Project No.:	687961
Project acronym:	RespiceSME
Project title:	Regional, National and European Support for Photonics Innovation Clusters enhancing SMEs Innovative Potential
Instrument:	Coordination and Support Action
Programme:	ICT-27-2015: Photonics KET
Start date of project:	01.01.2016
Duration:	24 Months

Deliverable 2.3
Report on the second EU photonics cluster meeting

Deliverable Name	Report on the second EU photonics cluster meeting
Deliverable Number	D 2.3
Work Package	WP 2
Associated Task	T 2.2
Covered Period	01.01.2016 – 31.12.2017
Due Date	M 18 (June 2017)
Completion Date	M 22 (October 2017) ; Revised (January 2018)
Submission Date	12.01.2018
Deliverable Lead Partner	SECPhO
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Dissemination Level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1. Introduction

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 main objective of the Work Package (WP) 2 is creating 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-photonic sectors such as Environment / Energy, Health, Transport and Manufacturing –thereby enabling the penetration of new markets and / or new application areas close to markets.

Within this WP2, the task 2.2 is focused 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 activities in order to further strengthen cluster collaboration and networking. Following the ASPICE workshops 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 existing contacts and collaborative projects, and must be a yearly tradition. In the absence of any such event for photonics clusters, RespiceSME will continue this tradition and gather all the photonics cluster representatives in order to exchange the best practices of cluster collaboration and innovation development in their countries.

2. Photonics Cluster Meeting

The second *Photonics Clusters Meeting* organised in the framework of the RespiceSME project took place at the Laser World of Photonics exhibition in Munich, Germany, on June 29th, 2017. This exhibition, one of the most important in photonics worldwide was chosen due to its high attraction potential towards photonics clusters, companies and organisations.

In order to develop and organise the meeting, all the consortium members leaded by SECPhO and Steinbeis 2i were involved in the preparation of data, coordination and contacting photonics stakeholders.

2.1 Objective of the meeting

In accordance with the objectives of the task, the photonics cluster meeting aims at:

- 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 their regions and countries;
- Getting insight on 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.

Beyond that, in this second edition the consortium decided to go further, introducing a section where photonics **SMEs could also interact and identify potential collaborations**.

Thus, the second edition of the *Photonics Clusters Meeting* had two main targets: **photonics clusters** and **photonics SMEs**. In order to attract more SMEs, the consortium decided to focus the agenda on **Photonics in Automotive** and invited SMEs as speakers to present their business cases.

2.2 Organisation & Communication

As already mentioned, the Laser World of Photonics exhibition in Munich in June 2017 has been selected as framework event for the photonics cluster meeting because of its high attractiveness amongst the photonics community.

The event was delayed from the date indicated in the DoA due to an important reason: after the low assistance of the first Photonics Cluster Meeting, which was held in a smaller exhibition – '*Micro Photonics' in Berlin*, the consortium wanted to broaden the potential participants by choosing a bigger one, such as the *Laser World of Photonics*. The organisation started by defining the location, renting the room, creating the *Safe the Date* of the event (found in the list of annexes) and developing the first draft of the agenda.

During the next months, new versions of the draft agenda were developed, SMEs and Photonics Clusters were contacted, exhibitors in Munich and other photonics platforms were also analysed as follows:

- **Photonics Clusters:** the consortium partners used their contact lists to reach them through direct mailing, website events, social networks and phone calls.

Some examples of communication actions through the partners for the promotion of the event:

- **Photonics SMEs:** the consortium partners contacted their companies to involve them in the meeting, mainly those ones having potential capabilities or technologies for the Automotive sector. Beyond that, other companies were contacted using each partner's databases.

- **Exhibitors**: Before the meeting and during the exhibition, the consortium reached companies attending the trade fair in order to invite them to the meeting. This way, companies out of the consortium partners' contacts were reached, for example companies out of the European scope. In this case, a flyer was developed in order to attract them (attached in the annexes list).

- **Photonics platforms**: in order to keep broadening the scope of the meeting and reach more involvement, other platforms were contacted. The consortium invited **EPIC** to held a presentation on the potential of photonics in the automotive field who promoted our event at the same event amongst its networks.

- Moreover, the consortium partners were also involved in the organisation of the meeting in **content providing** and **getting speakers**. Content providing was very important because the consortium created *Collaboration Cards* used during the meeting, as it will be explained in the section *Meeting Description.*

2.3 Target groups

The second *Photonics Cluster Meeting* had two targets: **photonics clusters** and **photonics SMEs**.

For the Photonics clusters, it was a new opportunity to learn about the progress of the project and the new tools of RespiceSME. After the first cluster meeting in Berlin, they were very interested to better understand these tools and on how the project consortium's clusters were implementing these tools with their members.

Regarding the Photonics SMEs, in order to attract them to the meeting, we introduced a more technical and applied section dedicated to **Photonics in Automotive** where there was an interactive session to foster collaborations between photonics SMEs.

2.4 Meeting description

The event was divided in two main blocks:

1. The first block focused on the RespiceSME project and the developed tools, dedicated to the photonics clusters:
    - Introduction & presentation of RespiceSME
    - Presentation of RespiceSME tools
2. A second block focused in the analysis of photonics in automotive with presentations of business cases and finally an interactive session to foster the collaboration between photonics SMEs, dedicated to SMEs and cluster managers:
    - The potential of Photonics in the Automotive industry
    - Business cases: Photonics for LIDAR and Connected Car technologies
    - Workshop: Mapping collaboration opportunities between Photonics SMEs in Automotive

However, it is important to take into account that the blocks had a clear main target, but not exclusively. This means that, in the first block, photonics SMEs could also get important feedback about how a cluster works, what services they can provide to the SMEs, etc. The second block was also interesting for the photonics clusters, since they were able to represent their companies during the session.

2.4.1 Introduction & presentation of RespiceSME

Samantha Michaux, the project coordinator, presented the RespiceSME project and its three dimensions:

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

Samantha also wanted to remark the outputs that are going to be generated from this project and will be available to the community of photonics clusters. The expected outcomes after the project will be:

- 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 Presentation of RespiceSME tools

How to enable the innovation potential of photonics SMEs?

Linas Eriksonas, from **LITEK** (Lithuania) presented the strengths of the PII as a tool showing three case studies from 3 innovation audits carried out by LITEK with 3 SMEs. The idea was to assess and analyse the innovation potential of their SMEs by providing them:

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

Linas explained how to convert the audit results into a very useful report to be used by the board of directors for taking new strategical decisions.

How to support the innovation strategy of Photonics SMEs? Best practice example of a Spanish SME

Sergio Sáez, from SECPhO, explained how the results of the innovation audits could be used to analyse the strategy of a company. He presented the Strategy Session (name given by the consortium to the session where the strategy of the company is analysed from the results obtained in the audits) developed with a Spanish SME.

In this *Strategy Session*, Sergio could go deep in some aspects that the CEO of the Spanish company had not thought before. First, primary results of the audits showed the ideal character of the company, where the key aspects were identified. In a second step, the deep characteristics of the company were

identified. Finally, a comparison between the two situations (ideal versus real) highlighted which aspects should be addressed from now on and take actions on it.

Finally, Sergio made a special emphasis in the importance of **making the right questions** in order to develop the best analysis of the company during the *Strategy Session*. According to his experience, this is the key point of the sessions, which requires a deep knowledge of the company: goals, needs, composition, vision, etc.

How to analyse the value chain of new photonics products application?

Finally, it was time for Ian McCabe from NUI Galway to present the methodology for Analysing Value Chains.

The idea of making a Value Chain analysis is important because:

- 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 and opportunities in value chains can be rapidly identified.

The RespiceSME tool assesses the value chains related to 3 domains:

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

The methodology consists in 4 steps:

1. Define the value chain centred on proposed product.
2. Identify stakeholders.
3. Analyse survey results
4. Assess innovation potential.

2.4.3 The Potential of Photonics in the Automotive Industry

Dr. Jose Pozo, EPIC – European Photonics Industry Consortium, presented an overview of the photonics applications in the automotive industry.

He highlighted the different technologies and how they can enhance the sector: sensors detecting obstacles on the road, optical communications enabling human-machine interactions, advanced lighting systems with a smart performance, etc.

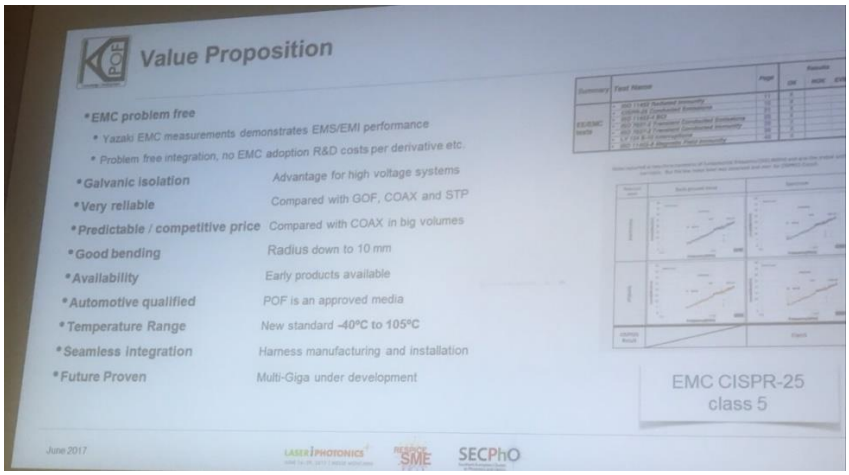
Among them, Jose Pozo also presented the technologies that would be analysed in the following business sessions: LIDAR and Connected Car technologies. Their appearance, advances, and main companies working at the European and Worldwide level were analysed.

2.4.4 Business cases: Photonics for LIDAR and Connected Car technologies

This part of the meeting focused on specific SMEs applications in the automotive sector and discussed how to "Boost(ing) the Collaboration of Photonics SMEs in the Automotive". Company representatives presented applications of LiDAR, SWIR and optical Ethernet technology, demonstrating how the power of photonics innovations creates benefit for the automotive sector. The presentations showed: The mobility of tomorrow, embracing autonomous driving and ADAS, relies to a great deal on photonics technology. Further progress in environment surveying, image scanning and processing for autonomous driving will depend on a combination of different photonic technologies. Thanks to photonics, driverless cars soon will navigate even more precise and safe on roads than with an actual human behind the wheel.

At this point, several companies presented business cases of their applications in both technologies:

Yang Ni, New Imaging Technologies
Outlook on SWIR LIDAR for Automotive



César Esteban, KDPOF
Optical Ethernet in Automotive

Devin S. Standard, Light Path Technologies
Automotive Applications of Photonics

2.4.5 Workshop: Mapping collaboration opportunities between Photonics SMEs in Automotive

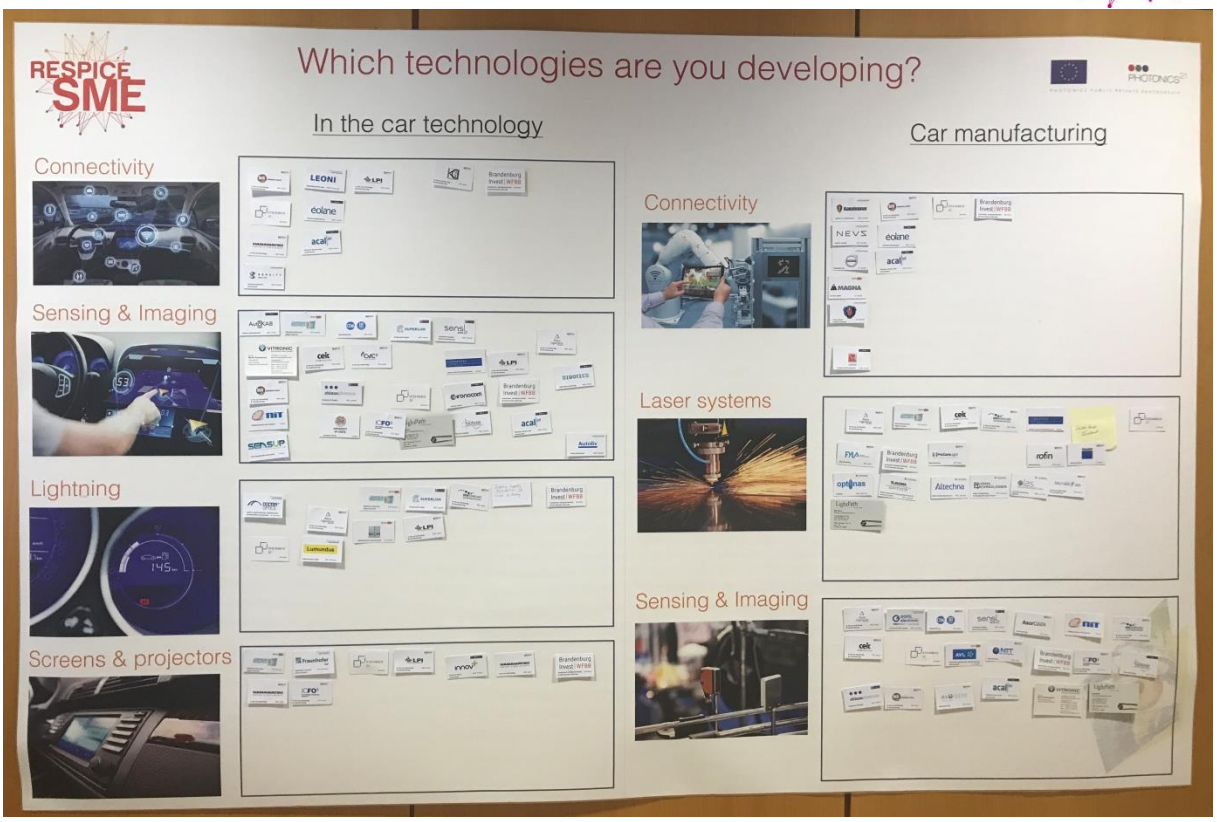
The *Photonics Cluster Meeting* concluded with an interactive session, bringing the participants into 'motion'. Each company or cluster representative was asked to map their own company or the companies in their network regarding their countries of operation, their position in the value chain and the technology fields their products cover. This resulted into colourful posters, showing the diversity and great potential of European photonics companies.

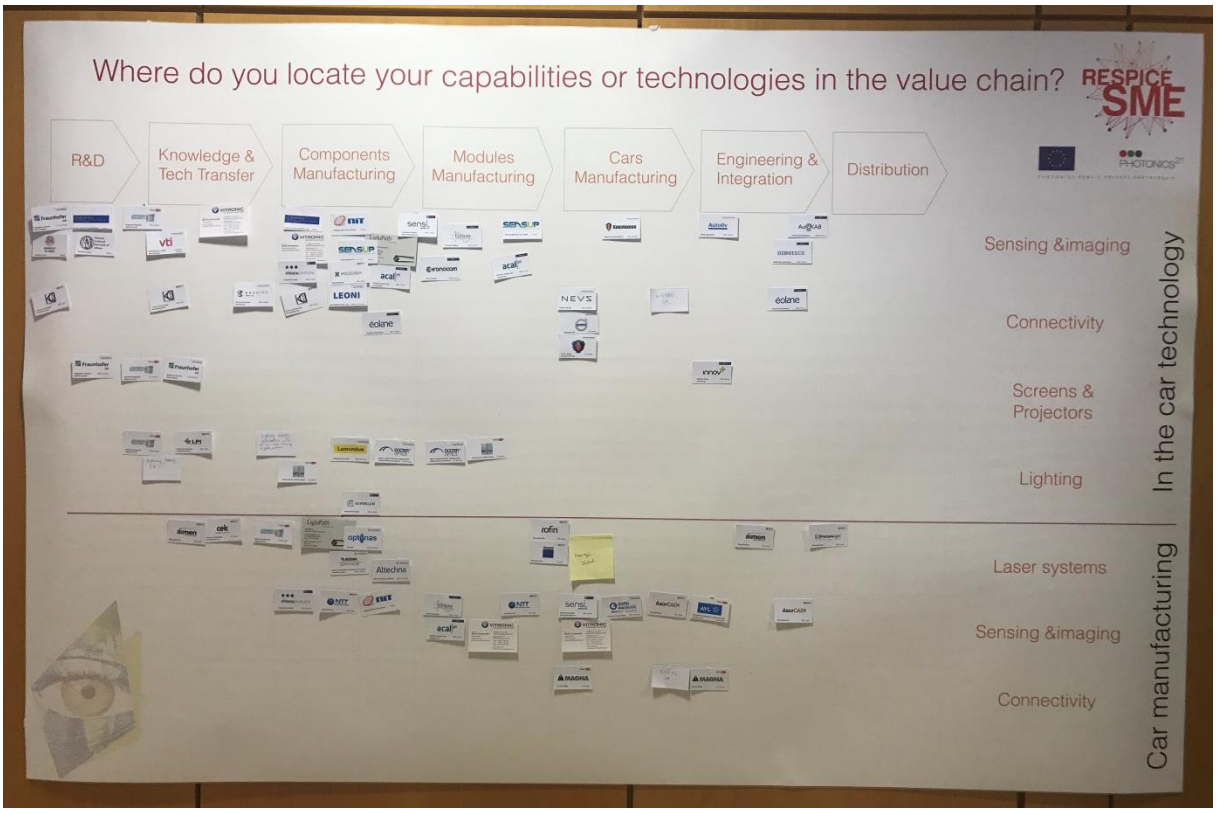
The session consisted in filling several posters (also called maps) with *Collaboration Cards* prepared in advance. Those cards were developed from the inputs received from every consortium partners (who provided information of their SMEs and organisations with business in automotive) and also from the registrations at the event.

The *Collaboration Cards* looked like as follows:

Two different kind of cards were prepared. The first one having a logo of a cluster at the top-right corner, while the other not, showing that the first company was represented by a Photonics Cluster (i.e. its Cluster Manager) at the event, while the other one was represented by themselves at the event. Beyond that, the core technology and the origin country were also shown in those cards.

Then, those cards were stack in three different kind of posters and the session resulted in three maps filled with


Which technologies are you developing?
In the car technology
Car manufacturing
Connectivity
Sensing & Imaging
Lightning
Screens & projectors
Connectivity
Laser systems
Sensing & Imaging


Where do you locate your capabilities or technologies in the value chain?
R&D
Knowledge & Tech Transfer
Components Manufacturing
Modules Manufacturing
Cars Manufacturing
Engineering & Integration
Distribution
Sensing &imaging
Connectivity
Screens & Projectors
Lighting
In the car technology
Laser systems
Sensing &imaging
Connectivity
Car manufacturing

2.5 Outcomes

The second *Photonics Clusters Meeting* reached the target groups: **Photonics Clusters** and **Photonics SMEs**. When going to numbers, the event achieved:

- **Photonics Clusters/Platforms:** Minalogic (Fr), Photonics Finland (Fi), CNR-Optoscana (It), Cluster ALPHA-RLH (Fr), EPIC (EU), Optics Valley (EUA). In total **6 Photonics Clusters** out of the consortium. Adding the consortium members, reaching **16 photonics Clusters/Platforms**.
- **Photonics SMEs:** Nanocomp (Fi), Lasea (Be), TOPAG (Ge), KDPOF (Es), New Imaging Technologies (Fr), Spectaris (Ge), Docter Optics SE (Ge), QuantIC (UK), Vitronic (Ge), Light

Path (EUA), OptoSigma (EUA), Altechna R&D (Li), Superlum Diodes Ltd (Ir). In total, up to **13 Photonics SMEs**.

- **Other photonics-related organisations and centres:** Warsaw University of Technology (Po), National Technical University of Athens (Gr), Electro Optics Journal (UK), Imaging Journal (UK), Laser Systems Journal (UK), National and Kapodistrain University of Athens (Gr), Promessa (Fr), Joensuu Science Park (Fi), SPIE (EUA), Optoelectronics Research Centre (UK), University of Parma (It), Wirtschaftsförderung Land Brandenburg GmbH. In total, **12 photonics-related organisations and centres**.

Taking into account all the former different sections, the event reached the involvement of **41 different organisations**, which is a success in terms of assistance. Moreover, it is a great advance from the first *Photonics Cluster Meeting.*

The agenda of the meeting was also interesting according to the evaluation questionnaires delivered during the workshop, where attendees could express their opinion.

During the *Mapping Session*, the attendees showed high interest about the methodology and the results for future cooperation opportunities generated during the sessions.

2.6 Lessons learned

According to the parameters evaluated in the report of the first *Photonics Cluster Meeting*, the second meeting was analysed in accordance:

Communication. It is a key point in order to get involvement in the meeting. While in the first event it was not much strong, in this second meeting we used all the available methods following a clear marketing strategy in order to reach the attendance: direct mailing, social networks, websites and direct phone calls.

Topic. According to the results of the first meeting, at the second edition of the *Photonics Clusters Meeting* we decided to broaden the scope of the meeting so that it would be attractive for more people. Thus, we decided to focus on the automotive industry as an important part of the meeting, which is a hot topic in photonics nowadays. This decision was very good since we could attract a lot of people.

Involvement of SMEs. As concluded in the first meeting, and proved during the second meeting, involving SMEs is a right decision since they can provide a more dynamic workshop and interact with cluster managers. However, involving them into the workshop requires setting an attractive topic for them, as explained in the former point *topic.*

Select a good environment. Choosing the exhibition 'Laser World of Photonics' was a right decision in terms of resonance and attractiveness since it is the most important Photonics event in Europe; and thus, it allowed to reach many companies that were present in Munich and could attend the event, instead of travelling to Munich specially for the *Photonics Clusters Meeting,* that is difficult to afford for some organisations.

2.7 List of annexes

1) Save the date

2) Meeting flyer

3) Meeting agenda

4) Participant list

5) Posters design