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 / Arnold Gillner

- Letter of Nomination -
Photonics21 Board of Stakeholders
Election 2023

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

   Fraunhofer-Institute for Laser Technology
   as part of Fraunhofer-Gesellschaft München, Germany

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
   Steinbachstrasse 15
   D-52074 Aachen
   Germany

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

   Prof. Dr.-Ing. Arnold Gillner

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]

With more than 540 employees the Fraunhofer Institute for Laser Technology ILT is worldwide one of the most important development and contract research institutes of its specific field. The activities cover a wide range in the field of Laser Technology and Optical Technologies as well as Laser based manufacturing technologies. Special emphasis is given to the development of new laser sources for industrial manufacturing and metrology. Currently in this field the developments are concentrated on high power multi kw ultrashort pulsed lasers, fiber lasers and diode lasers with a special view on system design for auto-mated packaging and assembly. Moreover frequency converted and single photon lasers are under development for applications in quantum technology. Large activities in laser development are currently multi wavelength lasers for satellite based LIDAR measurements of Methane and other atmospheric gases.

In the field of Laser manufacturing, Fraunhofer ILT is developing all kinds of laser processes like cutting, welding, ablation, drilling, surface treatment, material modification, micro and nano processing and additive manufacturing. Moreover Fraunhofer ILT develops laser based technologies for the generation of bio based artificial tissue for medical and pharmaceutical

[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.

use. Very strong activities are currently in the field of ultrashort pulsed laser processing with micro and nano drilling for filter applications and display technology. Using high power fs-lasers a new field of laser processing will be opened with fully digital manufacturing approaches. Also large emphasis is given to all kinds of additive manufacturing processing, like LPBF and LMD for metallic materials but also SLA and Multi Photon Processing for polymers. For biological applications Laser printing of cells using Laser induced forward transfer is investigated.

Furthermore, the Fraunhofer ILT is engaged in laser machines, process control, modelling and simulation as well as in the entire system technology. Fraunhofer ILT offers the whole chain of Laser system and manufacturing development from feasibility studies, process qualification and laser integration in customer specific manufacturing lines.
Fraunhofer Institute for Laser Technology is founding member of Photonics21 and has been partner in numerous European collaborative projects since 1985 with the intention to strengthen the European photonics industry, promoting cooperation and technological exchange between research partners, and thus contributes consistently to boosting the European Economic Area for more than 35 years.

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

Prof. Dr. Arnold Gillner studied Physics at the University of Darmstadt and made his PHD in Mechanical Engineering at the RWTH Aachen in 1994.

In 1985 he was one of the founding and starting scientists of the Fraunhofer Institute of Laser Technology in Aachen, Germany. Since then he works on Laser based manufacturing Technologies, like surface treatment and system technology.

Starting in 1992 he strongly developed the activities and the department for Micro Technology at the ILT and from 2010 to 2022 he was heading the department of Ablation and Joining. Together with more than 65 scientists in his department he was developing industrial laser processes for macro and micro joining, packaging, micro and nano structuring, polymer applications and Life Science applications.

From 2022 he is responsible for business development to transfer laser systems and laser processes in industrial fields like microelectronics, mobility, energy, health and aerospace. With a more generalistic view he is developing system solutions for different markets, like fuel cells, batteries, LiDAR-Systems and many others.

He is also Member of the RWTH Aachen University and gives lectures on Lasers in Life Science and Lasers in Micro- and Nanotechnology. He is currently also managing director of the Fraunhofer Group on Light and Surface and head of the advisory board of MedLife, a Aachen based network of Life Science companies and research Institutes.

In his scientific field he is coordinating numerous national and European R&D-projects on welding, cutting, micro ablation, drilling, process control and biofabrication.

In the Photonics21 platform Arnold Gillner is an active member in the manufacturing working group and together with the head of the working group he has been leading numerous working group meetings for roadmap and future topic definition. In this position he is member of the extended executive board of photonics21. He is continuously preparing the strategic agenda of Photonics21 and preparing the funding topics for Horizon Eu-rope program.

In the Photonics21 Board of Stakeholders Prof. Dr. Arnold Gillner will actively contribute and work to strengthen the leading role of Photonics Industry in Europe.