



# The EU framework Programme for Research and Innovation



# ICT-STREAMS

**Silicon Photonics Transceiver and Routing technologies for High-End Multi-Socket Server Blades with Tb/s Throughput interconnect and interfaces**



www.ict-streams.eu

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## Factsheet

### Coordinator

Aristotle University of Thessaloniki

### Funding

This project has received funding from the European Union's Horizon 2020 research and innovation programme EU-H2020-RIA-ICT-27 under Grand Agreement No: 688172

### Total Budget/EU Contribution

€ 4.086.810 / € 2.917.135

### Project Launch : February 2016

Duration : 36 months

## Consortium

**Aristotle University of Thessaloniki (Coordinator) (GR)**

Centre National de la Recherche Nationale - Laboratoire de photonique et de nanostructures (CNRS-LPN) (F)

IBM Research Zurich GmbH (CH)

Interuniversitair MicroElektronica Centrum -IMEC (BE)

Politecnico di Milano (IT)

ST MICROELECTRONICS (IT)

iMinds (BE)

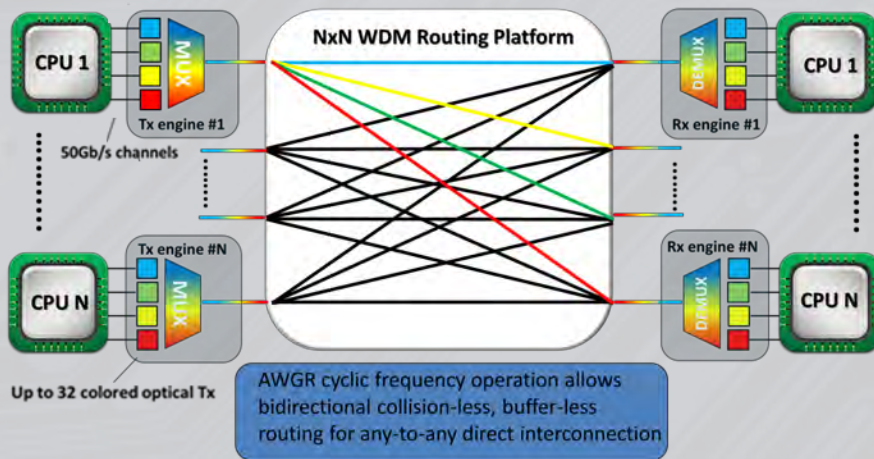
Vario Optics AG (CH)

Amphenol FCI (D)

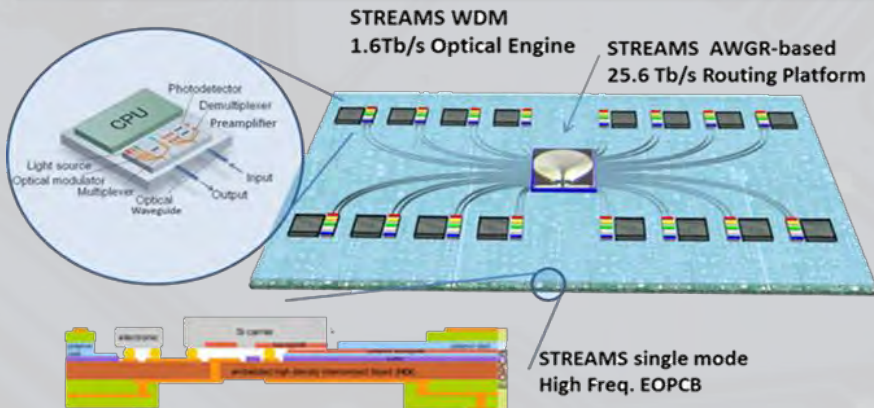
# What is ICT- STREAMS?

**ICT-STREAMS** is a 3-years research project funded by EU-H2020 that will deliver a 1.6 Tb/s WDM mid-board transceiver together with a 25.6 Tb/s-throughput mid-board routing engine hosted onto the same electro-optic PCB, as a way to offer the technology toolkit for implementing multi-socket server boards with point-to- point-linked connectivity. ICT-STREAMS aims to increase state of the art server-board density and throughput by >400% and 1600% respectively, with a 10 fold reduced energy consumption.

## ICT-STREAMS 16X16 ANY-TO-ANY INTERCONNECT TOPOLOGY...



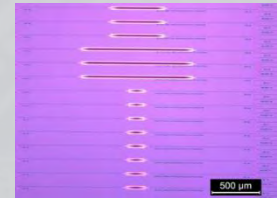
## ... implemented on a single Electro-Optical PCB



# ICT-STREAMS

## Technology Breakthroughs

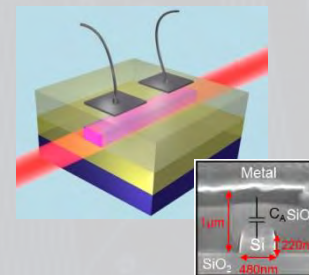
**In-plane fully CMOS compatible III-V-on-SiPh DWDM Laser Arrays**



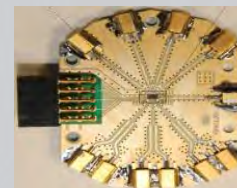
Single-mode, polymer-based optical PCB ...



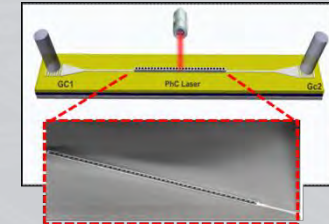
Thermal Drift Compensation Subsystem with ContactLess Integrated Photonic Probe (CLIPP)



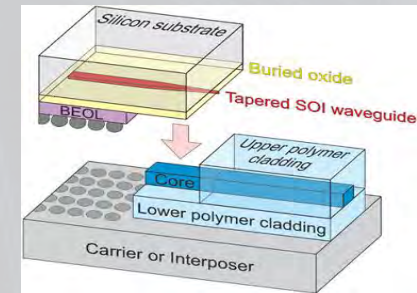
Energy efficient 50GHz driving electronics



**III-V on Si, PhC-based nanoamplification paradigm**



...and Low loss Silicon-to-polymer coupling interfaces



**50Gb/s active silicon photonics**

