To Photonics21 Secretariat
via eMail: secretariat@photonics21.org

Dear Photonics21 Secretariat,

We herewith submit the nomination of the following Photonics21 Board of Stakeholders candidate Fraunhofer Institute for Laser Technology ILT / Carlo Holly.

- Letter of Nomination -
Photonics21 Board of Stakeholders
Election 2025

Photonics21 Board of Stakeholders - Letter of Nomination

1. **Full legal name of the affiliation nominated as BoS Member (candidate's organisation):**

   Fraunhofer Institute for Laser Technology ILT

2. **Full contact details of the affiliation (street, postal code, country) nominated as BoS Member and invoice address** *(In accordance with the Terms of Reference §5, which the Affiliation acknowledges having received, an Annual Service fee will be invoiced every year during the first quarter to the BoS Member. By signing the present letter, the BoS candidate agrees to pay this Membership Fee. The Fee will be considered an asset of the Photonics 21 AISBL in accordance with its statutes (article 12b).)*

   Fraunhofer Institute for Laser Technology ILT
   Steinbachstr. 15
   52074 Aachen
   Germany

3. **Name of the suggested BoS Representative (the personal candidate)**

   Univ.-Prof. Dr. rer. nat. Dipl.-Ing. Carlo Holly

4. **Information about the BoS candidate and the BoS representative**

a) Description of the activities and information about the expected contribution and value added the nominated BoS member (candidate's organisation) will bring to the BoS[1]

The Fraunhofer Institute for Laser Technology ILT in Aachen brings four decades of application-oriented research and innovation in laser technology and photonics to the Photonics21 Board of Stakeholders (BoS). ILT's core activities span laser sources and systems, laser-based materials processing, additive manufacturing, micro- and precision processing, process monitoring and control, optical design, and integration of photonic technologies into manufacturing. Through close cooperation with RWTH Aachen University and a broad network of industrial and academic partners, ILT consistently bridges the gap between fundamental research and industrial deployment, turning proof-of-concept results into robust, industrial-grade solutions.

As a BoS member, ILT will contribute practical intelligence on strategic trends in photonics with a particular focus on laser and optics development (including high-energy lasers and secondary sources), laser-based manufacturing, quantum technologies and digital solutions in photonics. Drawing on extensive experience with multi-partner EU projects and bilateral industry collaborations across sectors such as mobility, aerospace, medical, energy, and microelectronics, ILT will help translate end-user needs into actionable R&I priorities and roadmaps. This includes identifying technology bottlenecks (e.g., beam shaping for higher throughput,

[1] The candidate is aware and accepts that according to the Photonics21 Terms of Reference (§ 5 (10) a member ship fee - as determined by the General Assembly of the Association - needs to be paid to the Photonics21 association.

in-process metrology for quality assurance, digital twins and AI for process control) and proposing targeted pilot lines and demonstration environments.

ILT will actively engage across Photonics21 working groups, co-author roadmaps, and convene cross-sector dialogues to integrate photonics into key EU policy priorities (green and digital transitions, health, secure and resilient manufacturing). With its strong ties to both academia and industry, ILT is well positioned to represent stakeholder needs, promote evidence-based decision-making, and ensure that European photonics innovations advance from fundamental research to competitive industrial solutions with clear economic and societal impact.

b) Description of the activities and information about expected contribution and value added the BoS Representative (candidate / person) will bring to the BoS.

Prof. Carlo Holly brings a dual perspective to the Photonics21 Board of Stakeholders (BoS) as Head of the Chair for Technology of Optical Systems (TOS) at RWTH Aachen University and Head of the Department Data Science and Measurement Technology at Fraunhofer ILT. This combination of academic leadership and application-driven R&D ensures his contributions are both scientifically rigorous and grounded in industrial reality. His research focusses on advanced beam shaping for high-dynamic and high-power systems, computational optics, optical technologies, laser/optics simulation, AI in photonics and laser-based manufacturing, and EUV technology. These topics align with the Photonics21's priorities across advanced manufacturing, micro/nano fabrication, digital photonics, and semiconductor ecosystems.

As a BoS representative, Prof. Holly will help translate end-user requirements into actionable R&I roadmaps and strategic technology directions. Drawing on experience in multi-partner EU projects and private-public collaborations, he will co-author roadmaps, shape work programme topics, and communicate across Photonics21 working groups.

Prof. Holly is an experienced researcher who will help organize BoS workshops, contribute to position papers and discussions. Leveraging his network in academia and industry, he will help align Photonics21 priorities with trends in industry and academia, ensuring photonics innovations move efficiently from fundamental research to competitive, industrial-grade solutions.