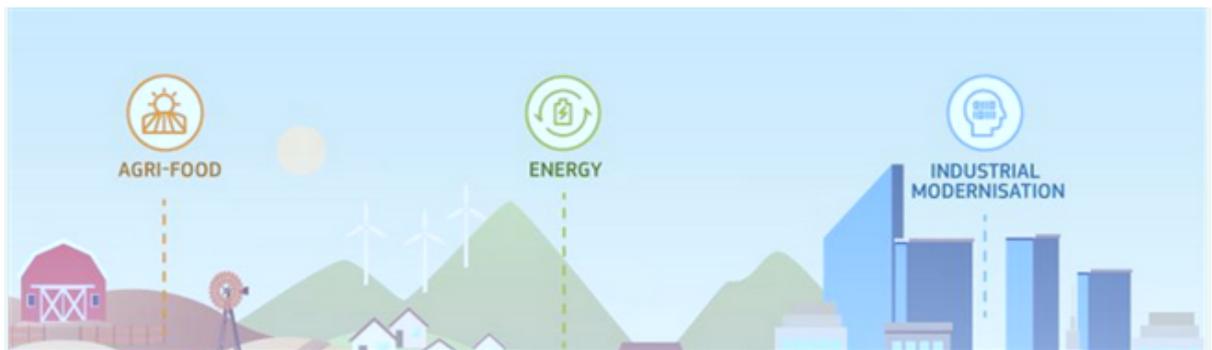# Thematic Smart Specialisation Platforms
Monitoring Progress Report

Fields marked with * are mandatory.

Thematic Smart Specialisation Partnership
Monitoring Progress Report

This report is presented to the relevant Working/Steering Committee.

The report is updated every six months.

Confidentiality:
The management report (section I) and progress report (section II) will be made available to the public via your Partnership's web page.
The part on self-assessment is confidential.

Based on the monitoring results, the European Commission will decide on the following term's support.

* **Reporting period**

July - December 2019

* **Please select the name of your partnership**

Efficient and Sustainable Manufacturing

I. Management report

Please provide the executive summary of the objectives of your partnership

The partnership on Efficient and Sustainable Manufacturing was born in the framework of the Vanguard Initiative, promoted by Lombardy and Catalonia. Its focus is on technologies, methods and tools aimed at:

• Increasing throughput, quality, environmental and social sustainability of manufacturing activities while reducing costs;
• Reducing energy, emissions, resources and materials consumption,
• Increasing the inclusion of humans in the factories Vision: Manufacturing should become efficient and sustainable to enable European reindustrialization and to preserve environment and planet's resources. Manufacturing efficiency and sustainability are two challenges to be addressed in a synergic way and systemic view.

The idea is to conceive and develop a European network of infrastructure and pilot plants in key-manufacturing areas, where companies can test innovative solutions before the industrial uptake. By exploiting and valorizing available research results, ESM European pilot plants have the potential to support companies' innovation in breakthrough technologies and applications that require manufacturing efficiency and sustainability.
This approach will increase the competitiveness and the development of European value chains, exploiting synergies and complementarities of different regional specialization.
The ESM Vanguard pilot is aimed at overcoming the barriers limiting innovation and the transfer of research results to industry in Europe, through the development of an European synergic network of pilot plants accessible to companies in a logic of Smart Specialization. Each Region will develop and operate pilot plant nodes coherent to regional industry and competences, offering to European companies a "one stop shop" for the industrial uptake of new technologies and innovative business model.

Please provide the list of leading regions

Lombardy (AFIL)
Catalonia (EURECAT)
Auvergne Rhone Alpes (PLASTIPOLIS)

Please provide the list of participating regions.
If possible, please follow this format: "Name of the region in English (Country abbreviation), NUTS code".
e.g.: Lapland (FI), FI1D7

Lombardy - IT
Catalonia - ES
Auvergne Rhone Alpes - FR
Baden Wurttemberg - DE
Basque Country - ES
Emilia Romagna - IT
Flanders - BE
Friuli Venezia Giulia - IT
Galicia -ES
Navarra - ES
Norte - ES
Pays de la Loire - FR
Saxony -DE
Scotland - UK
Slovenia - SI
South Netherlands - NL
Tampere -. FI
Wallonia - BE

Please provide the list of interested regions or other entities (other than national /regional authorities)

Wales - UK
Upper Austria - AT
Malopolska - PL
East Netherlands - NL
Zuid-Holland - NL
Saxony-Anhalt - DE

Please provide an overview of the **working areas** of your partnership

	Working area	Region in charge	Involved regions	Other actors
1	De- and Remanufacturing	Lombardy	Lombardy, Scotland, Saxony, Tampere, Norte, Basque Country, Flanders and Emilia Romagna; Wallonia Interested Regions: Catalonia; South Netherlands;East Netherlands; Pays de la Loire, Friuli Venezia Giulia	AFIL - Italy, Lombardy, Milan Politecnico di Milano - Italy, Lombardy, Milan EURECAT - Spain, Catalonia, Barcelona TUT - Finland, Tampere, Tampere INESC - Portugal, Norte, Porto PRODUTECH - Portugal, Norte, Porto Scottish Institute for Remanufacture - England, Scotland Fraunhofer IWU - Germany, Saxony, Chemnitz TECNALIA - Spain, Basque Country
2	Polymer Based Functional Products	Catalonia - Auvergne Rhone Alpes	Lombardy Navarra East Netherlands In talks with other potential participants: Baden Wurttemberg Norte Pays de la Loire Slovenia	Politecnico di Milano, Lombardy, Italy STIIMA-CNR, Lombardy, Italy Brainport Developement, South Netherlands TUT, Tampere, Finland INESC, Norte, Portugal PRODUTECH, Norte, Portugal TECNALIA, Basque COuntry, Spain University of Modena and Reggio, Emilia Romagna, Italy

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3	Digital Transformation	Lombardy - South Netherlands - Tampere	Norte Saxony Basque Country Flanders Slovenia Emilia Romagna East Nehterlands Friuli Venezia Giulia In talks with Catalonia Wales Pays de la Loire Malopolska	AFIL, Lombardy, Italy Politecnico di Milano, Lombardy, Italy STIIMA-CNR, Lombardy, Italy Brainport Developement, South Netherlands TUT, Tampere, Finland INESC, Norte, Portugal PRODUTECH, Norte, Portugal TECNALIA, Basque COuntry, Spain University of Modena and Reggio, Emilia Romagna, Italy COMET, Friuli Venezia Giulia, Italy
4	Energy-flexible and resource-efficient factory operation (EFREFO)	Saxony - Norte	Basque Country Lombardy-Navarra Baden Wurttemberg - Pays de la Loire	Saxony Energy, Saxony, Germany Fraunhofer IWU, Saxony, Germany STIIMA-CNR, Lombardy, Italy INEGI, Norte, Portugal
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Please provide information regarding past meetings, workshops and dissemination activities (six months prior to filling out the survey)

	Event	Date	Place	Any other information
1	SC meeting	11/04/2019	Virtual	
2	SC meeting	23/09/2019	Virtual	
3	SC meeting	15/11/2019	Virtual	
4	Digital Transformation demo-case meeting	20-21/06/2019	Eindhoven	
5	EFREFO demo-case meeting	13/09/2019	Virtual	
6	De and Remanufacturing Pilot Action updates	19/11/2019	Virtual	
7	Polymer Based Functional Products demo-case meeting	27/11/2019	Cerdanyola	Visit to Cendanyola Pilot plant
8	ESM Workshop for Galicia and Norte stakeholders	05/11/2019	Santiago de Compostela	
9	ESM Plenary meeting	13/12/2019	Brussels	
10	Interregional food manufacturing meeting	25/11/2019	Milan	Exploring the potential development of a new demo-case

Please provide information regarding planned future meetings, workshops and dissemination activities

	Event	Date	Place	Any other information
1	Digital Transformation demo-case meeting	February 2020	Brussels	
2	Mid Term Pilot meeting	June 2020	Brussels	
3	ESM Plenary meeting	December 2019	Brussels	
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II. Progress report

Innovative results

Please describe innovative results and achievements that could be attributed to the partnership (specific examples of results vs. objectives)

Considering the growing activities of this partnership, the Steering Committee agreed to appoint an additional co-coordinator of the partnership. The additional co-coordinator was selected in the frame of the partnership Steering Committee according to an process to which Steering Committee members took part. Auvergne Rhone Alpes declared its commitment and willingness to take this role and the Steering Committee approved. The decision was based on the commitment at political level as well as on the active involvement the Region in multiple demo-cases.

During the second semester of 2019, ESM members continued the development of INTERREG and H2020 projects conceived in the frame of the partnership network. These projects represent a concrete opportunity to speed up the development of use-case project expanding also their reach-out.

Besides the opportunities coming from the projects funded under various EU Programmes, De-and Remanufacturing demo-case received support in the frame of the DG Regio Pilot Action. This offered the opportunity to significantly improve the business and investment plan for the specific selected use-case (re-use of composite materials) and to show other use-cases a possible positive development path.

Several actions were implemented to raise awareness about the partnership through the organisation of meetings and participation to international initiatives. As it happened in the first half of 2019, the second semester was rich of events and workshops dedicated to the pilot and to specific demo-cases. In particular, in November, ESM was invited to organise and moderate an industrial workshop in Santiago de Compostela, in collaboration with the Innovation Agency of the Galician Region. The event was addressed to Norte and Galicia stakeholders with the aim to present them the status of ESM partnership and to intensify inter-regional collaborations, favoring the involvement of local stakeholders in the Pilot. Moreover, in December, ESM organised its annual meeting in Brussels to present the progresses and to discuss potential synergies with the European Commission in the future programming period. Pilot and demo-case coordinators presentations were followed by European Commission representatives who indicated the opportunities of the future programming period from the perspectives of various DGs. Also representatives of the ESM SC Regions attending the meeting played an important role remarking the strategic role of Vanguard Initiative in the interregional collaboration based on Regional Smart Specialisation Strategy.

Considering ESM demo-cases projects:

- De and Remanufacturing completed the activities under the DG REGIO Pilot Action started in 2018, elaborating a revised and improved version of its Business Plan. Based on this, the demo-case submitted the application for TAF services, which was positively evaluated. The demo-case has also attended a meeting (Brokerage event for interregional collaborative projects on Li-ion batteries) organised in June by the "Advanced Material for batteries" partnership.

- Polymer-based Functional Products continued to work on the development of its use-cases focusing both on contents development and partnership enlargement. In October 2019, the inauguration of the Functional Pilot Plant including Nanotexturing and Nano-replication was celebrated in Catalonia and, in November 2019, a restricted meeting was organised at the premises of this facility. The demo-case has participated to

several dissemination events and has also registered one of its use-case on the Smart Plastic Digital Innovation Hub.

- Digital Transformation demo-case focused on the definition of specific use-cases according to the competences and assets available in the different Regions. The second semester of 2019 was mainly dedicated to the preparation of two project proposals submitted by partnership members under the DT-ICT-03-2020 I4MS (phase 4) - uptake of digital game changers" call targeting 3 main topics:" Digital Twin and simulations" and "Artificial Intelligence"

- EFREFO focused on the description of the use-cases identified so far and held several telcos to sharpen overall content and focus. Compared to the other demo-cases, EFREFO has faced some difficulties in its development but during the final meeting a change in the coordination was announced that could boost the development of the project. Indeed Fraunhofer IWU will continue to contribute to the demo-case and the cluster Energy Saxony will enter as co-leader.

Tangible short- and medium-term socio-economic impacts achieved or expected (specific examples)

More than 15M€ mobilized through EU projects (reported below) by the stakeholders involved in ESM network, some of them are directly impacting on companies activities since they are main partners of the projects, which are generated from ESM use-cases.

H2020:
* SCREEN - Synergic Circular Economy across European Regions
* CarE-Service - Circular Economy oriented services for re-use and remanufacturing of hybrid and electric vehicles components through smart and movable modules
* FiberEUse -Large scale demonstration of new circular economy value-chains based on the reuse of end-of-life fiber reinforced composites
* DigiPrime - Digital Manufacturing Platforms for Connected Smart Factories

INTERREG:

* GREENOMED - Mediterranean Trans-Regional Cooperation for green manufacturing innovation
* S34GROWTH - Enhancing policies through interregional cooperation: New industrial value chains for growth
* CirCE - European regions toward Circular Economy

Other project proposal have been submitted with the aim to generate short and medium term impact among the partnership of ESM pilot and its demo-cases. (See the dedicated paragraph under "Self Assessment Section")

Inter-regional and inter-partnership collaborative results

Additional results obtained from working with other partnerships under the thematic S3 Platforms (specific examples)

A fruitful and solid collaboration has been established among ESM and "Advanced material for batteries" partnerships since one of the use-cases developed within "De and Remanufacturing" demo-case is addressing the remanufacturing of E-mobility batteries for reuse.

Moreover, ESM is planning to reinforce the collaboration among Bioeconomy pilot/partnership, considering the synergies on the topics of bio-based products addressed by " Polymer-based products" demo-case as well as the potential collaboration on the topics of "Circular Economy".

Thanks to the activities developed within the INTERREG MED project GREENOMED, some new topics emerged as strategic and relevant for ESM Regions (i.e. Food manufacturing and Textile manufacturing). Accordingly, during the upcoming year, ESM Pilot plans to interact more with "Textile Innovation" under the Industrial Modernisation Platform and with the partnerships under the Agri-Food Platform, to better define the scope of the initiatives and related demo-cases, avoiding overlapping.

Evaluation of the involvement of relevant business sector (clusters, SMEs, business associations, chambers of commerce, Digital Innovation Hubs (DIHs), etcetera) in the Partnership activities (specific examples)

ESM partership has been established in 2013 based on the Vanguard Initiative methodology. Accordingly, besides the commitment and involvement of regional authorities, several business stakeholders are actively contributing to the development of demo-cases. In particular, in several regions clusters are the organisation in charge of leading the activities within ESM ensuring the involvement of a number of local business stakeholders, in particular companies. In addition also research centers, universities and business associations are playing a strategic role in the partnership development.

Some connections have been established also with the regional organisations recognised as DIHs, in particular considering the demo-case "Digital Transformation". However, the situation is still fragmented in the different Regions, so thanks to the established collaboration, the ESM partnership will actively monitoring the EU DIH policy and related opportunities, defining its positioning with respect to the ongoing initiatives.

Evaluation of whether the level of inter-regional cooperation is sufficient to potentially provide practical and relevant socio-economic impacts (specific examples)

The ESM pilot established a cooperation among more than 20 EU Regions and it is expanding its network toward new less developed regions thanks to the opportunities generated by INTERREG projects (i.e. GREENOMED)

Thanks to this cooperation we are establishing regional working groups focused on specific topics able to gather regional stakeholders and connect them at interregional level facilitating the creation of innovation pilot plant projects.

New activities

Involvement of regions from EU13 Member States in the Partnership, in particular with respect to scoping, mapping and/or matchmaking. In addition, justification should be provided if no EU13 regions are involved

GREENOMED project, funded by INTERREG MED programme, represented a strategic opportunity to involve EU13 Member States in the partnership. Indeed Croatia and Slovenia were among the partners regions in the project, which gave them the possibility to create and animate regional working groups on specific topics of interest according to a structured cooperation methodology derived from the Vanguard one.

Thanks to this project, these Regions had the possibility to identify and establish link among their regional groups and the already established ESM network, focusing in particular on Industry 4.0, Food Manufacturing and Energy efficiency.

As anticipated in the previous report, ESM pilot has also participated to a strategic event in Romania during the first semester of 2019. As follow-up action, during the second semester a potential collaboration in the field of Food Manufacturing has been explored inviting a representative of Campden BRI Hungary in an interregional meetings organised in Milan on the 25th November, finalized to the definition of a new demo-case on "Secure and Sustainable Food Manufacturing"

Finally, during the second semester of 2019 ESM Pilot has received an expression of interest from Malopolska (Poland) who is interested in facilitating the participation of local stakeholders in ESM demo-cases. After some virtual and physical meetings, the representatives Malopolska will elaborate a concept highlighting the topics of interest for the region and the assets available that could be potentially integrated in the existing ESM demo-case network.

Involvement of regions/countries from outside of EU28 Countries. (Number of participants from non-EU countries (specify their contribution)

No non-EU countries involved.

Advancement and promotion of the Partnership through publications and other communication/outreach activities (number of outreach activities that resulted from the partnership)

11

ESM partnership is focusing its dissemination actions on communication activities such as workshops, events and newsletter. In line with the action carried out in the framework of Vanguard Initiative, several events have been organised to disseminate the contents of the ESM demo-case with the aim to gather new stakeholders, in particular companies. For example, Digital Transformation demo-case has organised a workshop at BIC Campus in Eindhoven where several digital applications were showcased with the aim to be integrated and further developed as use-cases.

More recently, in November, ESM was invited to organise and moderate an industrial workshop in Santiago de Compostela, in collaboration with the Innovation Agency of the Galician Region. The event was addressed to stakeholders in the regions of Norte and Galicia with the aim to present them with the status of ESM demo-case projects and to intensify inter-regional collaborations, favoring the involvement of local stakeholders in the Pilot.

Other activities are dedicated to promote the progresses of the pilot and its demo-cases, highlighting the challenges and needs faced. These actions are particularly targeted to regional authorities and EU Commission DGs. Indeed in December, the pilot has organised its annual meeting in Brussels to present the progresses and to discuss potential synergies with the European Commission in the future programming period.

Activities and projects with partnerships working under other S3 Thematic Platforms (AgriFood, Energy and Industrial Modernisation)

As reported in the previous paragraph, during 2020 ESM will also focus on the establishment and/or reinforcement of collaborations with other Partnerships. This will result in a series of meetings finalized to the definition of objectives, scope and stakeholders for new demo-cases focused on the topics of "Food Manufacturing".

Your Partnership and the UN 2030 Sustainable Development Goals (SDGs)

The EU has a strong position when it comes to sustainable development and is also fully committed to be a frontrunner in implementing the UN's 2030 Agenda, together with its member countries and regions. Many interregional partnerships under the thematic S3 Platforms contribute strongly to the attainment of these 17 goals.

Please indicate to which Sustainable Development Goals and to what extent your thematic Partnership contributes?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
Goal 1. End poverty in all its forms everywhere	○	●	○	○	○	○

Goal						
Goal 2. End hunger, achieve food security and improved nutrition & promote sustainable agriculture	○	●	○	○	○	○
Goal 3. Ensure healthy lives & promote well-being for all at all ages	○	●	○	○	○	○
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	●	○	○	○	○	○
Goal 5. Achieve gender equality & empower all women and girls	●	○	○	○	○	○
Goal 6. Ensure availability and sustainable management of water and sanitation for all	○	○	○	○	○	●
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	○	●	○	○	○	○
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment & decent work for all	●	○	○	○	○	○
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation & foster innovation	●	○	○	○	○	○
Goal 10. Reduce inequality within and among countries	○	●	○	○	○	○
Goal 11. Make cities & human settlements inclusive, safe, resilient and sustainable	○	●	○	○	○	○
Goal 12. Ensure sustainable consumption & production patterns	●	○	○	○	○	○
Goal 13. Take urgent action to combat climate change and its impacts	●	○	○	○	○	○

Goal 14. Conserve and sustainably use the oceans, seas & marine resources for sustainable development	○	○	○	○	○	◉
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss	○	○	◉	○	○	○
Goal 16. Promote peaceful & inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	○	○	○	○	○	◉
Goal 17. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development	◉	○	○	○	○	○

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