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Dear readers,

It is a pleasure to present to you the second edition of our project newsletter. **RespiceSME** is a project – funded by the European Commission – which started in January 2016 that reinforces the innovative capacity of Europe's photonics Small and Medium Enterprises (SMEs), clusters and national platforms by stimulating targeted collaborations in and beyond photonics.

We will keep you updated about our progress, exciting upcoming events and interesting facts about photonics with our semi-annual newsletter. We kindly invite you to visit our website at www.respice-sme.eu, which will also keep you updated about all our project activities. We hope you will enjoy reading our news and we are looking forward to sharing our events with you in the upcoming issues.

Yours Faithfully,

The RespiceSME Team

RespiceSME in a Nutshell

RespiceSME proposes new approaches for stronger innovative effectiveness using a **3-dimensional approach**. In the first dimension, RespiceSME will evaluate and **stimulate the innovation potential** in order to strengthen the innovation capacity of high-tech photonics SMEs. In the second dimension, **RespiceSME** will **enhance the global technological exploitation of photonics** innovation capacity by analysing different value chains valuable for high-tech photonics SMEs. This will allow significant **leveraging of non-photonic sectors** such as Environment/ Energy, Transport and Manufacturing and thereby, enabling the **penetration of new markets** and/or new application areas close to markets. The third dimension focuses on creating a **bridge over the 'Valley of Death'** to increase the competitiveness of the European photonics sector by developing **Best Practices** for enabling photonics SMEs access European and regional **Research Technology Organisations**, harnessing educational and **training** programmes aligned with their specific needs, determining next generation regional innovative **smart specialisation strategies** and providing **access to public and private financial supports**.

Reinforce the innovation capacity of Europe's photonics Small- and Medium-sized Enterprises





Photonic technologies are paving the future of intelligent mobility

As one of six European Key Enabling Technologies, Photonics has high potential to **contribute to several societal challenges**. In the last decade especially, the automotive field was faced with many challenges related to social changes and environmental impact.

In the automotive field, photonics provides not only essential components for the vehicle itself but largely contributes to the car making process through advanced manufacturing processes and technologies and it also influences the digital design of the vehicles. Nowadays communication and sensing technologies are important topics in the automotive field; to connect vehicles, detect obstacles or driver assistance Photonics is needed.

Which technologies are including photonics?

For communication technologies in automotive applications two photonics based technologies are used: optical fibres and visible light communications. Optical fibres for example offer immunity to electromagnetic interferences, lower weight and higher throughput than normal wires.

In Human-machine interfaces screens and the associated software equipped with intuitive interaction functions or 3D visualization some classic photonic technologies find their way into our vehicles. But also more complex technologies like sensors for gesture detection and recognition which are providing new means of interaction with the automotive systems are photonic based. Another key element for driver assistance or **the road toward “full automation”** related to photonics is sensing applications which include different types of cameras.

Exterior sensing for obstacle detection applications is currently done with LADAR (Laser Detection and Ranging). Due to its increasing precision and its ability to environmental scans, real-time 3D scans will be possible soon.

What does that mean for SMEs?

Thanks to this contribution to autonomous car technologies, photonics technologies drain new companies on the automotive industry, as well as new business models, aiming for European programs to sustain photonics Start-ups and SMEs in this paradigmatic evolution, such as RespiceSME.

With the shift to connected vehicles the value will be less concentrated on the sale of the product but more and more shifting to the sale of services. It is probable that **multinationals are willing to cooperate with SMEs and Start-ups which have certain solutions** or technologies to solve the current problems on the road towards full automation to speed up innovation.

Photonic based technologies will soon become one of the most important elements in the vehicle industry. Technologies like Screens, 3D visualization, gesture and obstacle detection are necessary components on the road to the future autonomous and connected vehicle. To realize these visions, experts in photonics are particularly needed – SMEs and Start-Ups will become important in the mobility industry.

**For further Information,
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PHOTONICS²¹



A French innovative High-Tech Photonics SME

New Imaging Technologies (NIT) is a French SME providing **imaging sensors** - covering the visible and infrared spectrum - by using a disruptive CMOS and InGaAs technology.

NIT's innovative products exploit the academic work of professor Yang NI which allowed the company to build a native logarithmic CMOS sensor.

New Imaging Technologies designs high contrast sensors covering the visible and infrared spectrum

Sensors for new perspectives

This type of sensors, offering new perspectives for the field of machine vision, are very accurate and robust by construction with respect to light intensity and ambient temperature, and insure a high contrast and a high quality of the image both in low and in intense lighting conditions. Since the creation of NIT in 2007, Pierre Potet, the CEO of the company has tried not only to make NIT the reference designer of these innovative sensors, but also to scale up the company and manufacture these sensors at a larger scale.

François Coursaget, NIT's current COO, an optronic specialist previously working for Safran Electronics & Defence, joined the company in 2015 to help strengthen, industrialize and market NIT's products. According to Francois Coursaget, **being part of a photonic network is a key success factor**, allowing the company to meet new potential partners and clients.

Project opportunities

Mr Coursaget was thus actively involved in the events organized by Opticsvalley - the Paris Region Photonics and High-Tech Cluster - in 2016. The seminars and workshops organized by Opticsvalley are one of the factors contributing to the SME's development: these events helped NIT to extend its network and identify new potential partners and customers for new application fields. The emerging project opportunities, stemming from the collaborations between the network members during working group meetings, could benefit by the leverage of the RespiceSME consortium that might help extend the field of imaging and machine vision for transportation systems, security solutions, and industrial applications to European SMEs.

For further information, please visit the website:

<http://new-imaging-technologies.com/en>

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SMEs drive cross-regional cluster cooperation: a success story

The traditional view holds that cluster cooperation could be driven by top-down initiatives, public incentives and management. However, other, more **bottom-up ways of cooperation** are becoming possible due to the direct links established by individual cluster members with their counterparts along the relevant value chains. These business-to-business contacts matching the complementarity of other companies involved along the supply chains become the initiators of cross-cluster cooperation

SMEs in Cooperation

One such company is TOPAG Lasertechnik GmbH from Darmstadt (Germany). In 2006 the company started cooperating with EKSMA Optics from Vilnius (Lithuania). Both companies have ever since been involved in bringing to market a variety of laser components e.g. special optics for high power lasers, opto-mechanical components for optics positioning, laser and nonlinear frequency conversion crystals, electro-optical Pockels cells.

Goals of long term Cooperation

As a result of a close long-term collaboration between two companies in 2014 TOPAG Lasertechnik GmbH was invited by its Lithuanian counterpart to join the Laser and Engineering Technologies Cluster (LITEK) in Vilnius (Lithuania). Through the involvement with EKSMA Optics TOPAG also became a part of this cluster network and benefited from some marketing, shared channels and cross-sales activities.

Prior to that TOPAG co-founded the optics competence network Optence (founded in 2001) in its own region (Hesse and Rhineland Palatinate) which developed into a regional photonics cluster with members from outside the region as well (including the cooperation with companies in Switzerland, the Netherlands and the UK). Thus, when in 2016 the need emerged for Optence to expand its cluster networking reach beyond Germany LITEK came first on the list due to the ongoing links between TOPAG and EKSMA Optics.

Cross-Regional Cluster Cooperation

This case clearly shows that the cross-cluster cooperation is often driven by SMEs themselves and that the cluster managers should pay close attention to them in order to **spot bilateral connections** early on, so that further networking efforts could be built upon them. To that end Optence as a future member of the international "Laser Go" consortium aiming to help SME's go international.

Bottom-up ways of cooperation are becoming possible due to the direct links established by individual cluster members with their counterparts



© EKSMA Optics

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Calendar of Events

Join us to the Workshop on "Aligning Education with Innovation" on June 28th 2017

Time: 14:00 – 18:00

Location: Laser World of Photonics, Munich, Germany

Room: Hall B1 – Room B12

Listen to and discuss with:

- industry representatives,
- innovation experts from academia
- representatives from EU educational programmes

About:

- What actions and measures are necessary to align education with innovation?
- How can universities and industry better collaborate to trigger innovation?

After the presentations:

- Networking with refreshments and snacks
- Matchmaking opportunity for job/internship seekers and companies!

Please register until 20th of June at the latest under following Link:
<https://doodle.com/poll/iaqxfi873zbdapr>

Registration is free of charge!

Join our 2nd Photonics Cluster Meeting on June 29th 2017

Time: 14:00 – 18:00

Location: Laser World of Photonics, Munich, Germany

Room: Hall B1 – Room B12

In order to strengthen the collaboration and networking among photonics clusters & experts, the RespiceSME consortium has organised a **Photonics inter-cluster meeting** in the framework of the **Laser World of Photonics Congress and exhibition in Munich** (Germany) on the **29th of June 2017**. This meeting will build a platform for **exchange of Best Practices** of cluster collaboration and innovation development in their regions and countries. Furthermore, the participants will get insight on the tools developed within the project which aim at enhancing the innovation potential of photonics SMEs.

The inter-cluster meeting reaches out to all photonics clusters and platforms who are interested in:

- Strengthening new business opportunities with other European photonics clusters;
- Generating and discussing new business models to get solutions to market;
- Encouraging innovative business creation for their respective SMEs;
- Enhancing market entry for innovative photonics technologies, processes and services.

Please register until 20th of June at the latest under following Link:
<https://docs.google.com/forms/d/e/1FAIpQLScLo0SjlwevzB9qTH9ds27Di1lQfM98GM3kfhP65W0wVPPEeQ/viewform>

Registration is free of charge!



The Laser World of Photonics Congress

The Laser World of Photonics Congress in Munich

Location: Messe München
Date: 26 – 29 June 2017

International and innovative: **LASER World of PHOTONICS** is the only event that depicts the entire range of photonics solutions. From components to systems and from concrete applications to services, LASER World of PHOTONICS depicts the entire value chain and brings global suppliers and customers together to meet their needs.

For further Information, please visit the website:
<http://www.world-of-photonics.com/index-2.html>

FURTHER EVENTS

08. 03 – 09.03.2017	Elektronik <i>Gothenburg (Sweden)</i>	http://www.easyfairs.com/de/elektronik-2017/elektronik-2017/
14. 03 – 17.03.2017	Open Readings – 60 th international conference for students of physics and natural science <i>Lithuania (Vilnius)</i>	http://www.openreadings.eu/
04. 04 – 06.04.2017	Advanced Factories <i>Barcelona (Spain)</i>	https://www.advancedfactories.com/
17.05 – 19.05.2017	British Medical Laser Conference <i>Manchester (England)</i>	http://massor.svenskamassan.se/en/sites/sca-automatic-processtechnology/
22. 05 – 25.05.2017	PIERS - Progress In Electromagnetics Research Symposium <i>St. Petersburg (Russia)</i>	http://www.piers.org/piers2017StPetersburg/
25. 06 – 29.06.2017	CLEO®/Europe-EQEC 2017 <i>Munich (Germany)</i>	http://www.cleoeurope.org/
26. 06 – 29.06.2017	Laser World of Photonics <i>Munich (Germany)</i>	http://www.world-of-photonics.com

Thank you for reading us!

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