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Deliverable 2.2

Report on the first EU photonics cluster meeting

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CO	Confidential, only for members of the consortium (including the Commission Services)	



INDEX

1. Introduction/background	3
2. Photonics Cluster Meeting	3
2.1 Objective of the meeting	3
2.2 Organisation	5
2.3 Target groups	6
2.4 Meeting description	6
2.4.1 Introduction & presentation of RespiceSME	6
2.4.2 The perspective from the Photonics Unit and Photonics strategy in H2020	7
2.4.3 Best Practices in helping SME's through EU programs	7
2.4.4 Presentation of RespiceSME tools	7
2.4.5 World Café - Interactive Sessions	11
2.5 Outcomes	13
2.6 List of annexes	Fehler! Textmarke nicht definiert.



1. Introduction/background

The objective of the RespiceSME project is to reinforce the innovative capacity of Europe's photonics Small and Medium Enterprises (SMEs), clusters and national platforms by stimulating targeted collaborations in and beyond photonics. The following deliverable reports on the first EU photonics cluster meeting.

The main objective of the Work Package (WP) 2 is to create broader technological applications and innovations of photonics throughout different sectors of strength in Europe. Activities in WP2 will target the photonics sector and its potential to significantly leverage non-photonics sectors such as Environment / Energy, Health, Transport and Manufacturing –thereby enabling the penetration of new markets and / or new application areas close to markets.

Task 2.2 focuses on organising Photonics Cluster and National Platform Meetings. This task identifies the potential for new business opportunities between EU regions within the photonics sector. Two European photonics cluster & platform meetings will be organised within the project in order to further strengthen cluster collaboration and networking. Following the workshops organised within the EU project ASPICE in Paris, during the OPTO show in 2012 and 2013, there was consensus that such gatherings of photonics cluster managers help establishing new and maintaining existent contacts and collaborative projects. In this framework, RespiceSME continued this tradition and gathered all photonics cluster representatives in order to exchange best practices of cluster collaboration and innovation development in their countries.

The first *Photonics Clusters Meeting* was organised and held on October 12th, 2016 at the MICROPHOTONICS exhibition in Berlin, Germany. Its aim was to reinforce connections within the photonics community.

2. Photonics Cluster Meeting

During the first edition of the photonics cluster meeting significant planning and organising tasks took place in order to identify, highlight and obtain the desired outcomes for both, the RespiceSME team and the workshop attendees. The choice for the fair "micro photonics" was motivated by the opportunity to attract as many photonics cluster managers as possible and to broadly disseminate the project's results, while at the same time establishing effective networks.

2.1 Objective of the meeting

During the meeting, the first objective was to present the first version of the new tools developed within the project RespiceSME to the community of European Photonic Clusters.

To generate a higher impact of the event and take advantage of the valuable feedback from the participants, the consortium organised an interactive session after the format "World Café" on best practices of helping SMEs to address non-photonics value chains. During the World Café, attendees were asked to identify the innovation potential of Photonics SMEs operating in non-photonics market sectors such as Environment / Energy, Transport, and Manufacturing. Mapping possible opportunities contributed to determine players at different levels of the value chain, and possible gaps in the chain.





Attendees discussing the potential of Photonics SMEs expanding their business to non-photonics market sectors.

As a whole, the cluster meeting focused on:

- ❖ Strengthening the collaboration and networking among photonics clusters and experts
- ❖ Building a platform for exchange of Best Practices of cluster collaboration and innovation development in the participants' regions and countries.
- ❖ Getting insight into the tools developed within the project which aim at enhancing the innovation potential of photonics SMEs
- ❖ Generating and discussing new business models to get solutions to market
- ❖ Enhancing market entry for innovative photonics technologies, processes and services

Agenda

09:00	Arrival of participants	
09:30	Welcome Speech & Presentation of European Project RespiceSME	Samantha Michaux , Steinbeis-Europa-Zentrum Project Coordinator of RespiceSME
09:45	The Photonics strategy in Horizon2020	Bart Van Caenegem Scientific Project Officer DG for Communications Networks, Content and Technology
10:00	<u>Best Practices</u> : a French Success Story of internationalisation	Ziga Valic , Pôle Optitec - Gold Label of the European Cluster Excellence Initiative (ECEI)
10:15	Presentation of RespiceSME's tools: <u>1. Innovation Audit – First feedback of SMEs</u>	
	<ul style="list-style-type: none"> • Analysis of Potential Innovation Index • Analysis of the access of SMEs to 	Linas Eriksonas , LITEK Mary Konstantaki , FORTH

RTOs

2. Value Chain Analysis Tool – 1st Case **Gerard O'Connor, NUI Galway**
Study and tool demonstration **Ian McCabe, NUI Galway**

11:15 World Café - Interactive Session Moderation:
Identifying the innovation potential of Photonics SMEs operating in non-photonics market sectors **Samantha Michaux, Frederik Metzger**
 Steinbeis-Europa-Zentrum

12:30 Conclusions & Final Discussion

13:00 Lunch & Networking

2.2 Organisation

The organisation of the meeting started with defining the location, initial structure and content of the workshop. Although the meeting was initially planned to take place in Paris, the consortium decided to move it to Berlin in October 2016, as by then, the advanced development of the different tools allowed presenting significant results to the photonics clusters community. The consortium decided to host the event at the “Micro photonics” exhibition in Berlin with regard to the opportunity of attracting photonics cluster representatives, already present at the show.

With help from all consortium members, follow-up calls were made to promote and disseminate the event in the European photonics community after sending official invitations per mail. This allowed more direct interaction with Europe’s cluster practitioners, as well as the possibility to better explain the project’s objectives. Finally, **29 people** participated at the Photonics Cluster meeting.

Participant list:

Title	Family name(s)	First name(s)	Organisation	Country
Dr.	Hontzopoulos	Elias	H-Phos, Hellenic Photonics Cluster	Greece
Mr.	Valic	Ziga	OPTITEC	France
Mr.	Purmonen	Juha	Photonics Finland	Finland
Prof.	Hofmann	Dietrich	SpectroNet c/o Technologie- und Innovationspark Jena GmbH	Germany
Mr.	Dittrich	Paul-Gerald	SpectroNet c/o Technologie- und Innovationspark Jena GmbH	Germany
Drs.	Roos	Ewit	PhotonDelta	The Netherlands
Mr.	Fritz	Helmut	FDS Dosimetriesysteme	Germany
Mr.	Soares	Francisco	Fraunhofer HHI	Germany
Mr.	Lee	Carlos	EPIC	Belgium
Mr.	Fonjallaz	Pierre-Yves	PhotonicSweden	Sweden
Mrs.	Bindig	Petra	PhotonicSweden	Sweden
Mrs.	Michaux	Samantha	Steinbeis-Europa-Zentrum	Germany
Mr.	Metzger	Frederik	Steinbeis-Europa-Zentrum	Germany

Mr.	Eriksonas	Linus	LITEK	Lituania
Mr.	Pauzolis	Julius	LITEK	Lituania
Mr.	Gedda	Karl	Opticsvalley	France
Mr.	Stefanut	Paul	Opticsvalley	France
Mrs.	Jones	Louise	KTN	Great Britain
Mrs.	Konstantaki	Mary	FORTH	Greece
Mr.	Pissadakis	Stavros	FORTH	Greece
Mr.	Mc Cabe	Ian	NUI Galway	Ireland
Mr.	O'Connor	Gerard	NUI Galway	Ireland
Mr.	Saez	Sergio	SECPhO	Spain
Mr.	Schindler	Klaus	Optecnet Deutschland e.V.	Germany
Mr.	Verst	Johannes	Optecnet Deutschland e.V.	Germany
Mr.	Trog	Ulrich	Photonics Austria	Austria
Mr.	van Caenegem	Bart	European Commission	Belgium

2.3 Target groups

The main target group of the meeting were cluster managers from photonics clusters, since the main output of this project is to provide them with toolkit/tools to support their SMEs in their business development. This group of cluster managers (almost 40 from throughout the EU) was invited to use and disseminate the tools of RespiceSME project in order to give strategic support to their SMEs in strengthening their innovation potential with regard to the value chains focused in the project.

The Photonics Unit of the European Commission, represented by the Project Officer of the project, was also invited to demonstrate how the consortium addressed/tackled the project goals.

2.4 Meeting description

2.4.1 Introduction & presentation of RespiceSME

The meeting started with a presentation of the project, launched 9 months ago, by Samantha Michaux, RespiceSME's project coordinator. The premises of RespiceSME have been presented focusing on helping photonic SMEs from 3 dimensions or perspectives:

1. Enabling the innovation potential of high-tech photonics SMEs
2. Stimulating business collaborations in and beyond photonics
3. Strengthening innovation capacities for value creation in SMEs

The idea is to use the cluster support service as a platform, implementing new tools and organising events, workshops, individual consultancy & follow-up.

S2i emphasized that the outputs generated within the project will be available to the whole community of photonic clusters. In detail, the expected outcomes of the project are:

- Reinforced innovation effectiveness of cluster networks in particular towards SMEs
- Value creation for SMEs in terms of number of business collaborations stimulated, penetration of new markets and/or new application areas close to market



- Successful exploitation of Best Practices in and beyond photonics

2.4.2 The perspective from the Photonics Unit and Photonics strategy in H2020

Mr. Bart Van Caenegem, *Scientific Project Officer from the DG for Communications Networks, Content and Technology*, gave feedback on the project's progress and presented the current Photonics strategy in Horizon2020.

Mr. Van Caenegem underlined the importance of the PPP as an instrument to accelerate the product development process, from laboratories to factories. Furthermore, he informed the consortium about the new initiative on creating Digital Innovation Hubs (IHL) in different European regions. Finally, Mr. Van Caenegem gave an overview of the various ongoing CSA Initiatives concluding that it is very important to distribute the results of RespiceSME among other CSA's.

At the end of the presentation, he invited the consortium to participate in the next Photonics PPP Annual Meeting 2017 which will take place in Brussels, 28-29 March 2017.

2.4.3 Best Practices in helping SME's through EU programs

Ziga Valic, International Project Manager of Pôle Optitec (Gold Label by the European Cluster Excellence Initiative), presented good practices in internationalization of SMEs, referring to his experience in helping photonic SMEs to become more involved in European programs.

Optitec's services for SMEs include:

- Customised monitoring & analysis of European funding opportunities (Horizon 2020, COSME, Eurostars...);
- Support by specialised consultants during the preparation of project application;
- Information dissemination: one monthly newsletter and customised e-mail notifications;
- Thematic workshops;
- Facilitating consortia and partner search;
- Representing members' interest at the European institutions, various stakeholder organisations and European partners.

After 2 years, the results obtained were:

- 21 companies participating;
- 10 European projects submitted;
- 5 projects selected in total:
 - 3 projects selected in SME Instrument Phase 1 (each 50k€)
 - 1 project Phase 2 (654k€)
 - 1 project Clean Sky (108€);
- Consolidated relationships with Region(s) and European partners, facilitating synergies between H2020 and ESIF funds.

2.4.4 Presentation of RespiceSME tools

The presentation of the tools generated in the RespiceSME project was divided into 3 blocks:



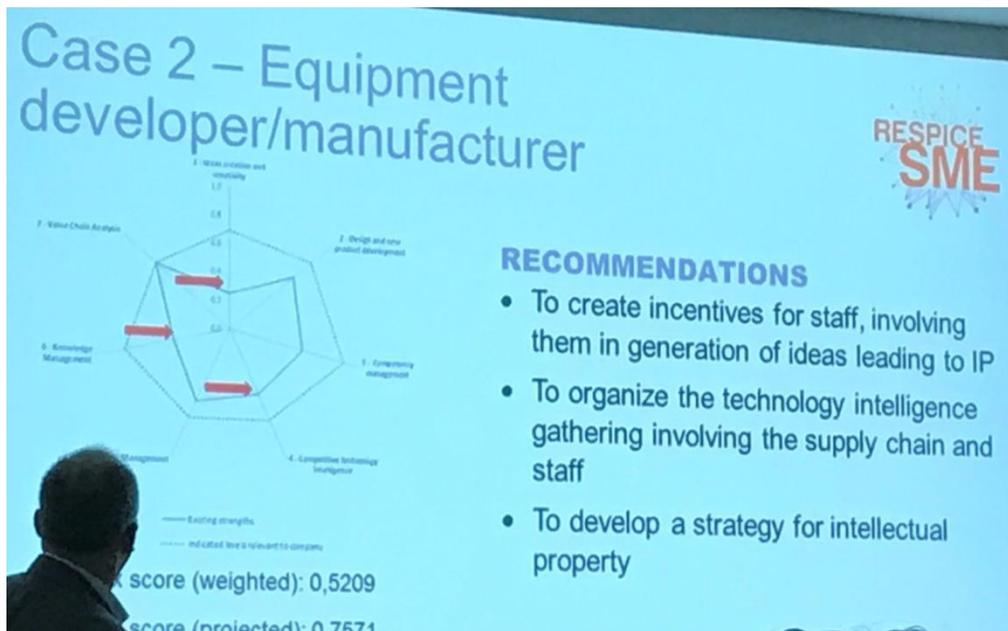
1. Analysis of Potential Innovation Index (PII)

Linus Eriksonas, from Partner LITEK (Lithuania) presented the strengths of the PII; a tool featuring 3 case studies from 3 innovation audits carried out by LITEK with 3 SMEs. The idea was to assess and analyse the innovation potential of each SMEs in order to provide them:

- An insight about the innovation potential of the company – how innovative is my company?
- A clear overview of the innovation processes on-going at all company levels – are innovation processes initiated at all company levels, or are there some discrepancies?
- Awareness of the company's Strengths and Weaknesses– SWOT-Analysis
- A definition of new strategic objectives for further business development – How can the company optimize its businesses by defining new objectives?
- Concrete recommendations for actions – what are the next steps to optimize my business? / Which measures should my company implement?

LITEK pointed out that the audit results could serve as a report for the SMEs to use during their board of directors meeting, supporting the discussion of new strategical decisions.





2. Analysis of the access of SMEs to RTOs

Mary Konstantaki from Partner FORTH (Greece) presented the methodology for enabling access of SMEs to RTOs and a tool to map European RTOs.

The RespiceSME approach focuses on:

- Developing a detailed database of European RTOs, including information on fields of activities within photonics and competences per RTO
- Collecting information from SMEs on their experiences and future needs
- Assisting individual SMEs to select and gain access to the RTO, best suited for their business' purposes
- Identifying good practices on SME - RTOs collaboration
- Contacting high-achieving RTOs and analysing their structure and practice in detail
- Developing a methodology enabling access to RTOs that is specifically tailored to Photonics SMEs

FORTH, with the help of the other clusters in the project consortium has developed a database with over 450 entries across 9 countries.

The map displays each RTOs contact data and its capabilities related to:

- Field of activity within photonics: Advanced Manufacturing, Automotive & Aerospace, Emerging & Advanced Lighting, Energy & Environment, Information & Communication, Life Sciences & Health, Security, Metrology & Sensors, Visualization & Displays
- Targeted application sectors: Energy/ Environment, Transport, Manufacturing

Moreover, in order to assess the access of SMEs to RTOs, a questionnaire has been prepared with 23 questions that draw attention on the connection between the SMEs and RTOs. This assessment should support the development of a methodology to provide a better and lighter access to RTOs infrastructures.

3. Value Chain Analysis Tool - 1st Case Study and demonstration tool.

Gerard O'Connor from Partner NUI Galway gave an introduction into the methodology for Analysing Value Chains & Innovation Potential of SMEs.



Conducting a Value Chain analysis is of high importance for the SMEs success since:

- Enterprises with highly differentiated & unique value chains are most competitive.
- Value chains provide the framework in which sustainable collaborations and partnerships can be assessed and developed.
- Gaps & opportunities in value chains can be rapidly identified

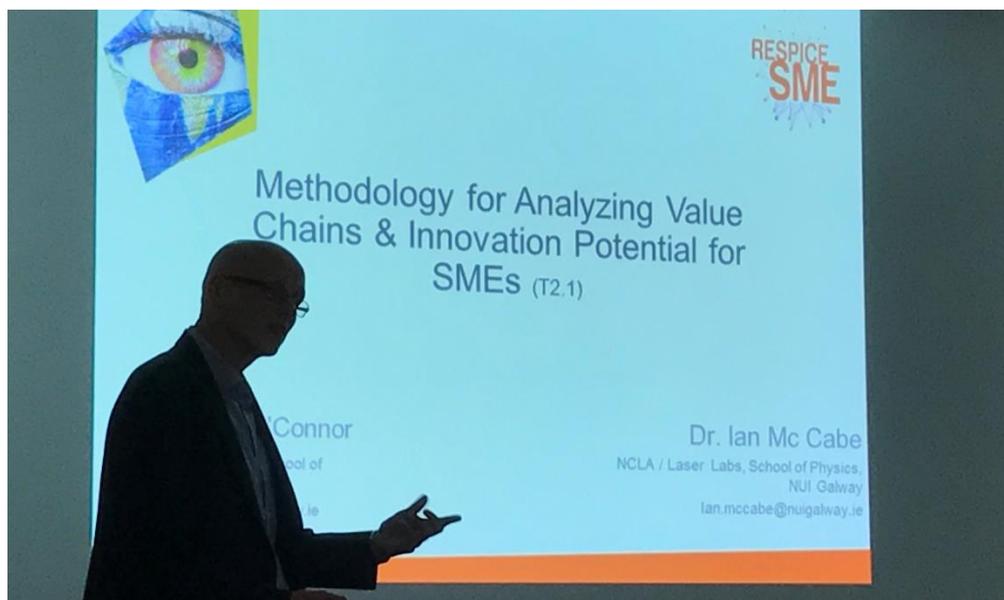
The RespiceSME tool assesses SMEs taking into account 3 aspects:

- **Stakeholder intensity:** Identifying numbers of stakeholders / gaps where few enterprises contribute to a specific value chain.
- **Assessment of TRLs:** Identifying technical maturity and priorities for the next specific R&D challenge to raise technology readiness levels.
- **Assessment of Innovation Potential:** Assessing the potential impact of the proposed development from the perspective of different user stakeholders.



The Methodology consists in 4 steps:

1. Definition of the value chain centred on proposed product.
2. Identification of stakeholders (excel tool)
3. Analysis of survey results (excel tool)
4. Assessment of innovation potential.



2.4.5 World Café - Interactive Sessions

The aim of this interactive session was to identify the innovation potential of Photonics SMEs operating in non-photonics market sectors. The RespiceSME team prepared some questions to be answered by 3 small groups following a discussion session.

Question 1: Please give specific examples on how your cluster connects photonics SMEs to the application fields below.

GROUP 1: “Clusters in Wales are weak in pursuing inter-sectoral work”, “Workshops; also connections have been abandoned years ago”

a. How does the technology transfer of photonics into non-photonics application fields currently take place?

GROUP 1: “Working Groups, forming associations with other Clusters in e.g. Automotive, Aviation, etc. draw attention to problems in other sectors & explore how photonics can solve the problems”

GROUP 2: the long term application of photonics in future non-photonics sectors was discussed. The approach presented uses long term horizon scanning. It requires strong “big industry” leadership, particularly by those, who can articulate a 20 year research vision. The approach is inclusive and iterative. In terms of inclusiveness, partners spanning industry, RTOs, spinouts, etc. meet and discuss future technologies in terms of “needs to have”, “nice to have”. The group of partners then determines topics that pave the way. They set a 15+ year time horizon for a technology goal. Goals are ambitious, seeking 1000x improvement. Once these are set,

intermediate milestones are identified in terms of “products” or “processes” that lead the way. These are regarded as building blocks. The ambition behind these drives an Ecosystem. The above approach is centred on photonics for electronics manufacturing – a technology defined by a clear roadmap.

Other groups had a rather short term perspective, mostly based on matchmaking.

GROUP 3: Reaching out to other sectors via ideas for collaboration and connection of members.

b. How do you assess the potential for such technology transfer?

GROUP 1: Assessment as carried out by the companies after matchmaking: the companies are recommended to determine the quality of the connection and the potential for collaboration.

GROUP 2: Big industry leadership usually sets the agenda. For a highly differentiated impact this is considered necessary.

GROUP 3: Reviewing the list of patents of the goal sector and choosing those problems that could be solved by photonic technologies, and additionally assessing the reference RTO of a specific sector in order to obtain insight into the newest sector developments.

c. What tools do you use to assess the innovative potential or scalability of future inter-sectoral collaborations?

GROUP 1: “Market Studies, Questionnaires”

GROUP 2: Not answered

GROUP 3: The best tool is to facilitate inter-cluster conversations through the cluster managers of both sectors to analyse together, if innovation potentials fit demands.

Question 2: Using the examples discussed in question 1 please describe on what basis do the companies in your photonics cluster compete in these application fields (non-photonics sectors)?

Key words: Rivalry, New entrants, Substitutes

GROUP 1: “In Automotive: Substitute is the defining key word, when describing the basis on which companies compete” “- However, substitution leads to stagnation”, eventually hampering healthy competition Opinions differed regarding in which contexts and settings rivalry played a role.

GROUP 2: Competition concerning the application of photonics takes place on the basis of “new entrants” and “substitutes”. These become the building blocks of the value chain the different ecosystems compete for. The ambition, differentiation of the value chain, and timescale, targets long term disruptive technology goals.

The building blocks developed within the ecosystem rest on the principal that the user must pay for the intellectual property. No one can block the use of the IP by another.

GROUP 3: The different strategies deployed for competing in non-photonics sectors depend on the maturity and size of the company and the technology. Also collaborative approaches are implemented within non-photonics sectors, due to the fact that a lot of photonic technologies are components that must be integrated in more complex systems.

Question 3: *What contributions do you think formal assessments of value chains and innovation potential could make to leveraging Photonics in the strategic roadmaps of non-photonics application fields?*

GROUP 1: “Formal assessments of value chains and innovation potential will have direct influence on a company level, e.g. the implementation of tools will raise awareness of photonics applications”

GROUP 2: There is scope for enterprise based value chain analysis in a research environment. Normally most VC funded enterprises will already have done the analysis proposed by RespiceSME. Technologists in enterprises may benefit nevertheless, although they usually do not lack funding, they are sometimes challenged with setting the technical direction of the activities.

GROUP 3: Not answered.

2.5 Outcomes

Altogether, the first RespiceSME photonics cluster meeting was a success: more than 30% of existing European cluster representatives attended the event, commenting positively on the meeting outcomes that will benefit their practices in managing and providing new services to SMEs in future. The upcoming meeting is going to be held at Laser World of Photonics (Munich), which will give the opportunity for the RespiceSME consortium to inform European cluster representatives about the project’s advancement and will attract more targeted clusters and other organizations to participate in the second meeting.