

Smart Specialisation Platform for Industrial Modernisation

Thematic Partnership

Photonics

Start Date (September 2017)

MONITORING PROGRESS REPORT

Reporting Period: from (September 2017) to June 2018

This Report is presented to the relevant Working/Steering Committee.
It contains three parts:

- I. Management Report prepared by the Lead Region(s)***
- II. Progress Report prepared by the Lead Region(s)***
- III. Previous versions of the Progress Report; i.e., part II of past reporting periods***

The report is a “cumulative” report, i.e. it is updated annually and covers the entire period of the Partnership.

Confidentiality: the documents will be made available to the public via the Partnership's web page except for chapter *II.E. Self evaluation*.

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

Executive summary (max. 250 words):

Formed in September 2017, the European Photonics Alliance is an active network of European Digital Innovation Hubs and clusters. Each member has deep domain knowledge of light-based technologies, often termed “photonics”. This is one of the 6 key-enabling technologies defined by the European Commission in Horizon2020. The 23 regions listed in this document have identified Photonics as one of their Research and Innovation Strategies for Smart Specialisation.

Our goal is to accelerate wider use of photonic technologies across Europe between now and 2030. The Alliance achieves this by amplifying existing inter-regional initiatives and, when needed, kick-starting new ones. Our focus is on building projects with inter-regional collaboration. Five members of the Alliance are also active partners in the EPRISE project which is organising successful outreach workshops on a local and national level.

It will require volume manufacture for this continent to remain a global player in an era of Zettabyte communications and 50 billion IoT devices.

To achieve this, are building a formal alliance of European regional clusters with significant activities in photonics. Each have gained support from their respective regional governments for the coming 3 years. The initial focus on activities would be on optimizing the use of existing infrastructure in the regional clusters by sharing these expensive, specialist resources. We have also started to map current research programs across the continent to make sure they attain optimum benefit from each other and duplication is avoided.

Growing importance of Photonics Technologies for Other Industries

Photonics is having a knock-on effect in different sectors of society, including healthcare (needle-free testing for diseases), secure 5G communications, Quantum computing, self-driving vehicles (LIDAR in built up space), food safety tests for pathogens as well as environment monitoring both on earth and from space. It's becoming clearer that light-based technologies are the key to building smaller, cheaper, faster devices to solve a lot of these grand societal challenges.

Because of the complex nature of these (nano)technologies, Europe needs an inter-regional collaborative approach if it wants to scale up Photonics companies. The partners want to maintain their lead in the development of Photonic Integrated Chips. Scaling up to volume manufacture of chips and products are important for a financially, socially and environmentally sustainable industry.

Five members of the Alliance are also active partners in the EPRISE project which is organising successful outreach workshops on a local and national level.

I. Management Report prepared by the Thematic Platform/Lead Region(s)

I.A. Partnership Action Fact Sheet

• **Partnership** *Photonics*

- **Partnership's web-page:** <http://www.europeanphotonicsalliance.eu/>.

• **S3 Thematic Platform** *Industrial Modernisation*

• **Objectives:** *Our goal is to accelerate wider use of photonic technologies across Europe between now and 2030. The Alliance achieves this by amplifying existing inter-regional initiatives and, when needed, kick-starting new ones. Our focus is on building projects with inter-regional collaboration. ...*

• **Lead Region(s):** *list of regions/countries*

<i>South Netherlands.</i>

• **Other partner regions:** *list of regions/countries*

<i>Berlin (DE)</i>	<i>PACA (FR)</i>	<i>Styria (AU)</i>
<i>Bretagne (FR).</i>	<i>East Netherlands (NL).</i>	<i>Baden-Württemberg (DE).</i>
<i>Lubelskie (PL).</i>	<i>Thüringen (DE).</i>	<i>Flanders (BE).</i>
<i>Mazowieckie (PL).</i>	<i>Brittany (FR).</i>	<i>Catalonia (ES).</i>
<i>North Karelia (FI).</i>	<i>Dublin (IR)</i>	<i>Cork Region (IR).</i>
<i>North-Rhine Westphalia (DE)</i>	<i>Stockholm area (SE).</i>	<i>Östergötlands (SE).</i>

• **Intentions to join:** *list of regions/countries*

(Please list here all other regions that have expressed their interest to join the partnership)

• **Other participants (other than regions):** *(Institution Name, Country, Town)*

(Please list here all other (non-region) participants (clusters, etc.)

<p>Representative of Lead Region 1: <i>(name, institution, address, phone, e-mail)</i> <i>Ewit Roos, PhotonDelta, South-Netherlands,</i> <i>ewit@photondelta.eu</i></p>	<p>Representative of Lead Region 2 <i>(if applicable): (name, institution, address, phone, e-mail)</i> <i>Please enter here...</i></p>
<p>European Commission Coordinator: <i>(name, e-mail)</i> <i>Fatime Barbara Hegyi, fatime-barbara.hegyi@ec.europa.eu</i></p>	<p><i>Any other relevant information:</i> <i>Please enter here...</i></p>

I.B. Thematic Working Areas

- **Thematic Working Areas** *(if any, please list of WAs, region(s) in charge of it, names and affiliations of involved regional/national authorities, and other actors)*

<i>Working Area</i>	<i>Region in Charge</i>	<i>Involved regions</i>	<i>Other actors</i>
<i>Photonic Integrated circuits (PICs).</i>	<i>South Netherlands, East Netherlands, Berlin e</i>	<i>Attica, Bretagne, Stockholm, Thuringia</i>	<i>Other actors</i>
<i>Sensing, Measuring and Imaging.</i>	<i>PACA, Mazovia, North Karelia and Thuringia</i>	<i>Attica, Berlin, Bretagne, North Karelia, East Netherlands, Stockholms</i>	
<i>Optical Fibres for Industry.</i>	<i>BRETAGNE, MAZOVIA AND Lublin</i>	<i>Attica, East Netherlands, Stockholm, Thuringia</i>	<i>Other actors</i>

Pilot Facility for Photonics-based Manufacturing.	North-Rhine Westphalia	Attica, Bretagne, North Karelia, East Netherlands, Stockholm, Thuringia	Other actors
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I.C. Overview of past activities (past six months, the 1st half of 2018)

Past Meetings

Title	Date	Place
Meeting to finalise the Scoping paper	8-9 January, 2018.	Sevilla, Spain.
Meeting Working Area 2.	11 June 2018	Stockholm, Sweden.
Digital Innovation Hubs I meeting.	22 January 2018.	Brussels .
We have also taken active part in discussions around the www.photonics21.org vision paper.		

Past Workshops

Title	Date	Place
Photonics Meets Semiconductors	February 4th	Nijmegen, Netherlands..
Photonics Meets Robotics..	May 16/17/18 2018..	Linz, Austria
We have taken an active part in workshops organised by EPIC in Karlsruhe, Amsterdam and Leuven		

Past Dissemination Activities

Title	Date	Place
tbd	tbd	tbd
tbd	tbd	tbd
These have not yet started		

I.C. Overview of future activities (the next 6 months – the 2nd half of 2018)

Future Meetings

Title	Date	Place
Meeting to coordinate mapping and pilot programs..	16 October 2018.	Berlin, Germany.
Outreach to agri-food sector together with photonics21.org .	September 2018.	Wageningen, Netherlands.

Future Workshops

Title	Date	Place
Medical Sensors.	to be determined..	Amsterdam Cancer Institute.
Space technologies	to be determined.	Noordwijk

Future Dissemination Activities

Title	Date	Place
tbd	tbd	tbd
tbd	tbd	tbd

II. Progress Report prepared by the Lead Region(s) of the partnership, describing **results achieved during this period**, in no more than 3 pages (the report is “cumulative”). All items listed in Sections A, B, and C, below, must be addressed.

Additional documentation such as extended technical reports and/or proceedings of workshops may be provided separately as an annex to this report (and should be referenced in the report).

II.A. Innovative results

- Innovative results and achievements that could be attributed to the Partnership. (Specific examples of Results vs. Objectives)

We have created 2 pilot inter-regional projects. These are now being evaluated

PhotonDelta organised the World Technology Mapping Forum June 20-22nd 2018. The report on activities is comprehensive but only available on line. www.worldtechnologymappingforum.org

We are examining completed projects such as <http://www.inspect2020.eu/> to see whether other parties in the alliance can take the project to a commercial stage.

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

The project impacts on society are also being assessed in each of the pilot projects.

II.B. Inter-regional and inter-partnership collaborative results

- Additional results obtained from working *with other partnerships* under the thematic S3 Platforms. (Specific examples)

Active reachout to Smart Agriculture, Smart Cities(5G) and Medical Sensors has started.

- Evaluation of the involvement of relevant business sector (clusters, SMEs, business associations, chambers of commerce, etcetera) in the Partnership activities. (Specific examples)

tbd

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

tbd

II.C. 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.*

The scoping paper is a living document. Currently in its 3rd revision, it is available for all interested regions.

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

Members of the EPA work closely with the AIM Photonics Academy(Boston) to develop the first Integrated Photonics Systems Roadmap. It is due to be published in Spring 2019.

- Advancement and promotion of the Partnership through publications and other communication/outreach activities. *(Number of outreach activities that resulted from the Partnership. A complete list with references and web-links should be given in an annex)*

This is currently under construction. We video and produce material from all workshops. We will publish this under the European Photonics Alliance in the same format as developed for the World Technology Mapping Forum. Here is a link to an example <http://pub.h2magazine.nl/wtmf18#!/proceedings>

- Activities and projects with partnerships working under other S3 Thematic Platforms (*Agri-Food, Energy and Industrial Modernisation*).

We are actively discussing with colleagues in Smart Food hubs.

II.D. 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 Agenda¹, 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?

Your Partnership and Sustainable Development Goals						
Goals to which your partnership (can) contribute:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not applicable
Goal 1. End poverty in all its forms everywhere	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 2. End hunger , achieve food security and improved nutrition & promote sustainable agriculture	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 3. Ensure healthy lives & promote well-being for all at all ages	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 5. Achieve gender equality & empower all women and girls	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 6. Ensure availability and sustainable management of water and sanitation for all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 8. Promote sustained, inclusive and sustainable economic growth , full and productive employment & decent work for all	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 9. Build resilient infrastructure , promote inclusive and sustainable industrialisation & foster innovation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 10. Reduce inequality within and among countries	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 11. Make cities & human settlements inclusive, safe, resilient and sustainable	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 12. Ensure sustainable consumption & production patterns	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 13. Take urgent action to combat climate change and its impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 14. Conserve and sustainably use the oceans, seas & marine resources for sustainable development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goal 17. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), adopted by the United Nations (UN) in September 2015, gave a new impetus to efforts to achieve sustainable development.