



## **D6.1- COMMUNICATION AND DISSEMINATION PLAN**

WP5 – Communication, dissemination, exploitation and clustering  
activities.

|          |                                     |
|----------|-------------------------------------|
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## Project details

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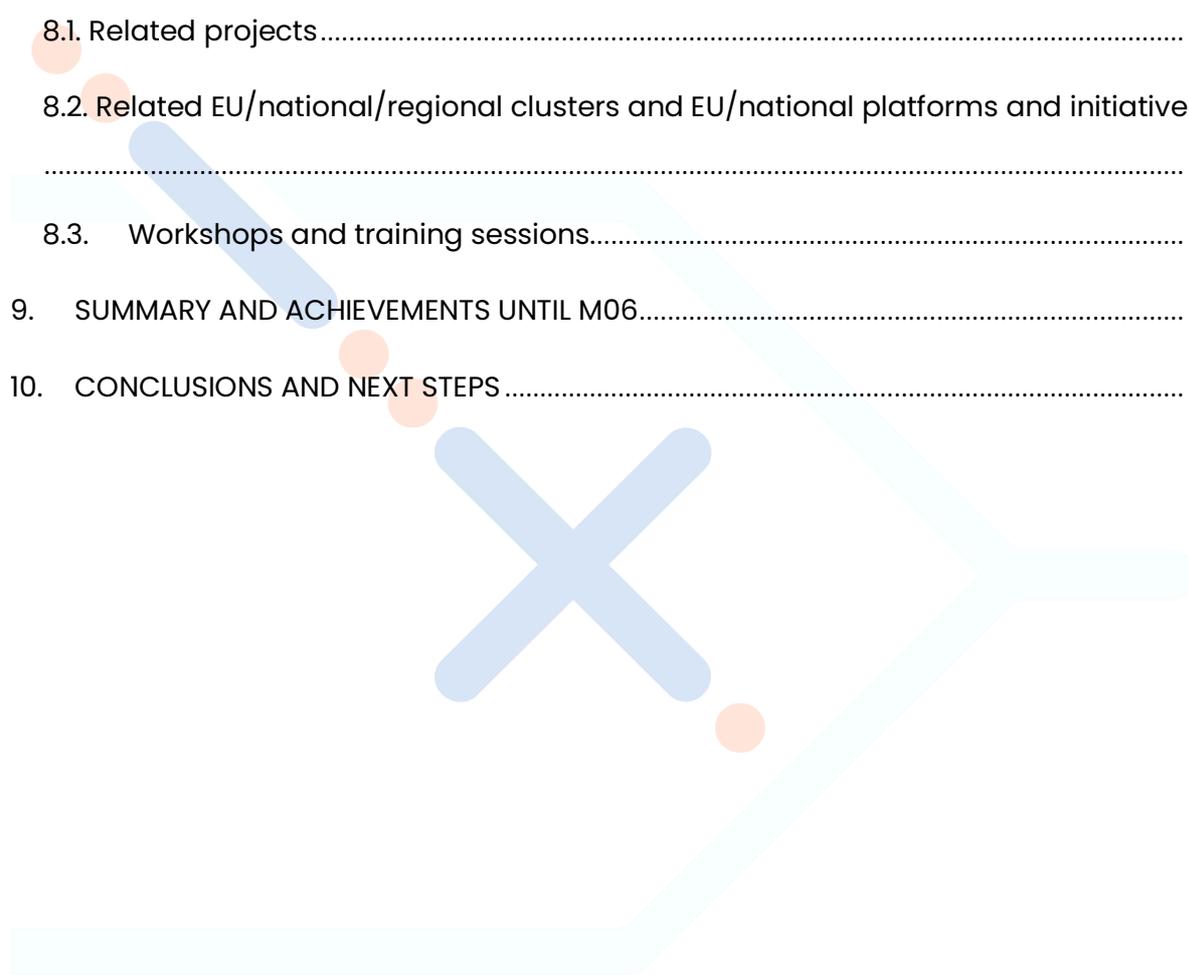
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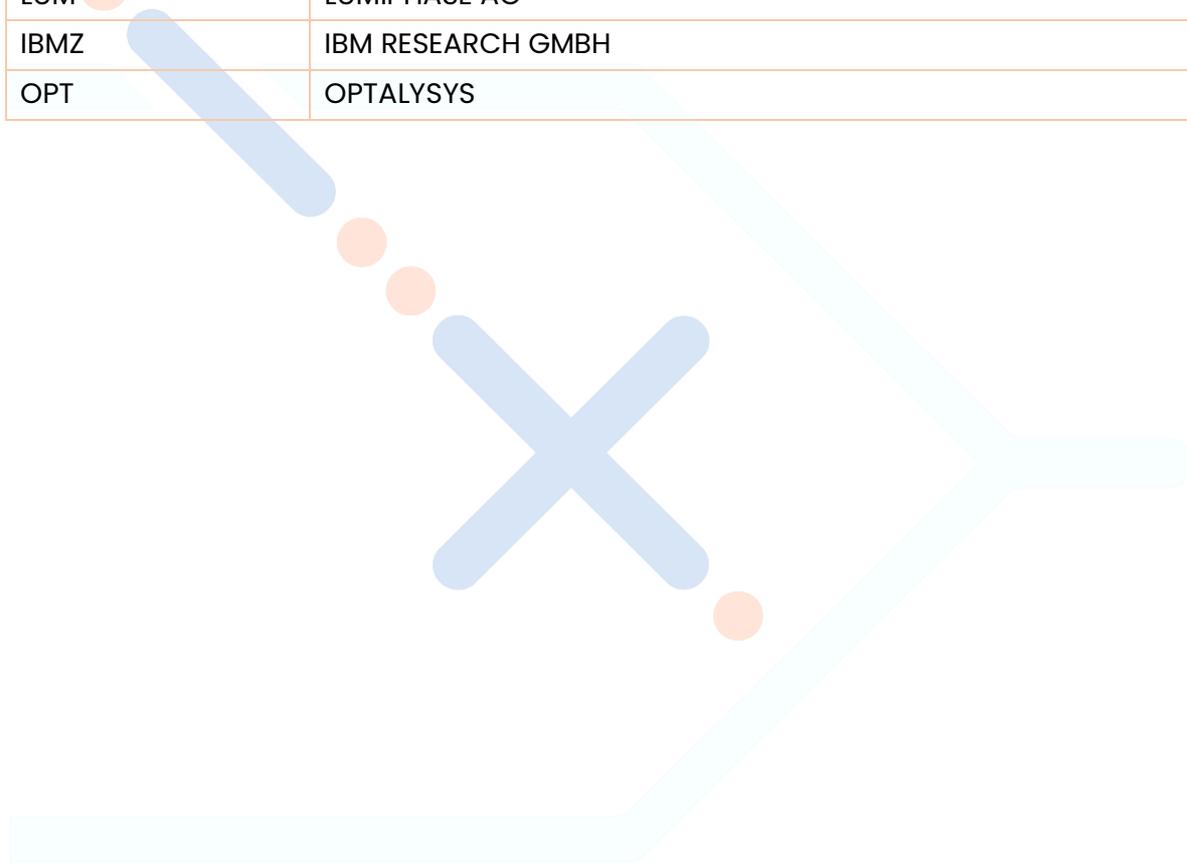
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## LIST OF ABBREVIATIONS AND DEFINITIONS

| Abbreviation | Definition                                           |
|--------------|------------------------------------------------------|
| <b>BTO</b>   | Barium titanate ( $\text{BaTiO}_3$ )                 |
| <b>CA</b>    | Consortium Agreement                                 |
| <b>CDP</b>   | Communication and Dissemination plan                 |
| <b>DoA</b>   | Description of Action                                |
| <b>EC</b>    | European Commission                                  |
| <b>GA</b>    | Grant Agreement                                      |
| <b>IBMH</b>  | IBM Haifa (Israel), partner                          |
| <b>IBMZ</b>  | IBM Zürich (Switzerland), partner                    |
| <b>KPI</b>   | Key Performance Indicator                            |
| <b>KUL</b>   | KU Leuven (Belgium), partner                         |
| <b>M</b>     | Month                                                |
| <b>LUM</b>   | Lumiphase (Switzerland), partner                     |
| <b>MZI</b>   | Mach-Zehnder Interferometer                          |
| <b>OEM</b>   | Original Equipment Manufacturer                      |
| <b>OPT</b>   | Optalysys (United Kingdom), partner                  |
| <b>PIC</b>   | Photonic Integrated Circuit                          |
| <b>PM</b>    | Person-Month                                         |
| <b>PNO</b>   | PNO Consultants (Spain), partner                     |
| <b>PO</b>    | Project Officer                                      |
| <b>SiN</b>   | Silicon nitride ( $\text{Si}_3\text{N}_4$ )          |
| <b>SME</b>   | Small and Medium Enterprise                          |
| <b>UPV</b>   | Universitat Politècnica de València (Spain), partner |
| <b>WP(s)</b> | Work Package(s)                                      |

## SHORT NAME AND NAME OF BENEFICIARIES

| Short name | Name                                                                  |
|------------|-----------------------------------------------------------------------|
| KUL        | KATHOLIEKE UNIVERSITEIT LEUVEN                                        |
| NTC - UPV  | Nanophotonics Technology Center - UNIVERSITAT POLITECNICA DE VALENCIA |
| IBMH       | IBM ISRAEL - SCIENCE AND TECHNOLOGY LTD                               |
| PNO ES     | PNO INNOVATION SL                                                     |
| LUM        | LUMIPHASE AG                                                          |
| IBMZ       | IBM RESEARCH GMBH                                                     |
| OPT        | OPTALYSYS                                                             |



## EXECUTIVE SUMMARY

Work Package 5 for “Communication, dissemination, exploitation and clustering activities”, which is led by partner PNO, is mainly responsible for most project activities targeting the communication, dissemination and exploitation and clustering of the project and its outcome. Since all project partners have person months (PM) in this Work Package, PNO will also moderate and design internal communication and request support from them.

This deliverable will give an overview of the objectives and tasks in Work Package 5, how communication and dissemination activities have been executed in the first six months of the project and then outline PHOENIX's strategy for Communication, dissemination and clustering in order to promote PHOENIX's results and impacts. The description of recent activities will include the set-up of all necessary communication channels (website, newsletter and social media) as well as their success statistics. Further it will list first dissemination activities by all participants as well as publications. All targeted communication goals have been successful reached in this period, and the main tools have been released.

## 1. INTRODUCTION

The communication and dissemination plan (CDP) of PHOENIX paves the way to promote and disseminate the results of the project and to communicate its impacts in order to support the process of attracting stakeholders from the photonics EU industry, increasing awareness and advertising PHOENIX BTO on SiN platform, in particular to SMEs. The communication and dissemination activities will also boost the sustainability of the platform beyond the project leading to the commercial exploitation of the platform services.

The objective of the CDP is to define clear objectives (adapted to various relevant target audiences) and to describe the timing for each activity in order to disseminate the PHOENIX activities and results of the project to a large community of users from key stakeholders to public at large and to create the largest possible awareness on the PHOENIX project with a specific attention to photonics SMES, original equipment manufacturers (OEM), photonic clusters and platforms and R&D community.

All communication and dissemination activities are aligned to increase awareness and visibility of the PHOENIX results and impacts, fostering PHOENIX sustainability of the BTO/SiN platform and all PHOENIX tools and services after the project ends. The keys of the future PHOENIX exploitation are therefore its vision and mission, which are reflected in the overall activities of the project.

Segmentation is an important component for the PHOENIX communication and dissemination activities. With the help of stakeholders segmentation, a differentiated approach to the target groups should be made possible for efficient and successful communication and dissemination activities, so that the individual needs of the various stakeholder groups can be best satisfied. In this context, segmentation determines to whom the content described in this plan should be directed, i.e., the target group. All interesting recipients in the target markets and related technologies, such as device manufacturers, EU projects, R&D community, national and regional clusters and national and European platforms and initiatives shall be reached through those activities. The existing networks and partners of the project consortium serve as good basis for a wide spreading of the projects offerings and results.

The marketing tools, which PHOENIX will use, are the materials used to promote the project online and offline services. The multiple marketing tools used in PHOENIX will be

press releases about reached milestones or as announcement for events etc., printed documents like leaflets, furthermore tweets, and posts. Further tools will be the PHOENIX logo, brochures, posters, articles, roll-ups, that means all materials created about the project. First publications about the launch of the project with a kick-off meeting held on 14th September 2022 and first general assembly meeting held February 7, 2023, have already been published via each project partner to their respective local, regional and national press distribution lists and online in the respective social media channels, which are shown in a separate table with publication information in the annex.

Every communication and dissemination activity will be carried out in accordance to the EC guidelines for dissemination, communication and exploitation<sup>1</sup> and Article 17 of the GA "Communication, Dissemination and Visibility".

For the communication and dissemination of these mentioned tools, certain channels are needed through which the materials reach the target groups. As those marketing channels will serve the PHOENIX website as main communication channel. Training and brokering events, participation in fairs, the social media channels Twitter, LinkedIn, ResearchGate, the quarterly online newsletters and mailing campaigns as well as the e-mail and phone number of the PHOENIX secretariat will serve as further channels to get the information to the audience. In order to keep all communication and dissemination activities under control, they will be measured for success using Key Performance Indicators (KPIs).

This CDP will focus on the activities already started since the start of the project as well as the upcoming planned activities within the next few months. The deliverable D5.4 "Market analysis and Exploitation Plan" will be prepared separately for delivery in month 36 at the end of the project.

This plan is a document that will be continuously updated during the project period. The first version of this CDP thus serves as an initial strategy for orientation in the initial phase of the project. Not every communication activity can be planned and implemented in detail at this stage. And not every possibility of publication is already given at this point of time. However, this CDP is already intended to give a good overview of the communications and disseminations already made and planned. First results like the website, the first press release about the launch of the project and the

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<sup>1</sup> [https://rea.ec.europa.eu/horizon-europe-dissemination-and-exploitation\\_en](https://rea.ec.europa.eu/horizon-europe-dissemination-and-exploitation_en)

logo will be described in this document. Any changes and updates will be reported in the WP5 description of the periodic reports.

In addition, it must be mentioned that many communication and dissemination activities within the PHOENIX project are intended to be presential. If by any change situations similar to that originated by Covid-19 pandemic occur, and attendance to fairs, face2face meetings, physical workshops and the like are not possible, the CDP implementation will shift whenever possible to online events until the situation allows otherwise. The strategy of the CDP will be evaluated on an annual basis for effectiveness and will be modified from the consortium, if needed.

To get good quality and quantity information out to the public, all consortium partners will provide continuously for the public interesting content to the WP5 leader (PNO). PNO will create drafts of this content and send the drafts to all consortium partners to let them review it for necessary change requests. A publication will first follow after the feedback of all partners, given a specific time period. Any information to be published about the project will be submitted to and agreed with PNO.

## 2. COMMUNICATION AND DISSEMINATION STRUCTURE

PHOENIX will publish and make available the activities, services and results as well as every information on the projects progress in printed/physical, digital, and interactive form to ensure the greatest possible degree of communication and dissemination.

All communication and dissemination activities will follow the EC best practice communication guidelines and focus the objectives, target audiences, planned tools and channels, responsibilities, and metrics for measuring impact.

PNO ES as DM and WP5 leader has the responsibility to publish all project specific activities, information, and results by supports of all project partners.

The dissemination activities are interlocked with the technical activities planned for PHOENIX project and will start by setting-up the PHOENIX network of stakeholders, implement and continuously update the CDP, and promote the engagement and liaison to reach out to more stakeholders and potential platform users.

The specific objectives of the communication and dissemination activities of PHOENIX are to:

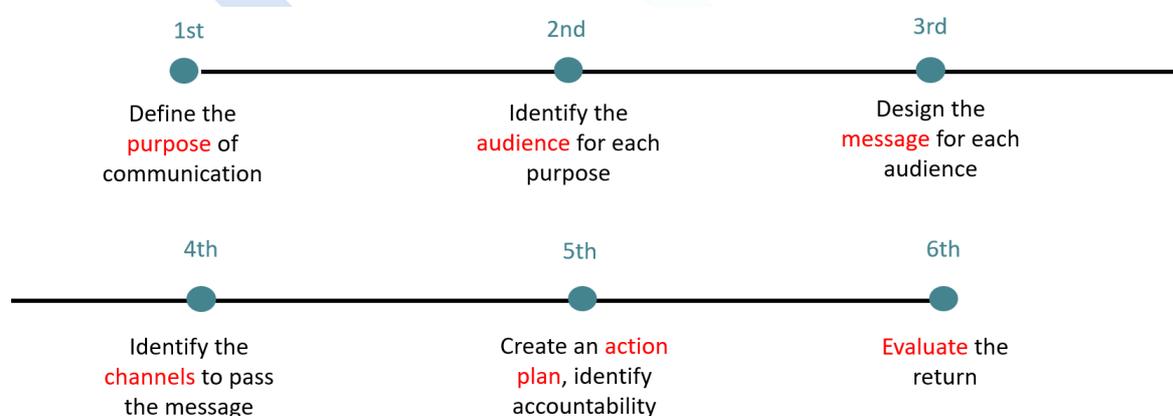
- ✓ maximise the impact of the project by effectively communicating, disseminating, and exploiting its results towards the general public, scientific community, industry and relevant stakeholders in the value chain.
- ✓ Create awareness of the existence of PHOENIX among all target groups and with a specific attention to the potential users of the BTO/SiN platform;
- ✓ Contribute to create a hub that will stimulate cooperation among stakeholders that will increase the European added value of the PHONIX projects results and platform;
- ✓ Create an outreach strategy to stimulate that the identified stakeholders are aware of the PHOENIX results and platform, thus increasing the potential uptake of innovative photonic collaborations, technological developments and products;

PHOENIX will use the wide networks of all the project partners to make the results available to a broader part of the photonics sector in Europe. The communication and dissemination activities will target a diverse audience centred mainly around the “supply-demand-finance” triangle. To multiply the uptake and impact of the PHOENIX communication and dissemination efforts, the project will establish links to additional external multipliers (clusters, associations, platforms, etc.), providing information about and fostering cooperation and good practices exchanges. In addition, all partners will be encouraged to participate in external conferences, workshops and events acting as PHOENIX ambassadors to raise awareness of the project’s activities and results.

## 2.1. Methodology and guidelines

### 2.1.1. Methodology

To provide stakeholders, interested parties, platform users, website visitors, newsletter subscribers with meaningful information, strategic communication and dissemination is essential. Objectives, targets audiences, and messages must be clarified before deciding on the media and before any kind of information is disseminated. The following graphic therefore shows the approach for each piece of information to be published to generate the highest possible market demand for the PHOENIX online and offline services developed. Messages that are to be sent to the public therefore go



**Figure 1 Communication and dissemination methodology**

through the following steps:

In order to keep communication and dissemination activities after the projects end in mind, besides the website maintenance, a strategy for sustainability actions will be designed in parallel and to support the PHOENIX exploitation plan.

To reach the interest of the target groups, PHOENIX will adapt its communication to short, understandable, active written communication, e.g. employing key value proposition messages or by formulating direct questions that are more appealing to the target audience (see 2.2) in every communication and dissemination channel.

In order to align the messages beyond the PHOENIX consortium, the partnership will take into consideration the long term vision/mission statements preliminary identified and that will be finetuned in the future exploitation planning for project results:

- **The vision** – to develop state-of-the-art photonic-integrated circuit (PIC) technologies and BTO/SiN fabrication platform and associated technologies.

- **The mission** – To reduce the time to market and support innovative ideas and technologies to increase the competitiveness and sustainability of the photonics sector in Europe.

All messages shall in future lead people and organisations to the relevance of the PHOENIX project results, outcomes and impacts, since this is the best way to demonstrate what PHOENIX is doing. That means that any social media post, newsletter and other publications will always have the link to the website available, as this has already been implemented in the produced newsletter and press releases and social media channels.

The communication and dissemination procedure obliges all project partners to review and check all communication and dissemination materials prepared by PNO within a reasonable time frame with respective deadline in the email and to provide feedback or change requests on the information in due time. This is to prevent incorrect, missing, unnecessary or confidential information from being communicated and disseminated, so that all project partners keep actively involved throughout all communication activities during the whole project period.

## 2.1.2. Guidelines

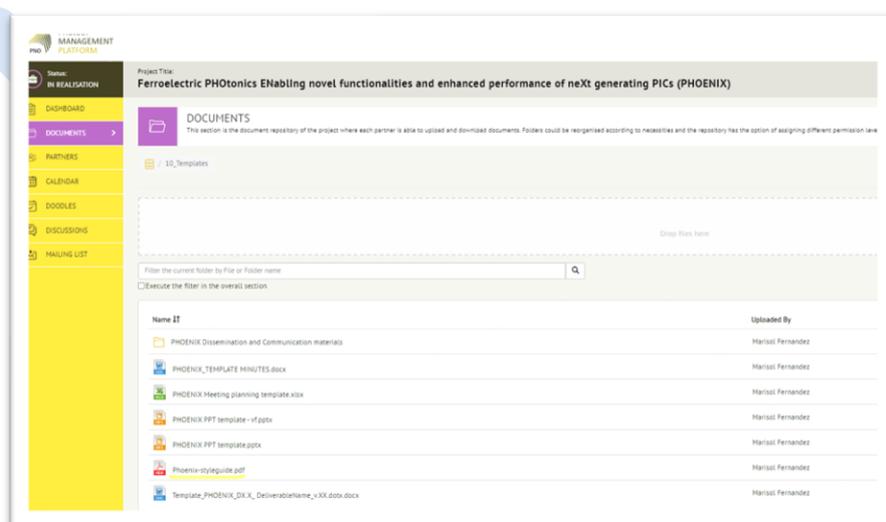
Internal communication ensures that relevant information flows smoothly and homogeneously among the project partners, increasing efficiency by establishing common procedures and materials. External communication controls the stakeholder perception of the project and shapes its reputation, which is why guidelines must be defined to ensure targeted communication. Uniform communication rules are to be used to achieve the goals of building trust, stakeholder loyalty, credibility and willingness to recommend PHOENIX.

### 2.1.2.1. Internal

To maintain a uniform image in all publications, the creation of and adherence to a corporate design is immensely important. In addition to the documentation templates presented in D1.1. "Project Handbook and Quality Assurance Plan", this also includes adherence to the PHOENIX project style guide, the use of the PHOENIX project logo on all types of publications as well as the use of the templates prepared and stored in the PHOENIX project management platform (innovation Place

<https://www.innovationplace.eu>) provided by PNO. There is already a folder in which the current logos of all project partners are stored. If necessary, they can be downloaded and used for presentations and the like. If the logos of a partner changes during the project, they will be kept up to date. All partners are asked to report changes in their organization logo to PNO.

Each person, associated to a beneficiary of PHOENIX, has his own user ID and password to access to the portal via the project web page <http://www.heu-phoenix.eu>.



**Figure 2 PHOENIX templates and dissemination materials stored in the Project Management platform.**

## 2.1.2.2. External

External communication includes all communicative measures and activities that are directed outwards. It therefore has a representative character and controls how the project activities, results and outcomes are or should be seen by customers, business/R&D partners, related projects, entities and platforms and funding authorities. This includes, among other things, advertising as well as press and public relations work.

In accordance with Article 17 of the GA "Communication, Dissemination and Visibility", unless otherwise agreed with the granting authority, the beneficiaries must promote the action and its 34 Associated with document Ref. Ares(2022)4590625 - 22/06/2022 Project: 101070690 — PHOENIX — HORIZON-CL4-2021-DIGITAL-EMERGING-01 HE MGA — Multi & Mono: v1.0 results by providing targeted information to multiple audiences

(including the media and the public), in accordance with Annex 1 and in a strategic, coherent and effective manner. Before engaging in a communication or dissemination activity expected to have a major media impact, the beneficiaries must inform the granting authority. Examples of such activities may be mentions in the press, preparation of a demonstration, award receiving, etc.

Care will be taken to ensure that all communication activities refer to the EU funding with appropriate use of the EU emblem through the following sentence (Article 17.3 of the GA):



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**Figure 3 Reference to EU funding**

Guidelines on the use of the EU emblem in terms of font size, font colour and font type will be compiled in the PHOENIX style guide available for all project partners. The appropriate prominence of the EU emblem in combination with the use of another logo will be clearly communicated in those documents, which will be uploaded in Innovation Place.

It is also to make clear in every document that the Agency and European Commission are not responsible for any content published, but that the responsibility lies with the authors or the project consortium and only reflects their opinion. Any communication and dissemination activity related to the action must indicate that it reflects only the author's view and that the Agency and the Commission are not responsible for any use that may be made of the information it contains. The Project Officer, HADEA, and the European Commission will also be informed about important events, webinars, milestones, and articles published.

Peer-reviewed scientific publications relating to the project results must and will be made available open and free of charge in accordance with Article 17 specific rules, Annex 5 to the GA and the Consortium Agreement (CA) provisions, subject to any restrictions due to the protection of intellectual property, security rules or legitimate interests.

**Clustering and liaison activities:** In order to ensure that PHOENIX is presented in a consistent manner to the outside world in any presentation of any of the clustering and liaison activities, all these projects and initiatives will be informed on how to present PHOENIX in appropriate planned publications. For example, if an event organised by PHOENIX is agreed with projects/initiatives be sent out as synergy effect in a channel of the collaborating projects/initiatives, the project or initiative will be informed by PNO how to comply with the funding notice, as well as the link to be provided to the PHOENIX website, from where the PHOENIX platform can be easily accessed.

Projects/initiatives will also be proposed to include the following sentence must to indicate the cooperation between PHOENIX and the project/initiative: "Brought to you by [the project/initiative] & the PHOENIX project."

The PHOENIX logo will be made available to all those projects/initiatives who disseminate PHOENIX activities to the public, as well as other PHOENIX infomaterials to be shared through newsletters, social media posts, website uploads, events, flyers etc.

## 2.2. Target audience

Target audiences are various stakeholders in the areas related to PHOENIX project innovations, the team will work closely with key actors to boost business opportunities, implementation action, and foster adoption of the PHOENIX technologies. Following approaches for the relevant target groups have been identified to ensure the innovations meet the actual needs of the involved actors, and will be taken forward once the project ends:

1) **Photonics high-tech SME and technology start-ups:** as early adopters of the new technologies developed in PHOENIX and future users of the open BTO/SIN platform, they will benefit from the project results, and the new capabilities offered by PHOENIX materials, technologies and open fabrication platform to reduced their R&D costs and innovation-to-market time.

- 2) **Photonic design houses** (SMEs): they will directly benefit from the project developments by the possibility to include new building-blocks in their design suites employing the innovative materials developed in PHOENIX,
- 3) **Equipment and technology providers** (SMEs, midcaps, large, RTOs, academic institutions) active in PIC design, technology development and integration, and commercialisation of the project results, will directly impact the project developments and further evolutions of PHOENIX activities. Once a broad adoption of the project results is achieved, their business will grow thanks to the improved performance and enhanced functionalities products.
- 4) **Policy, regulation, and standards organisms** related to the photonics sector: it is not expected to directly impact on the regulation organisms, but they will have a direct impact in the project developments, since all the activities, from design to deployment and operation will consider current regulations and standards. Continuous monitoring of the relevant updates in all these aspects will be carried out in WP5.
- 5) **Industrial associations and partnerships** (Photonics PPP, EPIC, 5G PPP, HPC JU, AI Data and Robotics PPP): PHOENIX will cooperate with these associations and partnerships, by providing visibility to the valuable assets originated from the project aligned towards their objectives: boosting European leadership and technological independence in their respective fields and boosting European industry competitiveness.
- 6) **R&D projects in HEU, Digital Europe or EIC programmes**: clustering and liaison with related projects will be implemented by PHOENIX project partners, trying to build synergies, exchange knowledge and initiate further collaboration,
- 7) **General public**: PHOENIX will provide visibility to the projects results and technologies to the wider audience, though social networks and media channels, to stimulate the awareness and recognition of the EU R&D initiatives and explain the contribution of high-tech developments to the EU society welfare and quality of life.

The stakeholders list will be continuously expanded during the project lifetime and will be complemented with D5.3 "Stakeholders analysis" to be provided by M24.

## 2.3. Metrics

In order to measure the success and the audiences reached, the following values will be documented on an ongoing basis at the periodic reports: number of visitors to the website (using google analytics), followers in social media (LinkedIn, Twitter, Researchgate), subscribers to the PHOENIX online newsletter, publications in newspapers and magazines, media appearances, publications in scientific journals and conferences, audiences attending online and face-to-face workshops, number of trainees, number of events attended, ... among others.

**Clustering and liaison** activities will be measured using the established KPI: +4 presentations in industry-related events, +3 clustering activities organised/participated, participation in +2 PPP/associations events, number of contacted stakeholders, etc.

The achievement of public relations objectives could additionally be measured by number of people asking for feedback or more information etc. through the PHOENIX contacts and possibly through surveys in the organised training and workshops.

## 3. COMMUNICATION AND DISSEMINATION TOOLS AND CHANNELS

The dissemination strategy will make use of a set of channels and tools, in order to successfully address the dissemination and communication goals and to reach the above identified stakeholders:

- ✓ **Website:** WP5 has set up a website which will be the main tool to communicate project information and manage interested parties. The website will be the first stop for getting information and make contacts and will therefore offer all relevant functions. The website of course will continuously be updated regarding project results, application experiments, events, and downloads, which will as a second effect also improve the visibility of the project, as search engine results reward "living websites" (and a wealth of relevant keywords).

- ✓ **Social media:** Blogging and tweeting in social networks are the fastest channels to reach the public based on the information they're interested in.
- ✓ **Newsletter / contributions to external newsletters:** PHOENIX set-up a newsletter which will be sent out quarterly and WP5 will seek to contribute to newsletters of umbrella organizations (e.g. Photonics 21, EPIC), cluster projects or business associations to make sure, project information is widely spread and the relevant target groups are targeted.
- ✓ **Press releases:** several press releases will be launched every year to disseminate the project results in particular towards the general public, the target groups envisaged and the specialised media. Press releases will be associated to relevant events within the project as well as reaching important technical milestones in order to achieve wider impact.
- ✓ **Public dissemination material:** Brochures, leaflets, posters, white papers, etc.
- ✓ **Conference presentations:** presentations in specific conferences and events targeting PIC manufacturing and end-users of the technology.
- ✓ **Scientific publications:** Scientific publications in high impact journals and conferences to disseminate the results of the project towards the scientific community, especially towards academia and developers.
- ✓ **Journals and magazines:** popular journals and magazines especially in the domain of the use-case demonstrators will be targeted.
- ✓ **Videos:** although not target initially, the partners will consider a video production about the project or specific achievements, which usually includes interviews to project members (testimonials, Q&A).

### 3.1. Communication and dissemination MATERIAL

The PHOENIX project communication and dissemination tools will be described in this section: logo, leaflets, posters, newsletters, press releases, presentations, roll-ups.

### 3.1.1. LOGO

The PHOENIX logo has already early been designed by KUL at the project start. It shows a Mach-Zehnder interferometer (MZI) structure (grey) with electrical electrodes (orange) symbolically representing the interaction of electrical and optical fields with the dash-dotted line ending in the final "X". The logo is also reflected on the homepage and serves as an eye-catcher in the minds of the platform users and website visitors, as is symbolizing the photonic nature of the R&D carried out in the project and the link with a concrete photonic building block that will be used in the project developments.

The version shown corresponds to the final version of the logo and will be refined in colour and shape and designed differently if necessary.



Figure 4 PHOENIX Logo

#### MAIN COLORS

|                                                                                     |                       |                                                                                     |                       |                                                                                     |                         |
|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------|-------------------------|
|  | R 37<br>Y 77<br>B 136 |  | R 227<br>Y 79<br>B 39 |  | R 149<br>Y 163<br>B 183 |
| C 94%<br>M 71%<br>Y 19%<br>K 4%                                                     |                       | C 4%<br>M 80%<br>Y 89%<br>K 0%                                                      |                       | C 47%<br>M 29%<br>Y 20%<br>K 3%                                                     |                         |
| #254d88<br>Pantone P 105-15 C                                                       |                       | #e34f27<br>Pantone P 40-16 C                                                        |                       | #92a3b7<br>Pantone P 174-4 C                                                        |                         |

Figure 5 PHOENIX main corporate colours

### 3.1.2. LEAFLETS

A first version of the leaflet for the PHOENIX project has been produced, which provides an informative insight into the activities and the main goals and motivation of the project. The following structure, content and design has been decided at this point of

time, which will be updated in due course if needed encompassing the project progress.

The front page provides the title, logo and a general drawing synthesising the target markets of the project. The second column "About the project" provides general information about the scope and activities. Then the detailed objectives of the project are listed in the third column "Objectives", and the fourth column "Impact" is devoted to describe the expected outcomes and impacts of the project. Finally, column 5 "Consortium" provides the entire project consortium logos and column 6 "Contact us" list the contact details of the PHOENIX Coordinator, as well as the references to the various PHOENIX social media channels that have been created. The PHOENIX project logo and the EU emblem with the reference to the EU funding according to the guidelines are also clearly visible on the leaflet.

To make the corporate design uniform, the leaflet has been designed with the same images from the project website and the power point presentations etc, already used at this point of time. The chosen images reflect the breadth of the photonics, security, and 5G sectors targeted by PHOENIX project.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>CONSORTIUM</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p><b>CONTACT US</b></p> <p>PROJECT COORDINATION<br/><b>Professor Jean-Pierre Locquet</b><br/>KU Leuven<br/>jeanpierre.locquet@kuleuven.be</p> <p><b>María Recaman Payo</b><br/>KU Leuven<br/>maria.recamanpayo@kuleuven.be</p> <p><b>FOLLOW US</b></p> <p> #phoenix-project-photonics</p> <p> @Phoenix4916314</p> <p> www.heu-phoenix.eu</p> <p><small>This project has received funding from the European Union's Horizon Europe by the granting Authority "MDEA (European Health and Digital Executive Agency) under Grant Agreement No 101070690</small></p> | <p><b>Ferroelectric PHOTonics<br/>ENabling novel functionalities and enhanced performance of neXT generation PICs</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>ABOUT THE PROJECT</b></p> <p>In PHOENIX, "Ferroelectric PHOTonics ENabling novel functionalities and enhanced performance of neXT generation PICs", funded by the EU Horizon Europe programme (GA 101070690), a consortium formed by Partners Lumiphase (CH), Optalysys (UK), IBM Research (CH and IL), Nanophotonics Technology Center - Universitat Politècnica de València (UPV) (ES), and PNO Innovation (Spain), coordinated by KU Leuven (KUL), will collaborate during the next 3 years to create building blocks for the next generation of encryption and computing hardware.</p> <p>They will leverage compact photonic integrated circuits (PIC) offering a continuous and efficient control over optical signals. The PIC chips are based on Lumiphase's proprietary technology, and enhanced with novel functionalities using materials developed at KUL and UPV. Epitaxial technology will be advanced through the realization and upscaling of high-quality oxide thin-films.</p> | <p><b>OBJECTIVES</b></p> <p>The developed technology will be used to demonstrate its benefits in four high-impact emerging applications:</p> <ol style="list-style-type: none"> <li>1 fully homomorphic encryption (Optalysys, IBM Research)</li> <li>2 5G infrastructure (Optalysys)</li> <li>3 inference of deep neural networks (IBM Research), and</li> <li>4 training of deep neural networks (IBM Research).</li> </ol>                                                                                                                                    | <p><b>IMPACT</b></p> <p>The validation of the developed technologies will be completed with an extrapolation to benchmark against representative existing systems and a roadmap for photonic-electronic integration. The project will perform a market analysis and a techno-economic evaluation to define business models and exploitation plans that ensure the sustainability of the PHOENIX platform to reduce innovation-to-market-time and R&amp;I costs for disruptive high-tech SMEs and maximize the impact of the 4 user cases demonstrators.</p> |

Figure 6 PHOENIX leaflet

### 3.1.3. POSTER

A project poster has been produced using corporate branding. The poster can and should be handed out to all consortium partners for using in trade fairs, face2face meetings and to promote the project in the organizations. They can for example be used as background images at online events and online video conferences and they reinforce the uniform appearance of the PHOENIX partners.



Figure 7 PHOENIX poster

### 3.1.4. NEWSLETTERS

An online newsletter with relevant information for photonics stakeholders about financing/funding topics, project activities, information about the project general progress, announcements of the webinars, workshops, face2face meetings etc. will be published via mailchimp at least every 6 months and will be accessible through the website. Already sent newsletters will be reported in the activity report. Every beneficiary is responsible to send possible topics to PNO, who then will create the content in form of texts, images and design.

Special newsletters will be launched when specific up to date internal milestones of the project have been reached and to maximise dissemination of such events.

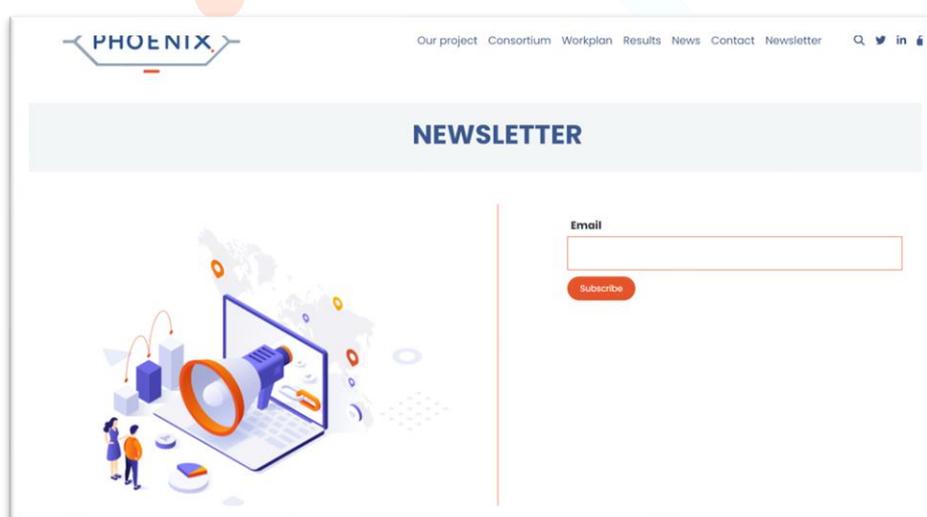


Figure 8 PHOENIX newsletter

### 3.1.5. PRESS RELEASES

At least six press releases will be delivered after the achievement of certain milestones during the whole project period. A press release is created whenever there is an interesting topic to report on or, for example, a milestone has been reached. Therefore, at this point of time, no concrete topics will be defined, so that the design of the topics remains open. Each project partner is required to communicate and disseminate each press release on their organization's own channels to multiply the message. This

applies to the organization's websites, the local, regional, and national press distribution list – including radio, television and printed press – as well as the existing social media channels and the organizations own newsletters.

The first official press release was published on the 24<sup>th</sup> February 2023 different channels (website, LinkedIn, Twitter) of the respective press distribution lists of the project consortium.



Figure 9 Post in LinkedIn, Press release

**PRESS-RELEASE**

*Issue N° 1, February 2023*



**THE PHOENIX RESEARCH AND INNOVATION PROJECT TOWARDS THE CREATION OF PHOTONIC INTEGRATED CIRCUITS FOR THE NEXT GENERATION OF ENCRYPTION AND COMPUTING HARDWARE**

**PHOENIX**, “**Ferroelectric PHOTonics ENabling novel functionalities and enhanced performance of neXt generation PICs**”, funded by the EU **Horizon Europe** programme, gathers a full panel of industrial, research and technology organizations from EU member states and Associated Countries, coordinated by **KATHOLIEKE UNIVERSITEIT LEUVEN** (Belgium), such as SMEs **Lumiphase** (Switzerland) and **Optalysys** (UK), **IBM** (Switzerland and Israel), the **Nanophotonics Technology Center – Universitat Politècnica de València** (Spain), and **PNO Innovation** (Spain). The PHOENIX project started the 1<sup>st</sup> September 2022 and will run for 3 years until the 31 August 2025.

Europe aims to maintain and increase Europe’s industrial leadership in photonics by fostering photonics manufacturing and accelerating Europe’s innovation process to reduce the time-to-market for novel products, stimulating the creation of strong and complementary value chains around photonics and facilitating access to the manufacturing capabilities of highly innovative SMEs.

The creation of such an ecosystem will cement EU leadership in photonics, stimulating private investment in research and development and business creation, resulting in jobs generation and economic growth. Furthermore, it will contribute to the EU’s technological sovereignty, industrial competitiveness and independence, and support EU **industrial** and **digital** strategies.

On 14<sup>th</sup> September 2023, **PHOENIX** partners met for the first time in Leuven, Belgium for the kick-off meeting of the project. **PHOENIX** with a total budget 5.25M€ has been granted with 3.5M€ from the European Union’s **Horizon Europe** research and innovation programme to leverage compact photonic integrated circuits (PIC) offering continuous and efficient control over optical signals.

**The PHOENIX Project’s main goal is to create building blocks for the next generation of encryption and computing hardware, offering continuous and efficient control**

 This project has received funding from the European Union’s Horizon Europe by the granting Authority “HADEA (European Health and Digital Executive Agency) under Grant Agreement No 101070690. This document reflects only the author’s view.

**over optical signals and enhanced functionalities stemming from a combination of materials having a metal-insulator transition with epitaxial ferroelectrics. The developed technologies will be demonstrated in four use cases in the fields of encryption, wireless telecommunications, and neuromorphic computing.**

During the 36-month duration of the project, **PHOENIX** partners are committed to accomplish the following ambitious objectives:

1. Provide novel photonic technologies with enhanced functionalities thanks to the integration of VOx and BTO.
2. Provide a BTO/SiN waveguide platform for subsequent manufacturing of PICs and an upgraded version of such a platform integrating VOx with the potential to improve their performance and scalability.
3. Build up the demonstrators.
4. Advance in the understanding, realization and upscaling of high-quality oxide thin-films by molecular beam epitaxy (MBE) on large area.
5. Develop business models to foster SME's access to advanced PIC technology.

**PHOENIX partners will work towards the creation of the next generation of compact PICs, leveraging Lumiphase's barium titanate (BTO) on silicon nitride (SiN) platform that will be optimized to enable novel functionalities and produce enhanced PICs.**

The **PHOENIX** project is expected to generate the following scientific, societal, economic and technological outcomes and impacts:

- ✓ Innovative materials and technologies beyond the SotA for developing advanced materials integration, building blocks, and PICs with enhanced functionalities, reduced footprint and power consumption.
- ✓ Leadership in BTO/SiN technology combined with VOx and enhanced MBE control techniques to strengthen EU position and technological sovereignty in these critical technologies.
- ✓ Increased adoption of photonics technologies by demonstrating them in four application use cases in high-impact emerging fast-growing markets.
- ✓ Foster market uptake and business and economic sustainability of the BTO/SiN platform and the developed products, enabling access to high-tech SMEs, technology providers, and research institutions and associations.
- ✓ Reduction of time-to-market and costs to commercialize innovative photonic products.
- ✓ Training and improving knowledge and skills of MSc and PhD candidates in the field of photonics to prepare next generation EU photonics workforce.

**PHOENIX will also allow the creation of employment opportunities within Europe** by strengthening the EU market share in the worldwide photonics marketplace, creating gender equal opportunities, high-quality jobs and facilitating SME growth by providing access to the BTO/SiN open platform,



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following and leveraging the first-demonstration experience of SME companies such as Optalysys and the worldwide pioneering IBM.

**PHOENIX Consortium**

[Website KU LEUVEN](#)   [Website NTC- UPV](#)   [Website IBM](#)   [Website PNO](#)

[Website Lumiphase](#)   [Website IBM](#)   [Website Optalysys](#)

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**Follow PHOENIX project on social media**

 [LinkedIn](#)

 [Twitter](#)

 [Webpage](#)

 This project has received funding from the European Union's Horizon Europe by the granting Authority "HADEA (European Health and Digital Executive Agency) under Grant Agreement No 101070690. This document reflects only the author's view.

Figure 10 Press release

### 3.1.6. PRESENTATIONS

The presentation templates are already in Innovation Place at the location described in the Project Handbook and Quality Assurance plan (D1.1) and are available for the use by all members. They include the uniform image design described previously and will be used for all internal and external events so that the corporate branding is maintained and visible at all events.

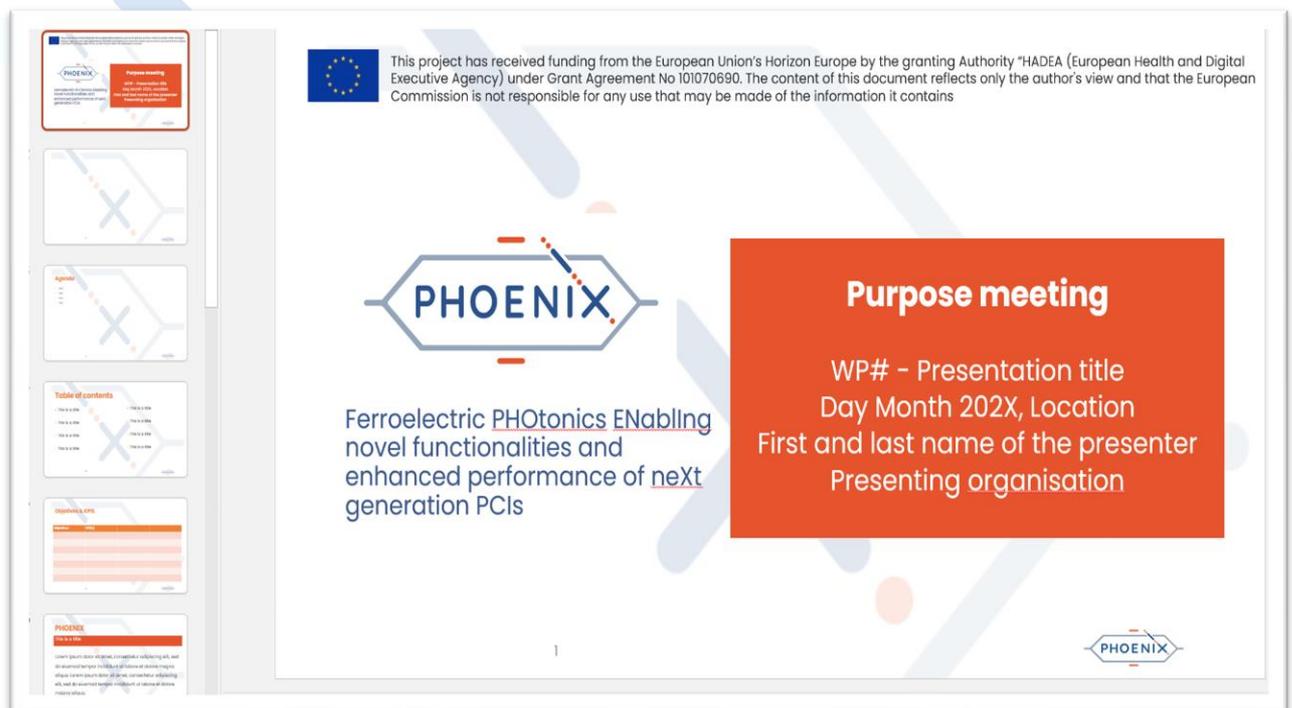


Figure 11 Presentation template

### 3.1.7. ROLL-UP

One PHOENIX roll-up has already been designed.



Figure 12 Roll-up

## 4. PHOENIX WEBSITE

The PHOENIX website shall serve as a first general information contact point to create an overview of the project for all website visitors. The website shall show the projects offered online and offline services, its objectives, the consortium etc. For this, the website content was delivered within the first two months in cooperation among the project partners. The website will serve as the main interface for distributing project's information and results providing regular updates on project activities and achievements, publications, meeting announcements and events as well as a series of information for a wide range of interested stakeholders (e.g., downloadable project brochures, newsletter registration form, and other dissemination materials). The website has been launched at M3 and can be accessed at <https://www.heu-phoenix.eu/>.

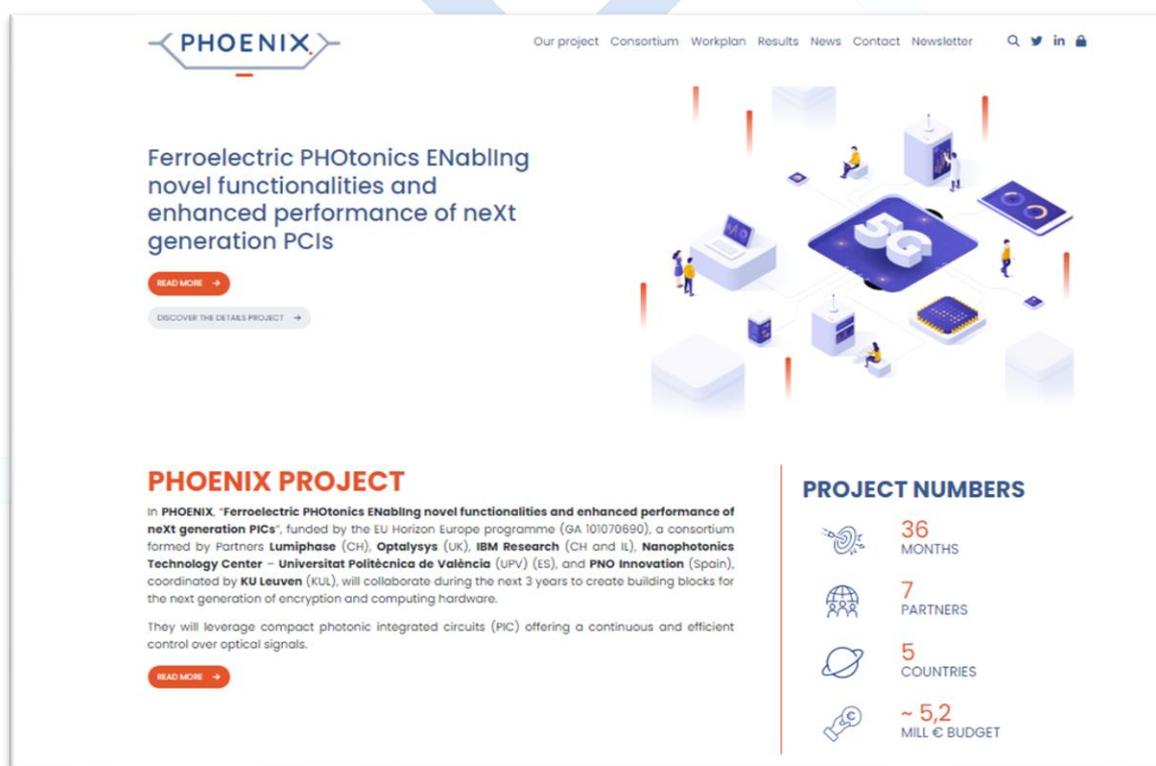


Figure 13 PHOENIX Website front-page

Although the numbers, geographical distribution and preliminary statistics obtained from Google Analytics are promising (see Summary report in Figure 14), the current goal after the first 6M of the project, is to increase the traffic on the website and thereby increasing the subscribers to the newsletter, too. To convince the visitor, the landing page must have information about the project and why the visitor should subscribe. If this message image is not clear, the bouncing rate (the amount of visitors who will just leave the site without joining or interacting) will be high. A high bouncing rate means that the traffic must be way higher to get the targeted number of subscribers to the newsletter. Assessment of the bouncing rate will be evaluated in order to trigger modifications to the website in order to make it more attractive.

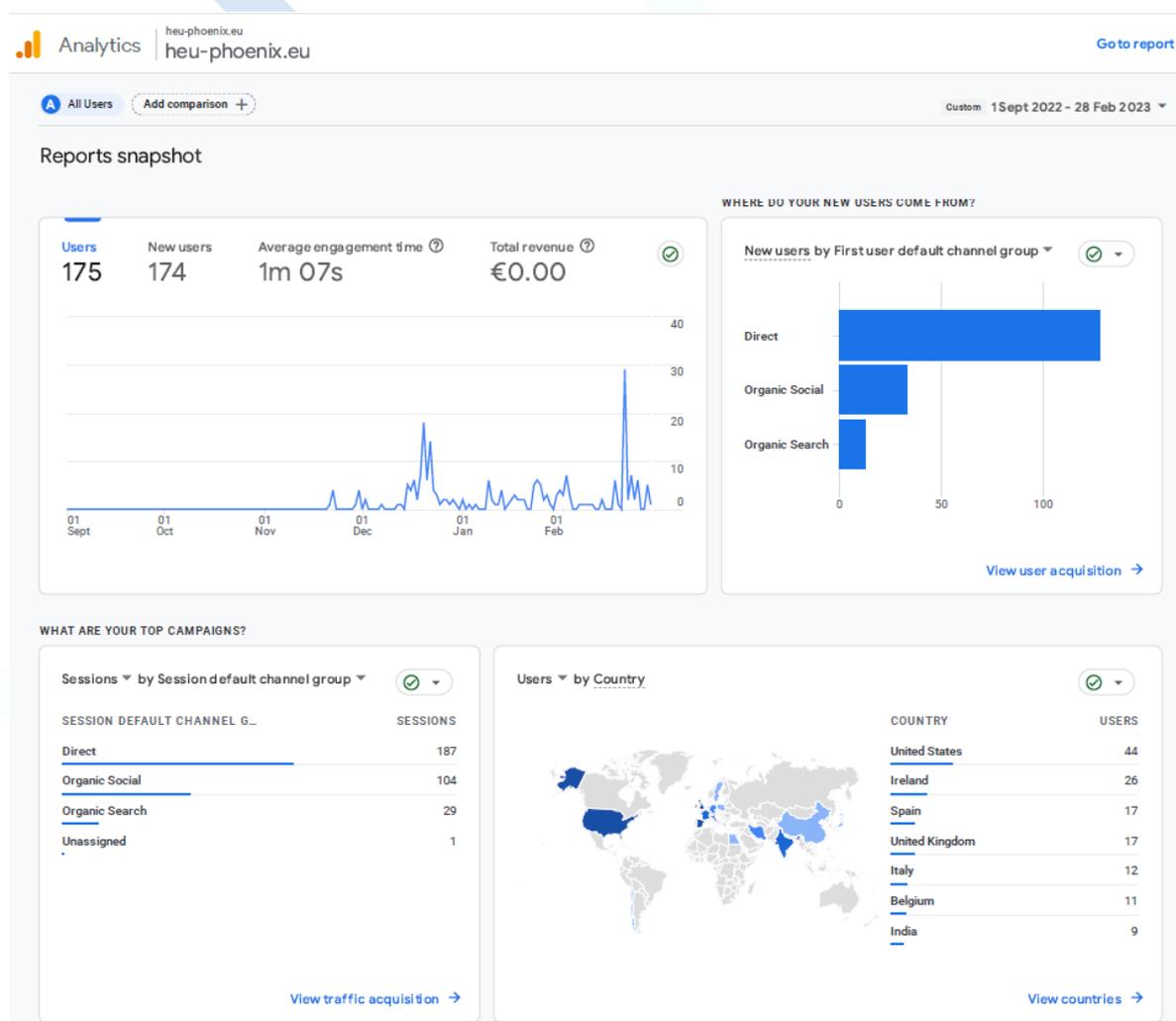


Figure 14 PHOENIX Website audience statistics

## 5. SOCIAL AND PROFESSIONAL MEDIA

Three profiles on social/professional media have been created:

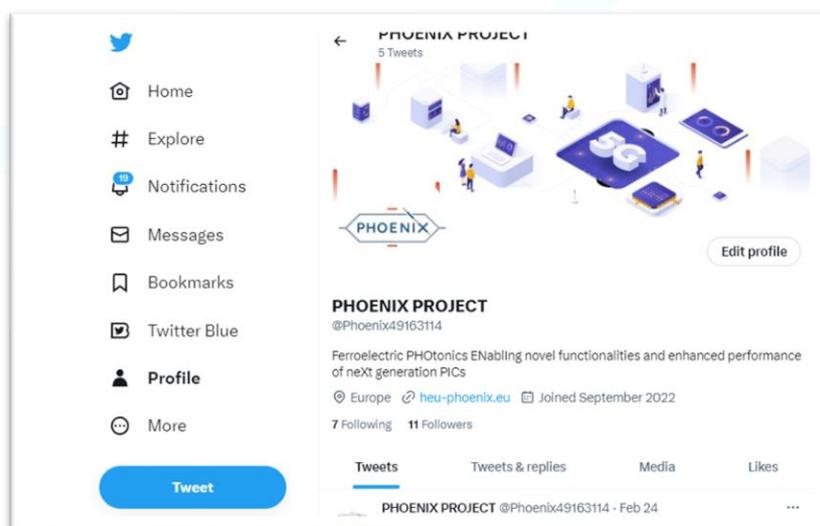
**Table 1 PHOENIX Social and Professional Media**

| Social Media                                                                      | Link                                 | Target audience                                                   |
|-----------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------|
|  | <a href="#">PHOENIX Twitter</a>      | Professional (Scientific/R&D, Industry, Funding), General public, |
|  | <a href="#">PHOENIX LinkedIn</a>     | Professional (Scientific/R&D, Industry, Funding),                 |
| ResearchGate                                                                      | <a href="#">PHOENIX ResearchGate</a> | Scientific/R&D                                                    |

All project partners are encouraged to regularly provide news and content to PNO to generate suitable content and to distribute (retweet, like, post, share) the publications made by the project.

### 5.1. Twitter

The project twitter channel has been created. The plan is to submit at least 1 tweet per week to keep subscribers engaged.



**Figure 15 PHOENIX Twitter channel.**

## 5.2. LinkedIn

As LinkedIn group has been created, to make PHOENIX known to an even wider audience. Using available analytics, up to now, the LinkedIn page has received 227 visits (92 unique visitors). The target is to generate weekly content in order to increase the number of visitors.

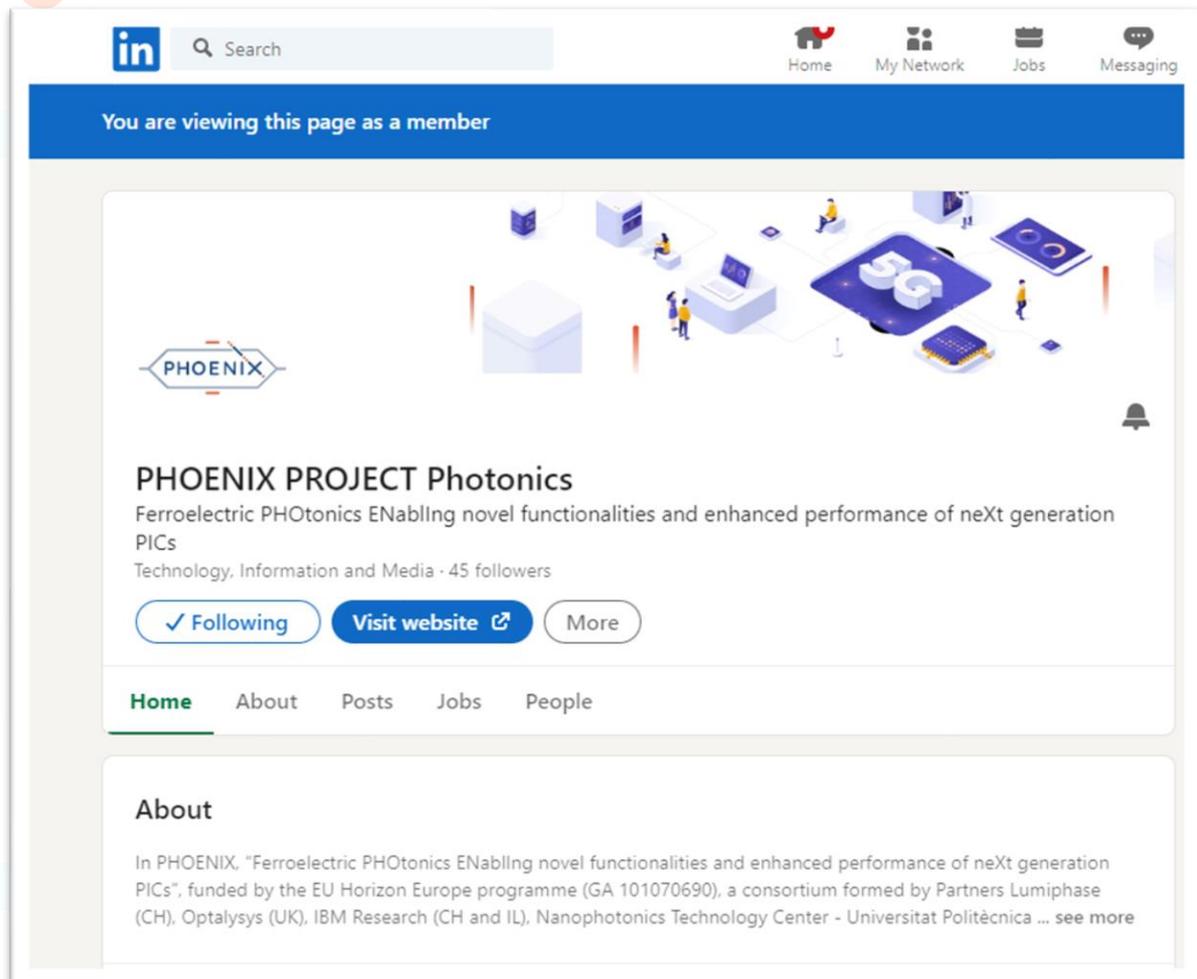


Figure 16 PHOENIX LinkedIn

## 5.3. ResearchGate

As ReaserchGate group has been created, to disseminate scientific results to the R&D and Academia community.

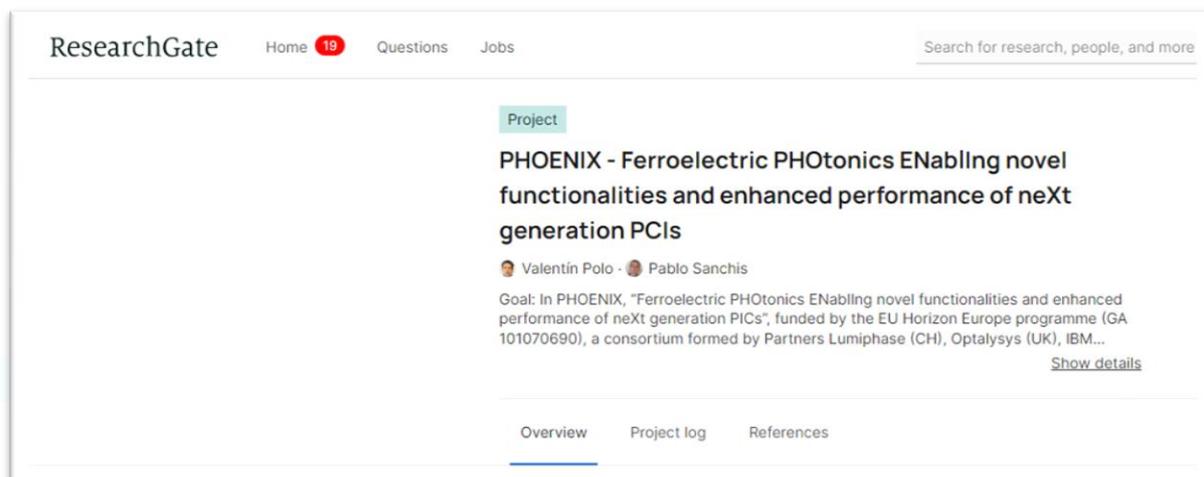


Figure 17 PHOENIX Research gate screenshot.

## 6. ARTICLES AND SCIENTIFIC PAPERS

The PHOENIX project will actively seek dissemination of the main project results and achievements to high-impact journals. An initial list of targeted journals and magazines is:

**Scientific:** Nature Photonics, Nature Communications, IEEE Journal of Lightwave Technology, IEEE Photonics Technology Letters, ACS Photonics, Nanophotonics, Optics Express, OPTICA, applied optics, Optics Letters, Scientific Reports, Laser and Photonics Review, APL Photonics, Advanced Photonics, Photonics Research and Photonix.

**Business-oriented journals:** Techniques, Laser Focus World

The most appropriate journal will be addressed as part of the dissemination strategy in order to maximize the generated impact and target the appropriate audience. For the same reason, attention to special issues related to the PHOENIX project activities will be given.

## 7. SCIENTIFIC CONFERENCES

The innovative nature of the PHOENIX project activities and expected results will be disseminated in major scientific conferences in EU and abroad. During the consortium's participation in these external events, the communication and dissemination tools like the leaflets will be available, posters and roll-ups will draw attention to the project, presentations will be shown etc.

Further short-term upcoming events, that are already identified and relevant for PHOENIX, are shown in the following table. The list will be completed and updated as far as further events are identified. The deadlines will be monitored and communicated to the partners and the possibility to attend and actively participate in collocated industrial exhibitions will be particularly foreseen and considered as part of the Communication and Dissemination plan.

**Table 2. PHOENIX-related scientific conferences**

| Conference title                                                                            | Website                                                                                                                                                           | Date       |            | Venue                   | Exhibition     |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|-------------------------|----------------|
|                                                                                             |                                                                                                                                                                   | Start      | End        |                         |                |
| 2022 Asia Communications and Photonics Conference (ACP)                                     | <a href="http://www.acp2022.org">http://www.acp2022.org</a>                                                                                                       | 05/11/2022 | 08/11/2022 | Shenzen, China          | No             |
| 2022 IEEE Photonics Conference (IPC)                                                        | <a href="https://ieee-ipc.org/">https://ieee-ipc.org/</a>                                                                                                         | 13/11/2022 | 17/11/2022 | Vancouver, Canada       | Yes            |
| 2023 SPIE Photonics West                                                                    | <a href="https://spie.org/conferences-and-exhibitions/photonics-west">https://spie.org/conferences-and-exhibitions/photonics-west</a>                             | 28/01/2023 | 02/02/2023 | San Francisco, CA       | Yes            |
| 2023 Optical Fiber Communications Conference and Exhibition (OFC)                           | <a href="https://www.ofcconference.org">https://www.ofcconference.org</a>                                                                                         | 05/03/2023 | 09/03/2023 | San Diego, CA, USA      | Yes            |
| 2023 IEEE Silicon Photonics Conference (SiPhotonics)                                        | <a href="https://ieee-gfp.org/">https://ieee-gfp.org/</a>                                                                                                         | 04/04/2023 | 07/04/2023 | Arlington, VA, USA      | Yes            |
| 2023 Conference on Lasers and Electro-Optics (CLEO)                                         | <a href="https://www.cleoconference.org/">https://www.cleoconference.org/</a>                                                                                     | 07/05/2023 | 12/05/2023 | San Jose, CA, USA       | Yes            |
| 2023 IEEE Photonics Conference (IPC)                                                        | <a href="https://ieee-ipc.org/">https://ieee-ipc.org/</a>                                                                                                         | 12/11/2023 | 16/11/2023 | Orlando, FL USA         | No             |
| ECOC 2023                                                                                   | <a href="https://www.ecocexhibition.com/">https://www.ecocexhibition.com/</a>                                                                                     | 01/10/2023 | 05/10/2023 | Glasgow, Scotland       | Yes            |
| ECIO 2023                                                                                   | <a href="https://www.ecio-conference.org/">https://www.ecio-conference.org/</a>                                                                                   | 19/04/2023 | 21/04/2023 | Twente, Netherlands     | Yes            |
| Quantum Business Europe                                                                     | <a href="https://www.quantumbusinesseurope.com/">https://www.quantumbusinesseurope.com/</a>                                                                       | sep-23     | sep-23     | Online/Virtual          | Online/Virtual |
| IEEE International Electron Devices Meeting (IEDM)                                          | <a href="https://www.ieee-iedm.org/">https://www.ieee-iedm.org/</a>                                                                                               | 09/12/2023 | 13/09/2023 | San Francisco, CA       | Yes            |
| Inside Quantum Technology                                                                   | <a href="https://iqtevent.com/thehague/">https://iqtevent.com/thehague/</a>                                                                                       | 13/03/2023 | 15/03/2023 | The Hague, NL           | Yes            |
| Q2B23 Paris                                                                                 | <a href="https://q2b.qcware.com/2023-conferences/paris/">https://q2b.qcware.com/2023-conferences/paris/</a>                                                       | 03/05/2023 | 04/05/2023 | Paris                   | No             |
| Q2B23 Tokyo                                                                                 | <a href="https://q2b.qcware.com/2023-conferences/tokyo">https://q2b.qcware.com/2023-conferences/tokyo</a>                                                         | 19/07/2023 | 20/07/2023 | Tokyo                   | No             |
| E-MRS spring                                                                                | <a href="https://www.european-mrs.com/meetings/2023-spring-meeting">https://www.european-mrs.com/meetings/2023-spring-meeting</a>                                 | 29/05/2023 | 02/06/2023 | Strasbourg (France)     | No             |
| OPTICA APC                                                                                  | <a href="https://www.optica.org/en-us/events/congress/advanced_photonics_congress/">https://www.optica.org/en-us/events/congress/advanced_photonics_congress/</a> | 09/07/2023 | 13/09/2023 | Busan, South Korea      | Yes            |
| Semicon West                                                                                | <a href="https://www.semiconwest.org/">https://www.semiconwest.org/</a>                                                                                           | 11/07/2023 | 13/07/2023 | San Francisco, CA       | Yes            |
| 2024 Optical Fiber Communications Conference and Exhibition (OFC)                           | <a href="https://www.ofcconference.org/en-us/home/about/">https://www.ofcconference.org/en-us/home/about/</a>                                                     | 24/03/2024 | 28/03/2024 | San Diego, CA (USA)     | Yes            |
| The International Symposium on Cyber Security, Cryptology and Machine Learning              | <a href="https://www.csclm.org/">https://www.csclm.org/</a>                                                                                                       | 29/06/2023 | 30/06/2023 | N/A                     | No             |
| Conference on Cryptographic Hardware and Embedded Systems (CHES 2023)                       | <a href="https://ches.iacr.org">https://ches.iacr.org</a>                                                                                                         | 10/09/2023 | 14/09/2023 | Prague (Czech Republic) | No             |
| Spanish conference on nanophotonics (CEN)                                                   | <a href="https://www.benasque.org/2023cen/">https://www.benasque.org/2023cen/</a>                                                                                 | 12/06/2023 | 14/06/2023 | Zaragoza (Spain)        | No             |
| 12/13th Workshop on Encrypted Computing & Applied Homomorphic Cryptography - WAHC 2024/2025 | Usually collocated to ACM CCS ( <a href="https://www.sigsac.org/">https://www.sigsac.org/</a> )                                                                   | TBD        | TBD        | TBD                     | TBD            |
| Fully Homomorphic Encryption ORG Conference                                                 | <a href="https://the.org/conferences/conference-2023/home">https://the.org/conferences/conference-2023/home</a>                                                   | 26/03/2023 | N/A        | Tokyo (Japan)           | No             |

Up to date, the consortium has submitted 3 contributions to Scientific conferences, as summarized in Table 2.

**Table 3. Summary of PHOENIX contributions to scientific conferences**

| Title                                                                                                                                                                                    | Partners involved | WP involved | Status    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|-----------|
| J. Parra, J.J. Seoane, J. Navarro-Arena, M. Recaman, J.P. Locquet, P. Sanchis, "Photonic memory based on VO <sub>2</sub> /Si technology", accepted as oral presentation in ECIO 2023.    | UPV-NTC, KUL      | WP3         | Accepted  |
| J.J. Seoane, J. Parra, J. Navarro-Arena, P. Sanchis, "Enhanced BTO/SiN platform with VO <sub>2</sub> technology for $\mu$ m-length amplitude switching", abstract submitted to CEN 2023. | UPV-NTC           | WP2         | Submitted |
| P. Sanchis, J. Parra, J. Navarro-Arenas, "New functionalities enabled by phase change materials in silicon devices", invited talk in E-MRS Spring Meeting 2023.                          | UPV-NTC           | WP2         | Invited   |

## 8. LIAISON AND ENGAGEMENT

PHOENIX is willing and will foster cooperation, liaison and engagement of relevant stakeholders in the relevant value chains in order to increase the outreach of project activities contributing to increase the project impact. With that aim, activities are planned at several levels, as described in sections 8.1 to 8.3.

### 8.1. Related projects

PHOENIX will proactively keep look out for Horizon EU, Digital Europe or European Defence Fund projects involving the use of photonics, as a means to exchange good practices, create synergies and foster further cooperation and commercial activities through clustering. A preliminary identification of running projects has been made and will be continuously updated from CORDIS, Photonics21, main events, desktop research and the stakeholders analysis to be delivered by M24.

**Table 4 Projects already identified for clustering**

| <b>Acronym</b>    | <b>Title</b>                                                                                                                                                                                                                    | <b>Website</b>                                                                                            |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>LASTSTEP</b>   | group-IV LASer and deTEctors on Si-TEchnology Platform                                                                                                                                                                          | <a href="https://cordis.europa.eu/project/id/101070208">https://cordis.europa.eu/project/id/101070208</a> |
| <b>POLYNICES</b>  | POLYmer based electro-optic PCB motherboard integration with Si <sub>3</sub> N <sub>4</sub> Chiplets, InP Components and Electronic ICs enabling affordable photonic modules for THz Sensing and quantum computing applications | <a href="https://cordis.europa.eu/project/id/101070549">https://cordis.europa.eu/project/id/101070549</a> |
| <b>PROMETHEUS</b> | PROgraMMable integrated photonic nEuromorphic and quanTum networks for High-speed imaging, communications and sEcUrity applicationS                                                                                             | <a href="https://cordis.europa.eu/project/id/101070195">https://cordis.europa.eu/project/id/101070195</a> |
| <b>PHORMIC</b>    | Wafer-scale platform for Photonic Programmable Multipurpose Integrated Circuits                                                                                                                                                 | <a href="https://cordis.europa.eu/project/id/101070332">https://cordis.europa.eu/project/id/101070332</a> |
| <b>PATTERN</b>    | Next generation ultra-high-speed microwave Photonic integrATED circuitS using advancE hybrid iNtegration                                                                                                                        | <a href="https://cordis.europa.eu/project/id/101070506">https://cordis.europa.eu/project/id/101070506</a> |
| <b>VISSION</b>    | <a href="https://cordis.europa.eu/project/id/101070622">https://cordis.europa.eu/project/id/101070622</a>                                                                                                                       | <a href="https://cordis.europa.eu/project/id/101070622">https://cordis.europa.eu/project/id/101070622</a> |
| <b>GRAPH-X</b>    | GRAphene PHotonic frequency miXer                                                                                                                                                                                               | <a href="https://cordis.europa.eu/project/id/101070482">https://cordis.europa.eu/project/id/101070482</a> |
| <b>LOLIPOP</b>    | Lithium NiObate empowered siLlcon nitride Platform for fragmentation free OPeration in the visible and the NIR                                                                                                                  | <a href="https://cordis.europa.eu/project/id/101070441">https://cordis.europa.eu/project/id/101070441</a> |

|                     |                                                                                                                   |                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>PhotoGENIC</b>   | PhotoGeNIC Photonics on Germanium - New Industrial Consortium                                                     | <a href="https://cordis.europa.eu/project/id/101069490">https://cordis.europa.eu/project/id/101069490</a> |
| <b>Phabulous</b>    | Pilot-line providing highly advanced & robust manufacturing technology for optical free-form micro-structures     | <a href="https://phabulous.eu/">https://phabulous.eu/</a>                                                 |
| <b>PhotonicLeap</b> | Photonic Wafer-Level IntEgration PACKaging and Test Processes                                                     | <a href="https://photonicleap.com/index.html">https://photonicleap.com/index.html</a>                     |
| <b>PICaboo</b>      | Photonic Integrated Circuits on InP technology pLAtform enaBling low cost metro netwOrks and next generation PONs | <a href="https://ict-picaboo.eu/">https://ict-picaboo.eu/</a>                                             |
| <b>SIPHO-G</b>      | Advanced GeSi components for next-generation silicon photonics applications                                       | <a href="https://www.siphog.eu/">https://www.siphog.eu/</a>                                               |
| <b>INSPIRE</b>      | InP on SiN Photonic Integrated circuits REalized through wafer-scale micro-transfer printing                      | <a href="https://www.inspire-h2020.eu/">https://www.inspire-h2020.eu/</a>                                 |
| <b>PhotonHub</b>    | One-Stop-Shop Open Access to Photonics Innovation Support for a Digital Europe                                    | <a href="https://www.photonhub.eu/">https://www.photonhub.eu/</a>                                         |
| <b>ELENA</b>        | Lithium Niobate PICS for Europe                                                                                   | <a href="https://www.project-elena.eu/">https://www.project-elena.eu/</a>                                 |

## 8.2. Related EU/national/regional clusters and EU/national platforms and initiatives.

The **Photonics 21 Photonics Public Private Partnership**<sup>2</sup> is the key entity for the PHOENIX consortium to build fruitful relationships with their industrial and research organisation members in seek of cooperation for common interests and goals. The Photonics PPP provides a unique opportunity for PHOENIX to collaborate key stakeholders in the photonics sector in the EU. As an initial action, PNO will attend the Photonics Partnership annual meeting 2023 to be held April 26-27 in Brussels.

In addition, communication and dissemination activities are planned through related **EU/national/regional clusters and/or national/European platforms and initiatives**. The following EU initiatives/projects/platforms/networks, in some of which the PHOENIX project partners already are involved, can serve as an important contact point for dissemination and communication. Examples of such platforms can be Photonics Sweden (SE), Photonics.fi (FI), PNL (NL), SWISS Photonics (CH), Fotónica 21 (ES), etc. Interaction with such entities, will contribute to build up synergies, acting as a multiplying factor that will also generate positive effects in the activities, the results and of course in the impact generated by all parties.

## 8.3. Workshops and training sessions.

The PHOENIX project aims to prepare several types of workshops along the project execution, which can be divided into the following categories:

- **Internal workshops** (trainings) to transfer knowledge and skills to partners requiring specific knowledge of the developed technologies (e.g. using of PDK, design guidelines)

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<sup>2</sup> <https://www.photonics21.org/>

- **External workshops:** either in cooperation with cluster projects or directly organised by the project in online or face-to-face formats. Currently, options for organising such workshops within the umbrella of organisations such as OPTICA or EPIC are being analysed. Co-location to scientific conferences is the preferred option for the consortium.
- **Project final workshop:** initial discussions on the event to which the final PHOENIX workshop will be collocated have been initiated, being the European Conference on Optical Communications (ECOC) and European Conference on integrated optics (ECIO) the preferred options so far.

## 9. SUMMARY AND ACHIEVEMENTS UNTIL M06

Communication and dissemination activities have been initiated as planned. The project has been active in preparing press-releases and newsletters, posting in social media and despite it is at its early stages of development, three contributions to scientific conferences have been issued. A summary of the activities carried out is provided in Table 5.

**Table 5 PHOENIX Achievements until M06**

| <b>Partner</b> | <b>Communication Activity name</b> | <b>Description</b>                  | <b>Who? Target audience</b> | <b>How? Communication channel</b> | <b>URL for social media</b>                                                                                                                                     | <b>Date of publication</b> |
|----------------|------------------------------------|-------------------------------------|-----------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>PHOENIX</b> | Website launch                     | Website launch                      | [Public]                    | Website                           | <a href="http://www.heu-phoenix.eu">www.heu-phoenix.eu</a>                                                                                                      |                            |
| <b>PHOENIX</b> | Post in LinkedIn                   | Discover PHOENIX Project in CORDIS! | [Public]                    | Social. Media                     | <a href="https://www.linkedin.com/feed/update/urn:li:activity:6986332600579596290">https://www.linkedin.com/feed/update/urn:li:activity:6986332600579596290</a> | 13/10/2023                 |
| <b>PHOENIX</b> | Post in LinkedIn                   | PHOENIX website is ready            | [Public]                    | Social. Media                     | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7010905154363240448">https://www.linkedin.com/feed/update/urn:li:activity:7010905154363240448</a> | 13/10/2022                 |
| <b>PHOENIX</b> | Post in LinkedIn                   | Visit PHOENIX website               | [Public]                    | Social. Media                     | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7023645525514072064">https://www.linkedin.com/feed/update/urn:li:activity:7023645525514072064</a> | 20/12/2022                 |



|                |                  |                                    |          |               |                                                                                                                                                                                                                                                                                                                                                     |            |
|----------------|------------------|------------------------------------|----------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>PHOENIX</b> | Post in LinkedIn | Meet PHOENIX consortium            | [Public] | Social. Media | <a href="https://www.linkedin.com/posts/phoenix-project-photonics-phoenix-consortium-video-activity-7026857761124626432=xheB?utm_source=share&amp;utm_medium=member_desktop">https://www.linkedin.com/posts/phoenix-project-photonics-phoenix-consortium-video-activity-7026857761124626432=xheB?utm_source=share&amp;utm_medium=member_desktop</a> | 02/02/2023 |
| <b>PHOENIX</b> | Post in LinkedIn | PHOENIX.s 6 month progress meeting | [Public] | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7027286267323133952">https://www.linkedin.com/feed/update/urn:li:activity:7027286267323133952</a>                                                                                                                                                                                     | 03/02/2023 |
| <b>PHOENIX</b> | Post in LinkedIn | Post in LinkedIn: Press-release    | [Public] | Social. Media | <a href="https://www.linkedin.com/posts/phoenix-project-photonics-newsletter-n-1-phoenix-activity-7034804072528424960-">https://www.linkedin.com/posts/phoenix-project-photonics-newsletter-n-1-phoenix-activity-7034804072528424960-</a>                                                                                                           | 24/02/2023 |



D6.1. Communication and dissemination plan  
 Dissemination level- PU



|               |                    |                                                                                        |          |               |                                                                                                                                                                 |            |
|---------------|--------------------|----------------------------------------------------------------------------------------|----------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|               |                    |                                                                                        |          |               | <a href="#">OOIT?utm_source=share&amp;utm_medium=member_desktop</a>                                                                                             |            |
| <b>PNO ES</b> | RePost in LinkedIN | Horizon Europe project PHOENIX officially launched,kick-off meeting of project PHOENIX | Citizens | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:6976554412315938816">https://www.linkedin.com/feed/update/urn:li:activity:6976554412315938816</a> | 16/09/2023 |
| <b>PNO ES</b> | RePost in LinkedIN | Visit PHOENIX website                                                                  | Citizens | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7023649124566638592">https://www.linkedin.com/feed/update/urn:li:activity:7023649124566638592</a> | 20/12/2022 |
| <b>PNO ES</b> | RePost in LinkedIN | Meet PHOENIX consortium                                                                | Citizens | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7027289101288583168">https://www.linkedin.com/feed/update/urn:li:activity:7027289101288583168</a> | 03/02/2023 |



D6.1. Communication and dissemination plan

Dissemination level- PU



|                  |                                  |                                                                                                                  |          |               |                                                                                                                                                                                                                               |            |
|------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------|----------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>PNO ES</b>    | RePost in LinkedIN with comments | PHOENIX 6 month progress meeting                                                                                 | Citizens | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7027289101288583168">https://www.linkedin.com/feed/update/urn:li:activity:7027289101288583168</a>                                                               | 03/20/2023 |
| <b>PNO ES</b>    | Post in LinkedIN                 | PHOENIX website is ready                                                                                         | Citizens | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7010911733674336256">https://www.linkedin.com/feed/update/urn:li:activity:7010911733674336256</a>                                                               | 20/12/2023 |
| <b>PNO ES</b>    | Post in LinkedIN                 | Press-release                                                                                                    | Citizens | Social. Media | <a href="https://www.linkedin.com/feed/update/urn:li:activity:7034808912302202880">https://www.linkedin.com/feed/update/urn:li:activity:7034808912302202880</a>                                                               | 24/02/2023 |
| <b>NTC - UPV</b> | Digital news                     | La UPV trabaja en el desarrollo de chips fotónicos de última generación que aceleran el rendimiento / The UPV is | [Public] | Other         | <a href="https://valenciaplaza.com/upv-trabaja-desarrollo-chips-fotonicos-ultima-generacion-aceleran-rendimiento">https://valenciaplaza.com/upv-trabaja-desarrollo-chips-fotonicos-ultima-generacion-aceleran-rendimiento</a> | 31/10/2023 |



D6.1. Communication and dissemination plan

Dissemination level- PU



|                  |                                                                                                                                              |                                                                                          |          |               |  |            |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------|---------------|--|------------|
|                  |                                                                                                                                              | working on the development of next-generation photonic chips that accelerate performance |          |               |  |            |
| <b>NTC - UPV</b> | Institutional Magazine : CIEMAT - Revista Vértices. Section Noticias de la I+D+i en España y en el Mundo / I+D+I News in Spain and the world | Comienza el proyecto Horizon Europe PHOENIX / Horizon Europe PHOENIX project begins      | Citizens | Social. Media |  | 30/09/2023 |

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## 10. CONCLUSIONS AND NEXT STEPS

Creating awareness through communication and dissemination activities is a clear objective of the project, as is a key activity to attract and engage stakeholders from the EU photonics industry and scientific/academia community.

During the first 6 months of the project the project has 1) prepared the first version of the dissemination and communication tools (corporate image and style guide, logo, newsletter, press releases, templates), 2) implemented the dissemination and communication channels (website, social media), and 3) has agreed the internal and external dissemination and communication methodology and guidelines.

Dissemination and communication activities have been initiated as reported in Section 9, with the main objective to start building up a network of stakeholders and interest groups in the photonics value chain and maximize the awareness of the PHOENIX project results and impacts in EU.

Discussions of the Consortium plans and strategies towards workshop and training organisation have been initiated. Up to M12, the activities will be focused to generate the stakeholders' network in order to initiate the clustering and joint activities from M12 on.

3 contributions to scientific conferences have been issued, 2 already accepted, one of them invited.

The communication and dissemination activities will contribute to build an active PHOENIX community during the project lifetime and beyond and will be interlocked with all the activities of the project, in order to foster the wide adoption of the developed technologies and facilitate the sustainability of the PHOENIX BTO/SiN platform.

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