# NEXPRESSO

## Network for EXchange and PRototype Evaluation of photonicS componentS and Optical systems

**Grant Agreement number: 258178**

**FP7-ICT-2009-5**

# PUBLISHABLE PROJECT FINAL REPORT

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http://www.nexpresso.eu/

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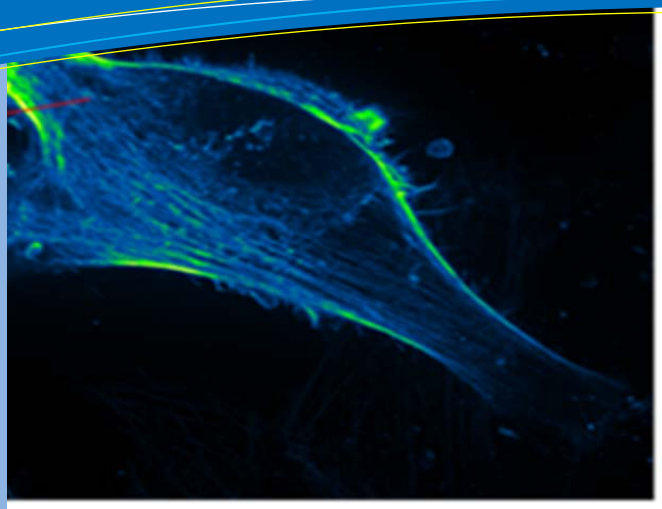
# NEXPRESSO



Publishable
Executive Summary

## About NEXPRESSO

NEXPRESSO, is the "Network for EXchange and PRototype Evaluation of photonicS componentS and Optical systems".

NEXPRESSO's objectives are to:

- Purchase at marginal cost pre-competitive photonic devices from innovative European companies and put them in the hands of European researchers and students, at no net cost to the university or to the company that furnished the devices and
- Facilitate transfer of device evaluation results to potential end-users, assisting companies to access new markets and new applications.

This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 258178.

## NEXPRESSO
## A Unique Tool to Bridge the "Valley of Death"

Sometimes, when research produces a new device, a spin-out company is formed for exploitation, but it takes a lot of work to turn the invention into a product: testing, optimising the components for specific applications, putting it in a package and complying with standards, etc. No grants cover this activity and investors typically only get involved once there is a market.

This gap is called the 'Valley of Death', because many start-ups fail during this phase.

The FP7-project "NEXPRESSO", a continuation of the FP6-project "ACCORD", set out to put pre-competitive photonic components and systems in the hands of researchers and students — at no net cost to the university or to the company that furnishes the prototypes. The NEXPRESSO-project then facilitated transfer of the evaluation results to potential end-users, assisting companies to access new markets and new applications.

NEXPRESSO is the first EU project to identify and address this so-called 'Valley of Death'. This refers to the absence of funding support (either private or public) in the gap between the public support for precompetitive research — where EU funding usually takes place — and private investment for development and exploitation of existing products.

The project benefits the company by providing cash flow to fund further development, providing focused evaluation and feedback from the R&D project at the premarket stage, and creating a link between students who perform the research and the employment needs of the company seeking to launch the prototype as a product

As far as we know, the NEXPRESSO project is the first anywhere to focus on creating a bridge between advanced prototype development and product launch. The project has been successful in recommending design changes, creating employment opportunities, and stimulating the first commercial sales.

In a nutshell, NEXPRESSO sends out a call for prototypes, and SMEs respond with a description of a prototype they would be willing to furnish, along with some of their needs concerning testing, evaluation or adaptation to a specific application. NEXPRESSO publishes this list, and sends out a call to R&D organisations (typically universities) to respond with a short proposal for a six-month project on a specific prototype.

These proposals are ranked by an independent panel of reviewers and the NEXPRESSO team then awards the project according to ranking and financial limits. In so doing, the project brings the SME and the research organisation together as a team — including agreements on intellectual property and other aspects.

NEXPRESSO then negotiates a transfer price with the SME, purchases the prototype, and lends the prototype to the research organisation for the duration of the project (three to nine months). If the R&D organisation completes its task successfully, it can keep the prototype, and NEXPRESSO will transfer ownership.

# The different types of call in the NEXPRESSO Project

**Type 1**

This is a continuation of the ACCORD mechanism. Manufacturers register pre-market components on which they would like researchers to conduct experiments. These components are displayed on the NEXPRESSO web site and Researchers are asked to propose projects with a selected component. The proposals are assessed and the best are selected to enter contract negotiations. NEXPRESSO purchase the component and offer it to the researcher to undertake the proposed project.

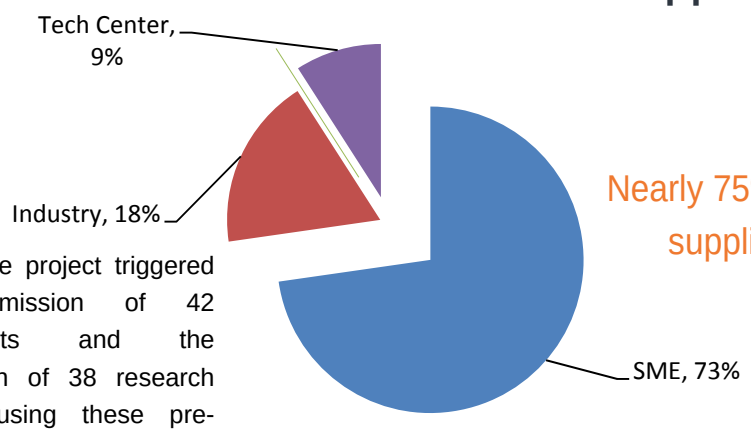
**Type 2**

Under this mechanism researchers can ask for a component not currently available in the market in order to progress their research. Manufacturers can then propose components nearing market launch. As in Type 1, NEXPRESSO will purchase the component and provide it to the researcher.

**TYPE 3**

In this mechanism an "End-User" can suggest a research project using a component not yet on the market. The Researcher and component supplier have to be identified. Once this has been achieved NEXPRESSO buys the component and provides it to the researcher.

## NEXPRESSO supporting SMEs

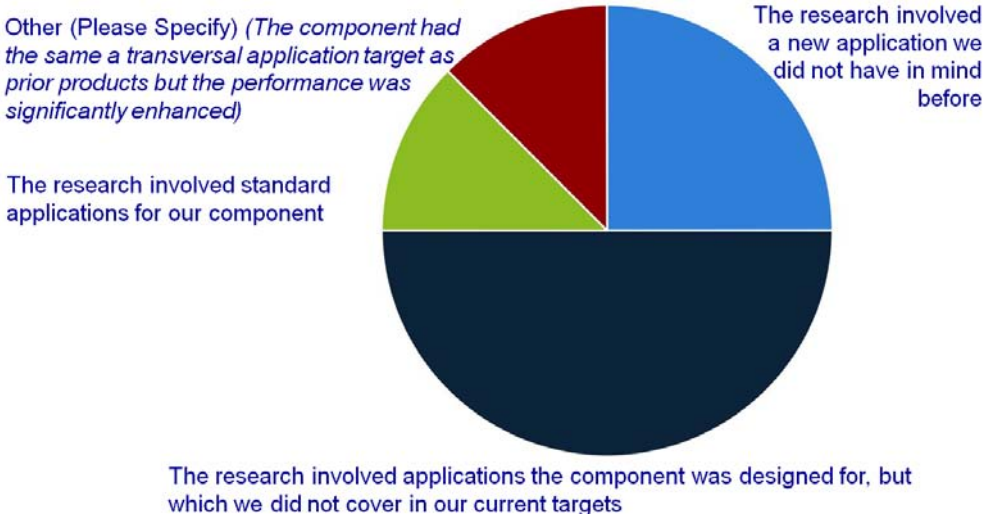



In total the project triggered the submission of 42 components and the submission of 38 research projects using these pre-commercial photonic components. Out of these projects, spread over several calls, the NEXPRESSO-project awarded 11 projects with a total financial support of nearly 250 000 euro spent on buying these pre-competitive photonic components and offering them for free to these research groups. About 75% of these awarded projects used components originating and submitted by SMEs in Europe.

Nearly 75% of component suppliers were SMEs.

Over 75% of component suppliers discovered new market applications through NEXPRESSO

Besides the pure involvement of SMEs, "bridging" the gap" also implies that support is given to these SMEs to further develop their products and business and to broaden their market scope. Both aspects have been tackled successfully by NEXPRESSO. Most of the component suppliers indicated that the application envisaged by the research project was either new or unexplored by the component supplier, or improved the performance of the component.




How much a tool like NEXPRESSO can have an impact on the business of an SME is best illustrated by a quote from one of the component supplier (Thierry Gonthiez, CEO Resolution Spectra Systems):

*"In 2012 we delivered a prototype of a spectrometer to a laboratory that we didn't know before, since then our company has an ongoing R&D collaboration with them. With our product they could develop a new laser source. The prototype has become a product that was a Prism Award finalist in 2013 and used today by customers in the US, in Europe, in Japan and soon in China. The NEXPRESSO model is really good and has helped our company facilitate our technology development and commercial expansion."*

## NEXPRESSO Projects

Institut Curie (France)
"Adaptive Optics in Spinning Disk microscopy (AOSD) of living samples"
COSINGO-Imagine Optic (Spain).

The Institute of Photonic Sciences (Spain)
Compact STED CW sources emitting in the yellow range
Solus Technology Ltd

The Institute of Photonic Sciences (Spain)
Super Resolution Multimodal Microscopy with Ytterbium Laser Systems
Time-Bandwidth Products AG

CNIT (Italy)
Toward Integrated photoNicaSsisted fully-dIgital raDar transceiver (INSIDE)
Selex Sistemi Integrati SpA (Italy)

ENSTA Paris Tech (France)
"Laser Beam and Tissue Characterisation for Ultrashort Pulse Laser Eye Surgery" and "Direct Imaging of Intense Pulsed Terahertz Beams
ALPhANOV (France)

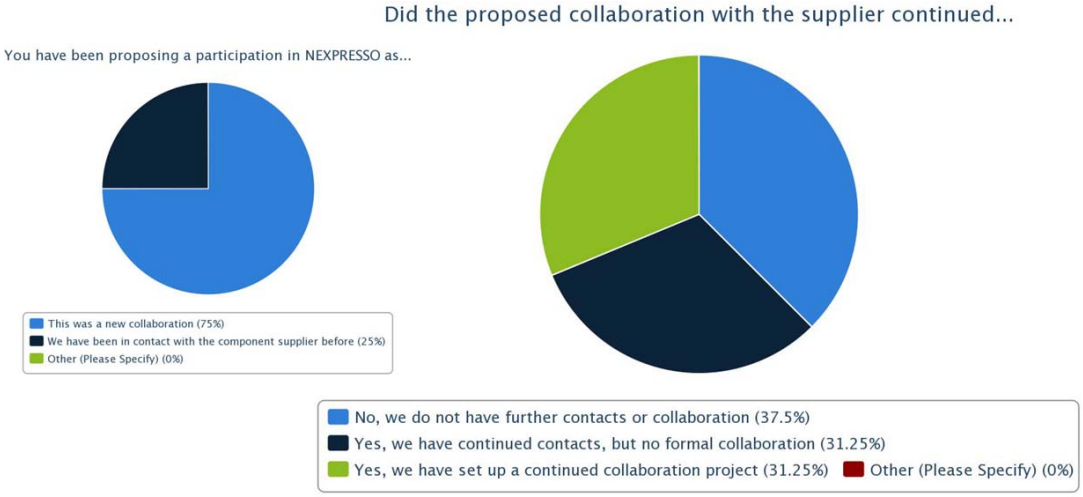
University of Dundee 2 (UK)
Generation of THz Radiation from Quantum Dot Photomixers
Innolume

Institut de Physique de Rennes UMR6251 CNRS/Université Rennes 1 (France)
Tunable high resolution Ti:Sa dual frequency laser for CW THz oscillator
Resolution Spectra Systems

Medical University Vienna (Austria)
Next Generation Multi-Functional Optical Coherence Tomography for Enhanced Ophthalmic Imaging and Diagnosis
Exalos (Switzerland)

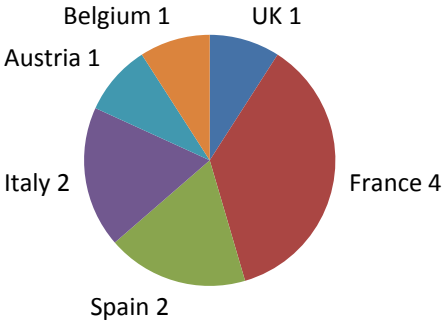
UMI2958 Georgia Tech – CNRS (France)
Development of Vertical GaN-Based LEDs Wafer Bonding to Conducting Substrates by means of a Sacrificial ZnO Template Layer & Chemical Lift-off from GaN Substrates
Nanovation SARL

# NEXPRESSO triggering a continued and cross-border collaboration




In 75% of the projects, the component supplier and the Academic Research Group did not know each other before NEXPRESSO and in 67% of the cases the collaboration continued in one form or another.

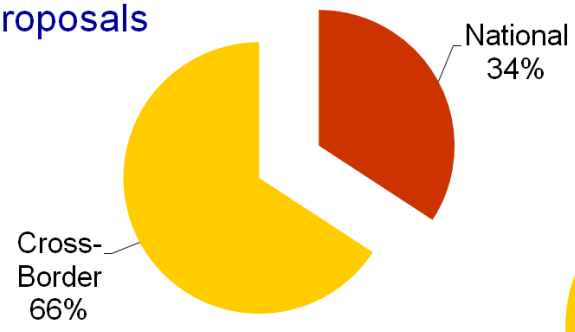
Geographical distribution of R&D groups with an awarded NEXPRESSO project



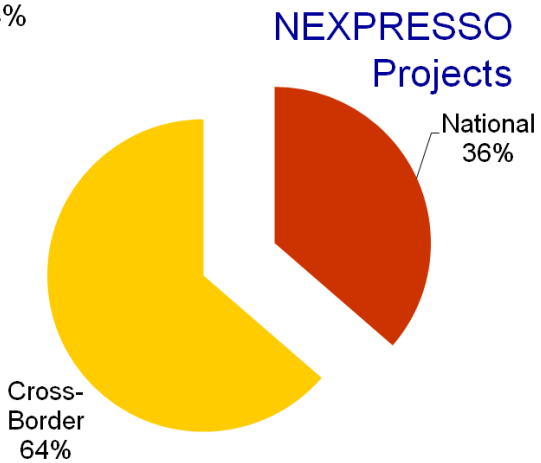

And in addition to this, this collaboration was mostly international, triggering new and cross-border collaborations and support for the SMEs, which would not have been possible without a tool like NEXPRESSO and without its European dimension.

## International aspect

NEXPRESSO Proposals




NEXPRESSO Projects



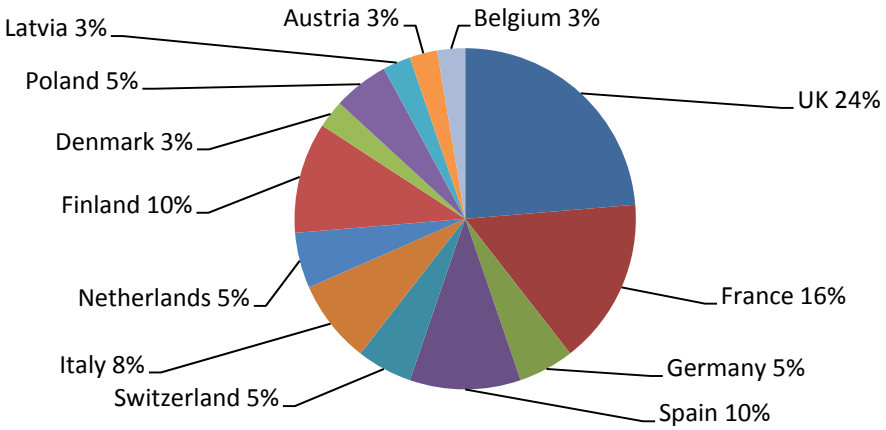
## NEXPRESSO Projects

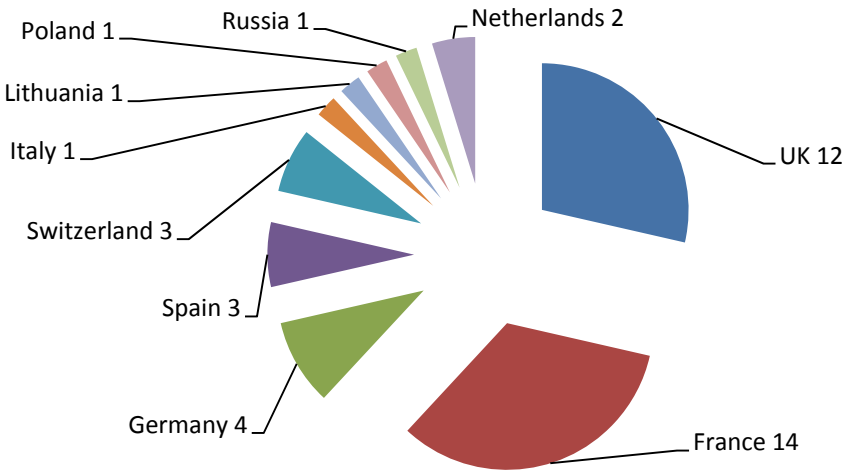
Type 2 project:

University of Parma (Italy)
Short-Pulse High-Speed Fiber Laser Cutting of Multilayer Materials
Innolight Innovative Laser & Systemtechnik

Type 3 Project

HoWest (Belgium)
OLED lighting applications in outdoor conditions
Philips




Geographical distribution of R&D groups submitting a project proposal to NEXPRESSO (top) and component suppliers (bottom)

# Sustainability

The NEXPRESSO model has been documented for other organizations to implement, a detailed 'copy kit' is available. EPIC has already confirmed that it will implement the model among its 150 members distributed over 24 countries.

# 1 Project Summary & Main Results

## *1.1 Project context*

Sometimes, when research produces a new device, a spin-out company is formed for exploitation, but it takes a lot of work to turn the invention into a product: testing, optimising the components for specific applications, putting it in a package and complying with standards, etc. No grants cover this activity and investors typically only get involved once there is a market.

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### *1.1.1 The NEXPRESSO Process Flow*

In a nutshell, NEXPRESSO sends out a call for prototypes, and SMEs respond with a description of a prototype they would be willing to furnish, along with some of their needs concerning testing, evaluation or adaptation to a specific application. NEXPRESSO publishes this list, and sends out a call to R&D organisations (typically universities) to respond with a fourpage proposal for a six-month project on a specific prototype.

These proposals are ranked by an independent panel of reviewers and the NEXPRESSO team then awards the project according to ranking and financial limits. In so doing, the project brings the SME and the research organisation together as a team — including agreements on intellectual property and other aspects.

NEXPRESSO then negotiates a transfer price with the SME, purchases the prototype, and lends the prototype to the research organisation for the duration of the project (three to nine months). If the R&D organisation completes its task successfully, it can keep the prototype, and NEXPRESSO will transfer ownership.

### *1.1.2 Objectives & how the objectives were achieved*

The specific objectives & achievements of NEXPRESSO are:

- Objective: to implement a set of collaborative schemes between R&D groups and industry. ACCORD was solely based on the proposal of R&D work to be carried out on pre-commercial components listed by industrial suppliers. Nexpresso goes beyond this and will explore new types of collaboration.

  Achievement: NEXPRESSO implemented 2 new schemes of collaboration. The first being a scheme where the R&D group publishes a proposal to which component suppliers can submit a component, and second a scheme in which an R&D group, eventually together with an end-user evaluates possible components for a specific application of the end-user.

- Objective: to develop and disseminate a procedure for efficient and productive evaluation programmes in the form of a Copy-Kit, so that local, regional and national authorities can implement their own "NEXPRESSO" programmes. This Copy-Kit will consist of a set of documents describing the findings of NEXPRESSO.

  Achievement: A collection of all required documents for launching and running an exchange programme as NEXPRESSO is produced, as well as estimates of required timing, personnel costs and effort to run the different steps of the programme.

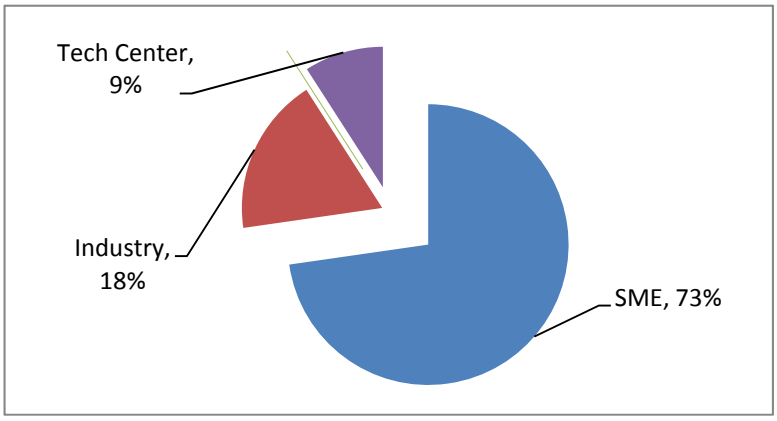
- Objective: to implement several methods of sustainable funding independent of the European Commission so that the NEXPRESSO initiative will continue to operate when the project is completed. These methods can either be through support from end-users, support from industry or support from local; or national funding agencies.

  Achievement: several prospective contacts have been established to try to run a test exchange programme by another authority, however no success was achieved at this moment. Possible routes by using professional organisations are still under investigation.

- Objective: These objectives respond directly to the call specification: "SME and researchers support through access to photonics technology and design expertise, prototype components and manufacturing facilities".

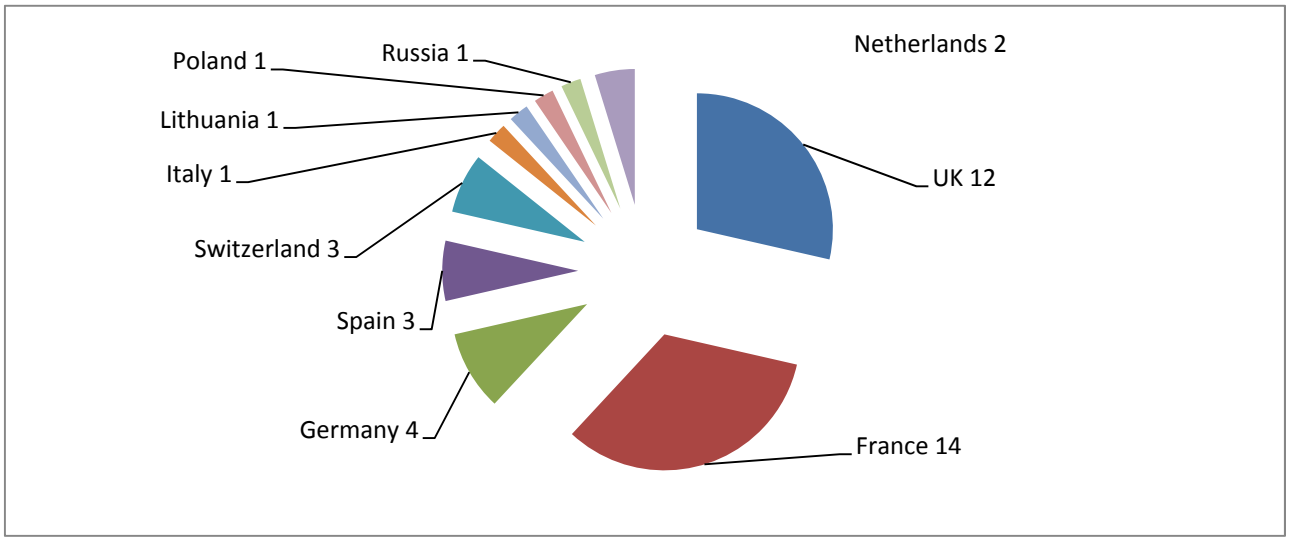
  Achievement: In total 11 projects were awarded by NEXPRESSO, of which 75% used components provided by SMEs.

***Type of organisation acting as component supplier in NEXPRESSO-awarded projects***

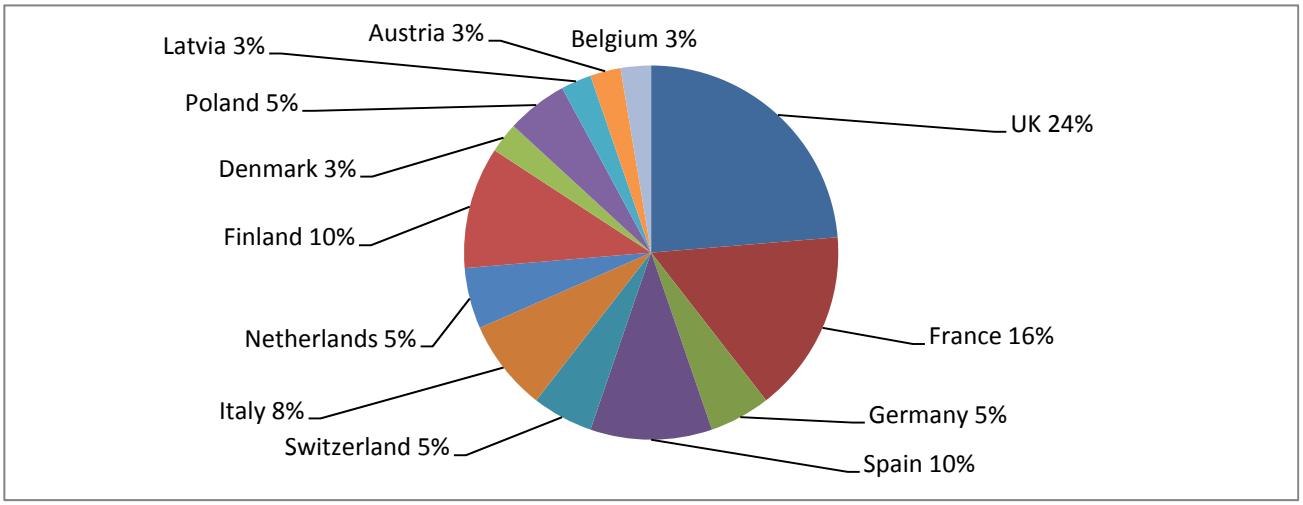


### *1.1.3 Measurable objectives & Achievements:*

The NEXPRESSO-project collected in total 42 single component submissions and 38 single R&D proposals, which is clearly above the limit of 30 set at the start of the project. The projects funded through NEXPRESSO involved young researchers and PhD students. In more than half of the projects the work, carried out, was specifically part of a PhD thesis and also in more than 10% of the projects, the work was part of a Master thesis and a Master course.

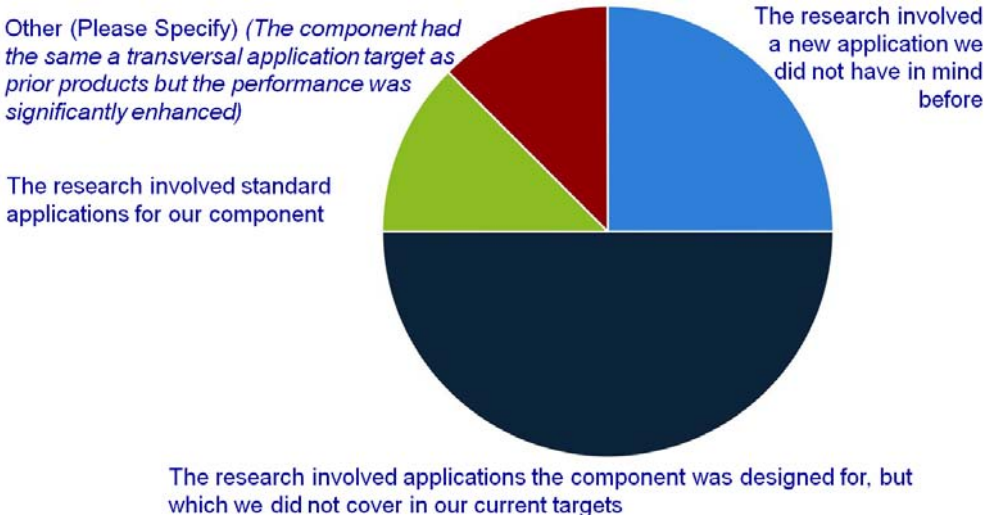



***Geographical distribution of component suppliers***

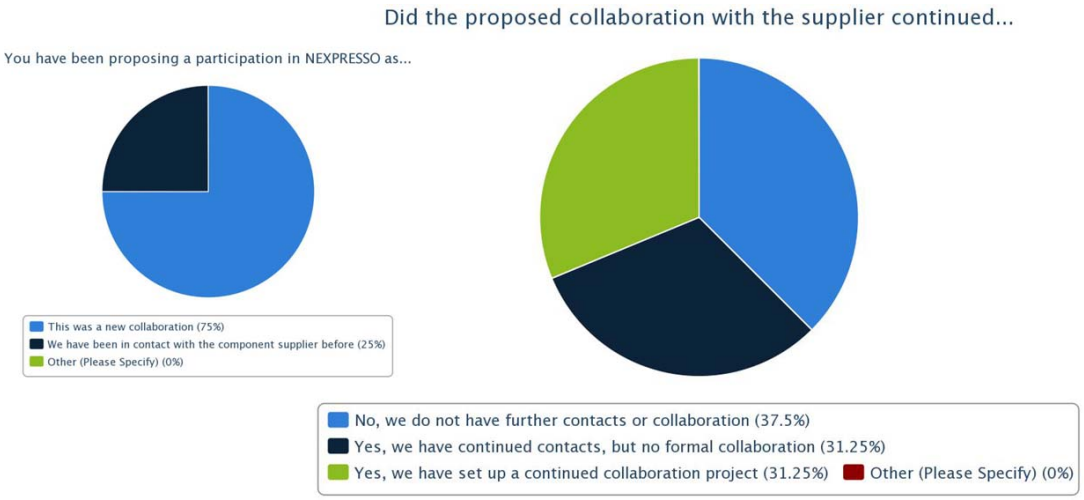



***Geographical distribution of R&D groups submitting a project proposal to NEXPRESSO.***

The projects also involved high-tech and scientifically relevant research as the majority of the projects resulted in at least 1 journal paper and / or a presentation at an international conference. However one of the primary objectives of the NEXPRESSO-project is to support SMEs in bridging the "Valley of Death". For all component suppliers involved in the NEXPRESSO-awarded projects, the area of interest was broadened by the project. For half of the R&D groups, the NEXPRESSO-awarded project provided them access to a component which they would have never been able to purchase without the opportunity offered by NEXPRESSO.




For the majority (by far) of the research groups and the component suppliers, the collaboration involved a new partner and paved the way to a continued collaboration.



## *1.2 Description of the main S&T results/foregrounds*

### *1.2.1 The NEXPRESSO Process flow*

NEXPRESSO supported 3 types of proposals and collaborations:

***Type 1: Universities respond to submitted components***

- NEXPRESSO opens a call for components
- Component suppliers respond by submitting proposals for pre-competitive components
- NEXPRESSO lists those components on its website and announces these through mailings and newsletters. Eligible components can be found in the Members' area; selecting "Proposals and Projects" and then "Components Proposed".
- Universities respond by submitting R&D proposals using one of these components in a research project.
- NEXPRESSO evaluates and ranks the submitted proposals and selects the proposals with highest interest.
- NEXPRESSO forms the cooperation team and formalizes the collaboration agreement between the company providing the component and the university chosen to perform the R&D project, so that there are milestones to track R&D progress and results.
- NEXPRESSO orders and pays for the component according to the terms of the agreement worked out in step 6, arranging for shipment to the university.
- The chosen university begins the R&D project and NEXPRESSO monitors progress to assure that the terms of the agreement are met.

***Type 2: Components suppliers respond to submitted R&D requests***

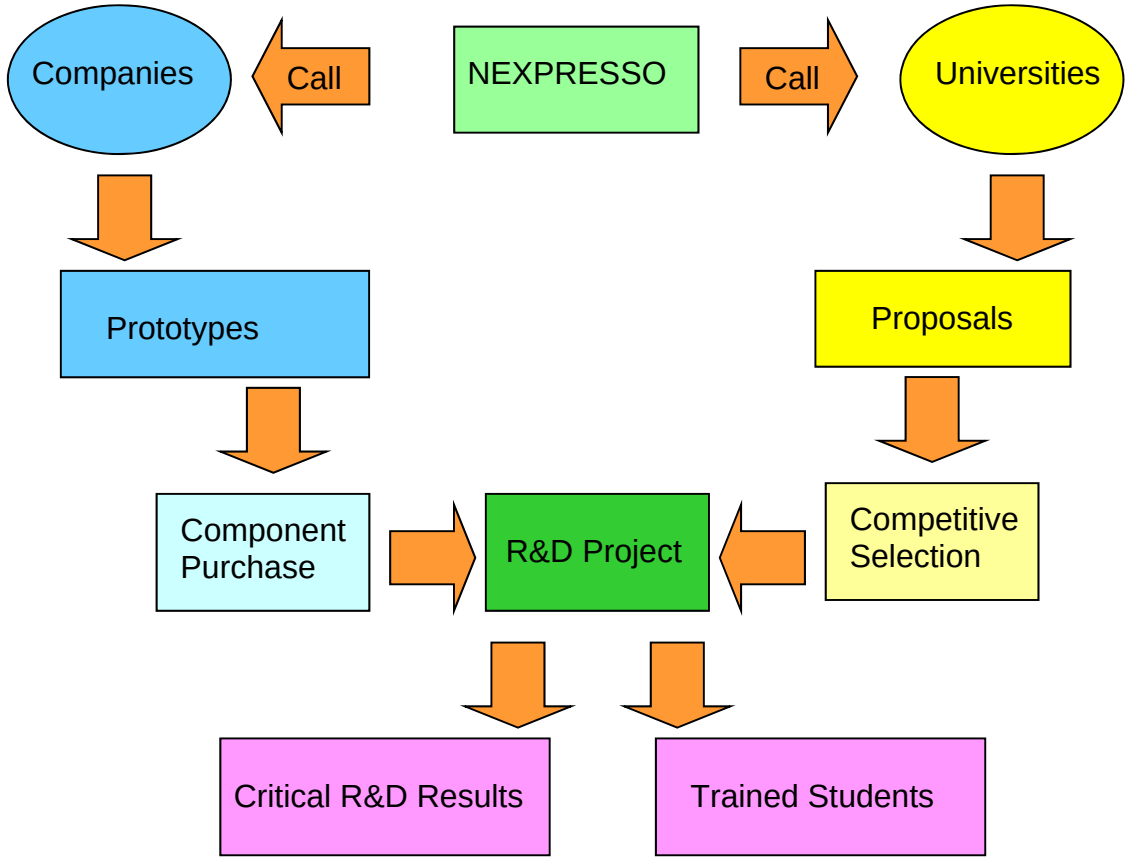
- NEXPRESSO opens a call for requests from universities
- Universities respond by submitting requests for components with improved characteristics or components not yet available on the market.
- NEXPRESSO lists those requests on its website and announces these through mailings and newsletters.
- Components suppliers respond by submitting component proposals to be offered for one of the listed R&D projects.
- NEXPRESSO evaluates and ranks the submitted proposals and selects the proposals with highest interest.
- NEXPRESSO forms the cooperation team and formalizes the collaboration agreement between the company providing the chosen component and the university chosen to perform the R&D project, so that there are milestones to track R&D progress and results.

- NEXPRESSO orders and pays for the component according to the terms of the agreement worked out in step 6, arranging for shipment to the university.
- The university begins the R&D project and NEXPRESSO monitors progress to assure that the terms of the agreement are met.

***Type 3: Requests from end-users***

- NEXPRESSO opens a call for requests from possible end-users
- Possible end-users respond by submitting requests to universities to carry out evaluation or assessment of prototypes manufactured by component suppliers
- NEXPRESSO lists those requests on its website and announces these through mailings and newsletters.
- Universities respond by submitting R&D proposals to carry out the request assessment.
- NEXPRESSO evaluates and ranks the submitted proposals and selects the proposals with highest interest.
- NEXPRESSO forms the cooperation team and formalizes the collaboration agreement between the company providing the chosen component and the university chosen to perform the R&D project, so that there are milestones to track R&D progress and results.
- NEXPRESSO orders and pays for the component according to the terms of the agreement worked out in step 6, arranging for shipment to the university.
- The university begins the R&D project and NEXPRESSO monitors progress to assure that the terms of the agreement are met.

The 3 types of collaborations follow the same objectives and are illustrated below.




A schematic diagram of the exchange program.

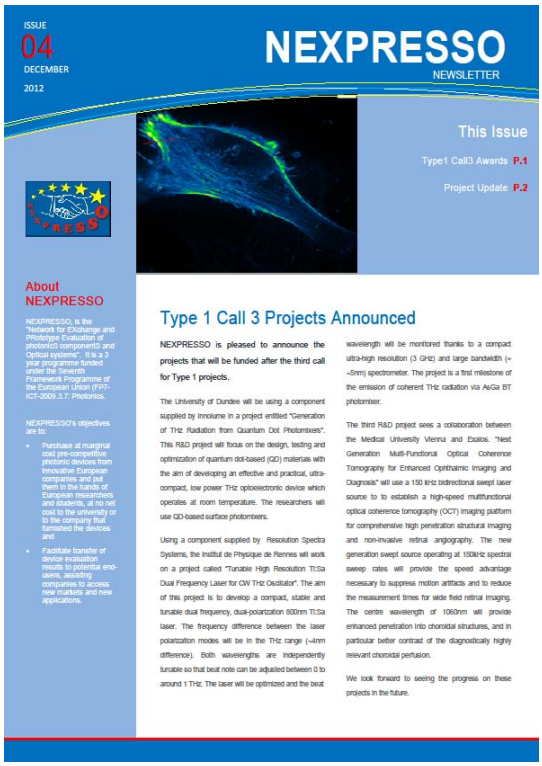
### *1.2.2 Solicitation of Proposals and Components*

All calls have been published on the NEXPRESSO Website and in the NEXPRESSO Newsletter. This newsletter is distributed through the NEXPRESSO Mailing list which contains the addresses of all registered participants on the NEXPRESSO website. The list contains about 400 addresses

NEXPRESSO Calls have also been announced through other newsletters. The newsletters which have been kept track of are:

- Newsletter of the EC Photonics Cluster
- Newsletter form SPIE Europe News
- Newsletter from Photonics21

Besides these “tracked” newsletters, there are also other magazines and newsletters which have picked up the news, as was e.g. the case with an appearance in “ElectroOptics Newsline”.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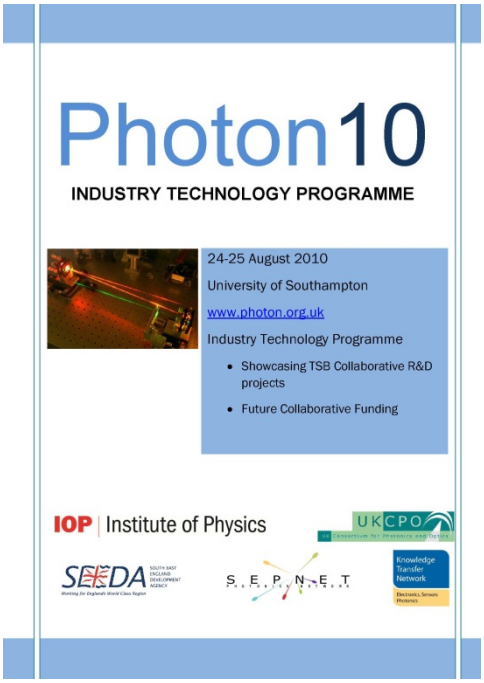
About NEXPRESSO

Type 1 Call 3 Projects Announced

Use was also made of the databases of the individual NEXPRESSO-partners which have a significant list of contact addresses for local and regional potential interested parties. Amongst these, the databases with the highest expected impact are the ones from EPIC, SOA and OpticsValley. As these serve as a central and regional contact point for industry and research in the photonics area.

In the ACCORD programme communication of the activity to Industry and Universities was accomplished by staging a workshop during major European events such as Photonics Europe and Laser, World of Photonics. Unfortunately these workshops were not well attended and hence in NEXPRESSO it was decided that a different approach would be adopted, i.e. more local and targeted events would be addressed. Two examples are listed below, a regional event as well as a workshop oriented towards SMEs.




This approach was successfully piloted at Photon10 – the UK's largest Photonics conference and exhibition. Photon10 was held at University of Southampton between 23rd and 26th August 2010 and was attended by over 400 academics and over 100 industry personnel.

A presentation was also made at the "PHOTONICS SME WORKSHOP", organized at the EU premises on 20 June 2011 and at other events.

### *1.2.3 Submitted Proposals and Components*

The announcement and Call for Components and Proposals resulted in the submission of 42 components and 38 proposals over all calls. The following tables illustrate in detail the results.

| | Open | Close | Submissions | Available | Eligible | Awards |
|---|---|---|---|---|---|---|
| Type 1 | | | | | | |
| *Call 1 for Components* | *16/08/10* | *08/10/10* | *33* | *33* | *33* | |
| *Call 1 for R&D proposals* | *21/10/10* | *30/11/10* | *27* | *27* | *27* | *4* |
| *Call 2 for Components* | *25/05/11* | *01/07/11* | *0* | *22* | *22* | |
| *Call 2 for R&D proposals* | *18/07/11* | *26/08/11* | *3* | *3* | *3* | *1* |
| *Call 3 for Components* | *01/02/12* | *30/03/12* | *7* | *16* | *16* | |
| *Call 3 for R&D proposals* | *07/05/12* | *22/06/12* | *9* | *9* | *8* | *4* |
| Type 2 | | | | | | |
| *Call 1 for R&D proposals* | *15/08/10* | *15/06/11* | *2* | | *1* | |
| *Call 1 for Components* | *15/06/11* | *20/08/11* | *1* | *1* | *1* | *1* |
| Type 3 | | | | | | |
| *Call 1 for R&D proposals* | *15/08/10* | *15/06/11* | *1* | | *1* | *1* |

### *1.2.4 Overview of submitted components*

In view of the confidentiality of some of the information, a detailed list of the submitted components is not listed here. In total 42 components were received over the different calls. These came from different countries

### *1.2.5 Overview of submitted proposals*

Again, in view of the confidentiality of some of the information, a detailed list of the submitted proposals is not listed here. In total 38 proposals for research projects were received over the different calls.

### *1.2.6 Organisation of the Evaluation Process*

NEXPRESSO has developed the modalities for implementing a fair and impartial evaluation of the submitted proposals (where a proposal is typically the pair made by a pre-competitive component submitted by an Industrial partner and coupled to a R&D proposal received from the University) right at the beginning of the project and before the opening of any call.

For fairness and impartial evaluation, each proposal is submitted to a number of independent experts (both coming from industry and academia).

As first step NEXPRESSO established a multidisciplinary database of potential evaluators. The names of possible evaluators were provided by each NEXPRESSO member for each of the possible field involved. Despite the evaluator names have been provided by NEXPRESSO, it is understood

that evaluators are not influenced in their evaluation by NEXPRESSO in any way. The evaluators do their job for free (no budget has been planned in the project for paying the work made by the evaluators).

For each call issued by NEXPRESSO, the evaluation committee for a single proposal will come from selecting a number of experts (minimum three) who are named by NEXPRESSO based on the following characteristics:

- the competence in the specific technical field
- the nationality (to avoid that the evaluation of a proposal is made by an expert of the same nationality)
- the absence of any possible conflict of interest (commercial especially)

The NEXPRESSO's database of experts is regularly updated at each issued call so to include new experts or to discard the ones who are not available for reviewing a proposal anymore. Each expert is the only responsible for scoring the proposal by using a number of criteria for evaluation that have been fixed in advance by NEXPRESSO. In total independence, each expert will be the sole determiner as to the points assigned in the evaluation.

### *1.2.7 Sorting and selecting components*

At the moment of the closure of a given call, all the received proposals (that have been submitted via the NEXPRESSO website) are pre-screened by NEXPRESSO for assessing the eligibility, i.e. in order to determine if the proposal complies with the requirements contained in the "Call for Participation" (this mainly means to verify that the submitted proposal is within the scope of NEXPRESSO but also that the proposed timeframe for the R&D project and price of the proposed component are in line with the available budget). If not clearly indicated already in the application, NEXPRESSO will try to match up the company (the component provider) with the R&D applications submitted by the University groups (the recipients), giving preference to non-existing collaborations and to applicants with a letter of support from end-users.

It should be noticed that the average cost of a component is typically in the 25 kEUR range, but exceptions are possible based on the scientific excellence and on the total available budget: when two proposals score the same for technical excellence, the less expensive one is preferred). The information on the price requested by the supplier for the component (the raw cost of the component) is somehow sensitive for the company and should be kept confidential. Therefore this information is not included as an evaluation criterion for the evaluation. NEXPRESSO will decide about which project are funded firstly based on the total score given by the evaluators, then based on available NEXPRESSO budget.

Proposals that are not in the scope of NEXPRESSO will be excluded. Reasons for exclusion are:

- Insufficient technical details for the correct evaluation of the proposal
- Proposals outside the technology area of interest (photonics)
- Component which is already commercialized
- Cost of the prototype component is too high

Any admissible component that could not be matched with a R&D project received within the call is automatically re-considered for all subsequent calls.

### *1.2.8 Evaluation of the research proposals*

Each eligible proposal is sent by NEXPRESSO to a minimum of three evaluators, who are appropriately chosen from the database. The proposals are individually read and judged by each member of the evaluation committee. It is expected that the evaluator will provide an answer – by filling and signing the NEXPRESSO evaluation form - within a month from the reception of the package (proposal plus evaluation form).

The evaluation panel adopts the following criteria to reach its decision (not in order of importance):

- Scientific and technical relevance
- Time for delivery
- Novelty of the application area
- Potential and involvement of end-users for new applications
- Likelihood of follow-on grants and contracts resulting from the proposed effort
- Perceived market opportunity
- Training opportunities

Once all the signed evaluation forms are received from each evaluator, NEXPRESSO can rank the received proposals. However, the following issues are also considered before making the final ranking:

- Scores by the evaluators are being evaluated in view of anomalies and discrepancies. In case a discrepancy is found, the comment will be taken into account and eventually the ranking may be changed.
- In case of ties between proposals, the discrepancy and specific comments made by the evaluators will be considered and evaluated. In the case that no distinction can be made, the budget may become a crucial factor in the final selection.
- In view of the budget available within NEXPRESSO, some proposals might end up with a too high cost. It is however considered that NEXPRESSO is intended to make a difference with respect to ACCORD in view of type of collaborations that might be funded. Therefore the budget issue does not play a role at this point in the project, but will of course affect the upcoming calls. It is also expected that during the negotiations, specific arrangements can be made with respect to the component purchase, as was also the case during the ACCORD-project. This may include a lowering of the costs if e.g. the institute purchases the component afterwards, the component is delivered on a “loan”-basis, or any other arrangement that might pop up.
- The fact that proposals are submitted by the same group is not an issue in the decision for awarding a proposal. The quality of the proposals is primarily considered.

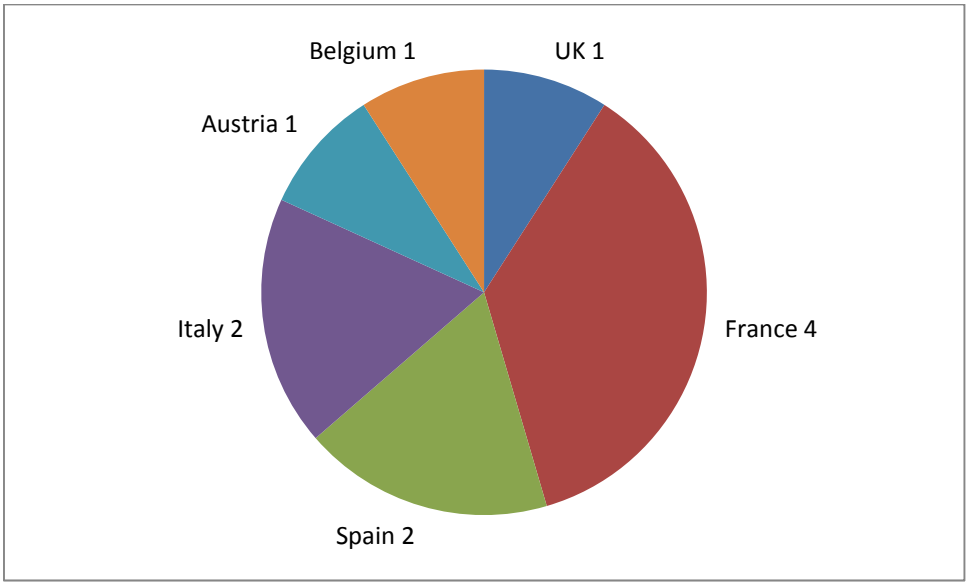
- The fact that components are being used in several proposals is also not taken into account, unless it is clear that the component submitted is unique (no 2nd component is available or is planned to be made available).

### *1.2.9 Final selection*

When the final selection is made, NEXPRESSO proceeds to the purchase of the prototype components from the providers on the basis of the best value for money (best price/quality ratio), under conditions of transparency and equal treatment. All decisions of the evaluation panel are final.

Based on these procedures the following proposals were awarded during the course of the NEXPRESSO-project:

| R&D Ref: | University | Research Proposal Title | Component Offered By: |
|---|---|---|---|
| Call_1 - 010 | Institut Curie | Adaptive Optics in Spinning Disk microscopy (AOSD) of living samples | COSINGO-Imagine Optic Spain S.L. |
| Call_1 - 013 | The Institute of Photonic Sciences | Compact STED CW sources emitting in the yellow range | Solus Technology Ltd |
| Call_1 - 016 | The Institute of Photonic Sciences | Super Resolution Multimodal Microscopy with Ytterbium Laser Systems | Time-Bandwidth Products AG |
| Call_1 - 023 | CNIT | Toward Integrated photoNicaSsisted fully-dIgital raDar transceiver (INSIDE) | Selex Sistemi Integrati SpA |
| Call_2 - 030 | ENSTA Paris Tech | "Laser Beam and Tissue Characterisation for Ultrashort Pulse Laser Eye Surgery" and "Direct Imaging of Intense Pulsed Terahertz Beams | ALPhANOV. |
| Call_3 – 001 | University of Dundee 2 | Generation of THz Radiation from Quantum Dot Photomixers | Innolume |
| Call_3 – 005 | Institut de Physique de Rennes UMR6251 CNRS/Université Rennes 1 | Tunable high resolution Ti:Sa dual frequency laser for CW THz oscillator | Resolution Spectra Systems |
| Call_3 – 006 | Medical University Vienna | Next Generation Multi-Functional Optical Coherence Tomography for Enhanced Ophthalmic Imaging and Diagnosis | Exalos:. |
| Call_3b-009 | UMI2958 Georgia Tech –CNRS | Development of Vertical GaN-Based LEDs Wafer Bonding to Conducting Substrates by means of a Sacrificial ZnO Template Layer & Chemical Lift-off from GaN Substrates | Nanovation SARL |
| Call_1 - 211 | University of Parma | Short-Pulse High-Speed Fiber Laser Cutting of Multilayer Materials | Innolight Innovative Laser & Systemtechnik |
| Call_1 - 311 | HoWest | OLED lighting applications in outdoor conditions | Philips |




***Geographical distribution of R&D groups with an awarded NEXPRESSO project.***

### *1.2.10 Project supervision*

There are 3 types of supervision processes that have been foreseen to be used within NEXPRESSO:

- Progress reports are envisaged to be used for long duration projects (12 months) where full research activities will be realized.
- Review meetings are envisaged for short term activities where physical meetings are necessary to implement correctly the collaboration between the university and company and also to define well the final goals of the work.
- Remote supervision might be envisaged for small projects that can give an input for further and bigger collaborations.

During NEXPRESSO there were 11 projects to supervise and all of them have matched the first condition. Only 1 single project matched the 2$^{nd}$ condition as it was very short in duration.

### *1.2.11 Sustainable Operations*

One of the objectives of the NEXPRESSO-project was also to investigate the possibility to implement a NEXPRESSO exchange programme in cooperation with a regional development authority.

After several contacts with a different set of regional authorities, it became clear that financing NEXPRESSO through regional funding might not be possible because regions will be demanding a direct return to their region, which is a constraint that doesn't fit with the NEXPRESSO philosophy.

The latest work has been on exploring industry financial support.

In 2013 EPIC, one of the partners of NEXPRESSO, contacted CTOs of companies with the proposal to be the major sponsor of a NEXPRESSO follow-up program. EPIC would provide the expertise in managing the program while companies' sponsorship would pay for the components. Independent of the sponsorship amount and benefits, the concerns were that companies would be sponsoring components in a technology field that was not related to their business, or worst case, paying for a component from a competitor or competing with their technology! Such a situation would result in an embarrassment inside the company from the person that approved the sponsorship; it seemed a no–go option for those with whom we discussed. The issue would be less with companies that offered a broad range of components.

The attempt to get many sponsors for a smaller amount of financial support was not explored, too much time would be spent on recruiting sponsors, and the visibility of the sponsor benefit would be diluted.

The latest attempt was in beginning March 2014 but with another approach. Instead of approaching NEXPRESSO from a technology perspective, we approached CEOs to engage their "marketing" staff into the discussion, this now became a marketing promotional opportunity where the return expect would be visibility of the sponsor, the sponsor being promoted as a "Sponsor of innovation".

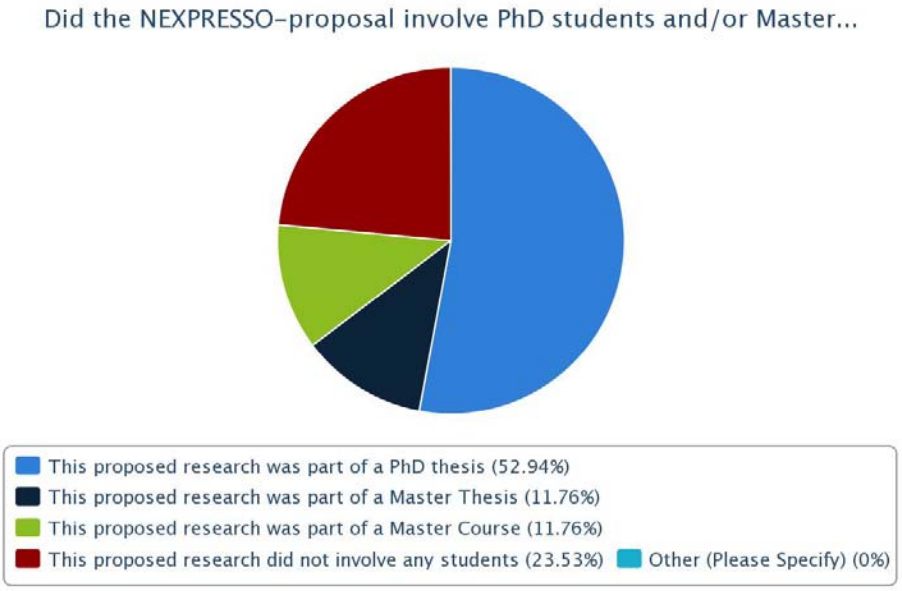
A sponsor could not be found and EPIC picked up the NEXPRESSO-CopyKit to implement this idea in a valuable service in scope with the association's mission to support an innovative and competitive photonics industry in Europe. Between 2012 and March 2014, EPIC has grown significantly from 80 to 150 members, being less dependent on public funding, and increasing its network and visibility.

## 1.3 Potential impact and the main dissemination activities and exploitation of results

### 1.3.1 Potential impact

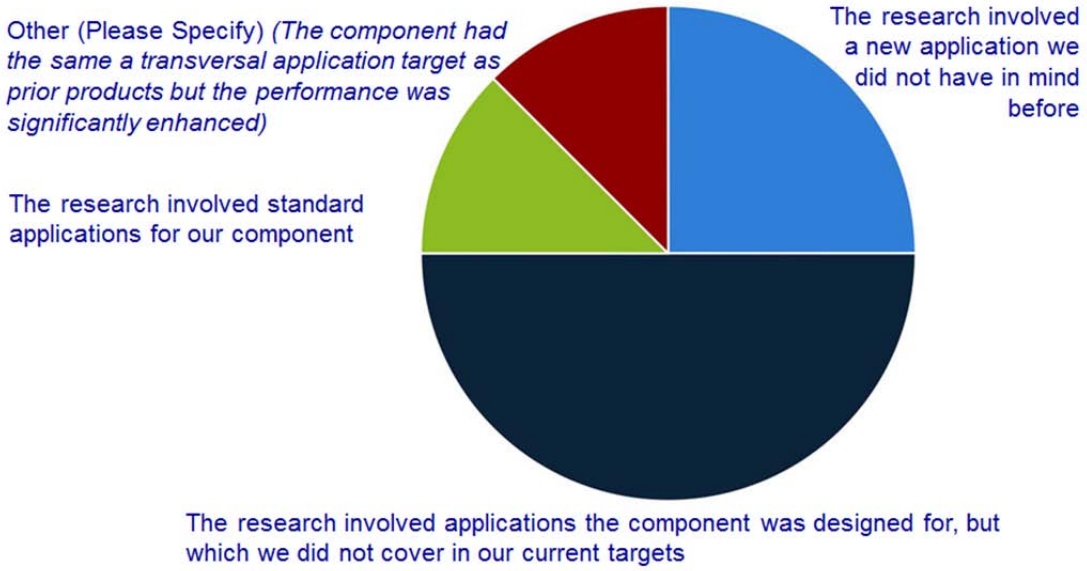
NEXPRESSO implements a network for evaluation by researchers of prototype photonics components and systems manufactured by SMEs, at no net cost to either the university or the SME. The program seeks to make a good match between available prototype products and the R&D proposal related to that product.

As a result, students are trained on the next generation of emerging technologies and products as identified by European industries. This training orients students towards advanced technology jobs in Europe, thus helping to develop a highly educated and productive workforce in Europe. As shown below, the NEXPRTESSO-project clearly involved these young scientists and brings them into contact with the SMEs and breaking-edge and pre-competitive components.



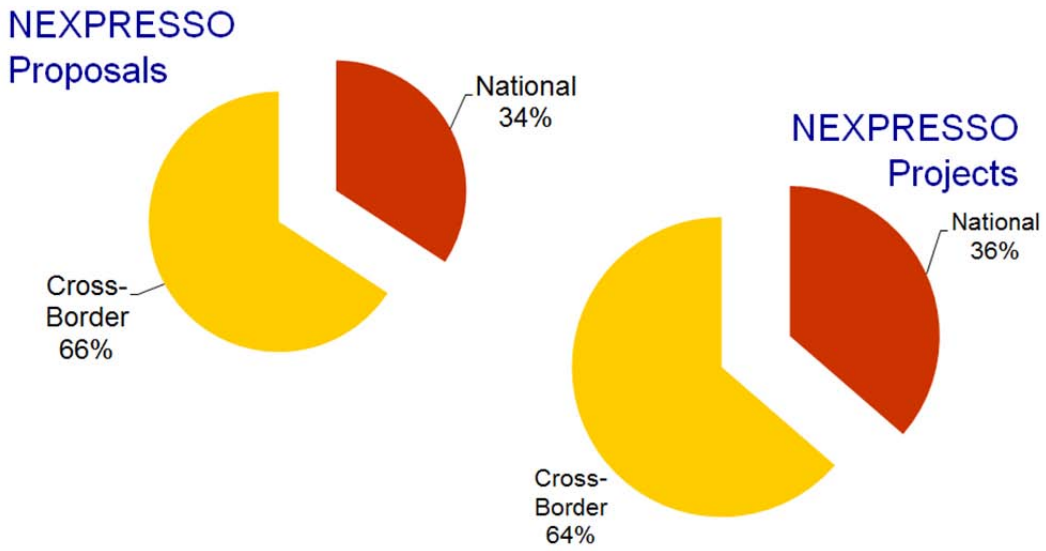

SMEs that participate in the NEXPRESSO program have a new and valuable resource for implementing research and development that is precisely focused on the products and on the issues that are most relevant to that company's continued growth and success.

NEXPRESSO builds European leadership and competitiveness for SMEs by shortening time-to-market for components addressing new applications, and contributes to broader take-up of advanced photonic technologies by implementing key R&D evaluations that help to enable a prototype to become a product.




The potential impact of NEXPRESSO therefore translates itself into a potential impact if an exchange program like this will be picked up by a regional authority or any kind of organization.

However the NEXPRESSO-project also illustrated the importance and the impact of the EU-funding. In about 2 proposals and projects out of 3, the collaboration was cross-border. This cross-border-effect might be lost if the idea is implemented by a regional authority, but can be maintained if an international organization picks up the NEXPRESSO CopyKit.




The potential impact for parties joining the program is listed below in more detail.

#### *1.3.1.1 Added value for the SMEs:*

The NEXPRESSO-project targets the participation of SMEs in the exchange program for components. The added value for SMEs for participation in the program can be quantified by the following criteria:

- For SMEs, with pre-commercial products the exchange program offers the possibility to obtain an opportunity to carry out an in-depth characterization.
- SMEs get an opportunity to check possibilities and qualities of R&D groups in view of setting up new collaborative projects as a continuation with the R&D group.
- For SMEs, aimed at particular markets, there is an opportunity to get input from universities and to address product applications in new markets.
- SMEs get access and preliminary contacts with academia and research groups in other fields and areas out of the market targeted by the SME itself.
- Additional resource for recruiting skilled personnel. This is particularly helpful for SMEs which need highly skilled engineers and scientists but that cannot afford maintaining a large human resources network.

#### *1.3.1.2 Added value for Universities*

Universities get access to cutting edge components to add, expand and enable their research and the start of on-going relationships with industry. The impact and added value for the R&D-=groups can be checked against the following criteria:

- Scientific value: The work with pre-competitive components and systems opens opportunities for publication in scientific journals or at conferences.
- Involvement in educational programmes: work and results from the exchange program is used in PhD thesis, Master Thesis or Master courses. This clearly targets the objective of the programme to put these pre-competitive cutting-edge components in the hands of young researchers.
- R&D groups get access to new areas of research or access to new components at a marginal cost.
- The projects funded through the exchange program offer the opportunity to set up new collaborative projects as a continuation with the supplier.

#### *1.3.1.3 Added value for Local and Governmental Authorities*

Besides the added value for SMEs and R&D groups, there is also an added value for the local, regional of governmental authorities involved and funding the exchange program. The added value for these authorities can be many but some criteria may be:

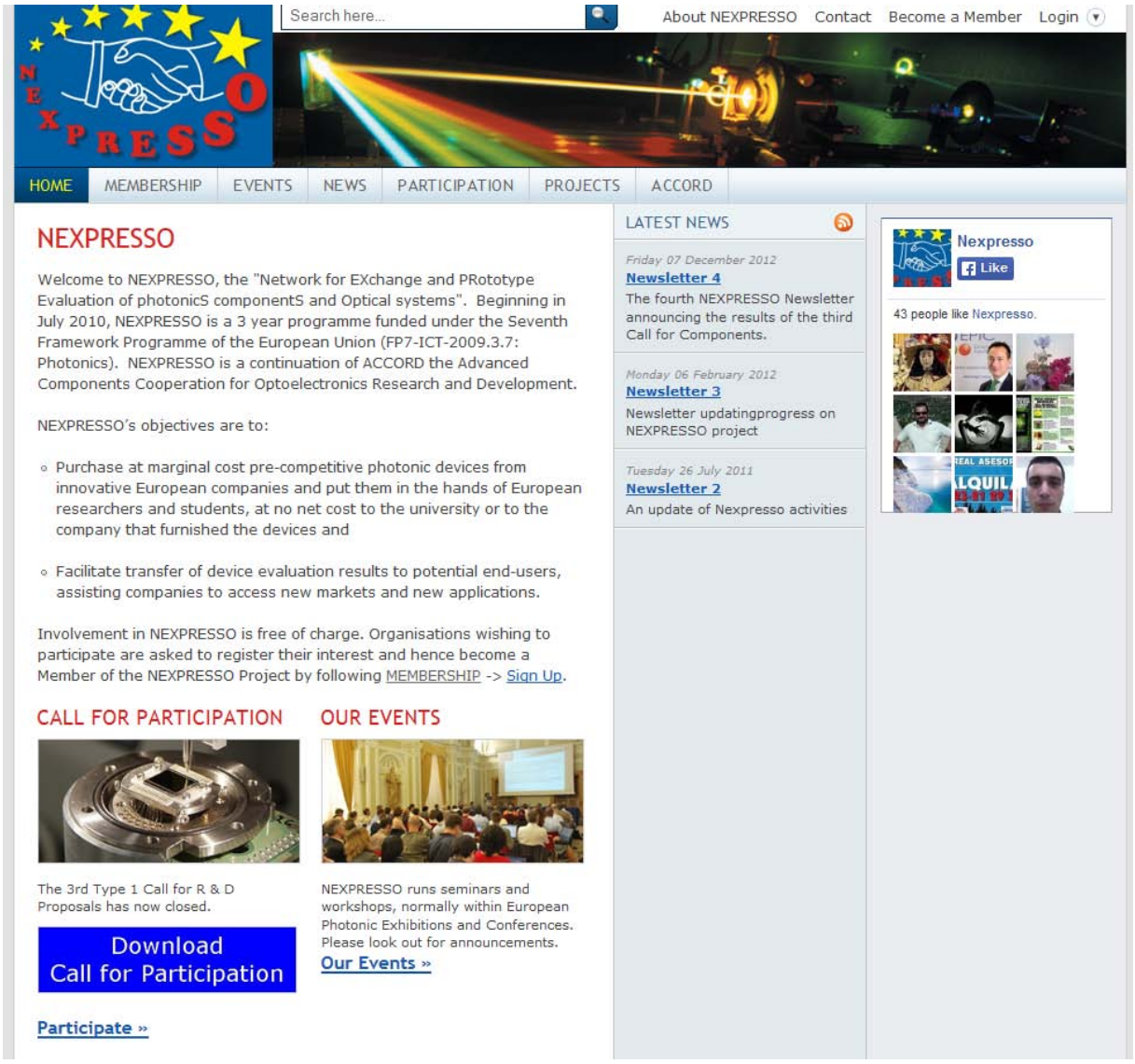
- Stimulated interaction and new collaborative projects between SME and University in the region or country envisaged
- Localization and region-binding of R&D activity and SME activities.

- Increase of employment on a regional scale as new collaborative projects, new markets for the SME and improved product characterization can stimulate employment and growth at the SMEs.
- Development of a high-tech focus for the region which serves as an attraction pole for new activities and new companies.
- Training of students in the next generation of emerging technologies and products, orienting them toward advanced technology jobs and helping to develop a highly educated and productive regional work force.
- Each company participating in the programme – particularly small and medium enterprises (SMEs) – has a new and valuable resource not only for implementing research and development at a reduced cost but also for focusing on products and issues most relevant to continued growth and success.
- Enhancement of professional mobility, particularly for students and researchers.

### *1.3.2 Main dissemination activities:*

#### *1.3.2.1 NEXPRESSO Website*

All information regarding the Calls and the NEXPRESSO-project has been published on the NEXPRESSO Website.




These statistics cover the period from May 2013 to present.

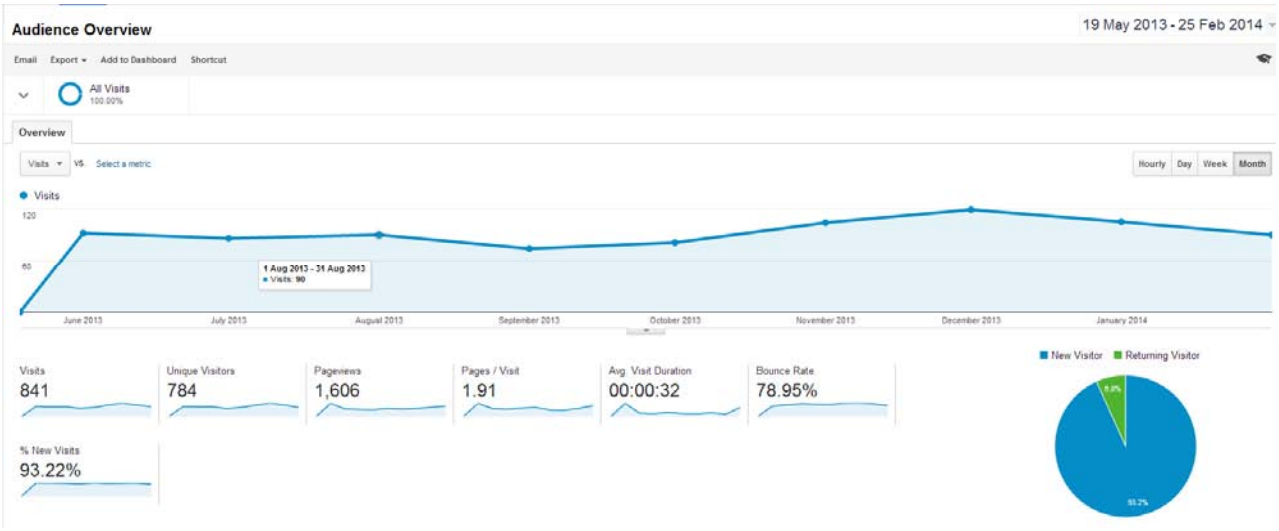
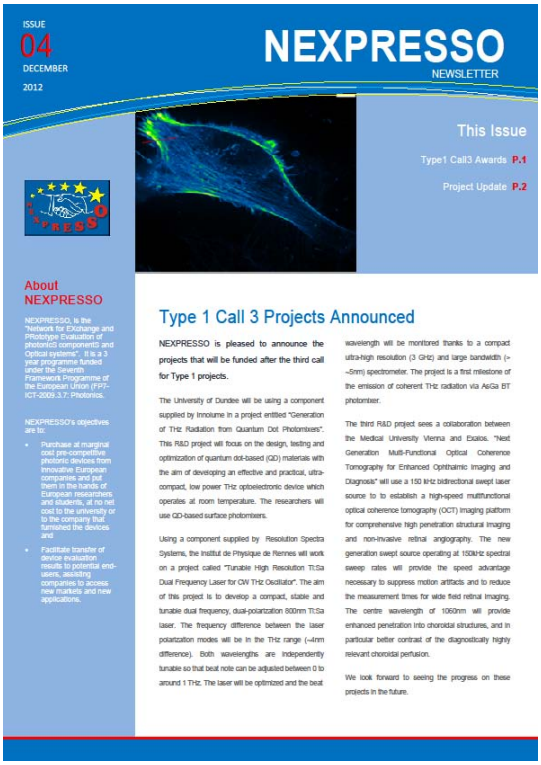



Table 1. Site visit statistics for nexpresso.eu May 13 – Feb 14

Over the period May 2013 to Feb 2014 the site received 841 visits, 784 of these were unique visitors, meaning 6.8% of our visitors were returning visitors. At its peak the site received 120 visits in December 2013, possibly coinciding with the IOA annual meeting and EPIC's 10th Anniversary celebrations.

### *1.3.2.2 NEXPRESSO Newsletter*



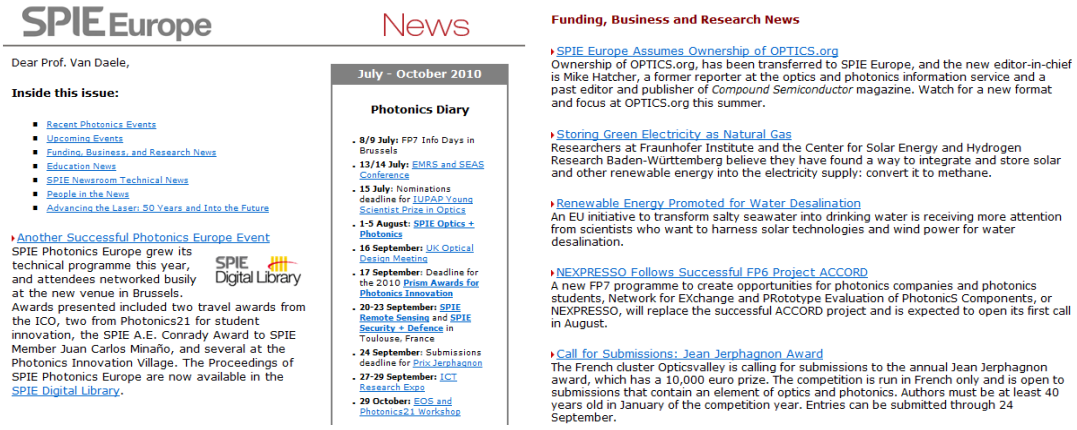

All calls have been published on the NEXPRESSO Newsletter. This newsletter is distributed through the NEXPRESSO Mailing list which contains the addresses of all registered participants on the NEXPRESSO website. The list contains about 400 addresses.

In total 6 newsletters were issued at specific times during the course of the NEXPRESSO-project.

### *1.3.2.3 Other Newsletters*

NEXPRESSO Calls have also been announced through other newsletters. The newsletters which have been kept track of are:

- Newsletter of the EC Photonics Cluster
- Newsletter form SPIE Europe News
- Newsletter from Photonics21



SPIE Europe News

Dear Prof. Van Daele,

**Inside this issue:**

- Recent Photonics Events
- Upcoming Events
- Funding, Business, and Research News
- Education News
- SPIE Newsroom Technical News
- People in the News
- Advancing the Laser: 50 Years and Into the Future

Another Successful Photonics Europe Event

SPIE Photonics Europe grew its technical programme this year, and attendees networked busily at the new venue in Brussels. Awards presented included two travel awards from the ICO, two from Photonics21 for student innovation, the SPIE A.E. Conrady Award to SPIE Member Juan Carlos Miñaño, and several at the Photonics Innovation Village. The Proceedings of SPIE Photonics Europe are now available in the SPIE Digital Library.

July - October 2010

**Photonics Diary**

- **8/9 July:** FP7 Info Days in Brussels
- **13/14 July:** EMRS and SEAS Conference
- **15 July:** Nominations deadline for IUPAP Young Scientist Prize in Optics
- **1-5 August:** SPIE Optics + Photonics
- **16 September:** UK Optical Design Meeting
- **17 September:** Deadline for the 2010 Prism Awards for Photonics Innovation
- **20-23 September:** SPIE Remote Sensing and SPIE Security + Defence in Toulouse, France
- **24 September:** Submissions deadline for Prix Jerphagnon
- **27-29 September:** ICT Research Expo
- **29 October:** EOS and Photonics21 Workshop

**Funding, Business and Research News**

SPIE Europe Assumes Ownership of OPTICS.org
Ownership of OPTICS.org, has been transferred to SPIE Europe, and the new editor-in-chief is Mike Hatcher, a former reporter at the optics and photonics information service and a past editor and publisher of *Compound Semiconductor* magazine. Watch for a new format and focus at OPTICS.org this summer.

Storing Green Electricity as Natural Gas
Researchers at Fraunhofer Institute and the Center for Solar Energy and Hydrogen Research Baden-Württemberg believe they have found a way to integrate and store solar and other renewable energy into the electricity supply: convert it to methane.

Renewable Energy Promoted for Water Desalination
An EU initiative to transform salty seawater into drinking water is receiving more attention from scientists who want to harness solar technologies and wind power for water desalination.

NEXPRESSO Follows Successful FP6 Project ACCORD
A new FP7 programme to create opportunities for photonics companies and photonics students, Network for EXchange and PRototype Evaluation of PhotonicS Components, or NEXPRESSO, will replace the successful ACCORD project and is expected to open its first call in August.

Call for Submissions: Jean Jerphagnon Award
The French cluster Opticsvalley is calling for submissions to the annual Jean Jerphagnon award, which has a 10,000 euro prize. The competition is run in French only and is open to submissions that contain an element of optics and photonics. Authors must be at least 40 years old in January of the competition year. Entries can be submitted through 24 September.

Besides these “tracked” newsletters, there are also other magazines and newsletters which have picked up the news, as was e.g. the case with an appearance in “ElectroOptics Newsline”.

electro optics newsline

Welcome to Issue 57 of EO Newsline, the monthly e-newsletter from the team at *Electro Optics* magazine.

Please forward this newsletter to any colleagues you feel would find it useful, and encourage them to subscribe by visiting our subscription page, where you can also manage your own subscription to both EO Newsline and *Electro Optics*.

NEWS FEATURE

Project launched to accelerate prototype commercialisation

NEXPRESSO, the 'Network for EXchange and PRototype Evaluation of photonicS componentS and Optical systems', has been launched, which looks to provide support for SMEs in commercialising their photonic device prototypes

SPONSORED LISTING

Ocean Optics NIR Spectrometer Now with free iPad*
Valid for all orders received before December 31st 2010

LATEST NEWS

Laser on board Mars mission
The Space Technologies group of Laser Zentrum Hannover is developing a laser suitable for use in outer space as part of the ExoMars-Mission. The laser will be used to help establish if there is any form

Lambda Research to distribute ScatterMaster products

Spectrometer helps dentists use curing lights

SPIE begins accreditation cycle with

### *1.3.2.4 Use of partner databases.*

Use was also made of the databases of the individual NEXPRESSO-partners which have a significant list of contact addresses for local and regional potential interested parties. Amongst these, the databases with the highest expected impact are the ones from EPIC, SOA and OpticsValley. As these serve as a central and regional contact point for industry and research in the photonics area.

Si vous n'arrivez pas à lire cette newsletter, cliquez ici

Opticsvalley

les ECHOS du réseau

13 | 02 | 2014 – n°55

ENTREPRISES

- EBlink se dote d'un Conseil de planification stratégique regroupant plusieurs experts des télécommunications
- La société UINT tient salon
- Thales regroupe ses compétences pour répondre à la forte croissance du marché de la cybersécurité
- Osséomatrix, prix Evry de l'Innovation
- Lucibel acquiert Procédés Hallier

INNOVATIONS & NOUVEAUX PRODUITS

- Isorg et Plastic Logic remportent le prix R&D FLEXI Award pour leur capteur d'image sur plastique
- La terre vue du ciel sous toutes ses coutures, grâce à l'instrument Sieleters de l'Onera
- Le Pôle Entrepreneuriat Etudiant Paris Saclay (PEEPS) organise sa 4ème Journée Entrepreneuriat Etudiant (JEE), le 20 mars prochain

**Appel à candidatures : Prix Fibre de l'Innovation 2014**

Comme chaque année, Opticsvalley organise son prix Fibre de l'Innovation dans le cadre de sa journée événement. Les adhérents de la structure peuvent déposer leur candidature, le 14 mars au plus tard, désormais dans trois catégories : Industrie, Recherche et Etudiants entrepreneurs. La journée Opticsvalley se tiendra le 29 avril 2014 sur le thème « Innovation technologique et citoyenneté ».

Contact : Anne-Laure Aurelle - al.aurelle@opticsvalley.org

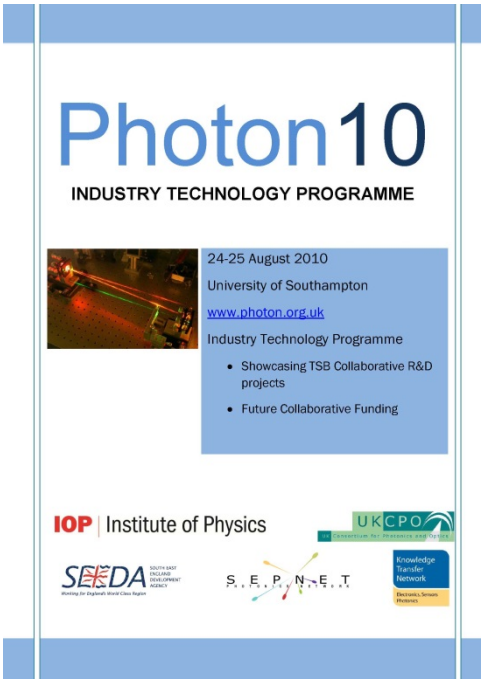
CARNET

A L'HONNEUR

**Costas Kounas**, lauréat du prix Gay-Lussac Humboldt 2013

### *1.3.2.5 Presentations at events*

In the ACCORD programme communication of the activity to Industry and Universities was accomplished by staging a workshop during major European events such as Photonics Europe and Laser, World of Photonics. Unfortunately these workshops were not well attended and hence in NEXPRESSO it was decided that a different approach would be adopted, i.e. more local and targeted events would be addressed. Two examples are listed below, a regional event as well as a workshop oriented towards SMEs.



Photon10

INDUSTRY TECHNOLOGY PROGRAMME

24-25 August 2010

University of Southampton

www.photon.org.uk

Industry Technology Programme

- Showcasing TSB Collaborative R&D projects
- Future Collaborative Funding

IOP | Institute of Physics

UKCPO

SEEDA

S.E.P.N.E.T

Knowledge Transfer Network

***Photon 10***

This approach was successfully piloted at Photon10 – the UK's largest Photonics conference and exhibition. Photon10 was held at University of Southampton between 23rd and 26th August 2010 and was attended by over 400 academics and over 100 industry personnel.

The NEXPRESSO workshop was part of the Industrial Technology Programme (ITP). ITP is an important constituent part of the conference as it acts to bring together industry and academia. The academic programme provides an insight into current research at the top UK Universities conducting Photonics Research and the exhibition is an important venue for those companies selling products to researchers. In addition Photon10 is advertised throughout the UK and numerous visitors attend the events over the event's 4 days.

EUROPEAN COMMISSION
Information Society and Media Directorate-General
Components and Systems
Photonics

AGENDA FOR PHOTONICS SME WORKSHOP

Venue: Avenue de Beaulieu 33, Room BU33 0/58, B-1160 Brussels (Auderghem), Belgium
Time: 20 June 2011, 10:00 – 17:00

AGENDA

10:00 Start

- Introduction and the objectives of the day (15 minutes)
  - *Thomas Skordas*
- Successful past and ongoing actions for SMEs
  - Eurapractice, FUSE – *Roman Burgess* (10 minutes)
  - ACTMOST – *Hugo Thienpont* (15 minutes)
  - Nespresso, Accord – *Peter van Daele* (10 minutes)
  - PhotonFab/ePIXfab – *Damae Delbeke* (10 minutes)
- SME needs
  - PhotonicsRoadSME – *Anthony Salingre* (15 minutes)
  - Photonics21 and SMEs – *Markus Wilhare* (5 minutes)
  - SEPNET – *John Lincoln* (5 minutes)
  - Anteryon B.V – *Koen Demeyer* (5 minutes)
  - Novaled AG – *Jan Blochwitz-Nimoth* (5 minutes)
  - AIDO – *Santiago Simón Martín* (5 minutes)
  - Optical technologies and SMEs – *Hercules Avramopoulos* (5 minutes)
  - Holst Centre / TNO – *Karel Spee* (5 minutes)
  - Other presentations / contributions - *t.b.c.*

12:30-13:30 Lunch

13:30 Discussion

*Designing a new potential action for SMEs*

- *What are the experiences from current and past actions for SMEs? What works and what does not work?*
- *What are the most important requirements from the SME point of view?*
- *Which are the different types of SMEs should be addressed ( for example those which do their own research and produce their own photonics solutions, those SMEs which are the end-users of photonics technology or SMEs elsewhere in the photonics value chain)?*
- *Are different approaches required for the different types of SMEs?*
- *How can such an action be constructed to work efficiently and to have maximum impact on the innovation potential of SMEs?*
- *What are technology areas in Photonics and Organic Electronics which need to be covered?*

15:30 Conclusion and Next Steps

16:00 Close

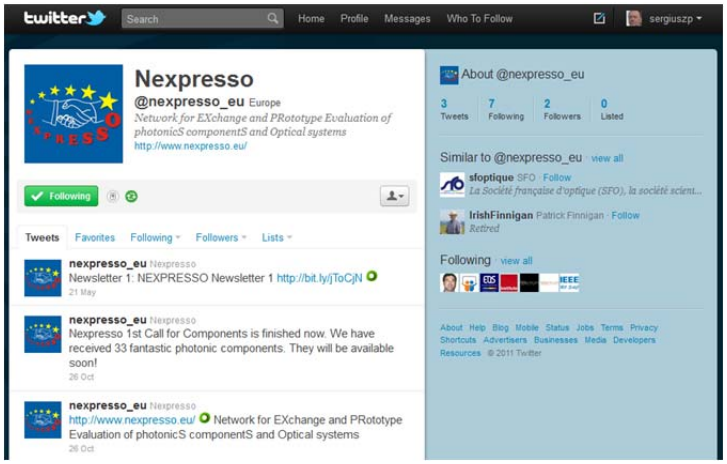
Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Telephone: (32-2) 299 11 11.
Office: BU31 5/58. Telephone: direct line (32-2) 2904440. Fax: (32-2) 2968390.
Roman.Burgess@ec.europa.eu

### *Photonics SME Workshop*

A presentation was made at the "PHOTONICS SME WORKSHOP", organized at the EU premises on 20 June 2011.

### *1.3.2.6 Nexpresso and Social media*

At the start of the project, an effort was also made to create a presence by NEXPRESSO on the social media and more specifically Facebook and Twitter. The Nexpresso Facebook page was a fully functional social media page, however no more effort was put into the maintenance as response and impact was considered too low. The impression was that decision makers who should take the initiative to participate in NEXPRESSO are not amongst the users of these social media.




Facebook & Twitter account for the Nexpresso project

### *1.3.2.7 Nexpresso in magazines*


The Nexpresso project has attracted the attention of the EU Commission publication Research*eu. (http://cordis.europa.eu/research-eu/home_en.html) Nexpresso is recognized for its innovative and effective approach to technology transfer, helping prototypes to cross the “Valley of Death” to become products.

The Nexpresso article seeks collaboration to extend and develop the Nexpresso concept is areas beyond photonics. The article was published in the March 2014 issue.

The Research*eu magazine features highlights from the most exciting EU-funded research and development projects. It is published 10 times per year in English.

## *1.4 Relevant contact details.*

The project consortium:

- P01 Interuniversity Microelectronics Center IMEC B
- P02 European Photonics Industry Consortium EPIC F
- P03 Multitel Multitel B
- P04 Haute Ecole Spécialisée de Suisse Occidentale HES-SOCH
- P05 Sagem Défense Sécurité SAGEM F
- P06 Wroclaw University of Technology WUT P
- P08 Scottish Optoelectronics Association SOA UK
- P09 Perfos Perfos F
- P11 Optics Valley Optics Valley F

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www.nexpresso.eu

# 2 Use and dissemination of foreground

## *2.1 Section A*

| TEMPLATE A1: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Title | Main author | Title of the periodical or the series | Number, date or frequency | Publisher | Place of publication | Year of publication | Relevant pages | Permanent identifiers (if available) | Is/Will open accessprovided to this publication? |
| | | | | | | | | | | |
| | | | | | | | | | | |

In view of the specific character of the NEXPRESSO-project, no scientific (peer reviewed) publications were made

**TEMPLATE A2: LIST OF DISSEMINATION ACTIVITIES**

| NO. | Type of activities | Main leader | Title | Date/Period | Place | Type of audience | Size of audience | Countries addressed |
|---|---|---|---|---|---|---|---|---|
| 1 | workshop | IMEC | 2010 International Students and Young Scientists Workshop "Photonics and Microsystems" | 25/06/10 | Szklarska Porebal, Poland | Regional meeting | 20-50 | International (mainly Poland) |
| 2 | conference | SOA | Industrial Technology Programme (ITP) at the PHOTON10 Conference and Exhibition | 23-26/08/10 | Southampton, UK | Regional meeting | 100-1000 | International (mainly UK & Ireland) |
| 3 | conference | IMEC | ICT 2010 | 29/09/10 | Brussels, Belgium | EU event | 100-1000 | International |
| 4 | workshop | IMEC | FP7 Photonics Unit – Concertation Meeting | 20/10/10 | Brussels, Belgium | EU event | 20-50 | International |
| 5 | workshop | Opticsvalley | Optics Valley Members Meeting | 20/10/10 | Paris, France | Regional meeting | 20-50 | France |
| 6 | conference | WUT | International Technology, Education and Development Conference | 07-09/03/11 | Valencia, Spain | Regional meeting | 100-1000 | International |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7 | workshop | Opticsvalley | Optics Valley Members Meeting | 06/04/11 | Paris, France | Regional meeting | 20-50 | France |
| 8 | workshop | IMEC | Photonics SME Workshop | 20/06/11 | Brussels, Belgium | SME targeted workshop | 20-50 | International |
| 9 | presentation | EPIC | Generalitat de Catalunya | 31/08/11 | Barcelona, Spain | Regional meeting | < 20 | Spain |
| 10 | presentation | PERFOS | Conseil Regional de Bretagne | 13/11/11 | Rennes, France | Regional meeting | < 20 | France |
| 11 | presentation | Opticsvalley | Conseil Régional d'Ile de France | 02/12/11 | Paris, France | Regional meeting | < 20 | France |
| 12 | newsletter | SOA | NEXPRESSO newsletter (1 - 6) | NA | | newsletter | 100-1000 | International |
| 13 | website | SOA | NEXPRESSO website | NA | | website | NA | International |
| 13 | article | EPIC | Research*eu | 01/03/2014 | | magazine | NA | International |

## 2.2 Section B

### 2.2.1 Part B1

| TEMPLATE B1: LIST OF APPLICATIONS FOR PATENTS, TRADEMARKS, REGISTERED DESIGNS, ETC. | | | | | |
|---|---|---|---|---|---|
| Type of IP Rights | Confidential Click on YES/NO | Foreseen embargo date dd/mm/yyyy | Application reference(s) (e.g. EP123456) | Subject or title of application | Applicant (s) (as on the application) |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

In view of the specific character of the NEXPRESSO-project, no applications for patents, trademarks, registered design, etc. were made

### *2.2.2 Part B2*

| Type of Exploitable Foreground | Description of exploitable foreground | Confidential Click on YES/NO | Foreseen embargo date dd/mm/yyyy | Exploitable product(s) or measure(s) | Sector(s) of application | Timetable, commercial or any other use | Patents or other IPR exploitation (licences) | Owner & Other Beneficiary(s) involved |
|---|---|---|---|---|---|---|---|---|
| General advancement of knowledge | *Implement a copy of the NEXPRESSO exchange programme* | *NO* | *2015* | *NA* | *Photonics* | *2015* | *NA* | *EPIC* |
| | | | | | | | | |

One of the objectives of the NEXPRESSO-project was also to investigate the possibility to implement a NEXPRESSO exchange programme in cooperation with a regional development authority.

After several contacts with a different set of regional authorities, it became clear that financing NEXPRESSO through regional funding might not be possible because regions will be demanding a direct return to their region, which is a constraint that doesn't fit with the NEXPRESSO philosophy.

The latest work has been on exploring industry financial support.

In 2013 EPIC, one of the partners of NEXPRESSO, contacted CTOs of companies with the proposal to be the major sponsor of a NEXPRESSO follow-up program. EPIC would provide the expertise in managing the program while companies' sponsorship would pay for the components. Independent of the sponsorship amount and benefits, the concerns were that companies would be sponsoring components in a technology field that was not related to their business, or worst case, paying for a component from a competitor or competing with their technology! Such a situation would result in an embarrassment inside the company from the person that approved the sponsorship; it seemed a no–go option for those with whom we discussed. The issue would be less with companies that offered a broad range of components and were market leader such as Thorlabs or Hamamatsu.

The attempt to get many sponsors for a smaller amount of financial support was not explored, too much time would be spent on recruiting sponsors, and the visibility of the sponsor benefit would be diluted.

The latest attempt was in beginning March 2014 but with another approach. Instead of approaching NEXPRESSO from a technology perspective, we approached CEOs to engage their “marketing” staff into the discussion, this now became a marketing promotional opportunity where the return expect would be visibility of the sponsor, the sponsor being promoted as a “Sponsor of innovation”. The following companies have been approached personally through known contacts at management level and we are expecting their feedback by April 2014. Aixtron, Andor, Avago, Cambridge Technology, Ciena, Cisco, Coherent, Coriant, Edmund Optics, Finisar, Hamamatsu, Han’s Laser, Heraeus, Infinera, IPG, JDSU, Jenoptik, Newport, NKT, nLight, Ocean Optics, OFS, Osram, Philips, Schott, TE Connectivity, Thorlabs, Trumpf, Zumtobel.

If a sponsor cannot be found EPIC will consider continuing the program as it is a valuable service in scope with the association’s mission to support an innovative and competitive photonics industry in Europe. Between 2012 and March 2014, EPIC has grown significantly from 80 to 150 members, being less dependent on public funding, and increasing its network and visibility. While the best scenario is to convince one or a few sponsors to provide collectively EUR 50.000-100.000 for the sponsoring of the purchase of the components, there is an opportunity in between to be explored on a year by year based on how much sponsorship can be collected. The NEXPRESSO program will be much less attractive if the components cannot be financially compensated, but EPIC can still act as a broker, either on a voluntary basis or through minimal industry sponsorship.

# 3 Report on societal implications

## A General Information *(completed automatically when **Grant Agreement number** is entered.*

| | |
|---|---|
| **Grant Agreement Number:** | 258178 |
| **Title of Project:** | NEXPRESSO |
| **Name and Title of Coordinator:** | Prof. Peter VAN DAELE |

## B Ethics

| | |
|---|---|
| **1. Did your project undergo an Ethics Review (and/or Screening)?**<br>• If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports?<br>Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 *'Work Progress and Achievements'* | ***No*** |
| **2. Please indicate whether your project involved any of the following issues (tick box) :** | |
| **RESEARCH ON HUMANS** | |
| • Did the project involve children? | |
| • Did the project involve patients? | |
| • Did the project involve persons not able to give consent? | |
| • Did the project involve adult healthy volunteers? | |
| • Did the project involve Human genetic material? | |
| • Did the project involve Human biological samples? | |
| • Did the project involve Human data collection? | |
| **RESEARCH ON HUMAN EMBRYO/FOETUS** | |
| • Did the project involve Human Embryos? | |
| • Did the project involve Human Foetal Tissue / Cells? | |
| • Did the project involve Human Embryonic Stem Cells (hESCs)? | |
| • Did the project on human Embryonic Stem Cells involve cells in culture? | |
| • Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos? | |
| **PRIVACY** | |
| • Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)? | |
| • Did the project involve tracking the location or observation of people? | |
| **RESEARCH ON ANIMALS** | |
| • Did the project involve research on animals? | |
| • Were those animals transgenic small laboratory animals? | |
| • Were those animals transgenic farm animals? | |
| • Were those animals cloned farm animals? | |
| • Were those animals non-human primates? | |
| **RESEARCH INVOLVING DEVELOPING COUNTRIES** | |
| • Did the project involve the use of local resources (genetic, animal, plant etc)? | |
| • Was the project of benefit to local community (capacity building, access to healthcare, education etc)? | |
| **DUAL USE** | |
| • Research having direct military use | No |
| • Research having the potential for terrorist abuse | |

## C Workforce Statistics

**3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).**

| Type of Position | Number of Women | Number of Men |
|---|---|---|
| Scientific Coordinator | 0 | 1 |
| Work package leaders | 0 | 5 |
| Experienced researchers (i.e. PhD holders) | 2 | 6 |
| PhD Students | 0 | 0 |
| Other | 2 | 2 |

| | |
|---|---|
| **4. How many additional researchers (in companies and universities) were recruited specifically for this project?** | **0** |
| Of which, indicate the number of men: | |

## D Gender Aspects

**5. Did you carry out specific Gender Equality Actions under the project?**

○ Yes
● No

**6. Which of the following actions did you carry out and how effective were they?**

| | Not at all effective | | | | Very effective |
|---|---|---|---|---|---|
| ❑ Design and implement an equal opportunity policy | ○ | ○ | ○ | ○ | ○ |
| ❑ Set targets to achieve a gender balance in the workforce | ○ | ○ | ○ | ○ | ○ |
| ❑ Organise conferences and workshops on gender | ○ | ○ | ○ | ○ | ○ |
| ❑ Actions to improve work-life balance | ○ | ○ | ○ | ○ | ○ |

○ Other:

**7. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?**

○ Yes- please specify

● No

## E Synergies with Science Education

**8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?**

○ Yes- please specify

● No

**9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?**

● Yes- please specify

Production of copy-kit containing all the material required to set up a similar exchange programme by any authority

○ No

## F Interdisciplinarity

**10. Which disciplines (see list below) are involved in your project?**

● Main discipline: 2.2 Electrical engineering

○ Associated discipline:

○ Associated discipline:

## G Engaging with Civil society and policy makers

| | | |
|---|---|---|
| **11a Did your project engage with societal actors beyond the research community?** *(if 'No', go to Question 14)* | ● | Yes |
| | ○ | No |

**11b If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?**

- ● No
- ○ Yes- in determining what research should be performed
- ○ Yes - in implementing the research
- ○ Yes, in communicating /disseminating / using the results of the project

| | | |
|---|---|---|
| **11c In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?** | ○ | Yes |
| | ● | No |

**12. Did you engage with government / public bodies or policy makers (including international organisations)**

- ○ No
- ○ Yes- in framing the research agenda
- ○ Yes - in implementing the research agenda
- ● Yes, in communicating /disseminating / using the results of the project

**13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?**

- ● Yes – as a **primary** objective (please indicate areas below- multiple answers possible)
- ○ Yes – as a **secondary** objective (please indicate areas below - multiple answer possible)
- ○ No

**13b If Yes, in which fields?**

| | | | | | |
|---|---|---|---|---|---|
| Development Economic and Monetary Affairs<br>Education, Training, Youth | | Employment and Social Affairs<br>Enterprise | | Information Society<br>Regional Policy<br>Research and Innovation | |

**13c If Yes, at which level?**

- ● Local / regional levels
- ○ National level
- ○ European level
- ○ International level

## H Use and dissemination

| | |
|---|---|
| **14. How many Articles were published/accepted for publication in peer-reviewed journals?** | **0** |
| **To how many of these is open access provided?** | **0** |
| **How many of these are published in open access journals?** | **0** |
| **How many of these are published in open repositories?** | **0** |
| **To how many of these is open access not provided?** | **0** |
| **Please check all applicable reasons for not providing open access:** | |
| ❑ publisher's licensing agreement would not permit publishing in a repository<br>❑ no suitable repository available<br>❑ no suitable open access journal available<br>❑ no funds available to publish in an open access journal<br>❑ lack of time and resources<br>❑ lack of information on open access<br>❑ other: …… | |

| | | |
|---|---|---|
| **15. How many new patent applications ('priority filings') have been made?** *("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).* | | **0** |
| **16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).** | Trademark | **0** |
| | Registered design | **0** |
| | Other | **0** |
| **17. How many spin-off companies were created / are planned as a direct result of the project?** | | **0** |
| ***Indicate the approximate number of additional jobs in these companies:*** | | |

**18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:**

| | | | |
|---|---|---|---|
| ❑ | Increase in employment, or | ☒ | In small & medium-sized enterprises |
| ❑ | Safeguard employment, or | ❑ | In large companies |
| ❑ | Decrease in employment, | ❑ | None of the above / not relevant to the project |
| ☒ | Difficult to estimate / not possible to quantify | | |

| | |
|---|---|
| **19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (*FTE = one person working fulltime for a year*) jobs:** | *Indicate figure:* |
| Difficult to estimate / not possible to quantify | ☒ |

# I Media and Communication to the general public

**20. As part of the project, were any of the beneficiaries professionals in communication or media relations?**

○ Yes ● No

**21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?**

● Yes ○ No

**22 Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?**

| | | | |
|---|---|---|---|
| ☒ | Press Release | ☒ | Coverage in specialist press |
| ❑ | Media briefing | ☒ | Coverage in general (non-specialist) press |
| ❑ | TV coverage / report | ❑ | Coverage in national press |
| ❑ | Radio coverage / report | ❑ | Coverage in international press |
| ❑ | Brochures /posters / flyers | ☒ | Website for the general public / internet |
| ❑ | DVD /Film /Multimedia | ☒ | Event targeting general public (festival, conference, exhibition, science café) |

**23 In which languages are the information products for the general public produced?**

| | | | |
|---|---|---|---|
| ❑ | Language of the coordinator | ☒ | English |
| ❑ | Other language(s) | | |