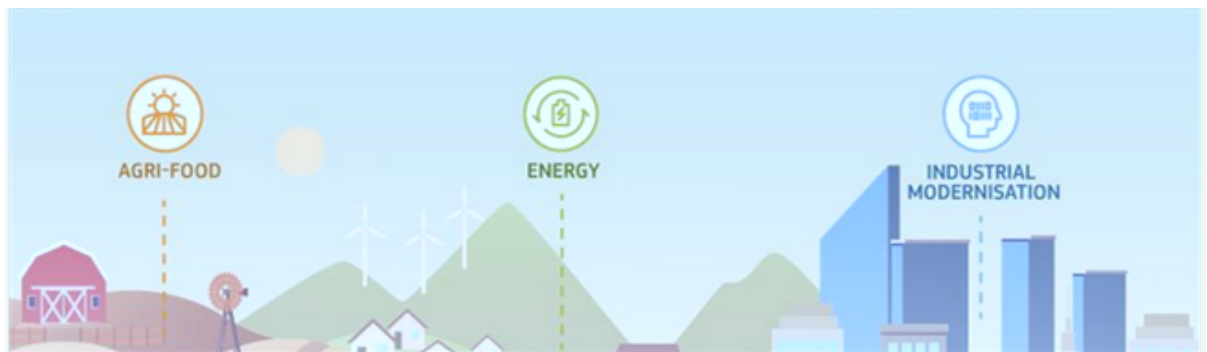


Thematic Smart Specialisation Platforms Monitoring Progress Report

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 2020

* Please select the name of your partnership

High Performance Production through 3D-Printing

*** Start date of your partnership**

01.10.2014

*** Partnership's webpage**<https://www.s3vanguardinitiative.eu/cooperations/high-performance-production-through-3d-printing>

I. Management report

*** Please provide the executive summary and the objectives of your partnership**

Pursuing the final goal of supporting the transitions towards a smarter, more sustainable and more competitive industry, the key objective of the Vanguard 3DP Pilot is to accelerate market uptake and deployment of 3DP-enabled solutions in the EU through the development of industry-led, transregional demonstration platforms (i.e. 'demo cases', see below) that connect 3DP capabilities and actors that were operating in largely disconnected and fragmented value chains in Europe.

Relying upon progress made in the 'Learn' and 'Connect' phases during the period 2015-2019, the Pilot has entered further the 'Demonstrate' phase (finalisation of business plans, generation of various SMEs led projects in many sectors, etc.) in S2 2020 and is actively preparing first steps for the 'Commercialise' phase (having secured funding solutions for application/product-specific projects from various demo cases of the Pilot). In other words, we were able to actively materialise since 2018 the identified synergies, the wide industrial interest and regional commitments into a first set of concrete funded industrial projects. We were able in 2020 to secure funding solutions (for demonstration activities) for some of these projects (for a total of 370k€ of demonstration activities): 9 cross regional demonstration projects are currently being started across the EU! For some other projects generated and 'calculated' implementation is still hampered by some barriers, especially funding. In parallel, extensive effort has been made to adapt the 3DP Pilot activities to emerging industrial needs: this has led to the elaboration of new action lines and working principles (e.g. successful implementation of the '3DP Pilot Pitching Platform' in 2020 that led to the emergence of 5 new demo cases and 4 new project ideas submitted in end-2020.

In addition to the 10 demo cases under active implementation (see working areas below), the following 'cross demo cases' challenges are being addressed: Risks (standards and certification), Skills (training), Funding and Awareness.

*** Please provide the list of leading regions**

Flanders, South-Netherlands, Norte

*** 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

- Aragon
- Asturias
- Bolzano-South Tyrol
- Trentino
- Auvergne Rhône Alpes
- Baden-Württemberg
- Cantabria
- Catalonia
- East Netherlands
- Emilia Romagna
- Flanders
- Gävleborg
- Lombardy
- Lower Austria
- Malopolska
- Norte
- North Rhine Westphalia
- Örebrö
- Piemonte
- PACA Sud – VI observer region, will become a VI full member in Spring 2020
- Saxony
- Saxony-Anhalt
- Slovenia
- South Netherlands
- Tampere
- Upper Austria
- Värmland
- Wallonia

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

Veneto, Liberec, Bavarian Region

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

	Working area	Region in charge	Involved regions	Other actors
* 1	Multi-materials components by hybrid 3D Printing manufacturing	Emilia-Romagna (IT)	Emilia Romagna (IT), Aragon (ES), Norte (PT), Baden Württemberg (DE), Saxony (DE), Lombardy (IT), Auvergne-Rhône-Alpes (FR), Region Örebro Lan (SE), Slovenia (SI), East Netherlands (NL), Veneto (IT), Trentino (IT)	CIRI MAM University of Bologna (IT), TUC Chemnitz (DE), German Aerospace Center (DLR) (DE), Institute of Vehicle Concepts (DE), Politecnico di Milano (IT), Centre Technique de la Plasturgie (FR), Alfred Nobel Science Park (SE) and more than 9 companies
* 2	An Additive-Subtractive Platform - Additive-subtractive high precision & high finish production (high-end metals)	South Netherlands (NL), Lombardy (IT)	Baden-Württemberg (DE), EmiliaRomagna (IT), Flanders (BE), Trentino (IT), Saxony (DE), Wallonia (BE), East Netherlands (NL), Lower Austria (AT)	Brainport Development (NL, TU Chemnitz (MERGE) (DE), DLR (DE), CIRI MAM University of Bologna (IT), Flame3D (BE), Politecnico di Milano (IT) and around 20 companies that submitted 'use cases'.
* 3	Machinery and Tooling - Structural Parts with Complex Shapes	Wallonia (BE)	Lombardy (IT), Aragon (ES), Catalonia (ES), Norte (PT), Tampere (FI), Auvergne-RhôneAlpes (FR), Trentino [IT], South Netherlands (NL)	/

*4	3D-Printed large parts (monomaterial) through emerging 3DP technologies	Aragon (ES)	Aragon (ES), Emilia Romagna (IT), Norte (PT), Baden-Wurttemberg (DE), Lombardy (IT), Thuringia (DE), Northrhine Westphalia (DE), Asturias (ES), Madrid (ES), Auvergne Rhône Alpes (FR), Piemonte (IT)	CIRI MAM University of Bologna (IT), Produtech (PT), Politecnico di Milano (IT), DLR (DE)
*5	Healthcare - 3D-Printed customized components for orthosis, exoskeleton and exoprosthesis	Emilia-Romagna (IT)	Aragon (ES), Flanders (BE), Saxony (DE), East Netherlands (NL), Catalonia (ES), Auvergne Rhone-Alpes (FR)	/
*6	Multi-material 3D printing: Structural integrated electronics in 3D printed parts (Current lead region: Upper Austria)	Upper Austria (AT)	Flanders (Belgium): South Netherlands (Netherlands) Aragon (Spain) South Tyrol (Italy) East Netherlands (Netherlands) Upper Austria (Austria)	/
*7	AM in the Built Environment (Current lead region: South NL)	South NL (NL)	Saxony-Anhalt (Germany) South-Netherlands (Netherlands) Aragon (Spain) Emilia-Romagna East-Netherlands (Netherlands) Malopolska (Poland) Norte (Portugal)	/

<p>* 8</p>	<p>Efficient collaborative robot through 3D printing optimization (Current lead region: Catalonia)</p>	<p>Catalonia (ES)</p>	<p>Aragon (Spain) Tampere (Finland) Emilia-Romagna (Italy) South Tyrol East-Netherlands (Netherlands) Flanders (Belgium) Upper Austria (Austria) Norte (Portugal) Gävleborg (Sweden)</p>	<p>/</p>
<p>* 9</p>	<p>Innovative hybrid (subtractive /additive) manufacturing approach for repairing added value damaged objects (Trentino)</p>	<p>Trentino (IT)</p>	<p>Flanders (Belgium) Värmland (Sweden) South-Netherlands (Netherlands) Aragon (Spain) Tampere (Finland) Emilia Romagna East-Netherlands (Netherlands) Upper Austria Norte (Portugal)</p>	<p>/</p>
<p>* 10</p>	<p>Provide a toolset for maintenance for 3DP and a training course for employees to do the maintenance (South NL)</p>	<p>South NL (NL)</p>	<p>South-Netherlands (Netherlands) Aragon (Spain) Tampere (Finland) Emilia-Romagna (Italy) Flanders Malopolska (Poland) Gävleborg (Sweden)</p>	<p>/</p>

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	Plenary Meeting	26.11.2020	Online	b). On 26.11.2020, more than 110 persons participated in the 12th Plenary Meeting. 11 sessions were organised (1 plenary and 10 demo cases or transversal actions-focused sessions), hosted by more than 15 committed action lines leaders.
2	Strategic Meeting	27.11.2020	Online	
3	Workshop on 'availability of current and upcoming regional funding instruments for calculated cases'	17.11.2020	Online	the 3DP Pilot invited regional experts from 8 regions involved in a selection of cases to discuss the availability of current and upcoming funding instruments. Preparatory materials, including a description of the characteristics of the cases (partners, roles, activities, costs, etc.) were sent beforehand to the experts.
4	Various demo cases meeting	S2 2020	Online	
5	Steering Group Meeting	24.10.2020	Online	
6				
7				
8				

9				
10				

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

	Event	Date	Place	Any other information
1	Working Session Funding Opportunities	March 2021	Online	
2	Plenary Meeting	June 2021	Online	
3	Hybrid Materials Tour - Second Stop: Orebro	15 June 2021	Online	
4	Challenges_Solutions Camp	end 2021	Online	
5	Plenary Meeting	end 2021	Online	
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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)

First, substantial progress was made towards effective funding of our cross-regional demonstration activities, which showcased the unique positioning of the Pilot in the EU Advanced Manufacturing Landscape.

- o 9 SMEs-led cross regional demonstration projects, led by SMEs located in Pilot members regions, were funded (funding source: 3DP Pan EU Open Call and, to a lesser extent, regional funding, for a total of 370k). 5 of these projects are directly linked to 3DP Pilot Demo Cases that were launched in the past, contributing to their full implementation.

- o 2020 was marked with a substantial expansion in terms of SMEs-led cross regional demonstration projects designed and calculated towards applying for support: 13 new projects were added to the portfolio of 3DP Pilot application-specific projects !

- o For those projects designed but not yet funded, the 3DP Pilot (in the context of a Cross Pilots Action) has worked actively (preparatory documents, workshop held on 17.11.2020) on the further identification, with the help of regional experts from 8 distinct regions, of possible combinations of regional funding instruments for a selection of calculated cases, identifying relevant instruments and gaps in regions involved in those cases.

Beyond the work with existing demo cases identified cases, the Pilot implemented new processes and tools to transform into an agile and flexible platform able to generate, support and monitor any relevant cross regional demonstration projects, even beyond the scope of the demo cases.

- o First the Pilot designed and implemented a revised governance, structure and assessment framework for projects generation, support and monitoring. This enabled the following key achievements: 1) 5 new project ideas (proposed in 2019) were further developed in 2020 towards these projects having reached the status of demo cases; 2) 4 additional project ideas were submitted and pitched in S2 2020 and 3) A (self) assessment framework has been successfully implemented, leading to demo cases progress being assessed and corrective actions undertaken.

- o The Pilot enabled the design and launch of a structural tool aimed at facilitating the matching of demand and supply of 3DP demonstration services. Such action, which took place in the context and with the support of the 3DP Pan EU project (a project generated by the 3DP Pilot and implemented by a 3DP Pilot supported consortium), is a major outcome of the 3DP Pilot (i.e. a formalized and automatic tool facilitating access to relevant demonstration services across regions) and directly serves its primary objectives to serve the industry. In S2 2020, the 3DP Pilot further secured funding for expanding the tool (in terms of scope-features) and making it sustainable, even beyond 3DP Pan EU project execution.

The year 2020 was marked with a growing internal and external interest in 3DP Pilot activities (growing and high attendance in 3DP Pilot activities (e.g. more than 100 persons attending our latest plenary meeting in December 2020), positive feedbacks on added value delivered through these activities, more active regions and dedicated project owners/leaders, etc.).

Progress has been made in terms of strategic (external) positioning and partnering in the overall Advanced Manufacturing landscape (incl. progress made in terms of the formalisation of cooperation with EFFRA/Made in Europe, AM Platform, Sports S3 Partnership in particular).

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

Activities of the 3DP Pilot enabled the development of structural tools (see above) aimed at facilitating the matching of demand and supply of demonstration services, enabling generation of demonstration projects, even beyond official working areas of the Pilot (matchmaking, connections being established). This has enabled industrial partners to find the partners they needed to implement innovative projects and delivering impacts (not monitored at this stage).

Beyond this generic matchmaking dimension, a first industrial cross regional demonstration project, fully lying within the 3DP Pilot activities, has been finalised in 2019: this has led to the demonstration of emerging solutions that will be ready for industrial uptake in the coming months/years, with high possible impacts. In addition to this, several projects have recently been funded, demonstration activities starting in the coming weeks and socioeconomic impacts expected to be fully realised but are expected for the coming months !

These projects will now be implemented in the coming weeks and months, enabling SMEs across the EU to develop, among others, the following solutions and applications: 1) Hybrid and lighter automotive components; 2) Highly customised functional injection moulds to produce thermoplastic parts for agricultural machinery, optimising for weight reduction and forest fire prevention; 3) Lightweight, flexible, smart and additively manufactured robot gripper; 4) Innovative parts for Insect breeding activities for food industry, etc.

Inter-regional and inter-partnership collaborative results

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

The 3DP Pilot partnership cooperates with other Vanguard partnerships within the thematic platform on industrial modernisation and energy. Beyond Vanguard partnerships, the 3DP Pilot also collaborates with other partnerships.

Example 1:

The 3DP Pilot has signed a Memorandum of Understanding with the Sports Partnership in view of facilitating the uptake and deployment of Additive Manufacturing solutions in the sporting goods industry.

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)

We can count on the active involvement of the companies in the calculated cross regional projects and in particular, the ones for which funding has been secured. Various clusters are also often cooperating directly with the 3DP Pilot.

In 2020, 13 new application-specific projects were identified and designed (in view, among others, of 3DP Pan EU applications), strengthening direct ties and involvement with private companies (each case being led by an SME). Most of these cases are under NDA and information cannot be disclosed at this stage.

However, in order to maintain and strengthen the industrial interest, the Partnership (and the regions involved) will have to offer concrete opportunities/plans to SMEs (cross regional funding, web-based interface, etc.) also in the future.

In addition and on a more strategic level, as mentioned above, progress has been made in terms of strategic (external) positioning the 3DP Pilot in the overall Advanced Manufacturing landscape (in particular, discussions with EFFRA/Made in Europe on a structural and formalized cooperation with contributions to various notes and meetings).

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

The level of inter-regional cooperation is adequate at this stage, however engagement of actors in regions and securing sufficient funds/interest for regional engagement remains an issue.

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

Slovenia joined the 3DP partnership and is actively participating (e.g. presentation during the Hybrid event in June 2019 in Pilot activities).
Malopolska (PL) joined the Partnership and participated to some events and activities.
The partnership intends to strengthen EU13 participation when this participation is mutually benefiting.

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

None

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

See list of 'Meetings/workshops etc'. Communication material has been developed for each of the demo cases and the Partnership. Various meetings have been held in 2020 in order to strengthen ties with regions /organisations interested in the Pilot (e.g. webinar for representatives from East and North Finland, etc.). The following efforts were undertaken in the second semester 2020 in order to structure the communication towards Vanguard members and possible interested regions/organisations outside the network:

- One Vanguard Progress Report was drafted (as requested by the VI);
- 8 contributions to the Vanguard Newsletter were sent.

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







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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Goal 2. End hunger, achieve food security and improved nutrition & promote sustainable agriculture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Goal 3. Ensure healthy lives & promote well-being for all at all ages	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Goal 5. Achieve gender equality & empower all women and girls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Goal 6. Ensure availability and sustainable management of water and sanitation for all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment & decent work for all	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation & foster innovation	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 10. Reduce inequality within and among countries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Goal 11. Make cities & human settlements inclusive, safe, resilient and sustainable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Goal 12. Ensure sustainable consumption & production patterns	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 13. Take urgent action to combat climate change and its impacts	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goal 14. Conserve and sustainably use the oceans, seas & marine resources for sustainable development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
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	