



Deliverable D2.4

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AM-motion

**A STRATEGIC APPROACH TO INCREASING EUROPE'S VALUE
PROPOSITION FOR ADDITIVE MANUFACTURING
TECHNOLOGIES AND CAPABILITIES**

Grant Agreement N° 723560

D2.4 Report on European and national initiatives and RDI programmes

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Table of Contents

Abbreviations.....	3
1. Introduction	4
2. Mapping of AM related initiatives	6
2.1. European level.....	6
2.1.1. AM-PLATFORM	6
2.1.2. European Powder Metallurgy Association (EPMA).....	6
2.1.3. CECIMO	7
2.1.4. European Federation for Welding, Joining and Cutting (EWF).....	7
2.1.5. ERRIN	8
2.1.6. OTHER EUROPEAN INITIATIVES.....	8
2.2. National level.....	10
2.2.1. CZECH REPUBLIC.....	10
2.2.2. FINLAND.....	10
2.2.3. FRANCE	11
2.2.4. GERMANY	12
2.2.5. ITALY	14
2.2.6. THE NETHERLANDS	15
2.2.7. POLAND	16
2.2.8. PORTUGAL	16
2.2.9. SPAIN	17
2.2.10. UNITED KINGDOM.....	18
2.2.11. OTHER NATIONAL AND REGIONAL INITIATIVES IN EUROPE.....	18
2.3. Mapping of AM initiatives on value chain approach	24
2.4. Building synergies with other European Initiatives: cross-regional, trans-European and cross-sectorial connections.....	27
3. Mapping of RDI programmes.....	29
3.1. European level.....	29
3.2. National level.....	30
4. Summary and Conclusion	32

Abbreviations

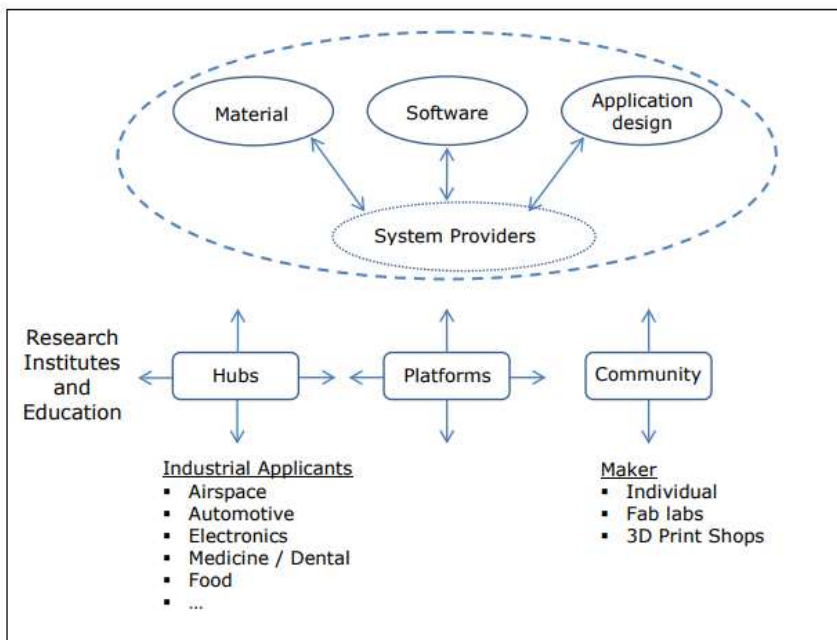
Abbreviations	
3DP	3D printing
AM	Additive manufacturing
VC	Value Chain
H	health
AE	aerospace
AU	automotive,
CG	consumer goods
C	construction
E	electronics
EN	energy
E&T	Industrial equipment & tooling
M&D	modelling and simulation
D	design
M	materials
P	process;
PP	post-processing
Pr	product
EL	end of life
PBF	Powder Bed Fusion
VP	Vat Photopolymerization;
MJ	Material Jetting
ME	Material Extrusion
SL	Sheet Lamination
DED	Direct Energy Deposition
BJ	Binder Jetting
STD	standardisation;
L	legislation
EDU	education/training
IE	business, commercialisation, industrial exploitation
IPR	intellectual property rights
TT	Technology Transfer

1. Introduction

The present document constitutes Deliverable D2.4 “*Report on European and national initiatives and RDI programmes*” in the frame-work of the H2020 project “*A strategic approach to increasing Europe’s value proposition for Additive Manufacturing technologies and capabilities*” (Project Acronym: AM-motion; Contract No.: 723560). This document is the result of the activities performed within the framework of work package 2 (WP2): “*Mapping the AM landscape*”, and more specifically of Task 2.3 “*Benchmarking and assessment of main AM initiatives (national/EU/international)*” led by CEA.

AM-motion WP 2 main objective is to represent an overall picture of the current situation of the AM field and community with a view on the development of products or applications in lead markets. The results of this WP intend to create stronger market and product centred links for cross-fertilisation and potential for new alliances. Specific objectives of the task 2.3. are to identify and map main AM actors, pilot lines and initiatives at national, regional and EU level and cluster them around the previously identified sector oriented value chains to have an initial mapping of AM capabilities and expertise.

This deliverable pretends to support task 2.3 in this activity first by establishing a classification of the main European, national and regional initiatives and then by clustering them in a specific value chain segment approach to achieve an accurate representation of the European AM landscape.



In this deliverable by AM initiatives is understood all kind of organisations that strategically gather companies, research organisation and/or Education organisations to join efforts, knowledge and outcomes in the field of AM. This encompass Associations, Clusters, Networks, Technology Platforms (virtual or not), but excludes the single companies and research laboratories. Figure 1 represents the key

Figure 1. Key actors in the additive manufacturing value Chain. Source1

actors in the Additive Manufacturing Value Chain. ¹.

AM-motion project and in particular this deliverable will make efforts to identify the different AM initiatives in Europe, to classify them and to categorise them when possible as a function of their value chain segments specifically related to the sector where AM is active, as identified in task 2.1.: Health, aerospace, automotive consumer goods, electronics, energy, industrial equipment and tooling and construction. Figure 2 shows this value chain and the actors associated to each link.

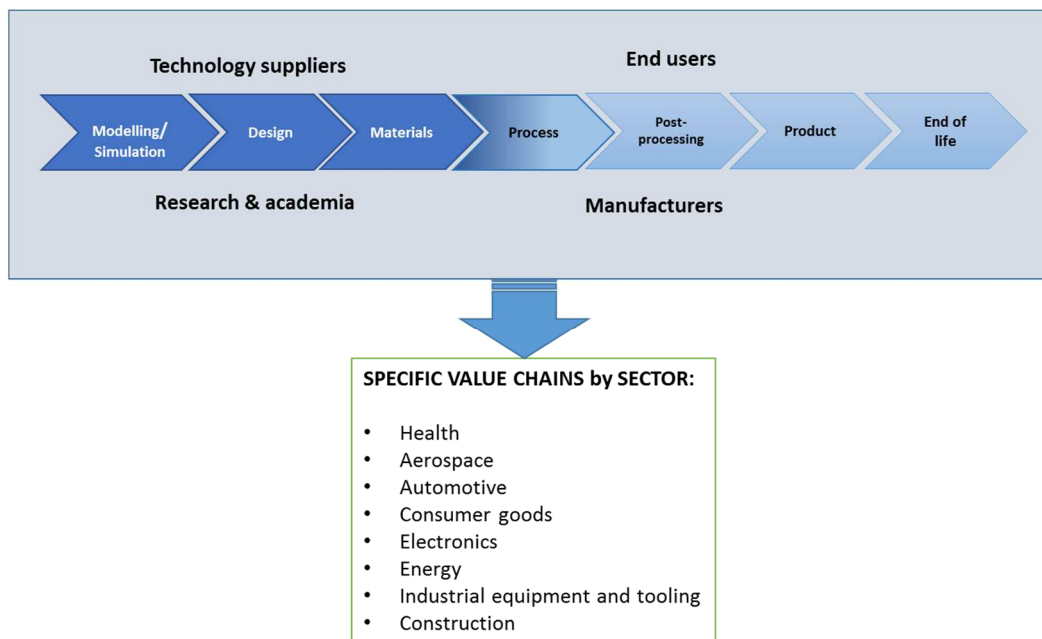


Figure 2. Additive Manufacturing Value chain. Adapted from VDMA.

¹ Open Innovation in Industry, Including 3D Printing. Directorate-General for internal Policies. IP/A/ITRE/2014-12 September 2015

2. Mapping of AM related initiatives

This section represents a classification of the most relevant European, national and regional initiatives in AM.

2.1. European level

2.1.1. AM-PLATFORM

This virtual central European area for all subjects related to Additive Manufacturing (hereafter named AM) aims to contribute to a coherent strategy, understanding, development, dissemination and exploitation of AM.

AM is fragmented. Lots of organizations are working or doing research in this area but there is no coherent strategy and several interpret the subject differently. This platform helps to achieve the Lisbon & Gothenburg objectives as defined by the EC (to become the most dynamic and most competitive knowledge-based economy by 2010 and achieving sustainability by 2030).

The AM-platform is active since 2007 (formerly as the RM-platform).

AM-Platform manages a AM DATABASE, a tool produced under the framework of FoF H2020 project "FoFAM"* (www.fofamproject.eu) in order to have an overview of the AM landscape and existing knowledge and capabilities and to facilitate networking. In this sense, it contains information on projects, regional strategies and main stakeholders around this set of technologies.

More information: www.rm-platform.com

2.1.2. European Powder Metallurgy Association (EPMA)

The European Powder Metallurgy Association (EPMA) was formed in Brussels in 1989 and has three key missions:

- To Promote and Develop PM Technology in Europe
- To Represent the European PM Industry within Europe and Internationally
- To Develop the Future of PM

These are achieved using a variety of means, a selection of which are described on the EPMA Activities page. EPMA serves all types of member organisations; from component, metal powder, and equipment producers to end-users, research centres, universities, and individuals who have an interest in PM.

More information: www.epma.com

2.1.3. CECIMO

The European Association of the Machine Tool Industries brings together 15 national associations of machine tool builders, which represent approximately 1500 industrial enterprises in Europe, over 80% of which are SMEs.

CECIMO defends the common interests of its members, particularly in relation to authorities and associations. It also promotes the European Machine Tool Industries and their development in the fields of economy, technology and science. CECIMO covers 98% of the total machine tool production in Europe and about one third worldwide. About 40% of CECIMO's production is shipped outside the EU. It accounts for almost 150,000 employees and a turnover of nearly €23 billion in 2014.

CECIMO vision:

- The association is recognized as the representative worldwide of the common interests and values of the European machine tool industry.
- CECIMO is the platform to identify and promote key strategic initiatives to improve the global competitiveness and leadership of the European machine tool industry.
- It maintains a body of knowledge concerning the European machine tool industry and is seen as the first reference on such matters.

More information: www.cecimo.eu

2.1.4. European Federation for Welding, Joining and Cutting (EWF)

The European Federation for Welding, Joining and Cutting (EWF) manages the International System for Training, Qualification and Certification of both welding personnel and companies using welding, in Quality, Environment, Health and Safety.

EWF was founded in 1992 and nowadays has 28 European member countries and 2 Observer Members from outside Europe, represented by their national welding societies.

EWF is an essential global network in the field of joining, welding, cutting and related technologies*, indispensable to members in the achievement of their strategic objectives.

EWF main objective is to promote the interests of the international welding industry through its members.

EWF expects to be the European reference for the harmonised qualification of personnel for the manufacturing industry through the facilitation of an international harmonised education, training and qualification system to provide the welding industry with qualified and skilled personnel at all levels.

EFW represent the interests of their members by promoting collaboration projects in the forefront of innovation and development of manufacturing technologies supporting the European manufacturing industry in the use of welding and joining.

EFW mission is to provide world class, European focused, value added products and support services to its members and their communities in the field of joining, welding and related technologies on an international basis.

More information: www.efw.be

2.1.5. ERRIN


It is a unique Brussels-based platform of more than 120 regional stakeholders organisation most of whom are represented by their Brussels offices. ERRIN promotes knowledge exchange between its members, focusing on joint actions and project partnerships to strengthen regional research and innovation capacities. Through these actions ERRIN seeks to contribute to the implementation of the Europe 2020 Strategy, the Innovation Union flagship initiative and Smart Specialisation strategies.

ERRIN will be recognised as an essential European network supporting regions in developing their collaborative and open regional innovation ecosystems to enhance the EU's research and innovation capacity and build a competitive Europe which supports smart, sustainable and inclusive growth in all regions.

ERRIN is a respected, professional, open and dynamic Brussels-based network within the Brussels research and innovation landscape. ERRIN supports regional research and innovation capacity building by facilitating regional collaboration and partnerships and the open and rapid exchange of knowledge in a context of trust and confidence. ERRIN supports its members engage in and shape EU research and innovation policy, develop successful projects at the EU level and raise their profile in Brussels.

More information: www.errin.eu

2.1.6. OTHER EUROPEAN INITIATIVES

 **VANGUARD INITIATIVE**: Smart Specialization Platform for Industrial Modernization:

The Vanguard Initiative new growth through smart specialisation is driven by a political commitment made by regions to use their smart specialisation strategy to boost new growth through bottom-up entrepreneurial innovation and industrial renewal in European priority areas.

This Vanguard Initiative has its foundations at the regional level. EU regions are the closest policy link to the bottom-up growth dynamics necessary for the renewal of our industrial fabric through their proximity to innovative partnerships and clusters. Such partnerships and clusters form eco-systems that are the catalyst for fast-growing innovative SMEs. Regional innovation ecosystems can and do develop solutions for significant societal challenges while delivering on the EU's ambitions for improved international competitiveness.

‘High Performance Production through 3D-Printing’ is one of five ongoing pilot projects within the Vanguard Initiative. Its goal is to create a network of industry-led demonstrators across European regions to improve the uptake of solutions provided by 3D-printing technologies. By exploiting the potential of regions, regional clusters and of interregional collaboration at the level of demonstration and piloting activities, development of the emerging industry in 3D-printing will be accelerated on the basis of organised complementarities (smart specialisation).

More information: www.s3vanguardinitiative.eu

<http://s3platform.jrc.ec.europa.eu/thematic-areas>

EUROPEAN TECHNOLOGY PLATFORMS

The following European Technology platforms develop activities related to AM

- **PHOTONICS21:** The European Technology Platform Photonics 21, aims to establish Europe as a leader in the development and deployment of photonics technologies. It presents a working group devoted to Industrial Manufacturing and Quality.
- **NANO futures ETIP :** NANO futures environment is an ETIP European Technology Integrating and Innovation Platform, multi-sectorial, cross-ETP, is a platform with the objective of connecting and establishing cooperation and representation of Technology Platforms that require nanotechnologies in their industrial sector and products.
- **EFFRA :** European Factories of the Future Research Association ‘Factories of the Future’ is the European Union’s €1.15 billion public-private partnership for advanced manufacturing research and innovation. It is the European Union’s main programme for realising the next industrial revolution: materialising Factories 4.0

As a summary, the following table contains a list of the most relevant organisations and European initiatives emphasizing their VC segment, the AM processes the initiatives are focus on, the material used and the Non-Technical activities. For more information please refer to the AM-motion data base:

Table 1. European AM initiatives

NAME	WEBSITE	Sectors	VC segments	AM processes	AM Materials	Non Tech.
AM-PLATFORM	www.rm-platform.com	ALL	ALL	ALL	ALL	ALL
EPMA	www.epma.com	ALL	ALL	PBF	Metal	EDU, TT, Networking
CECIMO	www.cecimo.eu	ALL	D, M, P, PP, Pr	PBF	Metal	STD, L, EDU, IE
EFW	www.efw.be	ALL	M, P	PBF, DED	Metal, polymer	STD, EDU, IE, IPR, TT
ERRIN	www.errin.eu	ALL	-	-	-	EDU, TT, Networking

2.2. National level

2.2.1. CZECH REPUBLIC

Additive Manufacturing Cluster (KAV)

KAV supports the higher innovation and competitiveness of its members, popularizes their activities in the field of additive production as well as the ability to solve very complex projects using the latest 3D printing technologies. As part of its activities, KAV creates a common identity of legal and natural persons, members, contributing to the promotion of the use of additive production as well as its popularization as a sovereign component of the manufacturing processes of Industry 4.0.

KAV long-term activities:

- promotes the interests of the cluster and its members at regional and national level.
- links member organizations within national and international environments.
- popularizes additive production in the Czech Republic in connection with education at technical schools.
- maps the available infrastructure for additive production, downstream services and products.
- makes joint purchases for cluster members on preferential terms.
- KAV creates an infrastructure designed to use the cluster member base.
- advises members of the cluster in PR and marketing.
- establishes close cooperation not only with state organizations such as CzechInvest or the Ministry of Industry and Trade but also with local regional organizations and local authorities.

Actions:

- Additive production in the aerospace industry
- 3D printing and scanning trends 2016
- 3D metal alloy printing in practice

More information: <http://www.3dklastr.cz/>

2.2.2. FINLAND

The Finnish Rapid Prototyping Association, FIRPA

FIRPA was founded in 1998 to promote Additive Manufacturing information in Finland. The Association acts as an independent source and distributor of information in all areas of Additive Manufacturing.

The association acts as an impartial channel for the transfer of know-how in the manufacture of the latest material to Finland.

Firpa's activity consists on:

- Supporting and organizing the gathering of information from international fora, and organizing seminars and training sessions.
- Maintaining library and information services.
- Maintaining and developing statistical information on the area of manufacturing that adds material.
- Performing publishing.
- Supporting the operation of the international RP mailing list.
- Organizing trips and visits to institutes, businesses and trade fairs.
- Participating in activities that support the above-mentioned activities.

The purpose of the association is to promote and develop the exchange of information on manufacturing know-how, co-operation and mutual material, and promote the industry's reputation in Finland.

More information: <http://www.firpa.fi/index.html>

2.2.3. FRANCE

Association Française du Prototypage Rapide (Fabrication Additive)

The association is a communication space for the French Stakeholders in the field of additive manufacturing.

Objectives:

- Join the rapid prototyping stakeholders to tighten the national and international links
- Answer multisectorial needs
- Foster the training and Technology Transfer
- Dissemination of information and news
- Support innovation projects
- Positioning on a European and world framework

More information: www.afpr.asso.fr

Alliance Industrie du Futur (Fabrication Additive)

Operational instrument of the Programme “Industry of the Future for the new Industrial France”, gathering the main stakeholders of the French industry. The French Additive Manufacturing Initiative has the goal to build up a solid French network dealing with topics about AM. It gathers 120 people addressing 10 different themes:

1. Materials, process and machines
2. Numerical Chain
3. Post-treatment and finishing

4. Quality and control
5. Health, Security and Environment
6. Standards and Norms
7. Certification
8. Education and Training
9. Marketing
10. Dissemination and support to the French

Based on the actions undertaken in this working groups a National Roadmap is created by AIF.

More information:

<http://allianceindustrie.wixsite.com/industrie-dufutur/fabrication-additive>



Cluster ViaMeca

ViaMéca is a competitiveness cluster devoted to “design, production and integration of intelligent mechanical systems”.

French competitiveness clusters bring together companies (SMEs and groups), research centers (public and private ones), educational establishments with the aim of accelerating innovation and enabling the emergence of innovative collaborative projects.

ViaMéca collaborative projects as well as scientific knowledge deal with :

- Surface Engineering
- Advanced Manufacturing Processes
- Intelligent Systems and Robotics
- Engineering driven by Uses and Services

Since 2005 ViaMéca labelled more than 415 collaborative projects that involved more than 499 companies and 342 labs.

More information:

http://www.viameca.fr/assets/files/maj%20mai%202016/160527%20%20diapo_anglais_ViaMeca_Ang.pdf

2.2.4. GERMANY



Fraunhofer Additive Manufacturing Alliance

It integrates seventeen Fraunhofer institutes across Germany, which depending on their main focus, deal with subjects concerning additive manufacturing and represent the entire process chain. This includes the development, application and implementation of additive production processes as well as associated materials.

Rapid tooling and rapid manufacturing offer tremendous potential for success in terms of quickly and efficiently translating product innovations into prototypes and small production batches.

The Fraunhofer Additive Manufacturing Alliance has earned a reputation as the largest interdisciplinary European alliance of competence for high-speed processes enabling individual manufacturing of products made of metals, plastics, ceramics and other materials.

Collaborating closely with national and international partners, the alliance develops new rapid strategies, concepts, technologies and processes to enhance the performance and competitiveness of small and medium-sized enterprises. Its advanced rapid methods and tools enable it to support all major sectors of industry: p.e. the automotive and aerospace industries, mechanical engineering and machine tools, medicine and medical engineering.

More information: <https://www.generativ.fraunhofer.de/en.html>

VDW: German Machine Tool builders' Association (Verein Deutscher Werkzeugmaschinenfabriken)

Industrial association in the metalworking sector, offering to their around 120 member companies a comprehensive service package including advice and action and give them an audible voice. Together with the Sector Association Machine Tools and Manufacturing Systems within the VDMA (German Engineering Federation), we represent our industry's interests to legislators, authorities, client industries and the public.

In addition, we facilitate long indispensable knowledge transfer. Permanent committees and working groups ensure the exchange of industry-specific opinions and experiences. We regularly inform our members about current technological, economic and legal matters.

Last but not least, we strongly support joint research. In close cooperation with the institutes of the WGP (Scientific Society for Production Engineering) we initiate practice-based projects from which our members and the whole industry benefit.

More information:

http://www.vdw.de/web-bin/owa/homepage?p_bereich=vdw&p_menu_id=1000000045&p_sprache=e

VDMA Additive Manufacturing Association:

The Additive Manufacturing Association in the VDMA offers its members from industry and scientific research a variety of services related to industrial 3D printing technologies. We are the cross-industry platform where potential users and development partners meet and work together.

Core topics of this Association are: Politics & Initiatives, Markets & Business Cycles, Management & Legal Affairs, Techniques & Environment, Research & Innovation and Education & Recruitment.

More Information:

<https://am.vdma.org/en/startseite>

2.2.5. ITALY

AITA-ASSOCIAZIONE ITALIANA TECNOLOGIE ADDITIVE

A cultural association aiming to represent the interest of Italian Additive Manufacturing Sector (producers of machines, end-users, enabling technologies suppliers, service centers, universities, research centers, etc.), helping the dialogue with public stakeholders and other industrial associations, in order to spread and develop the use of Additive Manufacturing (and the related knowledge) in manufacturing environment.

Its mission:

- to highlight this emerging sector coherently with its role in mechanical manufacturing; to carry out activities related to research and innovation;
- to create competitive advantage and «push» the industrial application of industrial technologies and their connection to the other mechanical manufacturing processes.

The basic activities deal with:

- Standardization
- Communication and Promotion
- Training
- Research and Development
- Events and exhibitions
- Other topics suggested by the board of directors

More information: <http://www.aita3d.it/inglese/>

Technology Cluster FABRICA INTELLIGENTE

The Italian Technology Cluster “Intelligent Factories” (CFI) is the first of the eight Clusters admitted by MIUR notice to the facilitations, according to the evaluations expressed by international experts about the Strategic Development Plan and the first four applied research projects proposed for the candidature of the Cluster itself.

The Italian Technology Cluster “Intelligent Factories” sets the target of developing and implementing a strategy based on research and innovation, able to consolidate and increment the national competitive advantages and, in the meantime, to orient the transformation of the Italian Manufacturing sector towards new product systems, processes/technologies and manufacturing systems, coherently with the strategic agendas of the European Union for research and innovation.

Besides the realization of pre-competitive research projects, intended for the development of enabling technologies for various industrial sectors, the action of the Italian Technology Cluster “Intelligent Factories” consists of other activities, such as: technological transfer, sharing of research infrastructures and mobility, support to a smart and sustainable entrepreneurship, technological foresight on a regional, national and international scale in the smart factory sector, support to the growth of the human capital.

More information: <http://www.fabbricaintelligente.it/en/about-us/organization/>

UCIMU SISTEME PER PRODUIRE

Italian machine tool, robots, automation systems and ancillary products (NC, tools, components, accessories) manufacturers' association.

The official representative of the sector, UCIMU-SISTEMI PER PRODURRE has today over two hundred associate member companies, which account for over 70% of the Made in Italy of the sector.

The value and the long-standing tradition of member companies, characteristic of one of the sectors that best represents the whole manufacturing chain, and the capabilities of the association network, make UCIMU one of the most influential representatives of Sistema Confindustria (General Confederation of Italian industry System).

2.2.6. THE NETHERLANDS

FIELD LAB FOR MULTI-MATERIAL 3D PRINTING

The Field Lab MultiM3D is a co-creation platform in which (in some cases even different) industries along the value chain work together with research organisations and universities, in order to develop and validate the next generation multi-technology and multi-material solutions. Close collaboration between the various actors in the value chain is necessary to bring technologies from the lab to the market and to efficiently integrate new technologies and applications. Partners in the Field Lab include TNO, Admatec, ECN, HTSC TU/e, Nextdent, Philips Lighting, Océ, DoMicro and PwC. PwC's role within this consortium will primarily focus on as-

sessing how the added value of MultiM3D can be unlocked taking into account the future potential as the technology matures (and additive manufacturing systems and services improves). Open and shared pilot facilities like Field Labs are essential to speed up the development of the technology as they create the necessary multidisciplinary setting and allow for experimentation. It facilitates upscaling of the technology and testing the market and production efficiency making the optimal use of technologies and competencies available, within the Brainport Region and via the Vanguard Initiative within Europe.

More information: <https://www.linkedin.com/pulse/field-lab-multi-material-3d-printing-turning-additive-kersbergen>

ADDFAB

AddFab is privately funded by 3 industrial partners. These participating companies are convinced that by cooperating rather than competing, they have a better chance of becoming a leading player in the field of industrial additive manufacturing.

AddFab is the 3D printing factory for the production of industrial metal parts in Eindhoven, The Netherlands. It is built on the ambition to develop worldclass 3D printed metalparts for a broad range of High Tech and High End Manufacturing applications.

A team of Additive Manufacturing professionals is running the AddFab and supports the partner companies in the production and supply of 3D metal parts for end-users.

More information: <http://www.addfab.nl/en/>

2.2.7. POLAND

Association of Polish Industry Printing 3D

The association mission consists on building an environment that supports companies and institutions in the 3D printing industry. Its strategic actions are:

- Building a positive image of the 3D printing industry
- Integration of companies wanting to work for the benefit of the industry
- Supporting the development of companies in the industry

More information: <http://druk3d.org/>

2.2.8. PORTUGAL

Productech

The Production Technologies Cluster is an articulated network of manufacturing technology providers capable of responding to both competitiveness and sustainability challenges and to the manufacturing industry's requirements with innovative, flexible, integrated and competitive solutions.

In its Action Plan, PRODUTECH fosters several projects and activities aimed at promoting Cooperation, Innovation and Internationalization, in close collaborations established within the

network and with other Research Centers, companies and organizations.

More information: <http://www.produtech.org/>

2.2.9. SPAIN

ADDIMAT

The Spanish Association of Additive Manufacturing Technologies and 3D, groups together all the players with interests in developing and promoting additive manufacturing and 3D.

The management of ADDIMAT is underpinned by the professional team of AFM, which covers the areas of internationalization, technology, communication and people, and whose headquarters are located at their facilities at the Technological and Scientific Park of Guipuzcoa.

ADDIMAT represents the Spanish additive manufacturing and 3D technology industry, constructing a coherent, comprehensible and differentiated image of the sector, and providing information about it.

To provide a forum for member companies where they can share information about market conditions and about the development of additive manufacturing technologies, and deal, as a group, with topics of mutual interest.

To foster business cooperation, creating networking opportunities between the different market groups.

More information: <http://www.addimat.es/association.html>

ASERM: Spanish Association of Rapid Manufacturing:

A meeting point of the Spanish stakeholders (Companies, Technology centers, Research Centres, Academy) to promote and foster R&D and Innovation in the field of advanced manufacturing.

Research and technology development, and Technology Transfer (from training and education to the Pilot line implementation) are the main activities of the association. All oriented from a collaborative point of view at national and international level.

More information: <http://www.aserm.net/>

MANU-KET:

MANU-KET is established as the Spanish Technological Platform for Advanced Manufacturing. The platform is born with an open integration spirit. Its aim is to identify technological needs required by future products and services, in which the incorporation of advanced materials, microelectronics, photonics and nanotechnologies (all of them, considered Key Enabling Technologies as defined by the EC) require new processes, equipment and production systems with

new levels of productivity, safety, functionality or precision. These new technological developments will place Spanish companies in positions of international competitive and leadership. The technological platform MANU-KET will deal with the needs identified by five of the key enabling technologies and their impact on the developments to be taken by the six: Advanced Manufacturing Processes, Smart and Adaptive Production Equipment, Human-Machine Collaboration, Digital, Virtual and Efficient Factories, Customer Centric Manufacturing y Sustainable Manufacturing.

MANU-KET has been supported by the Spanish Ministry of Innovation and Competitiveness, through its active participation and co-financing of the platform.

More information: <http://www.manufacturing-ket.com/en/manu-ket-2/structure/>

2.2.10. UNITED KINGDOM

The Additive Manufacturing Association (AMA)

AMA belongs to the Institution of Mechanical Engineers and aims to stimulate the adoption and exploitation of rapid product design, development and manufacturing technologies in the UK and provide a source of unbiased information from both industry experts and university research groups.

The scope of the Association is continually evolving to reflect the rapidly changing nature of this field and covers a wide range of topics from concept design to manufacture.

More information: <https://www.imeche.org/get-involved/special-interest-groups/manufacturing-industries-division/manufacturing-industries-division-information-and-resources/ama>

Manufacture using Advanced Powder Processes MAPP

MAPP is the Future Manufacturing Hub in Manufacture using Advanced Powder Processes of the Engineering and Physical Science Research Council.

MAPP is led by the University of Sheffield and brings together leading research teams from the Universities of Leeds, Manchester and Oxford, and Imperial College London, together with a founding group of 17 industry partners and the UK's High Value Manufacturing Catapult.

MAPP's vision is to deliver on the promise of powder-based manufacturing to provide low energy, low cost, and low waste high value manufacturing routes and products to secure UK manufacturing productivity and growth.

More information: <https://mapp.ac.uk/>

2.2.11. OTHER NATIONAL AND REGIONAL INITIATIVES IN EUROPE

The following table contains a list of regional/national initiatives as platforms, associations, clusters and networks developing activities related to Additive Manufacturing. In some cases these AM activities are the main focus of the initiative (e.g.: RAFAM) but in some other cases the AM activities are only accessory regarding the main activity (e.g: Cluster Aeroespacial_Madrid Network).

When possible a categorisation regarding the VC segment was accomplished. This table will be updated all along the AM-motion project with the information collected from the initiatives and available in the AM-motion data base.

Table 2. Other types of AM initiatives and Regional AM initiatives

NAME	WEBSITE	Country/region	Type of Initiative	Sector	VC segment	Non Tech.
FLAM3D	www.flam3d.be	BELGIUM / FLANDERS	Regional Platform	ALL	-	
(RAFAM) Rhône-Alpes Auvergne Fabrication Additive Métallique (belongs to ViaMeca)	http://www.viameca.fr	FRANCE (Auvergne-Rhone Alps)	Association/Pole Regional	Metal	BJ, PBF, MJ,	IE, TT
Fédération forge fonderie (FFF) ?	https://www.forgfond-erie.org/fr/forg-erie/moule-et-prototype	FRANCE	Association/Cluster	CG, E&T	M	EDU, IE
INORI	http://www.in-ori.fr/	FRANCE/ GRAND EST	Pilot Infrastructure	AE, AU, CG, E, EN, E&T	D, M, PP, Pr, EL	TT,
MATERALIA	http://www.materialia.fr/index.php?langue=en	FRANCE/ GRAND EST	Regional Materials Cluster	ALL	M	TT, EDU, IE
EMC2	http://www.pole-emc2.fr/industrie-competitive.html	FRANCE/PAYS DE LOIRE	Regional Production technologies cluster	AE, AU, EN, O	P, PP, Pr	TT, IE, EDU
Platform ADDIMADOUR	http://www.es-tia.fr/entreprises/plate-formes-techniques/addimadour.html	FRANCE/ESPAGNE Nouvelle-Aquitaine Region/the Basque Country Urban Authority	Pilot production	E&T, EN, O	M	TT
MATIKEM	en.matikem.com	FRANCE/ Nord - Pas-de-Calais	Pole/ Network	H, AU, CG	D, M, P, Pr, EL	STD, EDU, IE, IPRs, TT

Deliverable D2.4

NAME	WEBSITE	Country/region	Type of Initiative	Sector	VC segment	Non Tech.
ITIA-CNR	www.itia.cnr.it	ITALY	Research	ALL		
Confindustria	www.confindustria.it	ITALY	Association	ALL		
AFIL	http://www.afil.it/	ITALY (REGION: LOMBARDY)	Regional Technology Cluster	ALL		
ACMM	http://www.marche-manufacturing.it/en/hom	ITALY (REGION: MARCHE)	Regional Association	ALL		
ASTER	http://www.aster.it/	ITALY (REGION: EMILIA ROMAGNA)	Regional Technology Network	ALL		
COMET	http://cluster-comet.it/	ITALY (REGION: FRIULI VENEZIA GIULIA)	Cluster	ALL		
Mechatronics-Cluster of Lower Austria	http://www.mechatronik-cluster.at/en/mechatronics-cluster/	LOWER AUSTRIA	Cluster	ALL	M&D, D, P,	EDU, EI, TT
Plastics Cluster	https://www.ecoplus.at/interessiert-an/cluster-kooperationen/kunststoff-cluster/	LOWER AUSTRIA	Cluster	H, AE,	M, Pr	EDU, TT
AMSystems	http://am-systemscenter.com/	The Netherlands	?			
RAMLAB (RDM Campus)	http://www.ramlab.com/	The Netherlands	Laboratory	DED	Metal	EDU
3DPA	www.the3dprintingassociation.com	The Netherlands// Zuid-Holland	Non launched Association	?	?	STD, L; EDU, IPRs??
Fieldlab MultiM3d	?	NL	Platform			
RapidPro	https://rapidpro.nl/	NL	Conference			
Brightlands-materialscenter	http://www.brightlands-materialscenter.com/	NL	Materials Ecosystem ??	PBF, VP	Polymer	
PAMI	http://www.ucpt/en/iii/infrastructures/pami	PORTUGAL	Pilot Infrastructure University	ALL	ALL	
SectoTEC	http://www.plataformaptec.com	SPAIN		CONSTRUCTION	ALL	

Deliverable D2.4

NAME	WEBSITE	Country/re-region	Type of Initiative	Sector	VC segment	Non Tech.
	m/					
IMDEA Materiales	http://materiales.imdea.org/	SPAIN/MADRID REGION	Regional Institute	O	M	EDU, TT
Cluster Aeroespacial	http://www.madridaerospaace.es/	SPAIN/MADRID REGION	Cluster	Aerospace	M&D, D, P	TT
FOTÓNICA21	http://www.fotonica21.org/	SPAIN	Platform		Laser based	
MATERPLAT		SPAIN	Materials Platform		M	EDU, TT
Move to future	http://www.move2future.es/	SPAIN		AU	ALL	
Plataforma española en tecnologías sanitarias	http://www.plataformatecnologiasanitarias.es/	SPAIN		H	ALL	
Food for Life-Spain	http://foodforlife-spain.es	SPAIN		FOOD		
SusChem-ESPAÑA	http://www.suschem-es.org	SPAIN		CHEMISTRY	ALL	
PTFE	http://www.ptferroviaria.es/	SPAIN		RAILWAY	ALL	
IAM 3D Hub	http://iam3dhub.org/	SPAIN/CATALONIA	Regional Hub	AM	ALL	TT, IE, EDU
SATW Advanced Manufacturing Research Alliance	http://www.satw.ch/en/advanced-manufacturing/	SWITZERLAND	Research Alliance	ALL		
MACHINE AND TOOL ASSOCIATION OF SWEDEN	http://mtas.se/en/	SWEDEN	Association	E&T	M&D, D, M, P, Pr	STD, EDU, IE, TT
AM National Strategy	http://www.amnationalstrategy.uk/	UK				

The following table contains a non-exhaustive list of the most relevant organisations and National initiatives in Additive Manufacturing, some of them have been described on section 2.2. An endeavour was done to associate to each initiative to its VC segment, the AM processes the initiatives are focus on, the material used and the Non-Technical activities they develop. This table has been filled up with the information found in different documents and will be conveniently updated once the identified initiatives will complete the AM-motion the registration template data sheet. All the information will be available in the AM-motion data base:

Table 3. AM National Initiatives

NAME	WEBSITE	COUNTRY/ Region	Sectors	VC seg- ments	AM pro- cesses	AM Ma- terials	Non Tech.
3C ACADEMY	–	BULGARIA/ So- fia-grad	H, AU; CG, E, EN; E&T, C	M&D, D, P, PP, Pr	PBF, VP, MJ; ME; DED, BJ	Metal, pol- ymer, ce- ramic	STD, EDU, IE, IPRs
Additive Man- ufacturing Cluster	<a href="http://www.3d
klastr.cz/">http://www.3d klastr.cz/	CZECH REPUBLIC	AE, AU	D, M, P, Pr,	PBF, MJ, DED, BJ	Metal	EDU,
Finnish Rapid Prototyping Association, FIRPA	<a href="http://www.fir
pa.fi/html/in-
english.html">http://www.fir pa.fi/html/in- english.html	FINLAND	H, AE, AU, CG, E, EN, E&T	ALL	ALL	ALL	EDU, TT
AFPR	<a href="http://www.afpr.ass
o.fr">www.afpr.ass o.fr	FRANCE	ALL	ALL	ALL	ALL	ALL
Alliance Indus- try du Future	<a href="http://allian-
ceindus-
trie.wixsite.co
m/industrie-
dufutur">http://allian- ceindus- trie.wixsite.co m/industrie- dufutur	FRANCE	ALL	M&D, D, M, P, Pr	ALL	ALL	EDU, IE, TT
Pôle de compétitivité ViaMéca	<a href="http://www.vi
ameca.fr/">http://www.vi ameca.fr/	FRANCE	ALL	ALL	ALL	ALL	EDU, IE, TT
Fraunhofer Additive MAN- ufacturing Alli- ance	<a href="https://www.g
enera-
tiv.fraunho-
fer.de/en.html">https://www.g enera- tiv.fraunho- fer.de/en.html	GERMANY	ALL	ALL	ALL	ALL	EDU, TT
VDW	<a href="http://www.vd
w.de/web-
bin/owa/hom
ep-
age?p_spra-
che=e">http://www.vd w.de/web- bin/owa/hom ep- age?p_spra- che=e	GERMANY	E&T	P, M, PP, Pr	?	?	
VDMA Addi- tive Manufac- turing	<a href="https://am.vd
ma.org/tech-
nology">https://am.vd ma.org/tech- nology	GERMANY	E&T, AE, AU, CG, E, EN	ALL	ALL	ALL	STD, L, EDU, TT
Cluster Plat- form	<a href="http://www.cl
usterplatt-
form.de/CLU
STER/Naviga
tion/DE/Hom
e/home.html">http://www.cl usterplatt- form.de/CLU STER/Naviga tion/DE/Hom e/home.html	GERMANY	?				
EMD TECHNOLOG Y GATEWAY CLUSTER	<a href="https://www.t
echnologyg-
ate-
way.ie/net-
work/emd-
cluster/">https://www.t echnologyg- ate- way.ie/net- work/emd- cluster/	IRELAND	E&T, H, AE, AU,	M&D, D, M, P, PP, Pr	ALL	ALL	EDU, TT, IE
AITA	www.aita3d.it	ITALY	H, AE, AU, EN, E&T	M&D, D, P, PP, Pr	ALL	ALL	STD, EDU, TT
Cluster Fab- brica Intelli- gente	<a href="http://www.fabri-
caintelli-
gente.it">www.fabri- caintelli- gente.it	ITALY	H, AE, AU, EN, E&T	ALL	ALL	ALL	TT, EDU
UCIMU	www.ucimu.it	ITALY	ALL	ALL	ALL	ALL	STD, L

Deliverable D2.4

NAME	WEBSITE	COUNTRY/ Region	Sectors	VC segments	AM processes	AM Materials	Non Tech.
MultiM3D		THE NETHERLANDS	?				
AddFab		THE NETHERLANDS	?	M	?	?	?
Norraa Nordic Network of Rapid Manufacturing	http://nordicinnovation.org/Glob al/ Publications/Re-ports/2010/Norraa%20Network%20of%20Rapid%20Manufacturing.pdf	/NORWAY/ DENMARK /SWEDEN	ALL	ALL	ALL	ALL	ALL
Association of Polish Industry Printing 3D	http://druk3d.org/	POLAND	E&T	D, M, P	ALL	ALL	TT, EDU; E&T
Cluster PRODUTECH		PORTUGAL	ALL	Pr, P, PP	ALL	All	EDU, IE, TT
ADDIMAT	www.addimat.es	SPAIN	ALL	ALL	D, M, P,	ALL	EDU, TT
ASERM	http://www.aserm.net	SPAIN	ALL	ALL	ALL	ALL	?
MATERPLAT	materplat.org	SPAIN	ALL	M, P	ALL	ALL	ALL
Manu-Ket	http://www.manufacturing-ket.com/manu-ket/	SPAIN	ALL	D, P, Pr, PP	ALL	ALL	ALL
AM-NETWORK	https://www.amnet-work.ch/fr/	SWITZERLAND	ALL	D, P	ALL	ALL	TT, EDU
Swiss Additive Manufacturing Group	https://www.swissmem.ch/fr/organisation-membres/groupe/swiss-additive-manufacturing-group.html	SWITZERLAND	ALL	D, P, Pr, PP	ALL	ALL	STD, TT, EDU
Swedish Arena for Additive Manufacturing of Metals	https://www.swerea.se/en/collaboration/networks/swedish-arena-for-additive-manufacturing-of-metals/activities	SWEDEN	ALL	ALL	PBF,, DED, BJ,	Metals	ALL
Manufacturing Technologies	https://www.	UK	E&T	ALL	ALL	ALL	EDU, L

NAME	WEBSITE	COUNTRY/ Region	Sectors	VC seg- ments	AM pro- cesses	AM Ma- terials	Non Tech.
Association	mta.org.uk/about-us						
Additive Manufacturing Association (AMA)	https://www.imcmeche.org/get-involved/special-interest-groups/manufacturing-industries-division/manufacturing-industries-division-information-and-resources/am-a	UK	AE, AU, E&T, C, H, EN,	M&D, D, P, PP,	ALL	ALL	EDU
Manufacture using Advanced Powder Processes	www.mapp.ac.uk	UK	EN,	M&D, D, P, PP	Power based		EDU, TT

2.3. Mapping of AM initiatives on value chain approach

The previous section collected and analysed information about the AM initiatives at European, National and Regional level with the final target of establishing a Classification of them that allows to create an exhaustive map of the European AM landscape.

The following figures represent a mapping of the AM initiatives in Europe namely clusters, associations and platforms. To build up this mapping the regional and national initiatives identified and listed in the tables above have been clustered regarding their status (national, regional), type and Value chain segment. Only the initiatives identified as clusters, associations and platforms whose activities are directly and mainly linked to AM were considered for the mapping exercise. Those initiatives identified as Research Centres, private companies were excluded on the map. The initiatives whose activities are not mainly linked to AM were also disregarded.

42 initiatives have been identified and clustered by country considering if they are national or regional initiatives. The initiatives have been labelled by using different colours as depicted in figure 3.

There have been identified 28 National AM initiatives and 12 Regional initiatives whose activities are linked with AM. Two extra categories have been observed: a trans-regional and trans-national. The first example (depicted in purple) corresponds to the **ADDIMADOUR Platform**, a French/Spanish initiative launched by two regions: the French Nouvelle Aquitaine and the

Spanish Basque Country. The trans-national initiative is the Nordic **Norrarna** network that gathers the endeavours of Denmark, Sweden and Norway to boost the Additive Manufacturing in these countries (represented in figure 3 in yellow).



Figure 3. National and Regional AM initiatives

A second level of categorisation is possible by clustering the initiatives by their typology. This means the initiatives may be assembled depending on the typology of the affiliation of their members as follows: Associations, Cluster or network or Platforms. A singular typology has been observed in Switzerland with the Industrial Alliance, AM-Network, where 3 industrial companies are clustered with the mission of sharing knowledge on AM.

In the map of figure 4, the clusters are represented in blue markers, navy blue for the national clusters and light blue for the Regional ones; the trans-national cluster being represented in green. The Associations are depicted in red markers, dark red for the National and light red for the regional associations; the Platforms are represented in yellow.



Figure 4. AM initiatives grouped by their type

A **third categorisation can be done considering the Value Chain segment** of the sectors where AM is active. To accurately undertake this kind of clustering the information should be collected from each of the identified initiatives. To finalize this task AM-motion project has established the Additive Manufacturing actors' registration template that will feed the AM-motion data base. So far only a few initiatives have completed this template and thus to accomplish a complete mapping is not possible.

However, this type of exercise has been developed in the Final Report of 2016 of the Executive Agency for Small and Medium-sized Enterprises "Identifying current and future application areas, existing industrial value chains and missing competences in the EU, in the area of additive manufacturing (3D-printing)". The objective of this study was to detect missing capabilities in European regions regarding current and upcoming 3D-printing applications by identifying key application areas in the field of AM and reconstructing the AM value chains at the regional level. The report highlighted that European regions are among world-wide leaders in specific Additive Manufacturing fields (e.g.: metal AM) and it also emphasized the missing links between Western European regions where most AM capabilities are concentrated and Eastern European

regions. It was observed that the fragmentation of the European AM landscape can be associated to established or emerging specialisation patterns. This study was done from the point of view of research capabilities and industrial capabilities by identifying **key individual players** from both research and industry that are proactive when coming to adopt or develop Additive Manufacturing activities in different sectors.

AM-motion project takes a further step and analyses these capabilities from the point of view of **clustered initiatives** encompassing research centres, large companies and SMEs with the common focus of supporting AM activities and with the target of identifying already existing collaborations. Indeed, AM-motion project seeks for these type of initiatives as they may be a key indicator of the degree of development of AM in a particular country or region.

2.4. **Building synergies with other European Initiatives: cross-regional, trans-European and cross-sectorial connections**

The levels of both specialisation and fragmentation of AM in Europe particularly calls for international and cross-regional collaboration². Collaboration opportunities could be revealed for a particular value chain segment or could link different European regions, or address a variety of sectors in an open innovation approach. They can also involve RTOs players when a need to address particular technological issues is identified.

A mayor objective of AM-Motion is establishing connections among the different AM initiatives that will enable the identification of specialization niches in Europe. Moreover, AM-motions intends to be aware of interactional strategies and benefit from possible collaborations and links with key international initiatives that are already in place.

At European level there exist other initiatives that could interact and build synergies and collaborations with the identified AM initiatives:

Vanguard Initiative « High Performance Production through 3D-Printing»:

Vanguard Initiative has foundations at the regional level. It started by 20 EU regions in line with the European Cohesion Policy and related smart specialisation strategies.

EU regions are the closest policy link to the bottom-up growth dynamics necessary for the renewal of European industrial fabric through the innovative partnerships and clusters. Such partnerships and clusters form eco-systems that are the catalyst for fast-growing innovative SMEs.

The Vanguard Initiative seeks to lead interregional cooperation and multi-level governance for supporting clusters and regional eco-systems to focus on smart specialisations

² Identifying current and future application areas, existing industrial value chains and missing competences in the EU, in the area of additive manufacturing (3D-printing). Final Report Brussels, 15th of July, 2016. European Commission Executive Agency for Small and Medium-sized Enterprises

in priority areas for transforming and emerging industries. **Vanguard regions want to build the synergies and complementarities in smart specialisation strategies** to boost world-class clusters and cluster networks, in particular through pilots and large-scale demonstrators. These investments will strengthen Europe's competitive capacity to lead in new industries in the future and develop lead markets that offer solutions to our common challenges.

Vanguard Initiative is pioneering a new approach to support EU industry internationalisation and competitiveness by creating "inter-regional smart specialisation platforms". The "VI methodology" consists of four subsequent phases: learn, connect, demonstrate and commercialise.

Among other four pilots, the 3D-Printing Pilot of the Vanguard Initiative aims at mapping and connecting demonstration capabilities of European regions by linking segments of the 3D-printing value chain(s) across regions. A main objective of the Vanguard "3DP pilot" is to identify integration opportunities along and across industrial value chains. AM-motion project shares this same approach and actions will be taken during the project to build synergies with Vanguard initiative.

More information: <http://www.s3vanguardinitiative.eu/cooperations/high-performance-production-through-3d-printing>

- ✚ **Smart Specialisation Platform for Industrial Modernisation (S3P-Industry)** aims to support EU regions committed to generate a pipeline of industrial investment projects following a bottom-up approach - implemented through interregional cooperation, cluster participation and industry involvement.

Regional partnerships may develop their own working process. The work to be performed together by the regions, industrial partners and business intermediaries, and facilitated and supported by EU activities, can be carried out in three different phases:

More information: <http://s3platform.jrc.ec.europa.eu/industrial-modernisation>

✚ **Digital Innovation Hubs:**

DIH are launched to improve the access of SMEs to technology and expertise providing close-to-market technology services. The goal of the EU's first industry-related initiative of the Digital Single Market strategy is to ensure that Europe is ready for the growth in the emerging markets for future digital products and services. This will require sustained and coordinated investment from the public and private sectors³

The ambition of the Digital Innovation Hubs is to allow industry, in particular start-ups and SMEs to access advanced technologies and to provide them with support, including

³ Digitising European Industry

brokering between technological providers and suppliers, regional actors and a European network of Digital Innovation Hubs. Digital Innovation Hubs would also open to companies interoperable and secured European platforms (High Performance Computing, Cloud, Operating System, Open Data, BlockChain for instance). In addition, these Hubs would provide training and education programmes and help companies to access to financial support for their digital transformation. s the initiative promoted by the EC to support the European leadership in manufacturing through the adoption of ICT technologies.

EPPN: European Pilot Production Network

The scope of the EPPN EC initiative is to perform a mapping of the running funded pilot line projects landscape. The exercise will enable the identification of need of additional pilot facilities at national and regional level by addressing both technical, operational, business and economic issues.

In this sense a Pilots Task Force was created to coordinating joint actions at regional, national level, providing recommendations and implementing best practices in a number of areas. As an example, EPPN summons for Clustering of clusters, inter-clustering and cooperation between regions and establishing network of needs and in order to efficiently facilitate use and access to pilot lines facilities.

3. Mapping of RDI programmes

This section proposes to analyse the possibilities that European and National funding programmes offer to finance AM research and innovation activities. In the following tables the main RDI programmes supporting technological and non-technological aspects are listed.

3.1. European level

Table 4. European RDI programmes

NAME	WEBSITE	Funding type
H2020 – FoF	https://ec.europa.eu/programmes/horizon2020/	Technological
H2020 – NMBP		Technological
H2020 - SPIRE		Technological
H2020 - TRANSPORT		Technological
H2020 - ENERGY		Technological
H2020 - ERC		Technological/non technological
H2020 - MSCA		Technological

Deliverable D2.4

H2020 - FET		Technological
H2020 – SME Instrument		Technological
H2020 – CLEAN SKY	www.cleansky.eu	Technological
H2020 – EIT Raw Materials	https://eitrawmaterials.eu	Technological/ Non technological
H2020-COSME	http://ec.europa.eu/growth/access-to-finance/ http://ec.europa.eu/growth/smes/cosme/access-to-markets/index_en.htm http://ec.europa.eu/growth/smes/cosme/improving-conditions/ http://ec.europa.eu/growth/smes/cosme/supporting-entrepreneurs/index_en.htm	Non Technological
H2020-Access to risk Finance	http://ec.europa.eu/programmes/horizon2020/en/h2020-section/access-risk-finance	Non Technological

3.2. National level

Table 5. Funding mechanism at National level

NAME	WEBSITE	COUNTRY/ Region	Funding type
German Federal Government	http://www.foerder-info.bund.de/	GERMANY	TECHNOLOGICAL
Federal Ministry of Research and Education (BMBF)	https://www.bmbf.de/de/foerderung-in-der-forschung-642.html	GERMANY	TECHNOLOGICAL
Federal Ministry of Economy and Energy (BMWi)	http://www.bmwi.de/Navigation/DE/Themen/energieforschung.html http://www.bmwi.de/Redaktion/DE/Publikationen/Mittelstand/zentrales-innovationsprogramm-mittelstand-zim.html http://www.bmwi.de/Redaktion/DE/Artikel/Technologie/verwettbewerbliche-forschung-fuer-den-mittelstand.html	GERMANY	TECHNOLOGICAL/ NON TECHNOLOGICAL

Deliverable D2.4

German Research Foundation (DFG)	http://www.dfg.de/en/funded_projects/current_projects_programmes/index.jsp	GERMANY	TECHNOLOGICAL
ANR	www.agence-nationale-recherche.fr	FRANCE	TECHNOLOGICAL
ADEME	www.ademe.fr	FRANCE	TECHNOLOGICAL
Institut Carnot filière Manufacturing	http://www.instituts-carnot.eu/fr/RetD-pour-entreprises-mecaniques-et-procedes	FRANCE	TECHNOLOGICAL
FUI (Fond Unique Interministerial)	http://competitivite.gouv.fr/les-financements-des-projets-des-poles/les-appels-a-projets-de-r-d-fui-375.html	FRANCE	TECHNOLOGICAL/ NON TECHNOLOGICAL
Capital Risk: Cap Horn	http://www.caphorninvest.fr/index.php#tm-top-c	FRANCE	NON TECHNOLOGICAL
MIUR		ITALY	
MISE	www.sviluppoeconomico.gov.it	ITALY	
RVO	http://english.rvo.nl/subsidies-programmes	THE NETHERLANDS	TECHNOLOGICAL/
BOM	https://www.bom.nl/	THE NETHERLANDS	TECHNOLOGICAL/ NON TECHNOLOGICAL
LIOF	https://www.liof.com/en	THE NETHERLANDS	NON TECHNOLOGICAL
Oost NV	http://www.oostnv.nl/	THE NETHERLANDS	NON TECHNOLOGICAL
NOM	https://www.nom.nl/over-ons/	THE NETHERLANDS	NON TECHNOLOGICAL
Innovation Quarte	https://www.innovationquarter.nl/	THE NETHERLANDS	NON TECHNOLOGICAL
Ministry of Economy, Industry and Competitiveness /CDTI	https://www.cdti.es/	SPAIN	TECHNOLOGICAL/ NON TECHNOLOGICAL
Ministry of Energy, Tourism and Digital agenda	http://www.minetad.gob.es/PortalAyudas/IndustriaConnectada/Normativa/Paginas/convocatoria.aspx	SPAIN	TECHNOLOGICAL
ANI (Portugal2020-Compete2020)	http://ani.pt/	PORTUGAL	
Engineering and Physical Sciences Research Council (EPSRC)	https://www.epsrc.ac.uk/	UK	

4. Summary and Conclusion

The present document aims to identify and establish a cartography of the main European AM initiatives, considering as initiatives only actors as associations, clusters, networks or platforms but not individual stakeholders as companies or research labs. The so called initiatives could have a national, regional or European extent.

The goal of the deliverable 2.4 will be to cluster the initiatives around the sector oriented value chains previously identified in task 2.1, to have an initial mapping of AM capabilities and expertise in Europe.

To achieve this ambitious objective first of all a classification of the main European, national and regional initiatives is established. As a result 42 initiatives have been identified and clustered by country taking into account their national or regional character. In this sense 28 National AM initiatives and 12 Regional initiatives whose activities are linked with AM have been identified, clustered and represented in a map. Two extra categories have been observed: a trans-regional French/Spanish initiative launched by two regions and trans-national Nordic initiative.

A second level of categorisation is possible by clustering the initiatives depending on the typology of the affiliation of their members as follows: Associations, Clusters or network or Platforms.

A final mapping will be delivered once the AM acknowledged actors will be clustered as a function of their value chain segments: modelling and simulation; design; materials; process; post-processing; product; end of life, specifically related to the sector where AM is active, as identified in task 2.1.: Health, aerospace, automotive consumer goods, electronics, energy, industrial equipment and tooling and construction. A first screening showed how the end of life segment is not enough represented in Europe.

A mayor objective of AM-Motion is establishing connections among the different AM initiatives that will enable the identification of specialization niches in Europe. Indeed the task and deliverable seek out building connections that will lead to collaboration opportunities with other European Initiatives at different levels: cross-regional, trans-European and cross-sectorial. D2.4. thus detects existing initiatives at European level that could build synergies and create collaborations with the identified national and regional AM initiatives.

The mapping put in evidence that the identified national and regional initiatives are mainly located in southern and western regions (Spain, Italy, France, UK, Germany).

For instance in the case of Italy most of the national actors and programs dealing with Additive Manufacturing materials and technologies are focused on “Smart Manufacturing”, “Advanced Manufacturing” including 3D printing.

The majority of Italian, French and Spanish actors are based in the northern and central regions. For the case of Germany and UK all the identified initiatives are organised at national level.

Deliverable D2.4

Nordic regions show a trans-national organisation to boost collaboration between the Scandinavian countries.

Eastern regions initiatives located in Czech Republic or Poland have already seen the potential of AM and are well organised in clusters or associations.

All initiatives have acknowledge the importance of non-technological aspects and offer service of training, Technology Transfer, standardisation, legislation and IPR to their associate members but a clear lack of non-technological resources has been observed specially in IPR, legislation or standardisation issues.

Finally the deliverable shows the European and National funding programmes available to finance AM research and innovation activities considering if the funding is addressed to technological and/or non-technological activities.