

Vanguard – Wotify Meeting on 3D-Printing

Vanguard Pilot meeting and Matchmaking sessions

Monday 04 December 2017, 10:00 – 18:00

*Place of venue: The Regional delegation of Lombardy, Place du Champs de Mars 2,
1050 Brussels (To Be Confirmed)*

Context & Objectives of the meeting

You are cordially invited you to a joint Vanguard-Wotify meeting on 3D-Printing.

The **Vanguard Initiative** is an association of more than 30 EU-regions joining efforts to speed up European Industry Modernisation (see <http://www.s3vanguardinitiative.eu/>). The initiative seeks to launch interregional projects (funded either via EU-funds or through combined regional funding) focusing on five technology domains (or 'Pilots'): 1) 3D-Printing, 2) New Energy Applications, 3) Sustainable and Efficient Manufacturing, 4) New Nano-products and 5) New bio-mass applications. The focus of each 'pilot' lies on 'demonstration', i.e. speeding up market deployment of new technologies at post-prototyping level by connecting and networking technology infrastructures from different regions in a smart way and facilitating access for industrial companies to this network of demonstrators. Since mid-2016, the European Commission has launched the so-called 'Thematic Smart Specialisation Platforms' to further amplify and expand interregional initiatives for industry modernisation.

The **Wotify initiative** is an awareness-raising campaign, funded by the European Commission, on digital / technological transformation. Its core objective is to stimulate the modernisation of Europe's industry, covering different sectors, through the adoption of advanced technologies.

Over the past months, the regions involved with the Vanguard Initiative carried out surveys and mapped both the industrial needs in the regions and the own capabilities and facilities for demonstration. Within the 3DP Pilot, this led to the identification of 6 areas for joint-demonstration. Each area aims at connecting demonstration facilities in a complementary way on the basis of identified capabilities, needs and challenges in the regions, and to facilitate access from industry.

These 6 areas for joint-demonstration are (main sectors targeted):

1. "3D-Printed hybrid components (Metal-CFRP)" (automotive, aerospace and machinery and tooling)
2. "3D-Printed automotive components (mono-material) for large (>2500 mm), medium and small complex parts"
3. "3D-Printed complex parts" (Machinery & Tooling)

4. "Additive-subtractive high precision & high finish production (high-end metals)" (automotive, aerospace, transport, energy, machinery)
5. "3D-Printed customized components for orthosis, exoskeleton and exoprosthesis" (Healthcare)
6. "3D-Printed, mass-customised consumer products" (textile, lighting, decoration, furniture, fashion)

Each joint-demonstration area already regroups regions, demonstration facilities and interested industrial actors. Each area, however, remains open to interested new regions and their actors (clusters, demonstration facilities, SMEs). Likewise, this list of joint-demonstration areas is neither fixed nor limitative: new demonstration areas can be launched once common interest and synergies have been found between regions. Each demonstration area should be so defined that it is specific enough to meet industrial needs and transversal enough help as many as possible companies to deploy or absorb new technologies.

Attached to this agenda and to the invitation you can find a short 'concept note' for each joint-demonstration area.

The **main objective** of the meeting is to help areas progress towards effective launch of cross-regional projects and activities. New regions and regional actors are welcome to join existing demonstration areas (or propose new ones) based on their own interests, capabilities and challenges.

The cases are tested/piloted inter-regionally including the utilisation of a suite of public and private funds and the mobilisation of inter-regional infrastructure focusing on demonstrators. By exploiting inter-regional collaboration for joint-demonstration, the 3DP pilot activities are expected to improve the uptake of advanced 3D printing technologies.

More specifically, the **following specific objectives** will be pursued:

- To provide an update on the scope and the advancement of the cases;
- To present the general/transversal funding opportunities for 2018;
- Based on the specific needs of each case, to further work on the scope and/or partnerships and/or the concrete set up of each case. In this view, parallel matchmaking sessions will be organised for each case.

Agenda

10h00-11h00 Plenary session – Cross cases' lessons and opportunities and Wotify

- Welcome by Flanders, Norte & South-Netherlands
- **Introduction:** objectives, process (5 min) (IDEA)
- Presentation of **Wotify** (5 min) (Wotify)
- Short **presentation of each case** for joint demonstration (20 min) (IDEA)
- Transversal (Pilot) **funding opportunities** for 2018 (30 min) (IDEA)

11h00-13h00 1st set of parallel 'matchmaking' sessions - Further work on cases' developments

Three cases / areas for joint-demonstration (three parallel sessions):

- "3D-Printed hybrid components (Metal-CFRP)" (automotive, aerospace and machinery and tooling) (Case-leader: Luca Tomesani, University Bologna, Emilia-Romagna)
- "3D-Printed customized components for orthosis, exoskeleton and exoprosthesis" (Healthcare) (Case-leader: Alberto Leardini, Istitute Ortopedico Rizzoli, Emilia-Romagna)
- "3D-Printed complex parts" (Machinery & Tooling) (Case-leader: Jacky Lecomte, SIRRIS, Wallonia)

13h00-14h00 Networking Lunch

14h00-16h00 2nd set of parallel 'matchmaking' sessions - Further work on cases' developments

Two - Three cases / areas for joint-demonstration (two - three parallel sessions):

- "3D-Printed automotive components (mono-material) for large (>2500 mm), medium and small complex parts" (Case-leader: Berta Gonzalvo, AITIIP, Aragon)
- "Additive-subtractive high precision & high finish production (high-end metals)" (automotive, aerospace, transport, energy, machinery) (Case Leader: Benjamin Denayer, SIRRIS, Flanders & Bianca Colosimo, Politecnica di Milano, Lombardy)
- ["3D-Printed, mass-customised consumer products – Textiles" (textile, lighting, decoration, furniture, fashion) (Case-leader: Michele Malvestiti, Cofindustria, Lombardy) (to be confirmed)]

Box: Information on the design of each parallel session

Given that needs and opportunities may differ widely from a case to another, the design of each parallel session will be specific to each case. The following objectives could be, among others, pursued:

- Identification of areas of cooperation: domains of application, common challenges and demo activities
- Funding solutions – Proposal's preparation (in case concrete opportunities for some cases)
- Different specific "private" sessions for concrete projects developed within a case
- Etc.

16h00-18h00 Wrap up and Networking Cocktail

Description of 5 demo cases currently under development in the Vanguard 3DP Pilot

Demo-Case 1	3DP - Multi-materials components by hybrid 3D Printing manufacturing
Participating Regions	The leading region is Emilia Romagna. The co-leading regions are Aragon, Norte, Baden Württemberg, Saxony, Lombardy, Rhône-Alpes and Region Orebro Lan.
Description	The demo-case aims at connecting (and upgrading where necessary) existing and complementary innovation facilities in the Regions in order to demonstrate 3DP metals CFRP (Carbon Fibres Reinforced thermoplastics) combinations for different automotive and industrial applications. Applications will extend to graded metal components and mixed structures components. Offered services will be: product/process design, process demonstration and setup, products/process testing.
Contact person	Luca Tomesani (UNIBO), luca.tomesani@unibo.it

Demo-Case 2	Additive-Subtractive Pilot production for high precision components
Participating Regions	Coordinating regions: South Netherlands, Lombardy. Participating regions: Flanders, Wallonia, Trentino, Saxony, Emilia-Romagna, East-Netherlands. Region interested to join: Baden-Wurttemberg.
Description	The aim is to set up a platform of (digitally) networked production hubs to test the production of existing parts via Additive manufacturing (focussing on high-end metal parts). Services will include: 1) material selection and characterization (South Netherlands, Wallonia); Design for AM – topological optimization (South Netherlands, Wallonia); Laser and EBM powder-bed processes (all regions); Directed Energy Deposition (Lombardy); Hybrid systems combining directed energy deposition+subtractive (South Netherlands), process optimization and simulation (Lombardy, Wallonia); Heat treatment (South Netherlands); Quality monitoring and control in-situ and offline (Lombardy); Machining (all). Standards (Wallonia, Lombardy), Training (all).
Contact person	Coen De Graaf (Brainport), coen.de.graaf@hightech.nl and Bianca Maria Colisimo (Polimi), biancamaria.colosimo@polimi.it

Demo-Case 3	3D-Printed automotive components (mono-material) for large (>2500 mm), medium and small complex parts
Participating Regions	Coordinating regions: Aragon, Emilia Romagna (IT), Norte (PT), Baden-Wurttemberg (DE), Lombardy (IT).
Description	The main objective is the application of additive manufacturing technologies in the automotive sector, covering the entire value chain: <ul style="list-style-type: none"> • From vehicle builders, to integrators and component manufacturers. • To carry out additive manufacturing applications in design, prototype, tooling and final product phases, specially oriented to product customizations and short series. • Involving the main players in the automotive sector to start applications in the lines described. • To include several KET`s and to integrate them with additive manufacturing technologies to increase the added value to the products.

	<ul style="list-style-type: none"> To enable the application of additive manufacturing to market gaps, such as large parts production, including metal and non-metal materials. Targeted sectors are Automotive, aeronautics, shipbuilding, railway, construction.
Contact person	Berta Gonzalvo (AITIIP), berta.gonzalvo@aitiip.com and Jose Antonio Dieste (AITIIP), joseantonio.dieste@aitiip.com .

Demo-Case 4	Machinery, Tooling and Complex Shapes
Participating Regions	Coordinating regions: Wallonia (orga: SIRRIS), Lombardy, Aragon, Catalonia, Norte, Tampere, Rhone-Alpes, South Netherlands.
Description	<p>The aim is to set up a demonstration platform to help SME's overcome the entrance barriers to additive manufacturing with a minimum of risks. A European network of experience, competences and resources covering all aspects of AM, from redesign to pre-production, supports with tangible facts technical and economical validation on real life applications.</p> <p>The platform is focused on mature AM technologies implementation and is close to industrial expectations and requirements. It is a demonstration platform dealing with SME's problems and likely to generate R&D requirements based on industrial requests, but its main scope is to demonstrate usefulness of sofa technologies.</p>
Contact person	Jacky Lecomte (SIRRIS), Jacky.Lecomte@sirris.be .

Demo-Case 5	Healthcare case : testing and certification guide for medical devices
Participating Regions	Coordinating regions: Emilia Romagna (orga: Istituto Ortopedico Rizzoli), Saxony (DE), Wallonia (BE), Nordrhein-Westfalen (DE), East Netherlands (NL). + Industrial Companies: CRP (IT), Materialise (BE), Antleron (BE).
Description	<p>The new regulation of medical devices at EU level (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2017:117:FULL&from=EN) does not include precise certification procedures for tests and corresponding concrete thresholds. In this context, it is important to develop a guide that would identify certification procedures (e.g. Mechanical test to be performed to validate the solidity of the material? Biological risks/conditions? Material for joint orthotics? Etc.). Gathering of cross regional information and expertise could help speed up market deployment through the elaboration of a 'certification/testing guide'.</p> <p>In 'Phase 1', the demo case aims at developing a 'certification/testing guide', elaborated from specific selected applications and pre-identified human segments and joints, which is aimed at facilitating the market uptake of relevant 3DP medical devices. The aim would be to suggest a list of procedures (tests, etc.) that would complement and concretize the EU regulation for medical devices. This will facilitate products to be deployed on the markets. This work would focus in parallel on the following two applications:</p> <ul style="list-style-type: none"> Orthotics: foot and ankle orthosis, lower hand and arm; Internal implants and joint reconstructions: total ankle replacement, general orthopaedic implants (also cranial and maxillo-facial), and bones reconstruction. <p>In a possible 'Phase 2', focus on actual product/technologies' developments can be raised by a number of participants. At this stage therefore, it is envisaged the development of such new products/technologies and the design and test of these, exactly based on the work conducted in 'Phase 1' ('certification/testing guide' and relevant thresholds, etc.).</p>
Contact person	Contact person: Alberto leardini (DPhil – Istituto Ortopedico Rizzoli, Bologna), leardini@ior.it



Here: to be seen if Case 6 still to be included (textile)