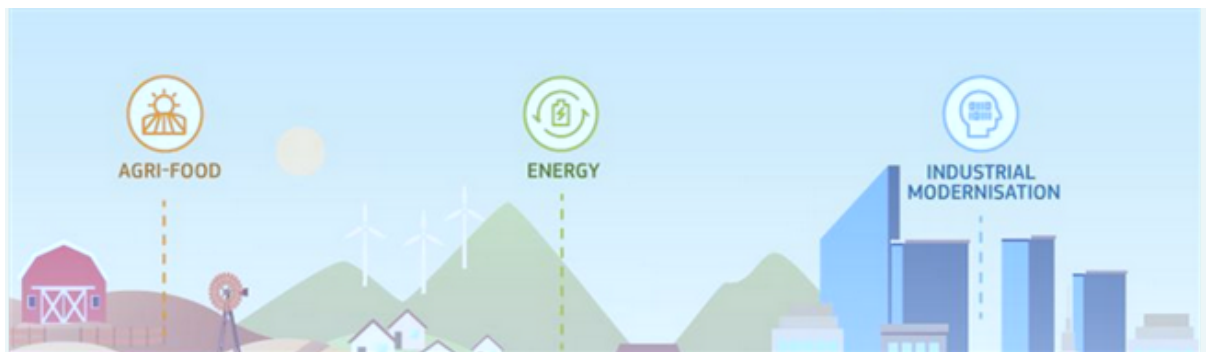


Thematic Smart Specialisation Platforms Monitoring Progress Report

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

New nano-enabled Products

*** Start date of your partnership**

January 2018

*** Partnership's webpage**<https://s3platform.jrc.ec.europa.eu/new-nano-enabled-products>

I. Management report

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

The New Nano-Enabled Products Pilot project (Nano Pilot) aims to connect regions in order to build an industrial ecosystem in nanotechnology and to create pilot production facilities for products based on nanomaterials. The Nano Pilot is promoted by Vanguard Initiative; this latter is a network of European regions politically committed to support the wider application and visibility of smart specialisation principles with the aim of boosting EU competitiveness and to revitalise European industrial growth.

The Nano Pilot's key objective is to boost the existing inter-regional value chains as well as create new ones to bring micro and nanotechnology-enabled products or manufacturing processes successfully into the market. In doing so, valuable connections between science and industry can be created or strengthened. The potential market opportunity of micro technologies (e.g. microfluidics, microelectronics) is huge and since these technologies are often applied in combination with nano-enabled products, the pilot will admit and support demo-case collaborations and projects in this field.

Based on this rationale, the pilot project aims to develop concrete joint demonstration cases in which regional innovation ecosystems can intensify collaboration.

The primary objectives of the pilot are:

1. Inspire and encourage policy makers to design and implement innovation strategies (e.g. RIS3) and operational programmes able to support inter-regional collaborations in the field of micro and nanotechnology-enabled products.
2. Develop concrete demonstration cases according to the TSSP four-step methodology (LCDU) in the field of micro and nano-enabled products.
3. Create synergies with other S3 Thematic Areas

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

Skåne (SE)
Emilia-Romagna (ITH5)

*** 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*

Auvergne-Rhône-Alpes (FR), FRK
Baden-Württemberg (DE), DE1
East Netherlands (NL) NL2
Flanders (BE) BE2
Navarra (ES)
North Rhine-Westphalia (DE)
South Netherlands (NL) NL4
Tampere (FI)
Wallonia (BE) BE3

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

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

	Working area	Region in charge	Involved regions	Other actors
1	Nanowires for ICT, Energy and Sensors Applications	Skåne (SE)	South Netherlands (NL) NL4 Emilia-Romagna (ITH5) North Rhine-Westphalia (DE)	RI.SE - Skane (Sweden) University of Bologna (Italy)
2	Nano-enabled Microsystems for Bioanalysis (NeMs4Bio)	Flanders (BE) BE2	Oost-Nederland (NL2) Emilia-Romagna (ITH5)	IMEC - Flanders (Belgium)
3	Printed Electronics on metallic 3D objects (Shapetronics)	Wallonia (BE) BE3	Navarra	CRM Group - Wallonia NAITEC - Navarra
4	Flip-Chip assembly for Indium Phosphide PICs chip	East Netherlands (NL) NL2		CITC
5	MEMS for nano-analytiX	Emilia-Romagna (ITH5)		CNR-IMM
6	Structural health on composite materials	Navarra		NAITEC
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8				
9				
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Please provide information regarding past meetings, workshops and dissemination activities (six months prior to filling out the survey)

	Event	Date	Place	Any other information
1	Annual Plenary Meeting	13 November	Virtual	The presentations shared during the meeting are available at this link: https://bit.ly/plenarymeetingpresentations .
2	NeMs4Bio Regional workshop	14 August	East Netherlands	explorative workshop for partners in East Netherlands and Flanders was organised on 14th of August. The objective of the meeting was to discuss various concepts for R&D activities in order to develop a platform using standardized solutions. Several advantages of the NeMs4Bio platform, such as access to standardized building blocks, cost-efficient and rapid customizations, improved scalability, etc. were discussed. Next, all participants were invited to present their organization and relevant initiatives. This session was followed by a brainstorm session

3	NeMs4Bio multi-regional workshop	20 October	Virtual	<p>the objective to discuss a new standardized platform aiming to simplify the development trajectories for nano-enabled bio-sensor modules by offering a portfolio of standardized microfluidic and -electronic building blocks that allow for engineering on demand into tailored applications. During the workshop, several advantages of the NeMs4Bio platform, such as access to standardized building blocks, cost-efficient and rapid customizations, improved scalability, etc. were discussed. All participants were invited to present their organization and relevant initiatives, followed by a brainstorm session where several statements were presented to the participants.</p>
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4	Nanowires for ICT and Energy applications workshop	9 October	Virtual	a workshop has been organised with the aim to identify partners that can address the challenges associated with III-V (GaN) nanowire-enhanced material for high power electronics through concrete collaboration projects. During the workshop, the identified challenges such as substrate, lithography, etching or characterization challenges were discussed.
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Please provide information regarding planned future meetings, workshops and dissemination activities

	Event	Date	Place	Any other information
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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)

The Nano Pilot has allowed regional actors active in the micro- and nanotechnology to identify new collaboration opportunities.

The NeMs4Bio demo-case aims to increase the usability of automated fluidic bio sample analysis in low-to-medium volume markets by making it more accessible to innovative SMEs by reducing time from idea-to-product. The demo case aims to drive the development of integration technologies, by leveraging component technologies and contributing to standardization. This demo-case is led by the Flemish institute IMEC and East Netherlands.

A first explorative workshop for partners in East Netherlands and Flanders has been organised on 14th of August. The objective of the meeting was to discuss various concepts for R&D activities in order to develop a platform using standardized solutions. Several advantages of the NeMs4Bio platform, such as access to standardized building blocks, cost-efficient and rapid customizations, improved scalability, etc. were discussed. Next, all participants were invited to present their organization and relevant initiatives.

A second workshop was organised on the 20th of October with the objective to discuss a new standardized platform aiming to simplify the development trajectories for nano-enabled bio-sensor modules by offering a portfolio of standardized microfluidic and -electronic building blocks that allow for engineering on demand into tailored applications. During the workshop, several advantages of the NeMs4Bio platform, such as access to standardized building blocks, cost-efficient and rapid customizations, improved scalability, etc. were discussed. All participants were invited to present their organization and relevant initiatives, followed by a brainstorm session where several statements were presented to the participants.

Following the input received during the workshop, several specific application cases for the NeMs4Bio platform, such as High-content cell cytometric analysis, bio-availability studies based on a gut-on-a-chip platform, patient-specific therapies using personalized patient cartridge, etc. have been developed.

The nanowires demo-case brings together expertise surrounding nanowire technologies aiming to promote a cross-regional collaboration platform to stimulate the market uptake of nanowires and related nanoscale structures for innovations in materials, sensors and components in the ICT and Energy domains. It is led by Skane Region.

The demo case has identified several challenges they are facing related to substrate, lithography, etching and characterization in the area of III-V (GaN) Nanowire-enhanced materials for high power electronics. These challenges are associated with establishing a new European Innovation Infrastructure (ProNano) as a pan-European pilot manufacturing facility for nano-enabled products. On 9 October 2020, a workshop has been organised with the aim to identify partners that can address the challenges associated with III-V (GaN) nanowire-enhanced material for high power electronics through concrete collaboration projects. During the workshop, the identified challenges such as substrate, lithography, etching or characterization challenges were discussed (see also Annex VIII with the minutes of this meeting). Following the workshop, several bilateral meetings have been organised.

The demo-case on Nano-Enabled Printed Electronics Shapetronics is working on the development of technologies to integrate functionally printed structures directly onto 3D objects. This demo case is led by Wallonia. The project aims to develop a technology platform dedicated to benchmarking and exploring new printed fabrication process (subtractive and additive methods) to integrate electronics on large area curved objects. Interested partners with complementary technological capabilities have been identified in various regions, allowing to further expand the technology platform and demonstrate its applicability for various industries like automotive, aerospace, oil & gas. A concept note has been developed and bilateral meetings were organised. As a result, the Shapetronics business case now presents a platform of structural and conformal electronic solutions, that can operate in severe environments.

Additional progress have been made with the new pilot projects.

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

The Nano pilot expects to identify several use cases to foster the deployment of nanotechnology.

Inter-regional and inter-partnership collaborative results

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

The Vanguard Nano pilot benefits from regular exchanges with other Vanguard Initiative pilots, the broad network of the Vanguard Initiative and other regional activities.

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)

During the NeMs4Bio workshops and the Nanowires workshop, several business were present and actively engaged in the discussions.

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

The demo cases of the Nano pilot have a strong potential to create socio-economic impacts.

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

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

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

The Nano Pilot wrote an article in NanoFabNet to promote the pilot.
The Nano Pilot participated to the Nano Innovation conference, that has taken place from 15 to 18 September 2020.

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

Collaboration with other Vanguard Initiative activities






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

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

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

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable

Goal 1. End poverty in all its forms everywhere						
Goal 2. End hunger, achieve food security and improved nutrition & promote sustainable agriculture						
Goal 3. Ensure healthy lives & promote well-being for all at all ages						
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all						
Goal 5. Achieve gender equality & empower all women and girls						
Goal 6. Ensure availability and sustainable management of water and sanitation for all						
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all						
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment & decent work for all						
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation & foster innovation						
Goal 10. Reduce inequality within and among countries						
Goal 11. Make cities & human settlements inclusive, safe, resilient and sustainable						
Goal 12. Ensure sustainable consumption & production patterns						
Goal 13. Take urgent action to combat climate change and its impacts						

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