	This covers smart transport systems, the vehicle of the future, modelling and uses.
Digital technologies and user-friendly systems	Sports, tourism and mountain infrastructure	Networks and energy storage	
This involves advanced production and industrial robotics,	This encompasses sport articles and equipment,	This involves multi-scale smart networks (micro grids, smart	

<sup>16</sup> EC, Smart Specialisation Platform, access Sep. 2021: <https://s3platform.jrc.ec.europa.eu/where-we-are>.

service robotics and ambient intelligence, the treatment of complex data and cybersecurity, and digital culture and education.	accessibility and infrastructure, security and management of natural risks, and an integrated offer of services linked to experiential tourism.	grids and super grids) and multi-energy storage.	
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**Table 3: Smart Specialisation Areas of Auvergne-Rhône-Alpes**

#### Lombardy<sup>17</sup>

Aerospace	Agri-Food	Green Industry	Health Industry
The production system consists of over 185 businesses with more than 15,000 employees and an overall turnover of about 4 billion euro, 1,7 billion euro of which from exports. The region offers all the technologies and skills of the entire supply chain required to build fixed and mobile-wing platforms and space frames.	The Lombard agri-food production system is the most important at Italian level and one of the most important in the European context. Agriculture production and food processing activities take place in approximately 70,000 production sites, involving 245,000 workers.	The green industry SA includes over 40,000 businesses with approximately 190,000 employees. The green industry is composed of rich and varied systems of skills, which include energy and cleantech and chemistry.	The SA contains a very rich and varied system of competences which includes the following themes: biotechnologies, pharmaceuticals, medical devices, food, creative industries and constructions for equipped living and working environments and for individual well-being systems.
Creative and Cultural Industries	Advanced Manufacturing	Sustainable Mobility	
The system of cultural and creative industries is made up of 260,000 enterprises, 43,101 of which operating in the fields of design, fashion, recording and music market, entertainment. The cultural industry ranks fourth after the major European areas.	The manufacturing industry is the first sector of the non-financial economy in terms of added value and number of employees. Moreover, this sector is complementary to service industry, as it produces goods required to produce Services.	The Lombard mobility industry is a comprehensive field that encompasses rubber, rail and water mobility, and logistics. The automotive manufacturing industry are particular important in this area.	

**Table 4: Smart Specialisation Areas of Lombardy**

<sup>17</sup> Mario Melazzini, page 10 of 2013, Research and Innovation Strategies for Smart Specialisation in regione Lombardia.



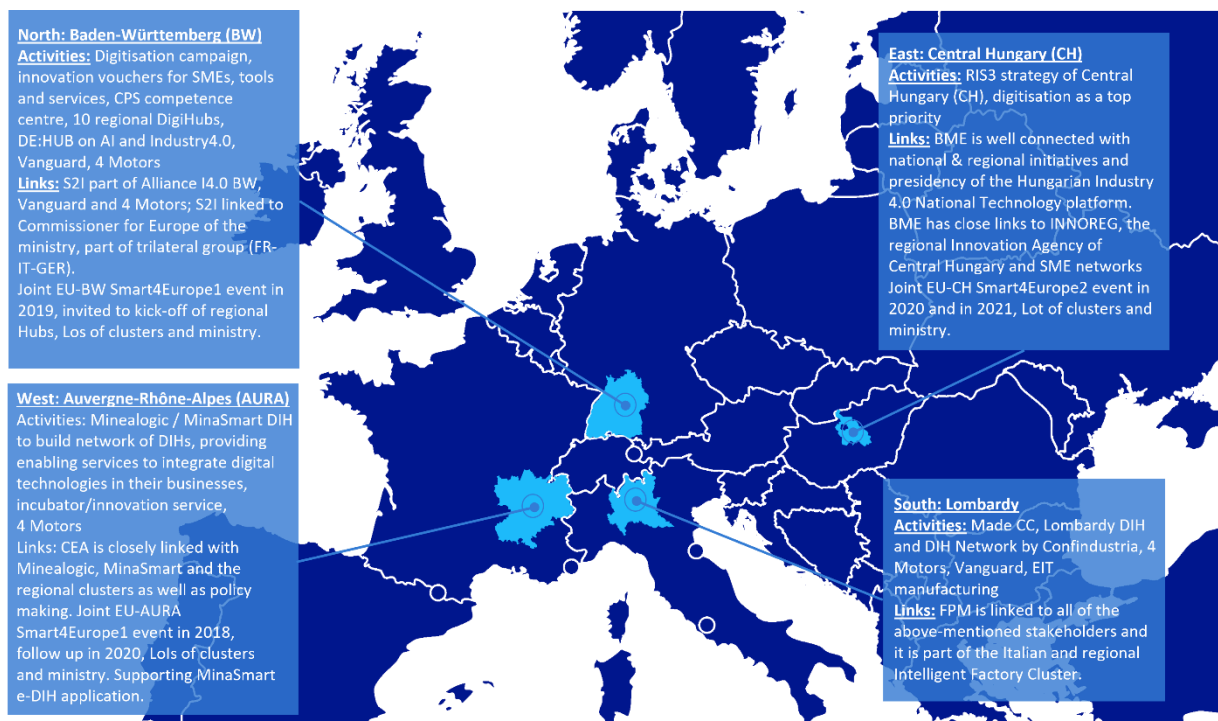
## Hungary

Advanced technologies in the vehicle and other machine industries	ICT and information services	Sustainable environment	Agricultural innovation
This priority covers several segments of the machine industry RDI, whose priority (but non-exclusive) objective is to develop the vehicle industry from the development of vehicle components to the different branches of machine production (including, but not limited to, agricultural, food processing, precision and household machinery).	This is a horizontal priority intending to support sectoral priorities, such as bioinformatics or diagnostic imaging in the health industry, or the intelligent transport systems in the vehicle industry, or “smart city” in the energy domain.	The priority is aimed at promoting the sustainability of the environment and natural resource management (e.g., environmental biotechnology) through the research and development of modern technologies and the implementation of the environmental industry and sectoral innovation.	The aim of the priority is to advance and establish the innovations facilitating sectoral renewal from the agricultural knowledge centres through producer undertakings to individuals, with the aim of enhancing the innovation potential of the sector.
Clean and renewable energies	Healthy society and wellbeing	Inclusive and sustainable society	Healthy local food
This priority involving the energy sector is designed to reduce the energy dependency of Hungary by means of clean and environmentally friendly energy and promoting the related RDI activities, so that the energy produced locally is sustainable, decreases the environmental load and is cost effective, in particular for the households.	The priority aims to cover the entire health care industry innovation chain ranging from the better understanding of diseases, through prevention and recognition, to curing and personalised doctoring through the use of advanced technologies, such as biotechnology in health industry, biomedicine and pharmaceutical industry, systems biology-based remedy, advanced diagnostic and therapeutic methods.	This is a horizontal priority aims to comply with the newest innovation model directions in education and training, health-conscious education and prevention, promoting entrepreneurial skills, organisation and management development, regional development.	The priority targets the development of Hungarian food industry in terms of the production of high-quality foods of high added value, foods supporting a healthy diet, functional foods and Hungarian specialities, as well as the shortening of food chains and in the field of food safety.

**Table 5: Smart Specialisation Areas of Hungary**

### 3 Overview of the regions addressed

In Smart4Europe2, a special focus was put on the link with national and regional activities. To that end, **four model regions** are being promoted to act as **pathfinders** towards an **EU-national-regional strategy**. The graph below gives an overview of the four model regions targeted by Smart4Europe2. The individual Smart4Europe2 partners are strongly embedded within their regional ecosystems, Steinbeis2i and Hahn-Schickard representing Baden-Wuerttemberg, CEA Auvergne-Rhône-Alpes, Budapest University Central Hungary and Fondazione Politecnico di Milano Lombardy. Various activities are illustrated in the graph and key links to national and regional initiatives are displayed.



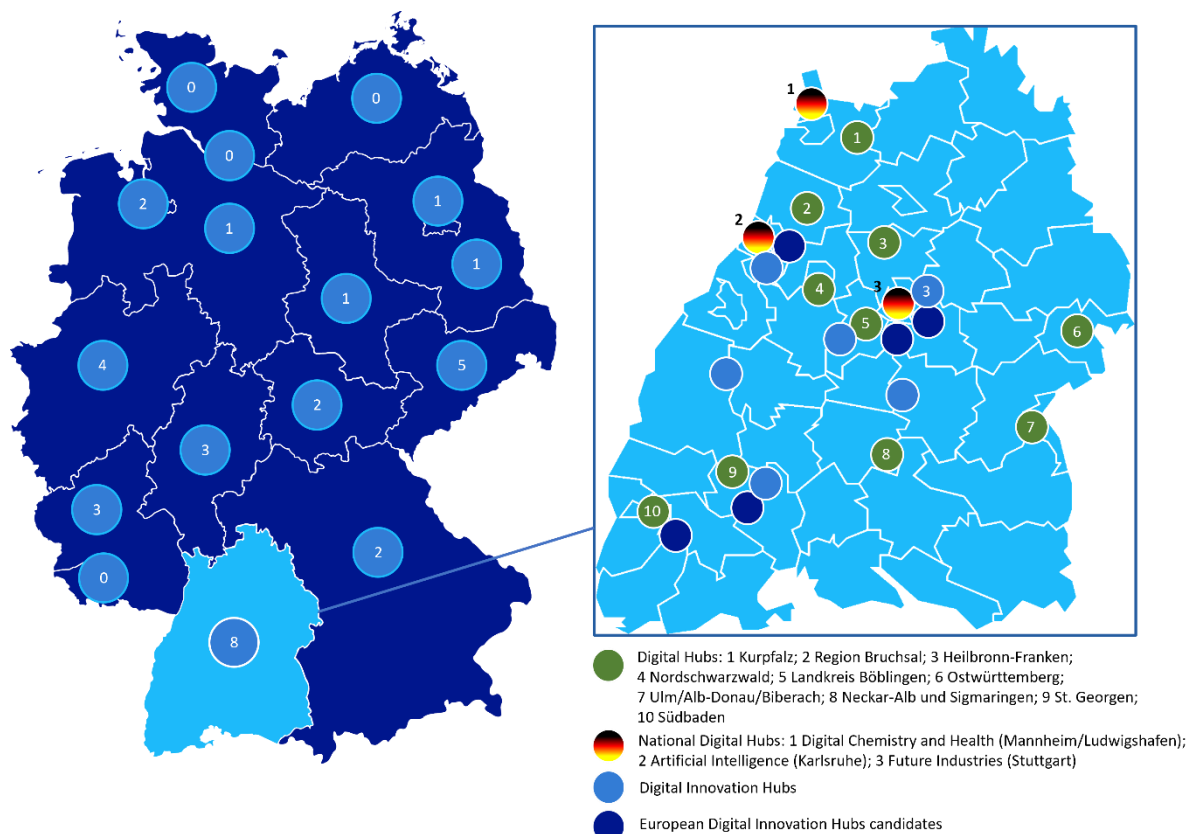
**Figure 6: Smart4Europe2's 4 model cases for EU, national and regional collaboration**

Three dedicated Ecosystem Building Events were organised to bring the relevant stakeholders together to build and bond the community for catalysing digital transformation across Europe. A dedicated Deliverable D3.2 'Report on Ecosystem Events' describes the details of these activities in the regions of Auvergne-Rhône-Alpes, Lombardy and Central Hungary. The final project event will be held in Baden-Wuerttemberg. Activities and events are held in collaboration with or inviting initiatives like Alliance Industry 4.0 BW, Digital Hubs BW, Piano Nazionale Industria 4.0, DIH Lombardia, Intelligent Factory, Minealagic, Minasmart DIH and Hungarian I4.0.

The following chapters provide details on the activities within these four model regions.

## 4 Case of Baden Wuerttemberg – South-Western Germany

### 4.1 Description of the region



**Figure 7: Distribution Digital Hubs in Germany (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Baden-Wuerttemberg (right)**

The Baden-Wuerttemberg (BW) region is working continuously on their strategic innovation policy, which is implemented almost across the entire federal state. These research and technology policies are defined by longstanding close cooperation of people and institutions from the science, business-enterprise and political sectors. According to InnoBarometer, BW has an investment in RTD of nearly 5 % and is one of the most innovative regions in the EU. Over the last decades, this strong network funded by national and regional funding agencies, enabled a wide range of common collaboration among universities, RTOs and businesses. To support and accelerate the process, the Ministry of Economics, Labour and Housing Baden-Wuerttemberg has launched the initiative 'Wirtschaft 4.0', which aims to support SMEs on the path to the digital future and make Baden-Wuerttemberg even more visible as a premium international location for the digital economy. In addition, the state promotes the digitisation of the economy through currently 10 regional digital hubs (Heilbronn-Franken, Kurpfalz, Landkreis Böblingen, Neckar-Alb und Sigmaringen, Nordschwarzwald, Ostwürttemberg, Region Bruchsal, St. Georgen, Suedbaden, Ulm/Alb-Donau/Biberach). Their aim is to support especially the exchange of experience, knowledge transfer, and establish customer and cooperation relationships. In this way, regional 'ecosystems' for digital innovations are created, which support the joint development of new business models and other digital projects among large industries, SMEs as well as start-ups and scale-ups. The ten regional digital hubs are supplemented by

three topic-specific digital hubs focusing on 'Future Industries' (Stuttgart), 'Artificial Intelligence' (Karlsruhe) and 'Digital Chemistry and Health' (Mannheim/Ludwigshafen). Besides official German and BW digital hubs, there are hubs providing technology transfer, individually initiated by various BW institutions of higher education, applied science and R&D institutions. These efforts are also supported by eight digital innovations hubs to pool resources and deepen expertise, especially enhancing the quality of the services and digital infrastructures across the EU Member States.

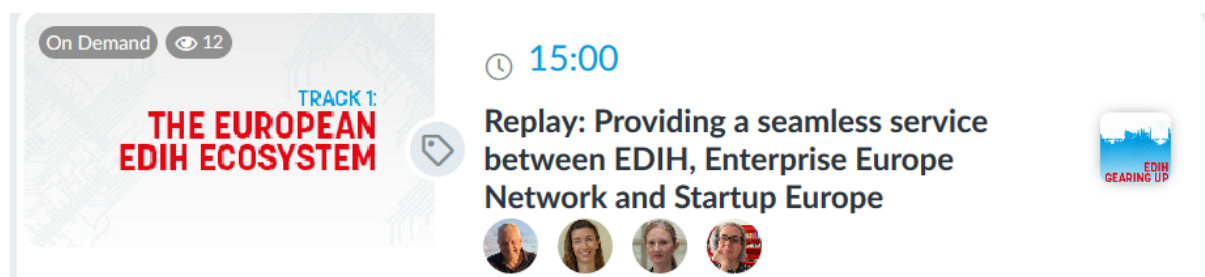
Another important initiative is the 'Mittelstand 4.0-Competence Centres' established by the German Federal Ministry of Economic Affairs. In BW, 25 contact points exist that offer support for SMEs to start their digital transformation, providing information and concrete, practice-oriented demonstration and testing opportunities in the respective regions. Furthermore, from a supra-regional perspective, BW takes part in the Vanguard Initiative, an alliance of the 29 economically most powerful regions across Europe. The alliance aims to build synergies and complementarities based on their smart specialisation strategies and to foster world-class clusters and cluster networks, especially through pilots and demonstration activities. Finally, BW belongs to the network 'Four Motors for Europe' (Auvergne-Rhône-Alpes, Baden-Wuerttemberg, Catalonia and Lombardy), one of the first European networks of regions. The network was primarily related to economics and research as well as to art and culture and is nowadays active in various areas (e.g., contributing to European affairs, especially by issuing common positions on EU policy initiatives and supporting inter-university agreements, etc.).

## 4.2 Smart4Europe2 Links and Activities

The Smart4Europe2 Partners Steinbeis2i (Technology Transfer and Innovation Support organisation) and Hahn-Schickard (RTO and DIH) represent this region within the project. HS was coordinator of Smart4Europe1 and S2i coordinates Smart4Europe2, and both organisations have contributed to SAE Innovation Actions already from Phase 1 onwards (2016-19: CPSELabs and SmarterSI, 2020-today: DigiFed). This led to very intense interconnections of the region with the SAE initiative. In 2019 a dedicated **Ecosystem Building Event** (DIH Day) was held in Stuttgart (capital of BW) to tighten the links and identify synergies and complementarities. The ministry and other regional initiatives had already signed **Letters of support** before the project start of S4E2 to continue their involvement (Baden-Wuerttemberg Ministry for Economics, CyberForum, Digitales Innovation Zentrum (DIZ), microTech Suedwest, bwcon linking to investors) and a regular exchange, as well as cross-promotion of activities, were performed. S2i belongs to the Steinbeis Europa Zentrum together with the Commissioner for Europe of the State of Baden-Wuerttemberg, and with this S2i is involved in updating and consulting the BW ministry on EU activities. DIZ became the coordinator of the regions so-called DigiHubs, which are funded by the BW ministry of economics in 2019 and S2i was invited to become the **representative building the link to Europe**, informing about DIH and later EDIH activities. HS on the other hand is actively involved in two of the **10 DigiHubs** as a full partner. Digital Mountains (<https://digital-mountains-hub.de>) and DigiHub Suedbaden ([www.digihub-suedbaden.de](http://www.digihub-suedbaden.de)), funded by Baden-Wuerttemberg, with more than two dozen partners, providing services to help SMEs in digitalisation. S2i and HS were deeply involved in the DigiHubs activities from the kick-off meeting throughout the project lifetime. Regarding the national thematic **de:hubs**, three are located in BW and were also invited as speakers to the 2019 event. Thereafter collaboration remained tight, especially with the de:hub on Artificial Intelligence. With the evolution of the European EDIH strategy, S2i remained the collaboration contact point for the EDIH proposers on behalf of the ministry and became part of an EDIH candidate AICS-Karlsruhe, gathering not only the DigiHubs of the nuts2 region, as well as the

de:hub on AI, but numerous (over 100 LoIs) stakeholders of the region. HS led the successful proposal towards the EDIH Suedbaden candidate. Moreover, HS, active in ECSEL and EPoSS, initiated and headed an EPoSS Task Force on EDIHs, a platform for discussion and exchange, resulting in a “Framework Agreement for Collaboration”.

As a key partner in the **Enterprise Europe Network**, S2i is well connected to all major actors of European technology transfer, innovation, and SME support. As the EENs mission is closely linked to supporting the SMEs of the region, many synergies could be found here and joint events and panels were organised, as well as broad cross-dissemination was performed. S2i is also an **ambassador for the Start-up Europe Initiative**, informing them on SAE opportunities and engaging them in EC activities. A highlight of Smart4Europe2 was organising and leading a session at the DIH Networking Event in January 2021 (Gearing up towards European Digital Innovation Hubs, <https://event.e-dih.eu/>) on 26-27<sup>th</sup> of January 2021. It was organised by DIHNET in collaboration with the EC and supported by I4MS and the SAE initiative. Smart4Europe2 held the panel on ‘providing seamless service between EDIHs, EEN and start-up Europe’, with over 700 visitors within this session (2500 in the event), many more watching the recordings and very positive feedbacks from the audience (over 90 % of voters found the session useful).



**Figure 8: European EDIH Ecosystem Event video**

Other key activities on the European level included joint training of EDIH candidates, joint workshops, cross-promotion of open calls, webinars and relevant information (via newsletters, websites and social media channels).

Next to the hub initiatives, S2i is also partner in other regional digitisation initiatives like the Alliance Industrie 4.0 BW and participating in the national Industrie4.0 Platform and trilateral group of national Platforms (Germany, Italy, France). HS and S2i are also well linked to many clusters and digitisation initiatives like AI Labs, innBW, Cluster agency, bwcon, microTech Suedwest, Showroom Mittelstand 4.0 above many others. At the national level HS is partner in one of the “Mittelstand Digital” projects, “Kompetenzzentrum Textil vernetzt” ([www.mittelstand-digital.de](http://www.mittelstand-digital.de); [www.kompetenzzentrum-textil-vernetzt.digital](http://www.kompetenzzentrum-textil-vernetzt.digital)), providing digitisation services in the area of textiles.



### 4.3 Record of Key Activities

Track record of activities with regional policy, clusters, regional EEN and national/regional initiatives				
Name initiatives / cluster / policy	Date	Place	Description of activity/aim	What was the impact/outcome
<b>BW DigiHubs (10 regional Digital Innovation Hubs in BW)</b>	2019	Stuttgart	Participation in Kick-off of BW Digital Hubs, presentation on SAE DIH strategy, services and opportunities	Getting to know the 10 BW Hubs, synergies and complementarities to collaborate
	2019	Stuttgart	DIH Day – Ecosystem Building Event, all 10 BW Hubs were present	Discussing regional and EU approaches, sharing best practices
	2020 / 21	online	Various meetings of BW DigiHubs	Sharing of SAE best practices
	12/11/2020	online	SAE Ecosystem Building Event, presentation of initiatives of different regions incl. BW (FZI in panel): Invitation of BW and de:hubs initiatives	Dedicated panel to discuss regional DIH approaches, fruitful exchange of best practices at WMF
	12/2021	hybrid	SAE Ecosystem Building Event planned as S4E2 final event	Build and bond the ecosystem sustaining (E)DIH network
<b>de:hubs</b>	2019	Stuttgart	DIH Day – Ecosystem Building Event, de:hub on AI presented at event	Fostering collaboration between regional, national and EU
	2020/21	online	Meetings with initiative, especially representatives of AI hub in Karlsruhe / FZI	Inclusion of de:hubs in BW EDIH strategy
<b>Vanguard Initiative</b>	17/05/2021	online	Vanguard Initiative - AI Pilot Kick-Off Event	Discussion on regional AI Pilot
	03/09/2021	online	AI REGIO Didactic Factories Network	Connecting Testing Facilities / Infrastruct.
<b>Enterprise Europe Network (EEN)</b>	26-27/01/2021	online	EDIH networking event, S4E2 session on DIH collaboration with regional EENs	Fostering synergies and providing seamless services for SMEs in digital transformation
	18/05/2022	online	French-German Partnering Event for AI in Industry 4.0: S4E2 brokerage event organised with regional EEN	Brokerage for regional SMEs to participate in SAE cascade funding instrument
	04/11/2020	online	Promotion of open calls and SAE brokerage via EEN Network - Förderung von Digitalisierungsprojekten	Informing on funding opportunities for SMEs on regional level
	2020/21	online	Joint events and brokerages	Exploit EEN links to regional SMEs to inform about open calls and opportunities
	29-30/09/2021	online	Yearly Conference	Involvement in discussions on Digital Transformation of SMEs and cascade funding instruments

<b>BW ministry of economics</b>	25/03/2019	online	Provided Letter of Support for S4E2 project	Collaboration with ministry to engage regional initiatives and SMEs
	08/04/2020	online	„European Digital Innovation Hubs (EDIH)“, S2i speaker to cover EC strategy and expectations for the call	Information day for EDIH proposers. S2i informed the related initiatives including BW Digital Hubs
	2020/21	online	Regular updates on EDIH strategy	Synchronising BW ecosystem on EDIH strategy
	26-27/01/2021	online	EDIH networking event, S4E2 session on DIH collaboration with regional EENs inviting regional players: BW ministry, EEN, Cyberforum, FZI, DIZ	Fostering synergies and providing seamless services for SMEs in their digital transformation
	12/2021	Stutt-gart	Closing Event of S4E2 in combination with Ecosystem Building Event for the region of BW.	Cross-dissemination and collaboration between regional (BW Hubs), National (DE:HUBs) and EU initiatives
<b>City of Stuttgart</b>	15/09/2021	online	Session informing the various departments of the city of Stuttgart on the EDIH strategy and open calls in Digital Europe	Making public administrations aware of the opportunities to participate in Digital Europe or the DIH services
<b>Cyberforum/ DIZ (Digitales Innovationszentrum BW)</b>	17/12/2020	online	Launch of EDIH candidate AICS Karlsruhe	Joint approach towards EDIH
	29/01/2021	online	Recap of EDIH Event (27/01/2021)	Strategic positioning of BW in EDIH strategy
	17/03/2021	online	EDIH strategy meeting	Exchange of synergies and complementarities in Karlsruhe region
	31/03/2021	online	Meeting of regional ecosystem participating in joint EDIH proposal	Providing information and lessons learnt from SAE activities
	14/04/2021	online	Meeting of regional (Karlsruhe) ecosystem participating in joint EDIH proposal	Exchange on services the region offers to SMEs in different application sectors
<b>bwcon</b>	2020/21	online	Regular meetings	Discussion of EDIH strategy
<b>FZI (Forschungszentrum Informatik)</b>	2020/21	online	Regular meetings, invitation to events and panels (WMF, DIH Networking event, DIH Day), collaboration DIH project (AI REGIO/I4MS)	Connecting with de:hub AI, cross dissemination, promoting BW DIH strategy in Europe
<b>microTEC SW</b>	2020/21	online/hybrid	Open calls in microTec Suedwest Newsletter and on website	Updating regional ecosystem on SAE

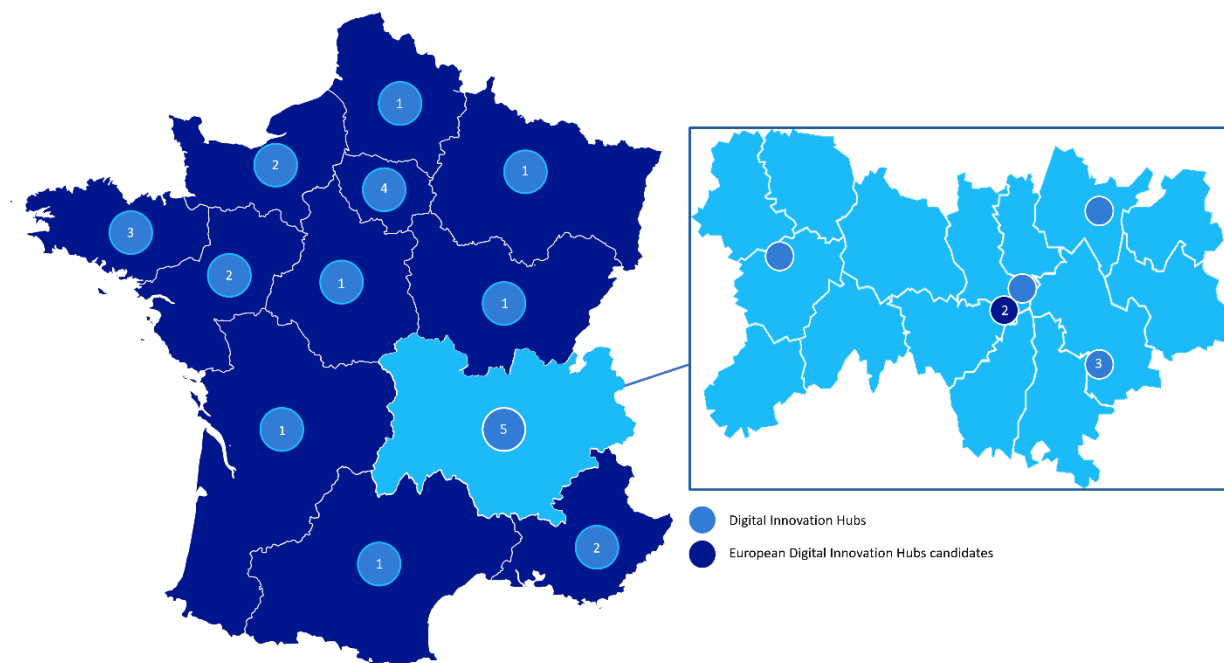


				opportunities (open calls & success stories)
	05/10/2021	Freiburg	EPoSS Annual Forum organised by HS and microTec SW	SAE presentation: evolution of SAE and Success stories within Smart Systems Integration
	11/2021	Ludwigsburg	MSTKongress	SAE at HS booth (distribution of SAE brochure)
<b>Technology Mountains</b>	11/03/2021	Online	InnovationForum Smarte Systeme und Technologien (SME focused event)	SAE at HS booth, presentation of open calls & success stories
<b>EPoSS Task Force “EDIHs”</b>	10x in 2021	Online	Discussion and exchange among a dozen of EDIH candidates	Framework Agreement for Collaboration
<b>Wirtschaftsförderung Berlin</b>	27/08/2020	online	Policy Briefing	Introduction of SAE instruments and opportunities
<b>EDIH Candidates</b>	Various meetings	online	HS is coordinator of EDIH Suedwest and partner of EDIH Quantum Technologies	Community building, exchange on DIH services, lessons learnt to prepare EDIHs
	Various meetings	online	S2i partner in EDIH-AICS (AI and Cybersecurity Hub in Karlsruhe)	Community building, exchange on DIH services, lessons learnt to prepare EDIHs
	26-27/01/2021	online	EDIH networking event, S4E2 session on DIH collaboration with regional EENs	Fostering synergies and providing seamless services for SMEs in digital transformation
	18/03/2021	online	Opportunities and services provided by CSAs to support DIHs and EDIHs	Informing EDIH candidates on SAE market place
<b>Regional EDIH Info Event:</b> Event co-organised by BW ministry in collaboration with S2i  <b>Participating initiatives:</b> 10 regional BW DigiHubs, Mittelstand 4.0 Kompetenzzentrum, DIZ/FZI, Cyberforum, de:hubs Stuttgart, Karlsruhe, Mannheim/Ludwigshafen, KI Labs, KI Fortschrittszentrum, innBW Fraunhofer CC for quantum technologies, IAF/IAO, DLR, Cluster agency, bwcon, Initiative Wirtschaft 4.0, Handwerkskammern/BWHT	27/03/2020 and 08/04/2022	online	Gathering of BW ecosystem interested in EDIH proposal  Informationsveranstaltung „European Digital Innovation Hubs (EDIH)“, S2i speaker to cover EC strategy and expectations for the call	Information day for EDIH proposers. S2i informed the related initiatives on EDIH call  Participants fostered synergies and complementarities to build a BW concept for the EDIH landscape

**Table 6: Record of key activities in Baden-Wuerttemberg**

## 5 Case of Auvergne-Rhône-Alpes (AURA) region, South-East France

### 5.1 Description of the region



**Figure 9: Distribution Digital Hubs in France (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Auvergne-Rhône-Alpes (right)**

The **Auvergne-Rhône-Alpes (AURA)** region is one of the top 3 most active French regions in terms of R&D investment, with investments of 6.6 billion€, which represent 2.7% of regional GDP and 2/3 being supported by the industry. The AURA region is involved in 14 competitive clusters among the 56 national ones. A competitive cluster gathers complementary partners (small-medium-large companies, Research laboratories/centres and training skills) on a given thematic such as micro/nano-technologies, renewable energies, biotechnologies, etc. Its objectives are to support competitiveness, create jobs, bring public and private research closer, and support the development of less developed areas. This active collaboration results in raising AURA region at the 4<sup>th</sup> place for patents delivery. This corresponds to 20.5% of the patents submitted in France.

Next to this, the AURA region has officially launched the Digital Innovation Hub (DIH) “MinaSmart” in 2018, whose objective is, in collaboration with a pan-European network of DIHs, to provide enabling services to all economy stakeholders willing to benefit from the advantages of digital technologies in their businesses (SMEs, mid-caps, large enterprises, public organisations, etc.). These services include access to key technologies and skills, understanding of use cases, value chain and supply chain, acceleration of R&D, support services related to innovation and field trials for experimenting with digital innovations.

**MinaSmart**, by now EDIH candidate, is a program of network resources and a label of actions for the development of industrial activities linked to digital technology, funded by Europe and the Auvergne-Rhône-Alpes Region, directly for the benefit of traditional SMEs or "tech SMEs" champions "and

indirectly for the benefit of all companies through the resulting actions. It focuses on the dissemination of these digital technologies – cyber-physical systems, integrated components, Artificial Intelligence, connectivity, security and high-performance simulation - to application markets, products, services, processes / industrial and organisational. Application markets (energy, health, transport, chemicals and environment, agro-agriculture, industry of the future) are addressed through all the partners brought together in this collective project. Today, MinaSmart counts among its partners the majority of the actors of the ecosystem: The Auvergne-Rhône-Alpes Region and all of its services, the Digital Campus, academics and research centres (CEA, INRIA, Universities (Savoie Mont Blanc, Lyon, Grenoble, Clermont-Ferrand), and also EMSE), the poles and cluster (Axelera, Cara, Tenerdis, Vegepolys, technical centres and other platform carriers (CapTronic, CETIM, Hall 32, IRT Nanoelec, Thesame), economic development organisations (ENE, Digital League, and companies). Discussions are ongoing to attract and involve new partners.

To strengthen and create new collaboration with SMEs, to extend its ecosystem to reach more SMEs is the mission of **CEA tech**, part of the DNA of CEA, based on its excellence and also on its capacity to handle innovation transfer to its industrial partners, from start-ups to SMEs, midcaps and large companies. To that extent, CEA works closely with Minalogic, the Innovation Cluster for digital technologies serving Auvergne-Rhône-Alpes region and with headquarters located on CEA premises. Furthermore, CEA collaboration with the region Auvergne-Rhône-Alpes has been reinforced with the opening of Y. SPOT (previously called Open Innovation Centre, <https://www.y-spot.fr/>), inaugurated on 31<sup>st</sup> January 2020. Y.SPOT offers a unique place providing networking, expertise equipment, creative methodologies, innovative space and a full range of services to ramp up innovation and proposes immersion in the world of innovation to technical components.

IRT Nanoelec (<https://irtnanoelec.fr/en/>) is one of the Technological Research Institutes (IRT) set by the French Government since 2012 to bring together academic laboratories and industries for R&D and innovation.

CEA, Minalogic and IRT-NanoElec are part of the MinaSmart core team and active members of the Auvergne-Rhône-Alpes community. They work jointly to provide the most complete offer of services to support tech companies in their development and more traditional ones in their digital transition with dedicated programmes supported by the region such as EASYPOC, EASYTECH, EASYINDUS managed by Minalogic, PULSE managed by IRT NanoElec.

## 5.2 Smart4Europe2 Links and Activities

CEA (Leti and Liten) is strongly committed to the MinaSmart DIH being one major R&D actor in the AURA region and through its close connection with Minalogic, coordinator of MinaSmart, the AURA digital technologies competitive cluster, member of Silicon Europe Alliance and H2020 National Contact Point.

CEA is strongly rooted in its regional/national ecosystem and has been actively involved in the Smart Anything Everywhere Initiative, from the beginning, through the coordination of 6 SAE projects from the first, 2<sup>nd</sup> and 3<sup>rd</sup> rounds (gateone, EuroCPS, SmartEEs, FED4SAE, DigiFed and SmartEEs2). A joint event “European Innovation Hub Day” was held in June 2018, gathering European representatives, regional competitive clusters, European partners and innovative companies. MinaSmart was presented during the DIH annual event in Warsaw (2019) and one awarded French SME (AURA) presented its FED4SAE granted cross-border project. Through the DigiFed H2020 project, CEA is testing

new innovation pathways to support SMEs digitisation, in particular combining both European and regional funding through its Generic Experiment programme and with the support of IRT Nano Elec platform.

In Smart4Europe2, MinaSmart is integrated deeply in the SAE ecosystem by deploying its regional services and making them available for trans-national collaboration through experimentation cases brought up by the 2014/2017/2020 DIHs open calls while strengthening the partnership with BW and Lombardy regions. As a result, the CEA ecosystem building event was set up jointly with Minalogic and MinaSmart, and hosted by Campus du Numérique (Lyon, France). It aims to illustrate how the AURA region, with the support of CEA, Minalogic, MinaSmart and AURA various actors takes active part in the Digitising European Industry initiative and the four pillars driving the Digital Innovation Hubs (Test before Invest, Skills and Training, Support to find Investment, Ecosystem and networking).

**AFELIM**, the French association on organic and printed electronics, and **Plastipolis**, a regional cluster active in plasturgy and structural electronics, were leveraged to give the SmartEEs2 DIH the opportunity to reach out to their many members, which were seen as relevant and potential third-party technical service suppliers in Application Experiments launched via SmartEEs2 Open Call. This was organised via webinars that turned out to be successful as several end-user third parties applied to the call and service suppliers were engaged in Application Experiments.

To enhance collaboration within the AURA ecosystem and its connection to the pan-European network, CEA in collaboration with the regional actors, organised a hybrid **SAE Ecosystem Building Event** in Lyon on October 27<sup>th</sup> (<https://campusnumerique.auvergnehonealpes.fr/>)..

### 5.3 Record of Key Activities

Which National/regional initiatives have you collaborated with and what were the overall outcomes/impacts of this?				
Name initiatives	Date	Place	Describe activity/aim	What was the impact/outcome
Minalogic and IRT Nanotec	28/01/2020	Minatec, Grenoble (France)	CEA and Région Auvergne-Rhône-Alpes, Associated with MINALOGIC and IRT NANOEEC, held an afterwork session focused on financial tools to support SME's innovation.	Regional event to launch AURA new innovation programmes EASYTECH and EASYPOC gathering SMES, AURA representatives, Minalogic partners.
Minalogic,	13/10/2020	Virtual	To explain the cascade funding process to Minalogic SMEs, and its application to DigiFed/SAE open calls	Open call communication
MinaSmart, Minalogic, IRT Nanoelec, CAP'TRONIC, AURA entreprise, and ICT4Manuf in Grenoble	2020/2021	Virtual f2f	CEA connects Smart4Europe2 to several DIHs, Digital Initiatives and high-tech clusters in the region, including MinaSmart, Minalogic, and IRT Nanoelec, CAP'TRONIC, AURA entreprise, and ICT4Manuf in Grenoble	CEA is strongly committed in the MinaSmart DIH being one major R&D actors in the AURA region and also through its close connection with Minalogic, coordinator of MinaSmart, the AURA digital technologies competitive cluster, member of Silicon

				Europe Alliance and H2020 National Contact Point.
Minalogic and MinaSmart	2020/2021	Virtual f2f	CEA cooperates closely with Minalogic and MinaSmart (AURA region DIH) to reach out for mostly French companies	Enhance awareness on SAE opportunities
AURA Region initiatives	2020/2021	Virtual f2f	CEA is engaged with AURA region DIH to co-finance (regional/European funding) SMEs digitisation through a dedicated program on cyber-security tested by DigiFed project.	Find synergies and inform SMEs on different funding opportunities
AURA Region initiative	2021	Virtual f2f	The co-financing pathway EC (DigiFed)-AURA (EasyPOC) is launched, involving CEA-IRT Nano Elec, STMicroelectronics, AURA, AURA SMEs and European SMEs. Set-up of 3 workshops (05/06/2021, 05/11/2021, June 2022).	Experimentation of a new innovation service, to check its feasibility and interest for all the stakeholders, in the eventual implementation by DIH.
Minalogic	2021	Virtual	CEA cooperates closely with Minalogic to launch a new innovation pathway to answer specific technical problems led by a Mid-Cap/LE from AURA.	Support European companies to benefit from European ecosystem to solve specific technical problems by having access to SAE community/networking
AURA Region initiatives	2020/2021	Virtual	Meetings in connection with EDIH strategy	Synchronisation regarding EDIH strategy
Minalogic	17/11/2020	Virtual	DigiFed/SAE network expansion event inviting nat./reg. initiatives	Exchanging experiences between different DIHs, particularly from the field Cyber-Physical Systems (CPS)
Minalogic, Smart4Europe2	2021	Virtual	Meetings to prepare ESB Event	Define the storyline & the services to highlight, set-up the panel sessions and identify the panellists.
Minalogic and MinaSmart	27/10/2021	Hybrid, Lyon	SAE Ecosystem Building Event in collaboration with Minalogic and MinaSmart, hosted by le Campus du numérique in Lyon (Auvergne-Rhône-Alpes region)	Bringing the AURA ecosystem and European stakeholders together to share and learn and intensify collaboration

**Table 7: Record of Key Activities in Auvergne-Rhône-Alpes**

## 6.1 Description of the region



Lombardy's knowledge-based system is extremely articulated, it is characterised by the specialisation in various technical and scientific disciplines and includes skills and research groups of international ranking. Lombardy is also characterised by an articulated research system active in various scientific areas such as Health, Energy and Environment, Advanced Manufacturing, Food and ICT.

The Lombardy Region Smart Specialisation Strategy (S3) for the period 2021-2027 continues the path launched in 2014-2020, aimed at declining an "integrated trajectory" of its territory development. The strategy proceeds in the new scenario raised following the Covid-19 emergency that clearly brings out two main challenges to be faced:

1. Support industrial transformation towards digital transition and sustainable development to understand the new needs of the citizen as quickly and effectively as possible
2. Increase the resilience and adaptability of the Lombard system to rapid changes of the economic-productive and social context in order to guarantee the citizens' safety and well-being.



The action plan is aimed at facing the identified challenges. It consists of 4 categories of actions:

3. Enabling action to reinforce the Lombard system of research and innovation thanks to the paradigms of RRI and Open Innovation;
4. Action supporting technological transfer, industrial research and innovation in the innovation ecosystems;
5. Action supporting investments to foster digital transition and the adoption of models for a sustainable development;
6. Action supporting the internationalisation and the Lombard system attractiveness.

The Lombardy Region Smart Specialization Strategy (S3) 2021-2027 also identifies 8 innovation ecosystems:

1. nutrition;
2. health and life science;
3. culture and knowledge;
4. connectivity and information;
5. smart mobility and architecture;
6. sustainability;
7. social development;
8. advanced manufacturing.

Some of the main actors of the advanced manufacturing ecosystem are briefly described below.

**AFIL (Lombardy Intelligent Factory Association)** is the Lombardy Cluster for the Advanced Manufacturing. It is the outcome of a process driven by the Lombardy Region, aimed at creating a network of actors that favours the aggregation of the various regional players active in the field of Research and Innovation within the priority areas identified in the Regional Smart Specialisation Strategy (S3). AFIL aims to promote and facilitate research and innovation regarding practices and enabling technologies for the manufacturing sector to support and develop the Lombard production system's leadership and competitiveness.

Besides, at the national level, the **Italian "Intelligent Factory" Cluster** is a non-profit association set up in September 2012 after issuing a call by the Ministry of Education, University and Research aimed at establishing National Technological Clusters. Small, medium and large enterprises joined it, universities and research centres, entrepreneurial associations, technological districts and other stakeholders operating in the manufacturing and intelligent factory sectors.

The **MADE competence centre**, which is led by Politecnico di Milano and co-financed by public and private funds, is one of the 8 selected competence centres at the national level. In addition to Inail and the Universities of Bergamo, Brescia and Pavia, it brings together 42 partner companies (Bosch, Brembo, Comau, Kuka, Prima industrie, SAP, Siemens, STMicroelectronics, Whirlpool Europe,...). MADE's Digital and Sustainable Factory supports the enterprises in their digital transformation path towards Industry 4.0. It is part of the Industry 4.0 Italian ecosystem created by the Competence Centres and the Digital Innovation Hubs. The one-of-a-kind large demo centre spans 2,500 sqm, hosting 20 use cases, training classrooms, co-working, and meeting spaces. The unique growth path towards digital transformation relies on different stages: to inform and show the technologies of Industry 4.0, to explain them with specific training sessions, transfer and implement the outcomes through dedicated projects.



The **DIH Lombardia by Confindustria**, the main Italian industrial association, was established after the launch of the National Industry 4.0 Plan. All the Territorial Associations in the region are founding members of DIH Lombardia. Thanks to the «Antenne territoriali» (local organisations) and the regional «digital ecosystem» coordinated by DIH Lombardia, the DIH aims to support companies' needs, towards Digital Transformation Journey regardless of their business sector or size, with a specific focus on SMEs. The Lombardy DIH, together with other 21 DIHs located in other Italian regions, is also part of **the Italian network of DIHs by Confindustria** (<https://preparatialfuturo.confindustria.it/>).

Moreover, in Milan there is one of the **co-location centre of the newborn EIT Manufacturing**, which aims at establishing an innovation community and connect a pan-European network of ecosystems to combine aspects of innovation, education and business creation.

Finally, since 2017, every year in Lombardy the **World Manufacturing Forum** Annual Meeting brings together more than 1000 participants and 50 high-level speakers from over 50 countries, coming from industry, research organisations and governments.

## 6.2 Smart4Europe2 Links and Activities

Fondazione Politecnico di Milano and its parent organisation Politecnico di Milano (POLIMI), are deeply rooted in the national, regional and European ecosystems. They have strong connections with the above mentioned regional and national initiatives, DIHs and stakeholders.

POLIMI is member of **Cluster Tecnologico Nazionale “Fabbrica Intelligente”** (Italian Intelligent Factory Cluster) and **AFIL** (Lombardy Intelligent Factory Association). POLIMI and AFIL also represent Lombardy in the **Vanguard Initiative “Digital Transformation Demo-Case”** involving other 10 EU regions (e.g., Catalonia, Tampere, South Netherlands, Baden-Wuerttemberg) towards inter-regional cooperation on smart specialisations. The “Digital Transformation” demo case aims to support the development of CPS-oriented flexible and agile assembly / manufacturing systems connected to digital and virtual factories, implementing advanced applications typical of Industry 4.0, such as predictive maintenance, augmented reality workspaces and energy consumption optimisation. In addition, at the EU level, POLIMI is strongly involved in **EFFRA** and **BDVA** PPPs as well as in **I4MS**, where it has led or participated in different Innovation Actions (e.g., BEinCPPS, MIDIH, AI REGIO) aimed at building and reinforcing a pan-European network of DIHs focused on digitalisation of manufacturing.

Moreover, in 2016 POLIMI participated in the Steering Group of the **Italian Industry 4.0 Plan**. Since then, an ongoing collaboration with the Ministry Directorate-General for Industrial Policy, Competitiveness and Small and Medium-Sized Enterprises has been established.

Within this framework, the **MADE competence centre** has been established to let SMEs have access to the latest digital technologies for the manufacturing industry, to be visited, used for training of workers and for technology transfer projects. POLIMI has also strong collaborations with **the Italian network of DIHs** by Confindustria and joint events have been held in Lombardy and other regions.

Last year the **European DIH Lombardia (EDIH Lombardia candidate)** was created to satisfy the needs of manufacturing companies and the Public Administration (PA). It is a consortium of multiple partners led by **MADE Competence Centre** and involving **DIH Lombardia, Confederazione Nazionale dell’Artigianato e della Piccola e Media Impresa (Cna), Confartigianato and Confcommercio, AFIL, Finlombarda, Banca Intesa**. The EDIH Lombardia aims to transform processes towards a business and organisational paradigm capable of guaranteeing connectivity and facilitating real-time exchange of

information to support the decision-making process. At the same time, EDIH Lombardia focuses on an update and a deep review of the managerial skills and business organisational models of manufacturing, with great attention to SMEs and PA. Therefore, EDIH Lombardia wants to favour the development of a corporate culture based on the management of data, which represent the information assets of companies. Artificial Intelligence (AI), Cyber Security (CS) and High-Performance Computing (HPC) will be used to support the PA and create an advanced industrial fabric. The use of new technologies, particularly AI, CS and HPC, will allow the development of strategic activities and services, which will act as an economic flywheel within the regional ecosystem. Significant attention will be paid to the involvement of SMEs for the adoption of new digital technologies (Big Data Analytics, IoT, as well as AI, CS and HPC), which can also be exploited within PAs. This will enable efficiency and will increase effectiveness of public action in territorial management. The EDIH Lombardia has been selected among the Italian candidates eligible to participate in the European call and it is now preparing the submission. Furthermore, it is working to strengthen the relationships with other EDIH candidates from the other most important manufacturing regions of Italy (e.g. Piedmont, Emilia Romagna) as well as with the ones from the **Four Motors of Europe** (i.e., Auvergne-Rhône-Alpes in France, Baden-Wuerttemberg in Germany, Catalonia in Spain) (<https://worldmanufacturing.org/activities/world-manufacturing-week-2021/technology-transfer/>).

### 6.3 Record of Key Activities

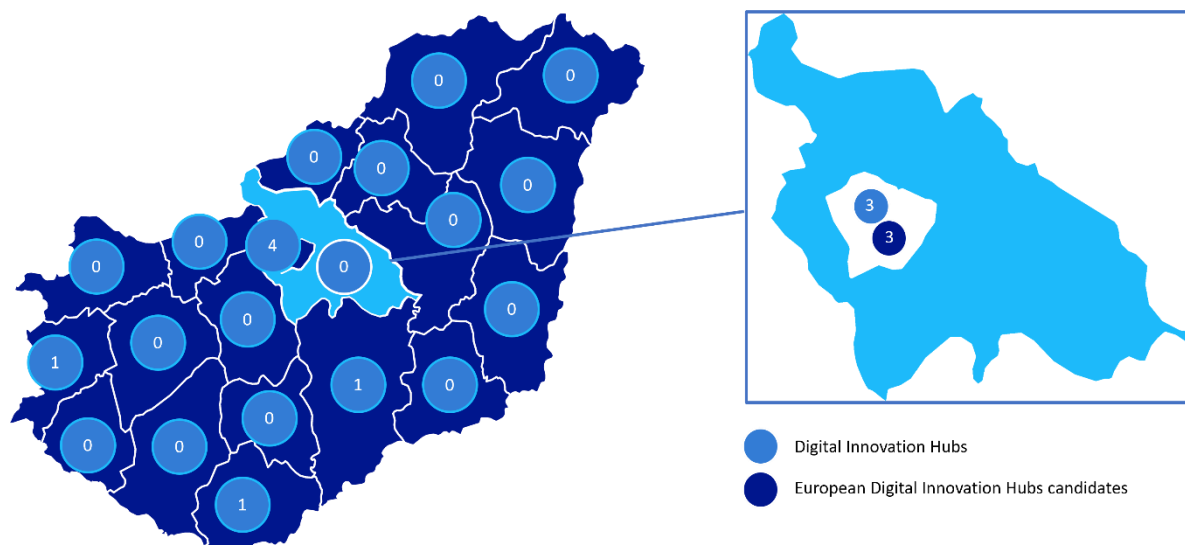
Which National/regional initiatives have you collaborated with and what were the overall outcomes/impacts of this?				
Name initiatives	Date	Place of interaction	Describe activity/aim	What was the impact/outcome
SAE Ecosystem Building Event at WMF 2020 - "Digitalization of Manufacturing: Building the ecosystem for a smart and sustainable future"	12 Nov 2020	Online	The event was organised in partnership with Politecnico di Milano, MADE Competence Centre, DIH Lombardia, with the aim of connecting the Smart Anything Everywhere Initiative with relevant stakeholders at the European, national and regional level.	The event reached more than 300 attendees. The event was appreciated by participants and speakers. They found the session interesting and of added value, and they reported to have learnt important information about SAE.
EDIH Lombardy	2020-2021	Online	POLIMI contributed to shape the consortium of the "EDIH Lombardy" led by MADE Competence Centre and to prepare the proposal that was submitted to the Italian Government.	The "EDIH Lombardy" was selected among the Italian candidates eligible to participate in the European call and it is now preparing the submission.
AFIL	2020-2021	Online	Exchange of information with AFIL, regional cluster on intelligent manufacturing.	Dissemination of SAE among members
Lombardy's Artificial Intelligence Roadmap	2020-2021	Online	AFIL steered the development of the regional roadmap for AI in	The roadmap was finalised and presented

			manufacturing. POLIMI contributed to the development.	to stakeholders in July 2021.
Intellimech	2021	Online	Bilateral meeting with the Chief Operating Officer of Intellimech, a private consortium of large, medium and small companies aimed at conducting research in the field of mechatronics.	Dissemination of SAE and link with potential research activities to carry out in future
SAE Ecosystem Building Event at WMF 2021 – “Smart Systems and Smart Platforms transformation towards Industry 5.0: experience and lessons learned from SAE and I4MS experiments”	20 Oct 2021	Villa Erba (Cernobbio, IT) and Online	The event has been organised in partnership with I4MS and AI REGIO as a hybrid event to link SAE with other digitalisation EU initiatives (I4MS) and regional/national stakeholders in Italy and across Europe.	Representatives of DIHs, clusters, industrial associations and other national/regional initiatives have been invited to attend the event.

**Table 8: Record of Key Activities in Lombardy**

## 7 Case of Central Hungary region, Hungary

### 7.1 Description of the region



**Figure 11: Distribution Digital Hubs in Hungary (left) and Digital Hubs inclusive European Digital Innovation Hubs candidates in Central Hungary (right)**

The RIS3 (regional innovation strategy for smart specialisation) strategy of Central Hungary (CH) adopted in 2013 is the key policy document for regional development for the period 2014-2021. Based on CH's SWOT analysis, it summarises the region's development priorities. Four sectors (technologies) were identified that are bound to become the engines of regional innovation-based growth: ICT, health industry (technologies), environmental technologies, and creative industries. The horizontal objectives of the strategy include the greening of the economy, the enhancement of innovation collaborations and raising awareness. The RIS3 strategy highlights the necessity of the targeted development of the R&D sector with a special emphasis to digitalisation, bionics and green industry innovations.

### 7.2 Smart4Europe2 Links and Activities

Budapest University (BME) is located in the Central Hungary region, in Budapest. It is well connected to the national initiatives, to the national innovation programs and to the stakeholders. BME is part of the presidency of the Hungarian Industry 4.0 National Technology and Artificial Intelligence platforms, through which it can reach all the active Hungarian SMEs in all Hungarian regions. BME also has a very good relationship with INNOREG, the regional Innovation Agency of Central Hungary and contacts to the following Hungarian regional networks: Pannon Business Network, Innoskart ICT cluster, Software Innovation Pole cluster, Connected and Automated Mobility Cluster of Zala, IQ Kecskemet DIH, AIP3PA Smart cluster.

BME connects Smart4Europe2 with several structures and initiatives for the advancement and implementation of CPS and Industry 4.0 in Central Hungary. Moreover, close links to the regional RIS3 strategy are built, which focus on several relevant target areas such as ICT, med-tech, and environmental technologies. BME is deeply rooted in both the national and regional ecosystem, e.g. leading the Hungarian Industry 4.0 technology platform and benefitting from close contacts to regional

and national decision makers. Moreover, BME is part of the BME-EET DIH, which is a non-profit international DIH located in the Central Hungary region, specifically in Budapest, and member of the SAE community and the National Industry 4.0 Platform. This DIH constitutes a valuable gateway to the eastern part of Europe, facilitating the understanding of the main challenges facing SMEs in their adoption of advanced digital technologies in the region. BME's Digital Innovation Hub (BME-EET-DIH) has collaborated with other DIHs both on national and EU level. On national level, DIH Innomine is a trusted partner, with multiple levels of cooperation. On the one hand, SMEs from Innomine's network have access to BME's test-before-invest infrastructures. Innomine, on the other hand, supports SMEs from BME's network by raising funding and preparing project proposals.

BME participated in the EuroCPS, FED4SAE and the DigiFed RIA projects and the Smart4Europe1 and Smart4Europe2 CSAs of the SAE Initiative. BME has been invited to present their DIH as a good practice example for transnational DIH activities at the 2018 DIH event in Warsaw. In July 2021, BME DIH organised a regional ecosystem-building event in collaboration with national and regional Initiatives (July 2021). BME DIH cooperates with a number of DIHs of the Central European region, such as 4P DIH, Slovenia, DIH TERA, DIH PISMO and DIGIPARC, Croatia. The latter DIHs had the opportunity to introduce themselves in the DIH Ecosystem Building Event.

### 7.3 Record of Key Activities

Which National/regional initiatives have you collaborated with and what were the overall outcomes/impacts of this?				
Name initiatives*	Date	Place of interaction	Describe activity/aim	What was the impact/outcome
INNOREG, the regional Innovation Agency of Central Hungary  Hungarian regional networks: Pannon Business Network, Innoskart ICT cluster, Software Innovation Pole cluster, Connected and Automated Mobility Cluster of Zala, IQ Kecskemet DIH, AIP3PA Smart cluster	2020/2021	Online	Promote the SAE initiative and it's open calls	Participation in webinars and open calls
SME networks, regional innovation agencies and networks	11/05/2020	Online event (Budapest)	Promotion of open call: DigiFed OC1 webinar at BME-DIH. This event promoted the first open call of DigiFed for local SMEs.	In total 30 local SMEs participated, further communication/proposal preparation took place with 3 SMEs
SME networks, regional innovation agencies and networks	06/10/2020	Online event (Budapest)	Promotion of open call: DigiFed OC2 webinar at BME-DIH. This event promoted the	In total 15 local SMEs participated, further communication/proposal preparation took place with 2 SMEs

			second open call of DigiFed for local SMEs.	
Preparation meeting for Budapest Ecosystem Building Event (see initiatives below)	25/05/2021	Online (Budapest)	The aim of the meeting was the preparation of the upcoming Budapest Ecosystem Building Event, with the representatives of Steinbeis-Europa and local DIHs.	The overall schedule and structure of the event were designed, and the organisers agreed upon an action plan to contact the regional DIHs and policy makers.
<p>DIH Ecosystem Building Event Budapest:</p> <p><b>Hungarian Initiatives:</b></p> <p>Hungarian Digital Success programme</p> <p>National Research, Development and Innovation Office</p> <p>Z10 incubator</p> <p>Innomine DIH</p> <p>BME-EET-DIH</p> <p><b>Central European Initiatives:</b></p> <p>4P DIH, Slovenia,</p> <p>DIH TERA,</p> <p>DIH PISMO</p> <p>DIGIPARC, Croatia.</p>	30/06/2021	Online (Budapest)	<ul style="list-style-type: none"> <li>- Networking opportunity for regional DIHs</li> <li>- Deeper understanding of the DIH and eDIH concept, presented by regional and EU policy makers</li> <li>- Presentation of SME success stories</li> <li>- Networking opportunity for regional SMEs</li> </ul>	<p>Local and EU aspects of DIH and EDIH activities were presented by Meike Reimann (Steinbeis-2i), Levente Gál András, Hungarian Digital Success programme, Anne-Marie Sassen from EC, Ágnes Divinyi from National Research, Development and Innovation Office. The event provided opportunities for promotion for DIHs on national level, Z10 incubator and Innomine DIH and BME-EET-DIH. On EU level, BME DIH cooperates with a number of DIHs of the CEE region, such as 4P DIH, Slovenia, DIH TERA, DIH PISMO and DIGIPARC, Croatia had the opportunity to introduce themselves.</p> <p>Furthermore, 3 regional SMEs presented their success projects carried out in the framework of previous DIH programmes. The event had 130 registrations and around 85 participants.</p>

**Table 9: Record of Key Activities in Central Hungary**

## 8 Conclusion

Cooperation with national and regional initiatives addressing digital transformation has been a key activity and main success factor for the Smart4Europe2 project. The partners' deep roots within the national and regional ecosystems helped to build the local-European links supporting the creation of a sustainable pan-European network. De-fragmentation and linking areas with their smart specialisation and expertise is a main aim of European efforts, and Smart4Europe2 bridged the different programs through a variety of activities. Smart4Europe2 was able to build on an existing network of the predecessor CSA, which was actively expanded through a series of joint activities and dedicated events, including the organisation of:

- Bilateral meetings with national/regional clusters
- Joint events with national/regional players, promotion of Open Calls in regional events (co-organised with EEN/national/regional Initiatives)
- Promotion of Open Calls and SAE events and opportunities via national/regional networks
- Contribution in projects with EU-regional focus
- Contributions to EDIH information events and training
- Contributions to EDIH proposals
- Participation in the EDIH events organised by the EC

The pandemic situation did not allow for face-to-face events after March 2021, and collaboration activities had to be re-planned and turned into digital formats. Nevertheless, on a regional level, interaction remained very close even if meetings were partly held in a digital way.