



On December 1<sup>st</sup> , 2015, the new H2020 project TERABOARD will start, with total duration of 36 months. TERABOARD will develop ultra low power - high **bandwidth density** data communication for servers and **packet processing** boards of data centers.

Data communication is a fundamental aspect of the societal evolution. The current use of internet and voice in communications will evolve in the future 5G (the fifth wireless communication generation), in which standard datacom and telecom will be merged with the IoT (Internet of Things). As a consequence, in the next five years data traffic will exponentially grow beyond the Zettabyte era. This evolution will require a technological roadmap that guarantees an increase of communication bandwidth by a factor of 1000 by 2020.

TERABOARD targets the needs of intra and inter-board communications in data centers and will deliver prototypes of optical interposers for Multi Chip Module applications. The prototypes will demonstrate Tb/s of aggregate traffic, scalable to hundreds of Tb/s by means of banks of high density optical interfaces in Silicon Photonics, communicating through a new VIAs-based multilayer optical intra-board interconnection platform.

TERABOARD will achieve:

- 50 Tb/s/cm<sup>2</sup> maximum bandwidth density
- Efficient power consumption strategy: front end consumption of 2.5 pJ/bit
- Multiple intra-board interconnections within 40 cm range with target cost of 0.1 \$/Gb/s

The European project TERABOARD is an initiative of the Photonics Public Private Partnership, under the grant agreement H2020-ICT-2015 n°688510, with a total budget of 4.25 million EURO.



PHOTONICS PUBLIC PRIVATE PARTNERSHIP

[www.photonics21.org](http://www.photonics21.org)

TERABOARD gathers the following beneficiaries:

- Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT), Italy – *Coordinator*
  - INPHOTEC fabrication center at Scuola Superiore Sant’Anna, Italy – *Linked third party*
- Ericsson Telecomunicazioni, Italy
- STMicroelectronics, Italy
- IMEC, Belgium
- Alcatel-Lucent Italia, Italy
- iMinds, Belgium
- Consiglio Nazionale delle Ricerche (CNR), Italy
- Universitat Politècnica De Valencia (UPV), Spain
- European Photonics Industry Consortium (EPIC), France

More information on: [www.teraboard.eu](http://www.teraboard.eu)