

SMART-SPACE – Deliverable D.T1.4.1. Benchmarking report concerning the policy contributes to digitalise AS industry



Project Acronym: SMART-SPACE

Project title: ASP478

D.T1.4.1.

Benchmarking report concerning the policy contributes to digitalise AS industry

WP n°:	T1
Task n°:	4.1
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Contributors:	All PPs
Type:	R
Dissemination level:	PU
Revision:	Final
Due Date:	2017.06
Date of submission:	2017.10

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Deliverable History

This deliverable history should be removed from the document once it has been finalized. It can then be stored as a separate document on the server, next to the final version.

Version	Date	Status	What's new?
0.1	23-05-2017	draft	First release
1	10-10-2017	final	Adding late contribution

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Executive Summary

This document collects the SMART SPACE partners' feedback on the policy contribution to digitalisation of in each area.

It includes an overview on research and innovation policies and the priorities identified by the S3 strategies in all partners areas', at national and local level.

Moreover, the most significant policies actions supporting the implementation of the Digital Single Market have been mapped.

Then it covers specific measures and other initiatives directly available for companies involved into the digitalization process.

Lastly, an outline of aggregation of companies, research centres and other players (such as clusters and networks), dealing with topics connected to the digitalization, as well as the single partners' involvement in EU initiatives linked to the topic, are taken into account.

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1. Introduction

The Deliverable D.T1.4.1. “Benchmarking report concerning the policy contributes to digitalise AS industry” is an analysis of main Regional, National and EU policies and Action plan concerning SMEs’ digital revolution.

It aims to identify shared topics, networks, action plan to be taken into consideration and The EUSALP strategic priorities are included as well.

As stated in the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Mid-Term Review on the implementation of the Digital Single Market Strategy – COM(2017)228, through improved access and fair conditions, the strategy means an open market where it is easy for businesses and people to operate as effectively anywhere in Europe as it is at home. Anyhow in order to make the Digital Single Market a reality, the full support of Member States and all the stakeholders is necessary.

In the following pages what is under implementation in the SMART SPACE area is represented.

A common template was used to gather the information needed through the partners’ contribution, in a standard and comparable way.

Since the main European pillars aiming to foster SMEs digitalisation are the **Smart Specialisation strategy** and the **Digital Agenda strategy**, partners were requested to collect and describe how these two strategies have been applied and declined at national and regional level.

This document include therefore the information gathered from partners to compile an exhaustive picture of the situation on the different territories involved.

The first part focus on research and innovation policies and list the priorities identified by the S3 strategies in all partners areas’, at national and local level.

The following chapter contains the most important policies action in place to support the implementation of the Digital Agenda. Again, the national and regional level is considered.

The third part focus on the specific measures available for companies willing to implement the steps to digitalization.

In the next section, an overview of the different aggregation of companies, research centers and other stakeholders, such as clusters and networks, active in the Smart Space area and dealing with topics connected to the digitalization, have been represented.

Then, other initiatives, aiming to sustain digitalization in industry are listed and, lastly, the single partners’ involvement in EU initiatives linked to the topic, is mapped.

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The whole set of information collected gives indications on the level of implementation of the Digital Single Market Strategy in the territorial area covered by the Smart Space partnership.

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2. Policies for research and innovation

As defined by the EU regulations: “Smart specialization strategy’ means the national or regional innovation strategies which set priorities in order to build competitive advantage by developing and matching research and innovation own strengths to business needs in order to address emerging opportunities and market developments in a coherent manner, while avoiding duplication and fragmentation of efforts. A smart specialization strategy may take the form of, or be included in a national or regional research and innovation (R&I) strategic policy framework” [from “Regulation (EU) 1301/2013 of the European Parliament and of the Council of 17 December 2013].

The new Cohesion Policy 2014-2020 Programming Cycle expect, as an “ ex-ante” condition for the use of community resources, that national and regional authorities develop research and innovation strategies aimed at the smart specialization. Therefore, to develop a Research and Innovation strategy for Smart Specialization (RIS3) is currently a prerequisite in order to receive funding from the European Regional Development Fund (ERDF)¹.

In this chapter the priorities identified in the SMART SPACE area and their relations to the Digital Single Market implementation are listed.

2.1 S3 priorities in the SMART SPACE area

ITALY

Digitalization is involved directly or indirectly in all the 12 priority Areas identified by the National Specialization Strategy:

- Aerospace
- Agro-food
- Blue growth
- Eco-industry
- Creative and cultural industries
- Health industry
- Advanced manufacturing
- Sustainable mobility
- Energy
- Smart, Secure and Inclusive Communities
- Smart Living Technologies
- Cultural Heritage Technologies

¹ For more information: http://ec.europa.eu/regional_policy/sources/docgener/informat/2014/smart_specialisation_en.pdf

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The priorities areas that directly embrace digitalization are: aerospace, agro-food, health industry, advanced manufacturing, sustainable mobility, Smart, Secure and Inclusive Communities, Smart Living Technologies.

REGIONAL LEVEL

✓ **Lombardy Region**

The Smart Specialisation Strategy of Lombardy Region outlines the strategy of integrated and sustainable development that the region intends to pursue, together with the means to embark on a pathway of smart, enduring and inclusive growth.

Lombardy Region has set up as priorities the following areas:

- Aerospace
- Agro-food
- Eco-industry
- Creative and cultural industries
- Health industry
- Advanced manufacturing
- Sustainable mobility

identifying also, as drivers of the cross-fertilization process, the KETs and the Smart Cities and Communities, in order to face the ambitious challenge: to support the transformation of the mature and traditional industries in emerging ones.

Digitalization represents the way to increase the regional economic development and the employment rate. Thus, Lombardy is putting in place actions to favor the usage and diffusion of ICT technologies as enablers to increase the efficiency in the public administration, foster innovation in companies, improve quality of life of citizens, and as key element for the transformation of industrial processes.

In addition, Lombardy will support initiatives with direct or indirect impact on SMEs, since they constitute the majority of Lombardy companies.

✓ **Veneto Region**

The Smart Specialisation Strategy of Veneto focuses on four main topics:

-SMART AGROFOOD (i.e. nutraceuticals, food safety, supply chain traceability, sustainable agro food)

-SUSTAINABLE LIVING (i.e. smart cities and buildings, active ageing, cultural heritage valorisation, smart living)

SMART MANUFACTURING (cognitive systems and automation, industry 4.0, advanced production)

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-CREATIVE INDUSTRIES (bio-based materials, functional textile, 3D and virtual reality for design and tourism).

Digitalization is directly included in all the four thematic areas.

The strategy in addition foresees some horizontal priorities, among which:

-stimulate investment in R&D both between enterprises and between enterprises and research entities, encouraging their aggregation, cross-fertilization processes and the creation of sustainable partnerships.

-promote the territorial excellences by improving the organization and the technological equipment of traditional industries.

-support innovative start-ups and academic spin-offs that are able to develop, produce and sell innovative products and services with high technological value.

-strengthen the infrastructures of the regional research system and facilitate the connections with the European and international research networks.

-promote a widespread use of ICT, also through the digitalization of the Public Administration services.

✓ **Piedmont Region**

In the Piedmont Region S3, ICT are considered as KET- Key Enabling Technologies and no specific action line is forecast for them. An Innovation Pole and a call for proposals on Smart Factory Platform can be seen as the specific measures addressed to digitalisation.

FRANCE

The Industry of the Future program was launched on 18 April 2015. Its goal is to modernize France's production tools and provide support for manufacturers as the digital changeover transforms their business models, organizations and the way they design and market their products.

The New Industrial France programme is based on nine industrial solutions that provide real-world responses to key economic and social challenges: data economy, smart objects, digital trust, smart food production, new resources, sustainable cities, eco-mobility, medicine of the future, transport of tomorrow.

Support initiatives were put in place in early May 2015 in every one of France's regions, with the goal of providing customized modernization and transformation support to SMEs. 500 trained experts provided support to 3,400 SMEs throughout France in 2016, and the goal is to reach more than 4,000 such companies by the end of 2017.

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Digital technologies stands out as a decisive feature of the French regions' RIS3. 23 French regions identified digital technologies as an innovation driver and as a key issue for the territory. 16 French regions defined at least one smart specialisation area directly linked to the digital market. In addition, 10 regions defined one or more transverse themes focused on the development and dissemination of digital technologies.²

REGIONAL LEVEL

✓ **Alsace**

S3 strategy includes several priorities regarding digitalization of SMEs:

- Health: medical imaging, medical robotics, e-health
- Digitalisation of industries
- New products and services for mobility
- Construction, energy efficiency, construction materials
- Water management and equipment for water management.

✓ **Provence-Alpes-Côte d'Azur**

The PACA Region decided to focus on 12 topics (called OIR - Operations for Regional Interest) for the next 5 years. The objectives are to focus 1 billion € of the Public and Private Investment, create 50,000 jobs and attract 500 companies. One of this topic is OIR Industry of the Future. The aim is the integration of digitalization in SMEs.

✓ **Auvergne-Rhône-Alpes**

There are two S3 strategic domains related to the Smart Space project and related to the topic of digitization:

- Industrial processes and eco efficient plant – low carbon processes, environmental instrumentation and metrology, recycling, waste processing and bio sourced chemistry (in 2016, it has been renamed the Industry of Future regional Domain of Excellence)
- Digital technologies - advanced manufacturing and industrial robotics, ambient intelligence, data processing

² Alsace highlighted “digital economy” as a transverse theme. The Poitou-Charentes, Limousin and Aquitaine regions identified digital technologies in both smart specialisation areas and transverse themes. Bourgogne defined a transverse theme focused on “dissemination of key digital engineering technologies”. Lorraine planned on “transforming digital technologies into a development and innovation driver”. Champagne-Ardenne aimed at “transforming Champagne-Ardenne into a digital territory”. Aquitaine highlighted “Aquitaine’s regional digital development strategy”. Picardie sought to “develop new digital tools and standardise their use”. Limousin focused on the “digitisation of services in a rural environment and associated infrastructures”. Poitou-Charentes highlighted the “digital tools to benefit innovation”. Corsica and Guadeloupe underlined the development of ICT as a transverse intervention theme.

The complete analyses of the different regional smart specialization strategies conducted by the French government can be viewed here http://www.cget.gouv.fr/sites/cget.gouv.fr/files/atoms/files/cget_sri_si_en-12-2015.pdf

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While, in the new SRDEII (Scheme for Regional Development, innovation and internationalization), a regional priority is:

- Accelerating the growth of SMEs with a transversal approach to facilitate the digitization of the companies, improve industrial and environmental performance of the SME, and enable companies to have access to high-level expertise for their industrial developments (integration of new technologies, modernization of the production tool...)

The other major challenge for the Region is to stimulate and accelerate the penetration of digital and robotics in SME in different sectors (industrial production, health, transport, culture, education, agriculture, tourism).

SLOVENIA

Slovenian smart specialization strategies (S4) provides involvement of digitization of SMEs in the section INDUSTRY 4.0, which includes also the following areas: Factories of the Future, Health - Medical, Mobility, Smart buildings and Smart living; Smart cities as well as Development of materials as end products.

In addition, digital entrepreneurship is also defined in the strategic document DIGITAL SLOVENIA 2020 - A Strategy for Information Society Development to 2020, as well as in the Industrial Policy of Slovenia.

Slovenia is not divided into regions in classical terms as other European countries are. Namely, there is no regional authorities in Slovenia. Slovenia is divided into two Cohesion regions – mainly for purposes of EU funding and based on development regions, and into 12 statistical regions. Due to administrative configuration of Slovenia and lack of regional authorities, there is no foreseen and needed Regional Smart Specialization strategies. However what is present are regional development programs. For the purposes of this analysis two statistical regions have been considered – Central Slovenia – Ljubljana Urban region and Gorenjska region.

Regional development program (RDP) of Ljubljana urban region and RDP of Gorenjska region do not include special priorities regarding digitalization. However they both envisage strengthening of the entrepreneurship and entrepreneurial support environment with an emphasis on integrated solutions and innovation.

GERMANY

With its new *High-tech Strategy*, Germany wants to move forward to become a leader in innovative products and services. Part of the *High-tech Strategy* is to boost the pace of

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innovation in industry. Therefore, the Federal Government's funding supports all Companies – SMEs, Start-ups, larger companies – with two programs: a technology-specific program and a non-technology-specific program. Due to the dependence of microelectronic technologies for many sectors such as mechanical, plant engineering, automotive industry and electrical engineering, it's necessary to strengthen microelectronics sector. Therefore, Germany is participating in the Electronic Components and Systems for European Leadership (ECSEL) research program. Another focus of the *High-tech Strategy* is strengthening innovative SMEs. There are different programs to foster innovativeness of SMEs:

- The Central Innovation Program for SMEs (ZIM) promotes non-technology-specific research and innovation projects. The Federal Ministry of Economics and Energy (BMWi) wants to motivate small and medium-sized enterprises (SMEs) to more research, development and innovation. Research and development results are to be implemented more quickly in market-oriented innovations. ZIM also contributes to the development of cooperation between SMEs and research facilities and to improve entrepreneurial innovation, cooperation and network management³.

- The "Industrial Cooperative Research program for SMEs (IGF)" project, which has a pre-competitive orientation, and in which numerous companies, most of them SMEs, are participating, is aimed at closing the gap between basic research and industrial development.

- With the "KMU-innovativ" funding program, the Federal Ministry of Education and Research (BMBF) is supporting top-level research in German small and medium-sized enterprises. In many areas of top-level research, small and medium-sized enterprises (SMEs) pioneer technological advances. The BMBF wants to simplify the application and approval of grants for innovative SME. A central solder service helps in all questions, binding processing periods give planning security. SME innovation has been launched in technology fields that are particularly important for Germany's future, e.g. ICT, Material research, Production technology and Resource efficiency and climate protection. Top-level research offers SMEs the chance to successfully compete on the market with new products and processes. When developing new markets, SMEs are particularly flexible and fast⁴.

- The "SME-Digital" ("Mittelstand-Digital") initiative is promoting greater use of ICT and eBusiness among SMEs, especially among crafts companies.

- The "go-Inno" initiative is supporting SMEs in improving their innovation management and enhancing their resource and material efficiency⁵.

³ <http://www.zim-bmwi.de/>

⁴ <https://www.bmbf.de/de/kmu-innovativ-561.html>

⁵ <https://www.hightech-strategie.de/>

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Especially SMEs are accompanied and strengthened as ICT-supplier and ICT-demanders in the transition into the digital economy. Small and medium sized businesses are supported in increasing their innovation capacity through application and development of new digital technologies regarding new goods and services as well as the optimisation of their business processes.

- Expansion of research and technology programmes with high transfer to economy, e.g. in autonomics, 3D, Big Data, Cloud Computing and microelectronics
- New business models and service innovations through supporting and development and spreading of safe and data security friendly big data and cloud applications
- Strengthening of trust and security in using digital services
- Supporting IT-SMEs with internationalization and access to growth funds
- Funding of norms and standards to ensure the connection of classic industry with ICT over trouble-free interfaces
- Construction of competence centres to inform and demonstrate best-practices for industry 4.0 and smart services for SMEs as well as funding user-friendly applications and service

REGIONAL LEVEL

✓ **Baden-Württemberg**

The digitization of the economy is a major focus of the promotion of innovation by the state government. So far, the state government of Baden-Württemberg has provided around 114 million euros for the promotion of digitalization and has thus launched many projects.

The term "Wirtschaft 4.0" means the digitalization and networking of all industries. Baden-Württemberg's economic policy explicitly refers to all sectors in its commitment to the digitization of the economy - from industry to small and medium-sized enterprises as well as trades and trade, to services and information, communication and data management (ICT). Digitization changes the way of living and working. There are major changes to employers as well as to employees. Therefore, "Wirtschaft 4.0" is the subject of economic policy in the coming years.

As a high-tech country with strong industrial sectors and excellently qualified specialists, Baden-Württemberg is an excellent starting point for the digital future. The approximately 492,000 small and medium-sized enterprises, which account for 62% of the jobs and 58% of the taxable turnover of the Baden-Württemberg economy, are of great importance. Due to its strengths in mechanical engineering as well as in the field of automation technology and in the equipment of industrial information and communication systems, the country is now a leader in the field of industrial 4.0 systems. Some medium-sized companies in Baden-Württemberg are already very advanced in the process of digitization, others are still very early. As with the consumers, there are also "Digital Natives" in the companies, which are

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concerned quite naturally with digital technologies. Other companies are now planning to set off. Some see the digitalization rather skeptical and form the group of digital newcomers. There are also differences in the sectors. The Baden-Württemberg industry has taken a pioneering role all over Germany. Other industries still have catching up, such as parts of the craft, trade or services. Digitization is a great opportunity for Baden-Wuerttemberg and the country is in a good starting position to use this also. Economic policy will continue to intensify its efforts, so that Baden-Württemberg will play a leading role in both industry 4.0 and business 4.0, thus ensuring economic success and prosperity in the country. In the supplementary budget for 2015/16 a total of 30 million euro was planned for digitization.⁶

The outstanding importance of digitization for people living in Baden-Württemberg and the companies in the country is also reflected in the coalition agreement. It explains digital change as a central field of action for government work. Digitalization is identified as an innovation and sustainability motor. In order to strengthen the location of Baden-Württemberg and to improve the quality of life of the people living here, the state government is working to develop a nationwide digitization strategy digital@bw. The digitization strategy is being developed by all ministries under the leadership of the Ministry of the Internal Affairs, Digitization and Migration and includes among others the topics digital education, Smart City and smart administration. Therefore, "round tables" or other forms of participation and network formats will be conducted by the ministries, to open the digitization strategy for external expertise from business, science and society. The participation formats are to be implemented by the end of April 2017 and the digitization strategy is to be conceptualized along the needs of business and society. It is planned to present the overall strategy to the public in the second quarter of 2017⁷. In 2016, the state government has already invested over € 100 million⁸.

✓ **Bavaria**

The Bavarian Ministry of Economy offers special funding for SMEs as part of the future strategy "Bayern Digital":

- Digitalbonus as easy, fast and un-bureaucratic funding for SMEs
- Handwerk.Digital pursues pilot projects for market testing of applications which then shall be available for craft businesses as Best Practice examples.

AUSTRIA

⁶ <https://wm.baden-wuerttemberg.de/de/innovation/wirtschaft-40/>

⁷ <https://beteiligungportal.baden-wuerttemberg.de/en/mitmachen/lp-16/landesweite-digitalisierungsstrategie/digitalisierungsstrategie-digitalbw/>

⁸ <https://www.baden-wuerttemberg.de/de/service/presse/pressemitteilung/pid/landesregierung-bringt-digitalisierungsstrategie-digitalbw-auf-den-weg/>

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The EU Commission believes Austria is well on its way to becoming a world leader in the area of research and development. Expenditure on research and development has increased over the past decade: from 1.94% of GDP in 2000 to 2.79% in 2010. This development is clearly above the EU average and has enabled Austria to approach the EU Lisbon target (to increase research expenditure to three percent of GDP by 2010). The Ministerial Council Decision of 2012 was an important signal to the Federal Government that it would continue investing in research, technological development and innovation, despite the economic crisis.⁹

For Austria, Smart Specialization is a concept of long-term relevance that aims to boost growth and competitiveness. With the concept of Smart Specialization, a new generation of business location strategies has been developed that defines thematic investment priorities for those locations where the specific strengths, competencies and development potentials hold the promise of boosting the economy and society. They are based on innovation and international market success thereby also enabling it to master future challenges. For Austria, the long-term potential of the concept is perceived to lie in the support provided for a new knowledge-driven location policy. The strategies are designed to facilitate the development of a productive “eco-system” that originates in the region. From Austria’s perspective, a particularly valuable element is the process of “entrepreneurial discovery”. This refers to the ongoing process of participation by enterprises and the knowledge sector, and to the closer involvement of business, administration, education and research as well as NGOs within the innovation system to jointly develop themes.

Newer empirical analyses by WIFO point out the special significance of diversification of regional economic structures into new areas based on their existing economic and technological competencies, while hardly any growth impulses may be expected from a narrow industry specialization. In this respect, the concept of “Smart Diversification” is more meaningful and useful when referring to the (re-)combination of strengths with technologies of the future, new markets and target groups to achieve a transformation process.

Austria would like to stress the following points that not only contribute to the further contextual development of the concept, but also increases its relevance for practice.

- Open with respect to process design: Smart specialization should be understood as a process in which the relevant stakeholders work together in location development by taking an evidence-based and outcome-oriented approach. Flexibility in the interpretation and concrete application of the core elements of RIS3 must be possible in the Member States and their regions. When assessing Smart Specialization strategies, existing practices for “strategy formulation” in the Member

⁹ For details, see the "Austrian Research and Technology Report 2012" (http://www.bmvit.gv.at/en/service/publications/downloads/downloads_ftb/ftb_2012_en.pdf)

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States and regions, the political realities and framework conditions must be taken into account. This would support acceptance of the concept among the policy actors.

- Open with respect to content: From Austria's perspective, the issue on hand is not so much to proceed according to a master plan, but rather to organize an ongoing development process. This may be achieved, for example, by "rolling planning" or by multi-tier planning (e.g. concrete implementation of general strategies in working programs).
- Open with respect to innovation: An open interpretation of the concept of innovation is advocated to achieve a wider integration of approaches such as open innovation and social innovation as well as creativity and to include social themes in the strategy. Austria has a broad understanding of the concept of innovation which is not restricted exclusively to technology and is well aware of the fact that it needs to achieve progress in the area of "social innovation".

Consideration of framework conditions: coordination of the policy areas is an important factor. It is pointed out in this context that EU financial assistance legislation must grant adequate room for the application of instruments to promote business and innovation in order to be able to advance Smart Specialization accordingly.

National Strategies that have special priorities regarding digitalization for Austrian SMEs

- Digital Roadmap Austria

Over 100 experts from all Austrian ministries, the federal provinces, the Association of Cities and Towns, the Association of Municipalities, unions and employer's associations and other organizations were involved in creating the Digital Roadmap. The Roadmap provides an overview on the current challenges and of existing and planned measures and activities and brings together the activities of all government departments in a joint Federal Government strategy paper for the first time.

The digital revolution will have a direct or indirect impact on all areas of business. Digital technologies make new business models, products and services possible. Industry has long been concerned with the question of how to link existing manufacturing and business processes along the value chain with information and communication technology and has coined the term Industry 4.0. Increasing the degree of customization and flexibility in production offers new business opportunities for existing and new providers. The key factor here is to ensure fair competition for all economic operators. To be competitive in the digital age, we need to ensure that the whole economy benefits from the advantages of digitization.

To achieve this in Austria we need a lively startup scene, greater awareness among SMEs of digital development opportunities and an optimal framework for innovations and funding. Networking and collaborations between companies in different industries and of different sizes will be crucial success factors, with the Austrian economy being able to build on its

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existing fields of expertise. While the productivity of the workforce increases as a result of digitization, people with new qualifications are in demand – and we are responsible for ensuring that these qualifications are acquired.

- Overall “digital education” strategy

Education 4.0 brings together all the initiatives of the Federal Ministry of Education, specifically prioritizing digital skills, infrastructure and educational media. Digital education is to be increasingly incorporated into the education system.

- Broadband Strategy 2020

The aim is to achieve virtually nationwide broadband coverage by 2020. To this end, one billion euros is being provided and is intended to benefit rural areas in particular

- 5 G strategy

Strategy to introduce the fifth generation of mobile telecommunications

- RTI strategy of the Federal Government

Strategic and operational objectives will be defined in order to build on strengths in research, technology and innovation, enter new fields of the future and niches, set up transparent funding and decision-making structures, and ensure efficient and sustainable use of public funds.

- Open Innovation strategy

The opening, expansion and development of Austria’s innovation system will be driven forward and open innovation will be embedded in the innovation system as a guiding principle.

- Creative industry strategy

Creative industries will be supported in their role as a driving force for innovation and transformation in the development and marketing of new products.

- Startup country strategy

The environment for startups will be continuously improved and a framework created that encourages innovation and entrepreneurial spirit.

- ICT strategy

The cornerstones of the strategy propose focusing measures on education, health and businesses over the next five years. Implementation levers include infrastructure, eGovernment, mobility, financing and security.

- Open Source Software position paper

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This position paper describes how the opportunities of Open Source Software (OSS) can be best used for the common good.

REGIONAL LEVEL

✓ **Salzburg**

The development and expansion of a distinctive Salzburg profile represents a substantial challenge for regional innovation policy. As regards the concept of intelligent specialization, it is sharpening of the profile and an excellence orientation that can effect an expansion of the innovation system, primarily in those subject areas where, alongside strengths in science and business, training structures are already in place. Yet in addition to the focus on excellence, one must also take a differentiated approach: in particular this is in order to take into account the Salzburg economy and its decidedly SME-based structure (many small, even very small, business enterprises) and strongly integrating that structure (regional approach to knowledge transfer and technology transfer).

From all analyses and discussions, five topic areas take shape for a specialisation of Salzburg's innovation system:

1. Life Sciences
2. Salzburg - I.C.T. Region: smart data and services
3. Smart Materials
4. Intelligent Building and settlement systems
5. Creative Industries and service innovations

Information and communication technology (ICT) and competence in digital technologies rank among those of Salzburg's strengths that can project even greater appeal and excellence, also on a cross-regional level, by carving out a specific profile. Salzburg's strength in this spectrum of subjects is the following: a strong science sector with research and training, in the form of the University of Salzburg, the Salzburg University of Applied Sciences, and Salzburg Research (this state's research company), as well as the research studio iSPACE, owned by Research Studios Austria, in addition to an equally strong private corporate sector.

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3. Policies to develop the DIGITAL AGENDA

The Digital Agenda (now Digital Single Market Strategy) presented by the European Commission forms one of the seven pillars of the Europe 2020 Strategy which sets objectives for the growth of the European Union (EU) by 2020. The Digital Agenda proposes to better exploit the potential of Information and Communication Technologies (ICTs) in order to foster innovation, economic growth and progress¹⁰.

As stated in the COM(2017)228, already mentioned, “people and businesses in the EU have the inherent strengths needed to take advantage of the Digital Single Market (DSM). These include a strong manufacturing base and fast-growing startup ecosystem, which combined with newly digitised industrial processes and a skilled workforce, can drive growth for the foreseeable future... However, these strengths can only be used to the full if there is substantial additional investment in digital skills and infrastructure, from the EU level, Member States and the private sector.”

In the following pages an overview of what the Member States and Regions, within the SMART SPACE area, are doing too reach this objective, is given.

3.1 DIGITAL AGENDA priorities in SMART SPACE area

ITALY

Italy has developed its own national Digital Agenda strategy, identifying priorities and methods of intervention, as well as actions to be taken and to be measured on the basis of specific indicators, in line with the scoreboard of the European Digital agenda.

The related national plans are:

- The “Banda Ultra Larga” plan. According to the digital divide challenge, the plan aims at achieving by the 2020 a network coverage of 85%, with a connectivity of at least 100 Mbps.
- The “Crescita Digitale” plan. The document is called "Digital growth" because it is a dynamic strategy that must adapt to the new challenges, technological developments, and to the market, with a focus on socio-economic development of the country.

The main topics included are:

1. Enable the progressive switch off of the analogue option for the use of public services, by designing the digitization of public administration in a user-centred view, and by coordinating and putting in place the various actions initiated by all public administrations.

¹⁰ For more information about Europe 2020 strategy and Digital Agenda: <https://ec.europa.eu/digital-single-market/digital-agenda-europe>

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2. Ensure economic and social growth through the development of skills in businesses and the diffusion of digital culture among citizens for the creation of a new demand capable of generating innovative and qualified supply.
3. Make the Italian's system more efficient by coordinating programming and investment in digital innovation and ICT.

REGIONAL LEVEL

✓ **Lombardy Region**

Objectives of the Lombardy Digital Agenda are:

- Promote research and innovation in the ICT sector
- Growth in the ICT sector (to face the effects of the global economic crisis)
- Development of services by broadband
- Simplification and modernization of public administration

It is based on the following six priority areas:

- Interoperability and standards
- Digital services
- Digital divide
- Research and innovation in the ICT field
- Digital citizenship
- Open Data

✓ **Veneto Region**

The five "key principles" of the Digital Agenda for Veneto 2020 are:

- it aims to be a regional development plan
- it is designed by placing in the focus the people within their communities
- it proposes a cultural innovation, not merely a technological one
- it attributes to the Public Administration the role of "enabling platform"
- it is a continuous bottom-up process

These five key principles guide the overall approach of the Regional Agenda and the definition of the consequent actions.

In particular, the new mission can be deployed in the following strategic objectives:

- improve the quality of life
- encourage the sustainable development of territories
- generate new employment opportunities, especially for young people.

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FRANCE

The objectives of the Digital Agenda in France are:

- Development of high-speed broadband
- Support R&I on internet of the things, robotics and additive manufacturing
- Digital and energy efficiency
- Digital and mobility
- Human resources and digital transformation
- New business models induced by digital transformation

REGIONAL LEVEL

✓ **Alsace**

S3 and ERDF use are closely linked. In Alsace, ERDF will be used to develop high speed internet (10 millions Euros) as well to fund research and innovation projects (collaborative and non collaborative projects). ERDF will be focused on :

Action 1: Support for new content and digital services by SMEs Support for the development of new software or application in Open Source (free sharing and free of rights) "Open source" means software in which source code is available to the general public.

Support for the development of products and services within the "Internet of objects" (connected object) that can respond to important societal issues, and which are intended to be applied in physical places. The Internet of objects is "a network of networks that allows, through standardized electronic and wireless identification systems, to identify and communicate digitally with physical objects in order to measure and exchange data between the physical and virtual. " Prototype development may be funded under this action.

Action 2: Support for the SMEs in access to e-business

Support for advisory services provided to companies to define the development strategies of a pilot project, to facilitate the appropriation of the tools and methods of e-business likely to generate growth.

ERDF will also co-fund project supported by the Regional Council (AMI Numerique). This program is a bottom-up one. Digitalisation of the industry is fully eligible within this program.

✓ **Provence-Alpes-Côte d'Azur**

Organization of SEPEM Industrial Regional Fair (April 2017) focus on Industry 4.0.

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Participation of “Le Bourget” national Aeronautical fair to present OIR Industry of the future (June 2017).

✓ Auvergne-Rhône-Alpes

There is a Regional Plan for Industry of Future. It is led by the regional government (the implementation is supported by the regional development agency). The plan aims to support companies, especially the SMEs in their industrial transformation toward Industry 4.0 and in their digital transformation including new economic models. The associated actions plan support the modernization of the production tool, the industrial developments and the diffusion of knowledge on new technologies in the companies.

There are 5 main axis in the plan: the actions to support the SMEs to improve their competitiveness, the development of the regional technological/digital offers proposed by the intermediaries, the development of professional trainings related to HR dimensions of digital transformation, the enhancement of the European cooperation, promotion of the regional know-how and strengths in Europe

SLOVENIA

The objectives of the Digital Agenda in Slovenia are:

- Comprehensive technological restructuring of tool industry by raising value added per employee
- Raising the level of digitalization with automation and robotization in manufacturing
- Connect knowledge and creativity of stakeholders in the field of photonics for new impetus and new market opportunities
- Increase export of automated industrial systems and equipment.

The Focus areas are

- Production optimization: (distributed) production management and control, quality assurance, regulation and data processing, intralogistics, automation.
- Optimization and automation of production processes: smart machines and equipment, mechatronic systems, actuators and smart sensors

The regional development programs of Ljubljana urban region and RDP of Gorenjska mention the following focuses:

- Ensure effective supportive environment for the development of dynamic entrepreneurship

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- Strengthening scientific-development business centers and institutions to be connected with the economy
- Strengthening entrepreneurship and entrepreneurial support environment with an emphasis on integrated solutions and innovation
- Increase the share of innovation with an emphasis on raising the competitiveness and development of new technologies.

GERMANY

Besides projects, which belong to the High-tech-Strategy, there is the project Industry 4.0 of the Federal Ministry for Education and Research (BMBF). This project aims to enable German industry to be prepared for the FoF. The project focuses on four topics:

- SMEs: Development of profitability analysis to ensure use of sustainable technologies, foster best practices to enable adoption, strategic guidelines and recommendations to facilitate implementation of FoF.
- IT-Infrastructure and standards: Due to importance of software in industry 4.0, project “SPEDIT” offers approaches for standardization and IT-Infrastructure.
- IT-security: Many SMEs are afraid of losing their intellectual property. According to this, project “INUO” shows how to minimize cyber-attacks.
- Required competences and qualification: Industry 4.0 includes changes in job profiles. Due to this fact, it is necessary to adapt new needs of businesses for educational training.

Especially for SMEs in the manufacturing sector, there are several national projects aiming to enhance activities for FoF. There are two categories: projects regarding to manufacturing development and preparation for FoF and projects which connect IT with manufacturing sector and enable M2M communication¹¹.

- Growth and employment

Digital added value and networking ensure growth and give impulses for enhanced working in the digital world trust and security. Easy, transparent and safe use of IT. It is important, to strengthen trust, to protect communication over digital networks and the required access and to support easy coding methods. It is also important to protect the existing critical infrastructure.

- Access and participation

Comprehensive access to the digital world should be guaranteed¹².

¹¹ <https://www.bmbf.de/de/zukunftsprojekt-industrie-4-0-848.html>

¹² https://www.digitale-agenda.de/Webs/DA/DE/Home/home_node.html

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REGIONAL LEVEL

✓ **Baden-Württemberg**

The digitization of production (keyword "Industrie 4.0") is also at the center of the measures and support that has been launched in the federal state of Baden-Württemberg. With the digitization strategy digital@bw, the economic policy will continue to strengthen its efforts to secure the leading role of Baden-Württemberg in Industry 4.0 with extensive measures and funding.

✓ **Bavaria**

The main areas of implementation are:

- Create an understanding of cross sectional technologies IT Security, Big Data, Cloud Computing, Necessary Political Framework
- Support SMEs (Industry 4.0, Mobility, Health and Care, Energy, Media, Tourism, Trade, Craftsmanship, Finance, Digital Planning living and Building, Agriculture, Environmental Protection)
- Increase infrastructure: infrastructure, R&D on products and services, create a culture of entrepreneurship, create funding for practical solutions, increase International cooperation, change the working environment, change learning possibilities, include persons with special needs and care, increase e-government
- Stay in touch with the needs of our society

AUSTRIA

The main areas of implementation are:

- ✓ Broadband expansion (Broadband Strategy 2020):The Broadband Strategy 2020 of the Austrian Federal Ministry for Transport, Innovation and Technology is intended to make the conversion to high-performance broadband networks a success¹³.
- ✓ Digital Single Market: the creation of a Digital Single Market means above all the removal of existing obstacles (e. g. harmonisation in the area of copyright law, different legal systems, warranty) and building up greater confidence (e. g. consumer protection). These problems often stand in the way of cross-border trade. The telecommunications markets also remain heavily fragmented. The use of the digital single market will only succeed if the market's existing fragmentation is overcome. The cross-border sale of online music continues to face serious difficulties. The

¹³ Further information on the broadband expansion programme (in German only) is available on the BMVIT website (<https://www.bmvit.gv.at/telekommunikation/breitbandstrategie/bbs2020.html>)

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completion of the Single Euro Payments Area (SEPA) is an important step in this regard, but other steps are needed. Confidence when making online transactions must be strengthened.

On 25 January 2012, the European Commission proposed comprehensive reforms to the 1995 EU Data Protection Directive in order to strengthen the online rights of the individual privacy protection and to boost Europe's digital economy. The principles of the 1995 Data Protection Directive are to be updated and modernised to include the Commission's proposals in order to ensure that personal details remain protected in the future. The Commission's proposals consist of notification about the political objectives of the Commission (COM/2012/09) and two legislative proposals; these concern a regulation for establishing a general legal framework for data protection in the EU (COM/2012/0011) and a directive for the protection of personal data that is processed for the purpose of preventing, disclosing, investigating or prosecuting criminal acts and for associated judicial activities (COM/2012/0010). Intensive work is currently being undertaken on this package.

The Commission's notification on Content in the Digital Single Market (COM/2012/789) of 18 December 2012 also focuses on copyright law. On the one hand, the Commission will complete the work currently being undertaken to revise and modernise the EU legal framework for copyright law. On the other hand, further debates on questions such as Licences for Europe will take place, an area in which rapid progress is necessary and possible. The term Licences for Europe encompasses, amongst other things, four main tasks that are processed in parallel.

- Cross-border access and transmission of services
- User-generated content and licensing for small users of protected works
- The audiovisual sector and cultural heritage institutions
- Text and data mining

In this regard, the Commission will hold dialogues with the stakeholders and set up committees.

- Education: eFit21 – digital agenda for education, the arts and culture: efit21 focuses specifically on the inclusion and use of the new information and communication technologies in Austria's educational, arts and cultural institutions, lays the basis for an ICT implementation strategy that focuses on targets and effects, and is the digital agenda for education, the arts and culture of the Austrian Federal Ministry for Education. You can find extensive information on this topic on the e-Fit21 website of the Austrian Federal Ministry for Education (<http://www.efit21.at>).
- Digital Inclusion: another area in which Austria is making a special effort concerns measures for reducing the number of off liners (around 20% of those aged 16-74 do not use the Internet). e-Government

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Across Europe, around 38% of citizens currently make use of public online offerings. This figure should grow to 50% by 2015¹⁴.

In addition to the priorities proposed in the Digital Agenda Review, Austria sees central elements that have been superbly addressed for many years through the Safer Internet Programme, above all in the area of awareness-raising and prevention. The Austrian safer internet hub, Saferinternet.at, supports pupils, teachers and parents with the safe use of the Internet, mobile phones and computer games through workshops, teaching materials and courses.¹⁵

- Digital Roadmap Austria

Within the digital roadmap Austria has developed 12 guiding principles for the digital future of Austria:

1. Every person in Austria should be able to take part in digitization. We want to bridge the digital divide.
2. Digital education should begin as early as possible. No child should leave school without digital skills.
3. Basic and human rights apply in the digital world too. We want to strengthen digital individual responsibility and civic courage.
4. Internet access via a well-developed and affordable digital infrastructure is essential to both citizens and business in Austria and should be guaranteed.
5. We want to create more and better jobs through digitization and to educate and train people accordingly.
6. Digitization leads to new business and working models, for which we want to create a modern legal framework.
7. Our aim is for Austria to be one of the world's leading digital business locations. To this end, we must provide support to businesses for their digital transformation.
8. Science and research should be helped to develop new digital opportunities to ensure that Austria becomes an innovation leader in the future.
9. We will play an active role in shaping the European Digital Single Market.
10. We consider security in the digital sphere to be the joint responsibility of public institutions, business and citizens. Austria should continue to have high data protection standards.
11. We want to ensure and encourage a respectful online discussion culture and high-quality journalism in the digital world too.

The public sector also sees itself as a driving force for innovation in Austria. Citizens and businesses have the right to convenient, easy and accessible electronic communication with public administration.

¹⁴ You can find extensive information about this on the website of the Digital Platform Austria at <http://www.digitales.oesterreich.gv.at/site/6497/Default.aspx>

¹⁵ Details on the measures implemented by Austria can be found at <http://http://www.digitales.oesterreich.gv.at/site/6497/Default.aspxwww.daeimplementation.eu/>

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REGIONAL LEVEL

✓ Salzburg

Salzburg can position itself as being equipped to face the future, with the knowledge available in the Salzburg ICT region, the opportunities for professional training, the early promotion of youthful talent in the STEM (science, technology, engineering and mathematics) range of subject-areas, and also the conversion of research results into benefit for the economy as a whole. The region can proactively take on the rapidly-growing digitalization of society and the economy. Industry 4.0, the digital transformation of all economic sectors (technology, organization, the individual, and business models) and global networking through new internet technologies - these are the central connecting points where cooperation between business, science and education is to be expanded in the region. The challenge for all research institutions is to cooperate more closely – so as to reach purposeful orders of magnitude in terms of implementation, to make the new technological opportunities accessible to all business sectors, as well as to sharpen Salzburg's areas of externally-directed competence.

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4. The available supporting measures

ITALY

✓ Lombardy Region

- **Innovalombardia - Linea innovazione** – POR FESR - 2014-2020: This program aims at favoring companies carrying out product or process innovation projects. It is addressed to SMEs and companies with less than 3000 employees. The funding actions are: long-medium term financing. Grant leveraging on POR FESR 2014-2020 resources
- **Bando Smart Living**: This program aims at favoring companies carrying out experimental development and innovation projects with impact on smart living supply chain. It is addressed to consortia composed by at least 2 SMEs and one university or large enterprise. The funding action is grant, maximum 800.000 € per project.
- **Accordi per la Ricerca e l'Innovazione**: Hereby Lombardy Region Initiative opens a call that aims to encourage the development of Research, Development and Innovation projects, with particular relevance in terms of partnership and activated investments that would affect the competitiveness of Lombardy. It is addressed to consortia composed by at least 1 company and 1 research institute/university. The funding action grant is 40M € overall (max 4.5M € per project).
- **Linea Ricerca & Sviluppo per Micro Piccole e Medie Imprese (FRIM FESR 2020)**: Lombardy Region has allocated 30M € to support micro, small and medium enterprises in the sectors of manufacturing, construction and services to businesses and to promote industrial research, experimental development and innovation to be realized in the Lombardy region in aerospace, agribusiness, eco-industrial, creative and cultural industries, health industry, advanced manufacturing and sustainable mobility.
- **Bando Linea R&S per aggregazioni**: The call supports R&D projects (industrial research, experimental development) of small and medium enterprises in cooperation with large companies or research organizations (public and private), to increase the competitiveness, the strategic and regional excellence, to promote the use of new technologies and innovation processes. Eligible projects are those presented by partnership with at least three subjects of which at least two SMEs and a research body, which include industrial research and experimental development and are aimed at introducing product and/or process innovation coherent and relevant with the corporate purpose and the classification of production activities of the applicant.
- **Bando Smart Fashion and Design**: The call supports experimental development projects that have real and proven achievements in the fashion industry and/or

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design, made by partnerships of companies in collaboration with public and/or private research organizations. Moreover, projects have to refer to one the macro thematic of the “Smart Specialisation Strategy” (S3) of Lombardy Region or to one of the transversal macro thematic of “Smart Cities and Communities”. Eligible consortia are made by at least 3 partners, of which at least 2 SMEs and 1 large company or research institute.

✓ **Veneto Region**

- ROP Action 2.1.1: This action aims to develop the ultra wideband spreading infrastructure (at least 100 Mbps) in areas with a high density of established businesses where the market has not yet intervened. Beneficiaries are: ICT operators, the regional administration, the public authority in their various forms.
- ROP 2.2.1: This action aims to consolidate the structure of the public data centres in Veneto, reducing the number in a remarkable way and by making an upgrade of the information systems of the municipal administrations. Beneficiaries are: the regional administration, the public authority in their various forms.
- ROP 2.2.2: This action aims to develop and disseminate interactive and integrated e-government services developed in a co-design logic with users, focusing on, for example, the following advanced digital services: citizen's file, instances management, electronic payment system, electronic billing, digital identity, dematerialization, open-government services, services for smart communities and cities, etc. Beneficiaries are: the regional administration, the public authority in their various forms.
- ROP 2.2.3: This action aims to disseminate data-sharing infrastructures across the regional territory between public administrations and relevant national and regional public databases. Beneficiaries are: the regional administration, the public authority in their various forms.
- ROP 2.3.1: This action aims to increase the number of citizens using the internet and to raise their awareness of digital potentials through the spread of Open Data culture. Beneficiaries are: the regional administration, the public authority in their various forms.
- ROP Action 1.1.1: Support for R&D projects (Individual): support to businesses for the development of research projects developed that foreseen the involvement of a researcher Individual: 18.000.000 €.
- ROP Action 1.1.4: Support for R&D projects (Collaborative): for business combinations; support to collaborative R&D projects between companies and research centers for the development of new sustainable technologies, new products and services: 23.000.000 €.

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- ROP Action 3.1.1: Development of technological or non-technological innovation. Support to innovation only, without any activity regarding research and experimental development. It includes, for example, instruments supporting a technology upgrade in already existing enterprises, as a way of increasing innovation, managerial and organisational innovation, and the commercialisation of innovative products. Aid for investments in machinery, equipment and intangible assets, and support to business reorganisation and restructuring processes: 43.500.000 €.

✓ **Piedmont Region**

Piattaforma Fabbrica Intelligente (Smart Factory Platform) and the linked calls for proposals and projects. A call to develop, with a cooperative approach, large projects of industrial research and experimental development on the Smart Factory domain. Five projects funded at the end of 2016 and working. Other four/five projects will be funded by the end of 2017.

Digital Innovation Hub: it is a "Digital Competence Center", a slim and concrete model of innovative support for companies with bottom-up involvement of the territory, universities and research centers of excellence and constitutes a strategic asset for growth and economic development and industry of Piedmont. DIH Piedmont offers a collaboration path to local companies to accompany them as quickly as possible in the process of digital transformation, putting them in a position to identify their own improvement margins, define action plans and launch innovative projects.

It works to raise the level of awareness and understanding of the topics of interest and will help companies to develop their digitalization plans by providing mentoring and support services. The goal is to maximize the synergy between the excellent actors in innovation in the area, including Poles, universities, research organizations and internationally leading companies, to help Piedmont entrepreneurship adapt to fourth industrial revolution. The mission is to bring together the different experiences and competences, addressing Piedmont companies to partners that can help them through the digital transformation path. Particular attention is paid to SMEs, which sometimes find it difficult to identify their critical or potential or to reach innovation providers.

FRANCE

✓ **Alsace**

- Factory of the Future diagnosis: Proposed by Région Grand Est (that include from the 1/01/2016) Alsace. Open to SMEs. The diagnosis is split into 4 parts 1) diagnosis performance industrial organization 2) evaluation of use of the opportunities to use new technologies as digital ones 3) environmental performances 4) Human resources. The main deliverables : Audit report and action plan.

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- AMI Numerique: Consortium involve companies from traditional sectors, academics and ICT companies. The diagnosis phase is financed by the Regional council (2,5 days) that has identified a network of experts¹⁶.
 - Financial support Competitiveness clusters and clusters: The regional authority fund clusters and poles that will set is specific actions dealing with digitalization and industrial transformation.
- ✓ **Provence-Alpes-Côte d'Azur**
- “Révélateur PACA”: Diagnostic and help to go to Industry of the future
 - “Fabrication Additive PACA”: Diagnostic and help to implement Added Value manufacturing
 - “Offreurs de Solution”: Identification of regional Smart technologies companies and helping them in Open Innovation
- ✓ **Auvergne-Rhône-Alpes**
- Call of Interest for Industry of the Future. In the OP, axe 1 (innovation for societal challenges), thematic objective 3 (reinforce SME competitiveness), specific objective 9 (SME growth), type of action 9-1 (regional instrument for collective action). Dedicated to SMEs, this initiative propose assistance (vouchers) to SME to integrate a new technology (additive manufacturing, robotic and smart manufacturing, and augmented reality). The financial grant can support feasibility studies and tests of innovative solutions.
 - UNR, Regional Program for Digital Factory (supported by ERDF funds): This program dedicated to SMEs aims to: evaluate a software application in real conditions during a 6 month period, before taking the decision to invest in it; conduct a Proof of Concept of an innovative process (demonstrator) or of a technology not yet mastered by the SME.

SLOVENIA

- Pilot lines, early product validation actions, advanced manufacturing capabilities and first production in key enabling technologies. Support will be given to projects in KET and other multi-functional technologies: The goal is to improve the competitiveness of the Slovenian companies, especially manufacturing SMEs. Tenders are not published as of now, as the relevant Ministries will form tenders based on defined action plans which are to be developed under Strategic partnerships mentioned above.

¹⁶ (http://www.vehiculedefutur.com/uploads/News-et-opportunites/2017-NetO/Usine_futur_Diagnostic_Region_GE.pdf)

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- Growth and development of SMEs with a view to promoting modern elements of achieving added value: The goal is to improve the competitiveness of the Slovenian companies, especially manufacturing SMEs. Tenders are not published as of now, as the relevant Ministries will form tenders based on defined action plans which are to be developed under Strategic partnerships mentioned above.

GERMANY

✓ Baden-Württemberg

- Innovationsgutscheine Baden-Württemberg (Subsidy programs): The innovation vouchers are aimed at start-ups and companies based in Baden-Württemberg and less than 100 employees (full-time equivalents) as well as a maximum of 20 million euros in turnover, start-ups and young companies up to a maximum of five years after their foundation. Eligible are scientific activities in the run-up to the development of an innovative product, a service or a process innovation, such as technology and market research, feasibility studies, and research-oriented research and development activities designed to provide innovative products, Market and production maturity, such as, for example, design procedures and prototype construction and implementation-oriented research and development activities within the framework of an innovative start-up project in future fields such as e.g. of sustainable mobility¹⁷.

✓ Bavaria

- Digitalbonus Bayern. Goals: it aims to support SME's to digitalize their products, processes and services and increase the safety of their IT system. Beneficiaries: SME with at least one facility in Bavaria; the supported innovation needs to be utilized in that facility. Promoted actions: development and improvement of products, services or internal processes based on ICT and IT Solutions. Up to 2.000.000 € credit possibilities.
- Bayerische Technologieförderung - Bavarian Technology fund. Goals: support SME in developing and implementing new technological products and production methods; keep economic competitiveness in times of rapidly changing technologies; keep high employment rate; support development of a modern infrastructure. Beneficiaries: SME with less than 400 employees, located with at least one facility in Bavaria. Promoted Actions: development of technological innovative products, processes or services. Offering grants and loans to SME's.

¹⁷ <https://www.stuttgart.ihk24.de/Fuer-Unternehmen/innovation/Innovation-Technologie/Foerderprogramme/Innovationsgutschein/675030>

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AUSTRIA

✓ Salzburg

- Digitalization Workshops for SMEs: ITG has developed a series of workshops (each lasting one working day, free of charge for SMEs from Salzburg) that will help immensely to sensitize SMEs to take first measures in digitalization and will offer clear and comprehensible examples of best practice in Industry 4.0 from similar and comparable companies. Agenda: general introduction to IoT and cloud technologies as well as digital business models & digital transformation; Develop and build a simulation model; IoT sensor systems, connecting IoT sensors; data visualization / dashboard; analyzing the data model.
- Several awareness raising actions: focused on SMEs, since 2015. Involving all relevant scientific institutions in the province.
- Best Practice Workshops: aiming at showing SMEs regional best practice cases, visiting innovative companies, learning from peers and getting in touch with regional scientific institutions.

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5. Other initiatives offered in SMART SPACE area to sustain digitalization in industry.

ITALY

IPER AMMORTAMENTO (HYPER DEPRECIATION)

The Italian national tax regulation for 2017 has been linked with the National Plan Industry 4.0 and can be considered a relevant initiative to facilitate the digitalization of SMEs, with an explicit reference to Industry 4.0. It foresees relevant tax advantages for companies which, in order to increase their competitiveness, invest in innovation, provide that their investments are consistent with the Industry 4.0 priorities.

One of this tax advantages, called "Iperammortamento" (hyper-depreciation), gives companies investing in new tools with high technological contents the chance of a depreciation increased by 250% on the cost of purchased device.

Industry 4.0 enabling technologies to which the "Iperammortamento" is applied are listed below:

- Advanced Manufacturing Solutions: Interconnected collaborative robots
- Additive Manufacturing: 3D printers connected to digital development sw
- Augmented reality supporting productive processes
- Simulation among interconnected machineries to optimize processes
- Integration of information along the value chain, from the provider to the consumer
- Multidirectional communication among productive processes and products
- Cloud: management of large amount of data in open systems
- Cyber security: security in network operations and in open systems
- Big Data and Analytics: large data base analysis to optimize products and productive processes

Moreover, instrumental goods need to be connected with production management sw and exchanging data among each other. The system management software will benefit with a hyper-depreciation rate of 140%.

Bergamo Tecnologica: The project "Bergamo Tecnologica": opportunities and new business models" is focused on SMEs having at least one operational headquarters in the province of Bergamo, interested in new technological opportunities and business models that could be integrated with existing systems or new systems, increase their competitiveness and trigger new demands from the market. The project, funded by the Chamber of Commerce and

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realized by Bergamo Sviluppo, supported by University of Bergamo and Consorzio Intellimech, is articulated in the following phases:

1. Technological check-up in 30 local SMEs
 2. Consulting hours to transfer knowledge and skills to the 30 SMEs
- Organization of the High Education Path “Impresa 4.0 – Guidare la trasformazione tecnologica e gestionale verso l’Industria 4.0”
 - Digital Innovation Hub: Regional Manufacturing DIH. Recently AFIL has been also recognized by I4MS as Regional Manufacturing Digital Innovation Hub (RMDIH) for Lombardy in the theme of Sensors, CPS and ICT, with the aim of creating the right suitable ecosystem to support SMEs towards the digitalization process.

FRANCE

- Club des offreurs de solutions: CCI Alsace Eurométropole has launched an initiative to identify at regional level companies that could offer solutions for digital and moreover industrial transformation. CCI has set up a “club” in order to federate these companies and increase their visibility. CCI has also set up a serious game dedicated to industrial companies to identify needs and related solutions proposed by members of the Club. This initiative has been identified as a best practice at national level.
- Alsace Digital, Rhenatic¹⁸: Industry Hacking camp: it is a HACKATHON (A hackathon - also known as a hack day, hackfest or codefest - is an event in which computer programmers and others involved in software development and hardware development, including graphic designers, interface designers and project managers, collaborate intensively on software projects). The objective is, in 54 hours, to find innovative solutions to answer to industrials problematics.
- 4iTEC 4.0: It’s an industrial initiative initiated by large companies as PSA (Peugeot), CLEMESSY, ALSTOM, SEB as well as by SMEs (Papeteries Zuber-Rieder). The objective is to set up collaborative innovation projects (TRL5-7) dealing with industrial transformation (including digitalization) and then to disseminate in other industrial sectors. 4iTEC 4.0 is a joint enterprise between 5 industrial companies and the headquarters are located in the PSA factory (Mulhouse).
- Tango & Scan¹⁹: Local initiative. Annual call for proposals. Objective to support collaborative projects between creative industries and companies from traditional sectors. Strong focus on project proposed by SMEs.
- Easytech: The Easytech program is carried out by Minalogic, a competitiveness cluster dedicated to digital technologies, and several other partners from the

¹⁸ (<http://www.hackingindustry.camp>)

¹⁹ (<http://www.creaccro.eu/actions/tangoscan-2017/>)

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academic world. Its main service consists in helping SMEs to build a demonstrator in cooperation with a research center or a laboratory. The Easytech program aims to support SMEs wishing to initiate a project in the fields of embedded software and electronics. Easytech is declined in 4 different offers proposed to the companies: Advisory meetings, creativity sessions, expertise and demonstrators.

- Espace Numérique Entreprises (ENE) : ENE is a resource and expertise center whose goal is to help companies discover or integrate digital technologies
- Program Digital SME (led by ENE): The Digital SME program allows SMEs to work with an expert to adopt the best strategy for digital transformation and to select the best digital technology. Program Performance SME (led by Auvergne-Rhone-Alpes Entreprises): The Performance PME program aims at helping SMEs to adapt to the digitalization through training sessions, personalized diagnosis and advices by expert consultants. The program targets either the organizational performance, the technological performance or the overall performance of the supply chain including the digital tools for enhanced collaborations between suppliers and customers.

SLOVENIA

- DigitAgenda by GZS - Chamber of Commerce and Industry of Slovenia: The aim of DigitAgenda is connecting of economy, research and development organizations and public administration to implement the following key responsibilities: raising Competence (organization of trainings and consultancy field of digitization), financing (assistance in obtaining public and other funding digitization of business and internationalization of SMEs).
- All in one place: all services in one place to simplify business with the State.
- Standardization: validation and enforcement of global and local EDI standards, and support for SMEs in their introduction (Industry 4.0).
- Internationalization and joint ventures: a digital Exhibition and Sales salon (Show Room) for the Slovenian economy.

GERMANY

- Initiative Ulm Digital: the aim of the initiative is to promote digital talents and ideas by creating a suitable and appealing environment for junior employees and digital doers. Thereby the already high attractiveness of the region and its powerful entrepreneurship is increased and Ulm can evolve into a digital model city. Pursuing this goal, supporting the public dialogue and encouraging the transition actively is very important.

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- Installing a LoRaWAN in Ulm and the surroundings is one of the projects of the initiative.ulm.digital. This Long Range Wide Area Network, a low-power-wireless network protocol, was especially developed for the safe bidirectional communication in the Internet of Things and is based on the open industrial standard LoRa. By creating such an infrastructure, the IoT shall be available and comprehensible for all citizens and businesses. Therefor it is completely free. Its multiple fields of application show, that there can be a direct advantage for everyone, e.g. temperature sensors, fine particle sensors at heavily trafficked roads or GPS sensors as theft protection²⁰.

AUSTRIA

- The Digital Service Package of the Austrian Economic Chamber: the Austrian Economic Chamber supports through several levels. Advice and support: in order to develop and implement the appropriate digital strategy the "DIGITAL Service Package" provides information, advice, online services, events and webinars on that topic. For questions about digitalization companies should use the consulting services offered by WKO's digitalization services.
- The Digitalization Offensive 2017 has one main priority: to strengthen the digital competences of Styrian companies, especially SMEs. For this reason SFG is launching an extensive digitization campaign - projects that expand the company's digital competences are being promoted through several initiatives.
- Awareness raising measures: Organized by the Salzburg Chamber of Commerce.
- KMU digital (SME digital): new program developed by the Austrian Chamber of Commerce together with the Federal Ministry of Science, Research and Economy: Grants, consultancy, events, webinars, analysis-tools, special training programs.

²⁰ <https://ulm-digital.com/>

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6. Clusters, networks and poles focusing on smart technologies and industry 4.0, Factory of the Future

ITALY

The National Technology Clusters initiative has been launched by the Ministry of Research (MIUR) in order to develop open and inclusive networks involving the major public and private entities operating on national territory in industrial research, training and technology transfer. Businesses, universities, public and private research institutions, incubators, start-up and other players active in the field of innovation are cooperating to coordinate their actions, draft proposals and strategies aiming to accelerate innovation processes and increase the industrial competitiveness of the Country.

Each aggregation therefore focuses on a specific technological and application domain (the ones referred to the National S3) that is considered strategic. Among the first eight Clusters approved by the MIUR in 2013, the ones more related to the Smart Space topics are:

Intelligent factory²¹: development and application of innovative technologies to foster the innovation and specialization of national manufacturing production systems, in terms of production, organization and distribution

Living Environment Technologies²²: Knowledge, Technological Solutions, Systems, Buildings, and Highly Innovative Products that, according to Ambient Intelligence and Ambient Assisted Living approach, allow to redesign the home environment to ensure inclusion , safety, and eco-sustainability.

Technologies for Smart Communities²³: Develop the most advanced application and technology solutions to enable innovative models for urban and metropolitan scale social problems

FRANCE

French Tech: French Tech is an accreditation awarded to French cities recognized for their startup ecosystem. It is also a name used by technologically innovative French businesses throughout the world. Convinced by the necessity to promote the emergence of successful start-ups in France to generate economic value and jobs, the French Government created the French Tech Initiative at the end of 2013. Its philosophy: build on member initiatives of the French Tech themselves, highlight what already exists, and create a snowball effect. It is a shared ambition, propelled by the State but carried and built with all the actors of the French tech and start-up scene. The French Tech initiative also has a transversal objective: to enhance the coherence of public actions in favor of startups. It does not create a new

²¹ <http://www.fabbricaintelligente.it/en/>.

²² (<http://www.smartlivingtech.it/en/content/national-cluster-smart-living-technologies>)

²³ (<http://www.smartcommunitiestech.it/>).

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organization or a new public tool, but is carried by a small team, Mission French Tech, which works closely with the French Ministry of Economy and Finance, the Ministry of Foreign Affairs and with the General Commissariat for Investment. Its partners, the pillars of the initiative, are national operators, who, under the common banner "French Tech" coordinate their actions in favour of start-ups: Caisse des Dépôts, Bpifrance and Business France. Funding from the French Tech Initiative for accelerators (€ 200 million) and international attractiveness (€ 15 million) is part of the Investments for the Future program. In this context, the operator is Caisse des Dépôts, which relies on Bpifrance for investment in accelerators and on Business France for international investments. The French Tech aims to provide a strong common visual identity to French startups as well as to promote entrepreneurial exchanges between them.

One of the French Tech network is focused on IOT (Internet of the Things) and Factory of the future. Alsace (Strasbourg-Mulhouse) is member of the network as well as Saint Etienne, Lyon, Grenoble (Rhône-Alpes-Auvergne) and Marseille (PACA).

Alliance Industrie du Futur / Alliance of the industry of the future: RALLYING, ACCELERATING, TRANSFORMING. The Industry of the Future Alliance is tasked with putting into practice the national Industry of the Future project launched by the French Government in April 2015, in the framework of the organisational overhaul of the New Face of Industry in France. Capitalising on the gains achieved in the "Factory of the Future" plan, this project is designed to play a central role in the New Face of Industry in France program, with a broader ambition now encompassing industrial modernization and the use of digital technologies, reinforced means of assistance, a stronger international dimension and a system of governance that brings together the industrial stakeholders at national and regional levels. The Alliance has a particular mandate to support companies in the transformation of their business models, their organisation, and their design and marketing methods, in a world in which new tools based, for example, on the digital, on additive manufacturing, on new materials and on advanced robotics are bringing down the barriers between industry and services.

PIA: French national investment plan²⁴ – Calls for proposals are launched to fund mostly collaborative projects. Some specific call are focused on Industry of the future. As digital is closely linked to industry of the future, most of the funded projects involved ICT companies, users as well as academics.

The French competitiveness clusters:

²⁴ (<http://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2016/06/pia3.pdf>)

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- EMC2, Materialia, Systematic, Aerospace Valley, Astech and ones from the Alliance of 8 Competitiveness Clusters located in Auvergne-Rhône-Alpes for the Industry of Future: Minalogic, Plastipolis, Axelera, Techtera, ViaMéca, Imaginove, Mont Blanc Industrie, Tenerrdis
- The IRT (Technological research Institutes)
- The Equipments of Excellence (Equipex) and Lab of Excellence (Labex)
- The Carnot institutes: The Carnot network combines scientific excellence and is committed to develop research for companies' innovation.
- The Technical Centers gathered in ACTRA

SLOVENIA

Digital Slovenia Coalition (www.digitalna.si)

GOSTOP - (key initiatives, tools and systems for factories of the future)

ACS - Automotive Cluster of Slovenia

TECES - Technology Center for Electrical Machines

TECOS - Industrial Association of Toolmakers

Center of Excellence for Polymeric Materials and Technology (CO PoliMaT);

Center of Excellence for advanced non-metallic materials with future technologies (CO NAMASTE);

Center of Excellence of nanoscience and nanotechnology (CO NIN)

TCS – tool makers cluster of Slovenia

SRIP - Strategic Innovation Partnership for Factory of the Future; For Smart buildings, for Materials as end products, for Smart cities.

GERMANY

Platform industry 4.0: In dialogue with companies, trade unions and science, the Federal Government wants to create the preconditions for the success of the fourth industrial revolution. The objective of "Platform Industrie 4.0" is to secure and further expand Germany's leading international position in the manufacturing sector. Just as the German industry can stay the leading factory supplier, how the industrial location Germany with Industrie 4.0 can further increase its competitiveness, the role Germany can play in standardization and how the industrial world can be shaped with industry 4.0 for the benefit of people the platform industry 4.0. Under the leadership of Federal Minister of Economics and Federal Research Minister, high-ranking representatives from companies, associations

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(BDEW, BDI, BITKOM, IHK, VDA, VDMA, ZVEI), science (Fraunhofer Gesellschaft), other Ministries (the Federal Ministry of Economics and Labor) as well as standardization organizations and trade unions (IG Metall) has been working together since April 2015 to take advantage of the opportunities offered by Industrie 4.0 for Germany. In thematic working groups, companies, standardization organizations, science and trade unions work together with representatives of various ministries to develop operational solutions and recommendations for action on standardization and safety of networked systems, legal framework, research and training. Furthermore, application examples are used, which illustrate the successful application of Industrie 4.0. The Steering Group with company representatives develops a strategy for the technical implementation of the working group results'. The strategy circle with representatives from politics, industry associations, science, trade unions, federal states and countries has the task of political control and assumes the role of multipliers in the socio-political discussion on the effects of industry 4.0. Since its inception, the Industrie 4.0 platform has developed into one of the largest networks worldwide in the area of digitalization and industry. Platforms and organizations have set up the Labs Network Industrie 4.0 and Standardization Council Industrie 4.0 initiatives to speed up standardization and industry standardization in industry-standard solutions. The Labs Network Industrie 4.0, for example, is designed to help companies get started with Industry 4.0 by enabling SMEs to test new technologies. Furthermore, the reference architecture model RAMI 4.0 (Reference Architecture Model Industrie 4.0) was also developed. It summarizes the key technological elements of the industry 4.0 in a model and provides the stakeholders with various areas orientation for the future development of standards in the area of Industry 4.0, not only in Germany. For example, questions of uniform standards as well as the interoperability of the systems in global value chains are of central importance. International partnerships with other leading platforms have been established. In July 2015, the BMWi signed an agreement with the Chinese Ministry of Industry and Information Technology (MIIT) on the cooperation of the two countries in the industrial area 4.0. The German-Chinese standardization cooperation between BMWi and SAC supplements this with a working group on standardization in the area of Industry 4.0. In March 2016, the Industrie 4.0 platform agreed on a collaboration with the US Industrial Internet Consortium (IIC).

At the HANNOVER FAIR 2016, a joint action plan with its French counterpart, Alliance Industrie du Futur, was initiated together with the former economic ministers, defining four fields of cooperation. Afterwards, application scenarios for industry 4.0 are to be developed which are specifically geared to the requirements of customers. In addition, international test centers are planned, which are to be shared. At the end of April 2016 the BMWi concluded an agreement with the Japanese Ministry of Economy, Trade and Industry (METI) on cooperation between the two countries in the Internet of Things / Industrie 4.0. The agreement is intended to support cooperation between German and Japanese companies

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and to work together more closely in international standardization. A joint action plan between the Industrie 4.0 platform and the Japanese Robot Revolution Initiative (RRI) supports these efforts.²⁵

Initiative Deutschland digital

- Exchange & qualification: advanced training and qualification offensive with the aim to prepare businesses and leaders cross-sectorally and branch-specific for the progressing digitalization. Information exchange between businesses and experts is completed by best-practices.
- Innovation & Start-Ups: the initiative supports the right basic conditions for a sustainable innovation culture in Germany. It serves as an instigator for networking of start-ups and established businesses as well as for the creation of new jobs in an increasingly digital economy.
- Infrastructure & technology: the productive networking of leading actors in the digital economy create the requirements for an efficient infrastructure. The needed technologies should be available without access barriers.
- Regulation & funding²⁶: the initiative supports economic and political entities and committees in fast information exchange and helps with processes for a specific funding of digital competences in society and economy.

Fraunhofer Gesellschaft²⁷: The Fraunhofer Institute (IAO) supports businesses and institutions on their way to new business models, efficient processes and economic success. With its profound understanding of organisation forms and technologies they manage the transfer from applied research to practice. The aim is to systematically improve the interaction of humans, organisations and technologies.

“Mittelstand 4.0” - competence centres : The initiative “Mittelstand 4.0 – digital production and work processes” supports mid-tier and crafts in digitalisation, networking and implementation of industry 4.0 applications. Therefore the agencies work on comprehensive digitalisation topics like cloud-computing, communication, trade and processes. Currently there are eleven competence centres all over Germany which sensitize, inform and qualify businesses and offer them concrete and realistic visuals and field trials. The aim is to make SMEs aware of the importance of industry 4.0, to inform them about its great opportunities, to support them with the digital transformation processes and in developing new ICTs and using them for themselves. Their actions cover workshops, information events and application instructions, but also practical training concepts and guidance as well as support of interesting implementation projects, for which SMEs can apply.

²⁵ <http://www.plattform-i40.de/I40/Navigation/DE/Home/home.html>

²⁶ <http://initiative-deutschland-digital.de/die-initiative/>

²⁷ www.iao.fraunhofer.de

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A company which collaborates with “Mittelstand 4.0” is SmartFactoryKL.

SmartFactoryKL itself is a precursor of the intelligent factory of tomorrow. As a leading competence centre and an independent demonstration and research platform, they develop innovative factory systems. In cooperation with partners from industry and research they work on new concepts, standards and solutions which form the basis for a highly flexible automation²⁸.

AUSTRIA

Most clusters in Austria are organized and financed on a regional level. The Mechatronics Cluster Upper Austria²⁹, though, operates in 3 provinces and is therefore the largest Cluster working in the field of Industry 4.0 and digitalization. Together with ITG it operates also in the province of Salzburg.

The Association Industry 4.0 Austria - The Platform for Smart Production³⁰ - was established to foster collaboration among all stakeholders and facilitate new technological developments and innovations in the context of digitization (“Industry 4.0”) and thereby to find sustainable solutions to challenges faced by companies, research institutions and society as a whole.

The Platform facilitates the implementation of digital transformation in Austria and unifies the Industry 4.0 community. It aims to secure and create highly innovative industrial production and to boost quality employment, thus strengthening Austria’s future competitiveness.

The Platform considers Industry 4.0 a societal challenge that

- can only be addressed by collaboration of industry, science, regional and national policy makers, associations, trade unions and NGOs
- is driven by technological innovation, new business models, knowledge transfer and its widespread socially acceptable deployment and implementation

It is planned to launch also “Silicon Austria” (not only “Silicon Alps”) – an investment programme to establish Austria as a prime location for electronic based systems.

The initiative “Silicon Austria” denotes a major opportunity to multiply success stories and to drive Austria into a leading global position in the EBS segment. “Silicon Austria” is interpreted to be “the instrument” to propel academic education at universities, colleges of higher education and polytechnic institutions for higher education to cope with the

²⁸ <https://www.mittelstand-digital.de/DE/Foerderinitiativen/mittelstand-4-0.html> www.smartfactory-kl.de

²⁹ <http://www.mechatronik-cluster.at/en/>

³⁰ <http://plattformindustrie40.at/?lang=en>

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problems of EBS design and development. “Silicon Austria” will be an essential element to strengthen the position of the European ebs industry.

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7. PARTNERS' INVOLVEMENT IN EU INITIATIVES

	<i>Industrial Modernisation Thematic Platform (S3 Platform)</i>	<i>EUSALP Action Group 1</i>	<i>EUSALP Action Group 2</i>	<i>KIC EIT Digital</i>	<i>KIC Added Value Manufacturing</i>	<i>I4MS initiative (ICT Innovation for Manufacturing SMEs)</i>	<i>Factory of the Future initiative</i>	<i>Other EU initiatives or networks</i>	<i>COMMENTS</i>
CCIAADL Italy									See Veneto Region line
AI France								EEN; Member of the innovation WG	
ARII PACA France								EEN	
TPLJ Slovenia								VANGUARD	
bwcon Germany								VANGUARD	
ITG Salzburg Austria								Trans-EU projects in the field of digitalization	
AFIL Italy								VANGUARD; 4 motors for the European Industry 4.0	

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UASRo Fermany								none	
CSP Italy								none	
ARDI Rhone- Alpes France								VANGUARD; EEN; 4 motors for the European Industry 4.0; SPIRE; ERRIN; SAE; COLAE; TETRACOM; CEA LETI; EUROCPS; CPSELABS	
Aws Austria									See ITG Salzburg line
Veneto Region Italy								EEN	

Color legend:

	yes
	no

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8. CONCLUSIONS

In order to define how to implement the Alpine Digital Innovation Hub (Alpine-DIH) in the most effective way, it is fundamental to have first a clear picture of what is going on in all the partners' territory.

Therefore this deliverable, focusing on policy initiatives, programs and measures, as well as on specific initiatives implemented at national and regional level, shall be used to better identify the fields of intervention of the Alpine-DIH.

All partners' regions have a strong focus on digitising their industry and all of them make a coordinated use of their strategies and their funds, particularly for what concerns ERDF.

Moreover, in many cases, since the beginning of the EUROPA 2020 strategy, Regions set up initiatives directed to reinforce the actions started by the EU Commission. Moreover, in some cases (i.e. France, Germany) national and regional funds are allocated to strengthen the efforts put in place to drive local industry toward digitization.

Finally, also within the EUSALP strategy, under the topic of *Jobs, economic growth and innovation*, some linked aspects are emphasized:

- the need to prioritise investment in digital infrastructures and the importance of ensuring quick and efficient access to high-speed internet, and, thereby, to digital and online services, such as e-commerce and the use of digital market channels and teleworking, as well as other opportunities for people living in areas remote from large urban centres, while promoting where possible alternatives to physical travel;
- the lack of effective digital connections within mountain areas; urges the Commission and the Member States to facilitate better connections at regional and local level in order to enhance the quality of life and promote the development of new activities and the creation of job opportunities in these areas, and to encourage resettlement;
- the importance of public investment in mountain areas in order to tackle the failure of the market to provide digital connectivity in these areas; emphasizes the importance of complete and universal coverage with broadband internet, including in mountain regions, in order to ensure the long term viability of remote settlements and economic areas; calls on the Commission to propose concrete solutions for this issue.

All these aspects can be connected to the tools already running at local level and shall be taken into account by SMART SPACE, to give momentum to its activities.