

# PhotonHub PHACTORY: Accelerating Quantum Hardware Integration

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As quantum technologies move to industrial deployment, the bottleneck shifts from physics to hardware integration. A primary requirement in this process is the realization of reliable, miniaturized photonic components. PhotonHub is the EU-founded pan-European one-stop-shop photonics innovation hub, established to accelerate the uptake, integration, and deployment of photonic technologies in innovative products, boost competitiveness and foster new business. Through a large consortium of internationally renowned partners, PhotonHub combines a broad range of photonics expertise, facilities and technologies from Europe's top existing networks of competence centers. It offers key technical, business, and training support services across the full value chain – technology readiness level 3 to 8 – all under one roof. PhotonHub provides any high-tech SME or mid-cap with a single point of entry to a comprehensive range of industrial support services to accelerate the uptake and deployment of photonics. With photonics acting as a key digital enabler our mission is to bridge the gap between "lab and fab," ensuring the global competitiveness of the European industry. Through the PhotonHub Factory, we offer a full-stack support model designed to lower the barriers to innovation:

- **Training and Upskilling:** From introductory sessions to intensive laboratory practice, we provide the technical expertise needed to integrate photonics.
- **"Test Before Invest":** We provide access to Europe's premier research infrastructures for prototyping and testing, de-risking the transition from concept to pilot production.

- **Support to Find Investment:** We connect innovators with regional and European funding sources, private venture capital, to fuel business growth and scaling.

- **Networking and Ecosystem Building:** Through cross-border collaboration between providers and end-users, we build a resilient European value chain.

Whether building data centers, edge computing, or ultra-fast connectivity, you face constant pressure for performance, efficiency, and security. Photonics provides the tools to achieve this, from lightning-fast transmission to energy-efficient computing. PhotonHub Factory offers "Test Before Invest" services specifically for the quantum ecosystem:

- **Integrated Photonics & PICs:** Access to world-class foundries (SiN, InP, Silicon Photonics) for miniaturizing quantum optical setups into robust, scalable chips.
- **High-Performance Components:** Support in developing and testing specialized light sources, high-speed modulators, and ultra-sensitive single-photon detectors.
- **Technology Readiness Level (TRL) Acceleration:** EU-subsidized projects covering up to 85% of costs, de-risking prototyping and pilot production from TRL 2 to 8.
- **Business & Investment Readiness:** Tailored coaching to refine your value proposition and connect with venture capital and regional funding.

Launched in January 2021, PhotonHub Europe has already helped >100 companies deliver >€750 million in new revenues, create 1,000 jobs and raise €250 million in venture capital. This success has led to new investment from the European Commission to continue offering expert support, fast-track access to Europe's leading laboratories, and generous subsidies, all delivered through a 'one-stop-shop' photonics innovation factory called PhotonHub PHACTORY.