

PHOTONICS FINLAND Association's Action Plan for the period 1.1. – 31.12.2025

The action plan has been prepared in collaboration between the Photonics Finland board and office during the autumn of 2024. At the same time, budgeting has been integrated into the action plan. Photonics Finland collaborates closely with the Photonics flagship programme PREIN.

The Purpose of the Association

Photonics Finland is a technology cluster that drives forward the photonics industry and research in Finland by connecting Finnish photonics companies, universities, research institutes, experts, students, and public authorities. Photonics Finland supports the development of new business and research opportunities and helps realize the full potential of photonics in industry and society in Finland in sectors like health care, energy efficiency, safety, manufacturing, and sustainability.

Photonics Finland promotes the development of the photonics industry and acts as a national advocate for its members. Photonics Finland maintains international relationships and seeks to establish networks with other photonics clusters and with companies, research institutions, and other organizations that are relevant to its members both nationally and internationally. Photonics Finland's mission is to ensure that the conditions for success in the photonics industry are met in Finland. Photonics Finland:

- Link between individuals, companies, and educational and research institutions interested in photonics and related fields
- Promotes equitable education, research, and business activities in the Finnish photonics industry
- Understands the needs of its membership and acts as an innovative leader
- Actively networks and facilitates networking for its members

The main action of Photonics Finland will be to respond to the needs of its members, who operate in an increasingly competitive environment and come up with new solutions with the means available to the Society. It is an innovative leader and a strong influencer in shaping the operating environment. The association is a sought-after player for its members.

By highlighting the opportunities in the photonics industry and mobilizing its membership, the association actively and systematically develops the operating environment.

Membership Acquisition

Photonics Finland aims to include all entities working in the field of photonics, such as companies and researchers, in the activities of the association. Additionally, target groups include entities like development agencies, funders, and companies that could benefit from utilizing photonics in their operations.

Individual members receive benefits such as reduced participation fees for events organized by the association, email-based mailing services, and their own contact information on the association's website upon request. Additionally, each member receives the association's biannual membership

magazine, 'FOTONI', which contains current updates on the activities of research groups and photonics companies operating in Finland and upcoming events in the field.

In 2025, Photonics Finland aims to recruit new photonics-related companies, companies utilizing photonics, individual developers and researchers as well as students to its membership portfolio.

All benefits available to individual members are also extended to corporate and organizational members. Additionally, corporate and organizational members have their company name, contact information, a brief description, and a link to their company website displayed on the association's website. Membership also includes one free of charge half-page advertisement in the 'FOTONI' magazine annually.

Since the beginning of 2013, Photonics Finland has become a full member of the European Optical Society (EOS) as an EOS Branch. This means that Photonics Finland's individual members are automatically EOS full members (EOS members) and thus receive EOS membership benefits: full voting rights in EOS meetings, the option to receive the 'Opto&Laser Europe' magazine for free, a 20% discount on IOPP books, and access to the electronic EOS News. Additionally, EOS member benefits include a discounted publishing fee in EOS's journal: Journal of the European Optical Society: Rapid publications. Photonics Finland's corporate members receive a discount when joining EOS as a corporate member.

The prerequisite for membership benefits is the annual payment of membership fees.

The Society's Objectives for the Strategic Period 2021 - 2025

Photonics Finland has outlined its operational objectives for the years 2021 - 2025. The association's key long-term operational goals are:

- Serve and listen to its members, and facilitate their growth and success in their operations.
- Promote photonics education and increase public awareness and importance of photonics industry in Finland.
- Be a significant and respected player in Finland, known also in Europe and worldwide.
- Include the majority of photonics companies and individuals in its membership

The Photonics Roadmap 2025 – 2030

The Finnish Photonics roadmap is a strategic document that presents a trajectory for the future of Finnish Photonics. It builds on past achievements of the Finnish Photonics Community spanning the entire value chain from fundamental research to large-scale production.

It is a comprehensive guide that will enable us to remain competitive, and capitalize on photonics research, innovation and technologies. It will provide tools to communicate about Finnish Photonics, facilitate discussions on strategic goals and align different stakeholders. Roadmap will be published on 2025.

Main Action Recommendations

1. National Photonics Pilot Line
2. Continuing and Expanding the PREIN Flagship Program
3. National Photonics Growth Engine
4. Workforce Growth and Development
5. Enhancing Finland's International Influence and Trade in Photonics
6. Strengthening the Photonics Ecosystem

The main activities of the association in 2025

Photonics Finland's 2025 Action Plan focuses on expanding the impact and engagement of photonics across Finland, guided by the Finnish Photonics Roadmap. The primary goals for 2025 include implementing roadmap initiatives, attracting new members through targeted development efforts, managing projects to maximize member value, and enhancing event offerings to support member engagement and knowledge sharing.

1. Implementing the Photonics Roadmap Initiatives
2. Attracting New Members – Establishing the Photonics Invest in Advisory Board
3. Executing Ongoing Projects with Excellence
4. Creating New Events and Engagement Opportunities
5. Enhancing the Role of the Academic Advisory Board

1. Implementing the Photonics Roadmap Initiatives

In 2025, Photonics Finland will take an active role in ensuring the successful advancement of the initiatives outlined in the Finnish Photonics Roadmap. Photonics Finland will work to activate, support, and drive forward key areas identified in the roadmap, creating an environment where roadmap priorities are not only highlighted but also achieved through coordinated actions and partnerships.

Driving Collaboration and Communication: Photonics Finland will bring together industry, academic, and public sector stakeholders to foster a collaborative environment in photonics. By hosting events, facilitating discussions, and actively sharing information on roadmap progress, Photonics Finland aims to encourage alignment across sectors and ensure that all stakeholders are informed and engaged in achieving the roadmap's objectives.

Ongoing Cooperation with the PREIN Flagship: The PREIN (Photonics Research and Innovation) Flagship is a crucial partner in implementing the Finnish Photonics Roadmap. Photonics Finland will work closely with PREIN to align research and innovation efforts with the roadmap's goals, ensuring that both fundamental and applied research contribute to photonics sector development. This cooperation will include joint projects, events, and knowledge-sharing platforms to ensure that roadmap priorities are integrated into PREIN's activities and that PREIN's advancements are shared with industry.

Developing Roadmap-Focused Initiatives: To ensure that the roadmap priorities progress, Photonics Finland will initiate and support projects that directly address key areas such as green technology,

health applications, and industrial automation. These initiatives will be designed to not only achieve technological advancements but also to showcase practical photonics applications that bring tangible benefits to Finnish society and industry.

Through these actions, Photonics Finland will play an instrumental role in turning the Finnish Photonics Roadmap's vision into reality, ensuring that the photonics sector grows in alignment with national priorities and global trends.

2. Attracting New Members – Establishing the Photonics Invest in Advisory Board

Photonics Finland aims to expand its membership by attracting new members from photonics startups, small and medium-sized enterprises (SMEs), and companies that utilize photonics technology. Beyond simply growing its member base, Photonics Finland will activate efforts to position Finland as an attractive hub for photonics investment. This "Invest in Photonics" initiative will highlight Finland's strengths in photonics, with the goal of attracting both domestic and international investment and fostering additional opportunities for collaboration and industry growth.

Targeted Outreach and Strategic Partnerships: Photonics Finland will collaborate closely with Business Finland, city governments, and local development agencies to drive the "Invest in Photonics" initiative. By working with these entities, Photonics Finland will emphasize Finland's photonics ecosystem advantages, which include cutting-edge research, a skilled workforce, and a supportive business environment. This strategy builds on the progress made in the "FKE" (Photonics City Ecosystem) project, creating a natural continuation of efforts to boost photonics-focused investment and regional development.

Photonics Invest in Advisory Board: Establishing a Photonics Invest in Advisory Board will be a key component of this growth strategy. This advisory group will bring together representatives from urban and regional development agencies, business development organizations, and the photonics industry. It will serve as a collaborative platform to explore and promote photonics applications that drive urban development, strengthen local economies, and position Finland as a leader in the global photonics sector.

Through these initiatives, Photonics Finland will actively promote photonics as a catalyst for urban innovation and regional economic development. The Photonics Invest in Advisory Board will guide these efforts and ensure that Finland's photonics industry realizes its full potential, benefiting local ecosystems and creating new business opportunities across the country.

3. Executing Ongoing Projects with Excellence

Photonics Finland will prioritize exemplary management of ongoing projects to maximize value for its members and partners. This will include streamlined communications and improved tracking of project milestones to ensure each project delivers successful outcomes.

Developing the Project Portfolio: Photonics Finland is committed to expanding and diversifying its project portfolio to meet evolving industry needs and support sustainable growth. This involves actively seeking new EU-funded initiatives and broadening project scopes to align with Roadmap themes, such as green technology, digitalization, and cross-sector applications of photonics. By strengthening its project portfolio, Photonics Finland aims to attract skilled resources, foster innovation, and advance the field of photonics in Finland.

Launch of the FiCCC – Finnish Chips Competence Center: An important new initiative in 2025 will be the launch of the Finnish Chips Competence Center (FiCCC), which marks a significant milestone for photonics in Finland. FiCCC will play a pivotal role in building domestic expertise in semiconductor and photonics technologies, offering critical support for chip development and integration into photonics applications. This initiative will not only strengthen Finland's position in the global photonics sector but also open new opportunities for collaboration, innovation, and growth within the industry.

Through these actions, Photonics Finland will enhance its ability to support its members, attract new talent, and ensure that Finland remains at the forefront of photonics and semiconductor advancements.

4. Creating New Events and Engagement Opportunities

In 2025, Photonics Finland will continue to expand its event offerings, with a strong focus on Roadmap priorities, such as applications in energy, health, and industrial automation. Events are central to Photonics Finland's mission, as they provide valuable opportunities for understanding members' needs, identifying industry trends, and showcasing new photonics applications. Additionally, networking—both within the photonics sector and across related industries—remains a key area of value for members, as highlighted in member surveys. Photonics Finland is dedicated to creating high-impact events that facilitate meaningful connections and support members' growth and collaboration goals.

Optics & Photonics Days (OPD) Development: As Photonics Finland's flagship event, Optics & Photonics Days (OPD) will continue to evolve in 2025 to increase its global reach and relevance. OPD will feature specialized sessions centered on the themes of the Finnish Photonics Roadmap, with an emphasis on topics like green technology, digitalization, and healthcare. To further enhance the event, Photonics Finland will invite more international speakers, creating an engaging forum that attracts diverse participants and promotes knowledge exchange on a global scale.

Photonics for X Events in Collaboration with the PREIN Flagship: In partnership with the PREIN Flagship, Photonics Finland will organize Photonics for X events, each focusing on specific photonics applications and sectors. These events will address areas such as healthcare, energy, defense, and industrial technology, demonstrating how photonics innovations can be effectively applied across different fields. The collaboration with PREIN will ensure that the latest research and innovations are shared with a broader audience, bridging the gap between academia and industry.

Photonics Finland will also organize targeted workshops that combine training and networking opportunities in response to industry demand. These workshops will focus on practical photonics applications, supporting members in applying photonics technologies to solve real-world challenges. By connecting members with experts, partners, and potential clients, these events will foster valuable partnerships and drive knowledge-sharing within the photonics community.

Through these initiatives, Photonics Finland will strengthen its role as a networking and information hub, helping its members navigate and capitalize on emerging trends and applications within photonics.

5. Enhancing the Role of the Academic Advisory Board

In 2025, Photonics Finland will place a stronger emphasis on enhancing the role of its Academic Advisory Board to foster closer collaboration between academia and industry, and to better align academic research with the goals of the Finnish Photonics Roadmap. While efforts have been made over the years to develop the Advisory Board's impact, these initiatives have faced challenges in achieving the desired level of integration and effectiveness. Moving forward, Photonics Finland recognizes the need for a more structured and purposeful approach to fully unlock the potential of this collaboration.

Key Initiatives to Strengthen the Advisory Board:

Developing Stronger Collaboration Between the Advisory Board and the Board of Directors: One of the key areas for improvement is strengthening the relationship between the Academic Advisory Board and the Photonics Finland Board of Directors. Clearer communication channels and defined processes for collaboration will be established to ensure that academic insights and recommendations are fully integrated into the strategic direction of the organization. This can include regular joint meetings where both groups can discuss long-term strategic priorities and identify areas where academic research can address industry challenges.

Streamlined Processes and Clear Roles: To overcome past challenges, Photonics Finland will establish clearer roles and responsibilities for the Advisory Board, ensuring that its activities are directly tied to the organization's goals. This includes defining specific areas of focus, such as green technology, health applications, and digital transformation, where the board can drive research initiatives that align with the needs of the photonics industry. A more structured framework for measuring the success of the Advisory Board's contributions will also be introduced, with regular reviews to assess progress and impact.

Organizing Regular, Targeted Meetings and Workshops: Photonics Finland will hold more focused and results-driven meetings between the Advisory Board and industry stakeholders. These meetings will address current industry challenges and identify opportunities for academic research to drive innovation. The goal is to move beyond general discussions to tangible outcomes that translate academic work into practical, industry-applicable solutions. Specific workshops can be organized around Roadmap themes, facilitating deeper collaboration on urgent industry needs.

Fostering Active Student Engagement and Industry Collaborations: To better support the next generation of photonics experts, Photonics Finland will actively promote student involvement through internships, collaborative research projects, and engagement in industry-driven challenges. The Advisory Board will help identify key areas where students can contribute meaningfully to ongoing industry projects, fostering an ecosystem where academia and industry work hand in hand to create solutions and talent pipelines.

Increasing Academic Input in Event Planning: The Advisory Board will play a more active role in shaping the content and structure of Photonics Finland's major events, such as Optics & Photonics Days. By integrating the latest academic research and trends into these events, Photonics Finland will ensure that academic perspectives are directly reflected in discussions on the future of photonics. The Advisory Board will also help bring in relevant academic speakers and thought leaders to elevate the global impact of these events.

Through these initiatives, Photonics Finland aims to transform the role of the Academic Advisory Board from an advisory body into an active, dynamic driver of collaboration and innovation. By establishing

more robust connections between academia and industry, and fostering greater interaction between the Advisory Board and Photonics Finland's leadership, the organization will be better positioned to stay at the forefront of photonics developments and address emerging challenges in the sector.

Some of the key actions to be implemented in 2025

- National Photonics Industry survey
- SuomiAreena 2025
- Photonics in Finland brochure
- Photonics roadmap publication

Communication Activities**FOTONI News Letter**

A high-quality FOTONI News Letter will be published twice in 2025. Jouko Korppi-Tommola continues serving as the editor-in-chief of FOTONI.

Website

The website is located at www.photonics.fi. The development of the website will continue in 2025. The Society takes pride of keeping up the most important website of photonics field in Finland. The fundamental aim is to distribute basic knowledge of photonics, inform activities of the Society as well as highlight new innovations and products/services of the member companies.

Examples of the themed subpages.

- Integrated Photonics
- Hyperspectral imaging
- Photonics for health & well-being
- Security & defense
- Extended Reality

Mailing Service

The mailing service for members via email will continue, and efforts will be made to further develop it so that the member registry and mailing list are as up-to-date as possible and update in real-time. The email address for the mailing list is photonics-list@fos.fi. Every person on the list can send relevant optics-related messages to all members using this address.

Material Bank

A service will be provided to members, compiling materials such as images and videos related to photonics.

For material bank to be developed and used platform will be Photonics Finland website, photos: <https://www.photonics.fi/media-2/photos/> and videos <https://www.photonics.fi/media-2/videos/>

Social Media

Currently, Photonics Finland's main social media channels are X, LinkedIn, and Facebook. The goal is to increase awareness of Photonics Finland's activities, member communications, and themes both nationally and internationally, as well as to communicate about current issues. We aim to increase the number of followers on X, LinkedIn, and Facebook. Photonics Finland is considering opening new social media channel (i.e., Instagram), to reach a new target group.

Facebook - Aims to reach individuals, both domestic and international, interested in or studying the field.

X (originally Twitter) - A voice for photonics, reaching various industry sectors/experts and showcasing the activities of members and stakeholders. @PhotonicsFin

LinkedIn - An expert channel for photonics. Individual communication (Photonics Finland team) plays an important role in highlighting concrete activities of Photonics Finland, especially in relation to exhibitions and events, but also in bringing attention to national photonics emerging in the media. The Photonics Finland group serves more as a communication channel among members and those interested in the activities.

Photonics Job Board

The Photonics Job Board page (<https://www.photonics.fi/jobboard/>) and group, as well as LinkedIn channels (<https://www.linkedin.com/groups/9046550/>), support each other in the search for new experts for Finnish photonics companies.

What's Up Photonics Finland - Online (Teams) session.

Short info-session, which is organized monthly and dedicated for all Photonics Finland members. It is like coffee breaks, very informal, no long presentations, and just 15 min - that's it. Topics are about European funding, events, ongoing projects, and many other upcoming opportunities. Also, to hear and share any info from Photonics Finland members.

Photonics Finland Overall Patches

To support university student sponsoring Photonics Finland will design and produce fabric overall patch for student sponsoring.

Project activities

Project activities play a critical role in advancing Photonics Finland's objectives, contributing over 50% of the budgeted revenues. The effective management and continuous development of our project portfolio stand out as primary focal points for the Photonics Finland office and board. While the project portfolio for 2025 appears promising, our focus in the upcoming year is to actively pursue new projects for future fiscal periods. The paramount action for 2025 is to ensure the impeccable execution of our ongoing projects. Noteworthy projects in progress for Photonics Finland in 2025 include:

- PHOTONHUB EUROPE - <https://www.photonhub.eu/>
- Phorwards21
- 360 CARLA
- FiCCC
- PhotonQBoost

PHOTONHUB EUROPE, started in January 2021, 52+12 months

In order to accelerate the uptake of photonics technologies by European industry, and thereby help to boost competitiveness and to foster new business and business models, PhotonHub Europe has established a unique European full-service one-stop-shop Photonics Innovation Hub in a manner which is deeply rooted within the wider ecosystem of innovation hubs and manufacturing right across the European continent for maximum coverage, leverage, impact and long-term sustainability.

Photonics Finland role in the project is promotion of the Demo courses on hyperspectral imaging (online and on-site training in Joensuu) and funding opportunities for companies (for innovation or training).

PhotonHub has received funding from the European Union's Horizon 2020 research and innovation program with 52 partners.

Phorwards21, started in January 2024, 36 months

Phorwards21 will create and implement a comprehensive industrial strategy for photonics in Europe. The action will be implemented by Photonics21 (the EU Commission's partner in the Horizon Europe Photonics Partnership) with its more than 3000 members from companies and research institutions as well as national photonics technology platforms and regional clusters. In addition to already initiated collaborations with end-user and other deep-tech partnerships, contacts with national ministries (Photonics21 Mirror Group) and financial actors such as the European Investment Bank (EIB), the European Investment Council (EIC) and (corporate) venture capital companies will be strengthened to implement the European photonics strategy and thus establish European strategic autonomy in this critical technology. Specific end-user community-based roadmaps will be developed, focusing not only on research priorities but also on industrial implementation, including pilot lines and the creation of appropriate framework conditions. The project involves 17 partners from all over Europe.

306 CARLA, started in January 2024, 30 months

The main goal is to engage a multidisciplinary population of university students and early-stage researchers in the pursue of a career in photonics through tailored 360 career development programs focused on photonics application verticals or technology trends that integrate symposiums, mentorship, innovation and entrepreneurship experience and underlying trainings. Combining these elements with a market focus will:

- appeal also students and researchers that might not be photonics aware
- provide participants with a round up view on the photonics careers for each field
- provide them an understanding of the landscape of the photonics ecosystem surrounding the corresponding application vertical, supported by a network of contacts and mentors, experience photonics innovation and entrepreneurship in that field and training tailored to them

The project is a follow-up project to the successful CARLA (<https://carlahub.eu/>) project. New partners have joined, such as Photonics Finland and the European Optical Society. Totally project includes 14 partners and ICFO from Barcelona is coordinator.

FiCCC - Finnish Chips Competence Center, 48 months

The Finnish Chips Competence Centre (FiCCC, www.ficcc.eu) aims to create a gateway for Finnish chips ecosystem to connect with the wider European ecosystem and speed up the growth and competitiveness of Finnish and European semiconductor industry. FiCCC will focus on strengthening the European competence in two interrelated areas where Finland has the best capacities to contribute at the European level, i.e. technologies on: i) high performance energy efficient and complex system-on-chip design, especially at advanced (up to 7nm and above) nodes and ii) specialized

manufacturing and integration processes, including quantum technologies, MEMS, RF and optoelectronics, WBG semiconductors and ALD and MBE technologies.

The key target is to offer easy-to-access first-line support and widened access to technical expertise and experimentation in semiconductors. FiCCC will act as one-stop-shop, facilitating the Finnish stakeholders' access to not only Finnish semiconductor competences, but also EU Chips Pilot Lines, Design Platform, European Network of Chips Competence Centres and other relevant European initiatives. The aim is to assure that Finns interested in semiconductor technologies will have smooth access to all relevant European services. By doing this, FiCCC is also a lead-generating partner for European chips initiatives. Simultaneously, FiCCC will act as an interface for non-Finnish capabilities that are leading edge at European and global level. FiCCC will build on the proven capacities of the Finnish innovation ecosystem by facilitating access to semiconductors related skills and development and by supporting semiconductor related entrepreneurship and access to Chips Fund. These capabilities are vital for enhancing technological competitiveness in Europe.

Partners:

- Kvanttinova Ltd, Espoo
- BusinessOulu Ltd.
- Tampereen uusi sirutehdas Ltd.
- Photonics Finland

PhotonQBoost, starts in December 2024, 48 months

The main goal is to help European SMEs enhance sustainability, resilience, and global competitiveness by leveraging the power of Photonics and Quantum technologies. Recognizing the barriers SMEs face such as limited awareness and resources, PhotonQBoost seeks to bridge the gap, offering these businesses access to transformative solutions that can drive sustainability and boost their competitive edge in the global market. The overall budget of the project is 5M€ including 3.6M€ to be distributed to SMEs.

This project involves 13 partners from 9 countries from across Europe and EurA PT will be coordinating the project. Photonics Finland is majorly responsible for Communication and Dissemination package, while taking part in other tasks.

International Activities

ICO is an international commission for optics.
Photonics Finland serves as the national ICO committee.

European Optical Society (EOS) and Nordic Cooperation
Continuing and further developing European collaboration with EOS and other Nordic national optics societies.

Photonics Finland is actively involved in the activities of the European Union's photonics platform, Photonics21, both in stakeholder and workgroup activities.

The Finnish photonics society actively seeks to participate in the preparation and implementation of Horizon Europe research projects.

Society's Finances

The society's financial foundation relies on membership fees, proceeds from photonics events, project activities, and grants. Additionally, the society generates some income from various services, such as organizing events. Specific grants are sought from the Federation of Finnish Learned Societies and other sources, including private foundations. Efforts are made to maintain the society's finances on a stable footing.

Resource Allocation

The Photonics Finland office is primarily responsible for implementing and reporting on activities, especially projects. The office consists of the executive director, communication and event manager, as well as one full-time project manager and one project manager working part-time at 20%.

Executive Director:

- Responsible for overall planning and leadership of the organization.
- Participates in decision-making with the board.
- Manages the comprehensive operations of the association.

Communication and Event Manager:

- Manages the planning and execution of communication and events.
- Maintains communication with members and stakeholders.
- Potentially involved in the planning of strategic communication

Project Manager:

- Mainly works on project-related tasks.
- Responsible for project planning, implementation, and reporting.
- Involved in acquiring new projects.

Project Specialist:

- Provides dedicated support to project activities, with a particular focus on the FiCCC project.
- Assists in project planning, coordination, and reporting.
- Supports project managers in implementing project tasks and ensuring deadlines are met.
- Contributes to the preparation of project documentation and communications.
- Expected to be hired after the summer.

Monitoring and Evaluation

The Photonics Finland board takes responsibility for monitoring and evaluating the effectiveness of activities throughout the year. Regular assessments will be conducted to gather insights that will inform adjustments and improvements to enhance the overall impact and efficiency of the association's initiatives.