

Leti to Coordinate Four-Year EC Project Targeting a Complete European Supply Chain in Silicon Photonics

The Associated Press

GRENOBLE, France--(BUSINESS WIRE)--Feb 20, 2013--CEA-Leti today announced that it will coordinate a four-year project aimed at building a European-based supply chain in silicon photonics and speeding industrialization of the technology.

The PLAT4M (Photonic Libraries And Technology for Manufacturing) project will focus on bringing the existing silicon photonics research platform to a level that enables seamless transition to industry, suitable for different application fields and levels of production volume.

PLAT4M, which is funded by a European Commission grant of 10.2 million euros, includes 15 leading European R&D institutes and CMOS companies, key industrial and research organizations in design and packaging, as well as end users in different application fields to build the complete supply chain.

“Silicon with its mature integration platform has brought electronic circuits to mass-market applications – our vision is that silicon photonics will follow this evolution,” said Laurent Fulbert, Integrated Photonics Program Manager at CEA-Leti, coordinator of PLAT4M. “Upgrading existing platforms to become compatible with industrialization is now essential and this requires streamlining and stabilizing the design and process flows by taking into account design robustness, process variability and integration constraints. The PLAT4M partners bring a critical combination of expertise to the challenge of building a complete supply chain for commercializing silicon photonics in Europe.” A surge in output of silicon photonics research in recent years has significantly boosted the potential for commercial exploitation of the technology. However, most of this R&D has been devoted to developing elementary building blocks, rather than fabricating complete photonic integrated circuits, which are needed to support large potential markets.

The PLAT4M consortium will make technologies and tools mature by building a coherent design flow, demonstrating manufacturability of elementary devices and process integration and developing a packaging toolkit. The project will validate the complete supply chain through application-driven test vehicles representing various application fields, such as telecom and datacom, gas sensing and light detection and ranging (LiDAR) and vibrometry. It also will focus on preparing the next-generation platform by setting up a roadmap for performance evolution and assessing scalability to high-volume production.

The supply chain will be based on technology platforms of Leti, imec and STMicroelectronics, supported by a unified design environment.

The multiple benefits of PLAT4M for the European photonic industry will include: Preparing the supply chain for silicon photonics technology, from chip-level technology to packaged circuits Making integration technologies accessible to a broad circle of users in a fabless model Contributing to the development of a design environment that facilitates photonics/electronics convergence Moving the emphasis from the component to the architecture, and thus concentrate efforts on new products or new functionalities rather than the technology level Aggregating competencies in photonics/electronics design and fabrication, and Retaining the key added value in components in Europe through optoelectronic integration, with little added value in offshore assembly PLAT4M Consortium Members The consortium consists of renowned technology providers, research institutes, end users and SMEs with excellent track records in advanced photonics technologies. At the design and process level, CEA and imec have been the most prominent European players in silicon photonics for a decade. Together with University of Paris-Sud, III-V Lab and TNO, they have demonstrated numerous scientific and technological breakthroughs.

For building a complete design flow, Mentor Graphics, Phoenix BV and Si2 are world leaders in EDA tools and will work together to develop a common reference platform.

STMicroelectronics (France and Italy) brings its vast experience in microelectronics, and it has been engaged for the past year in the development of silicon photonics at the industrial level. Tyndall-UCC and Aifotec are renowned experts in the field of optoelectronic packaging and will work together on the implementation of packaging technologies developed within PLAT4M in a manufacturing environment.

End-users like Polytec, Thales Research & Technology and NXP will drive the demonstrators development and assess the use of silicon photonics in their applications fields.

About CEA-Leti

Leti is an institute of CEA, a French research-and-technology organization with activities in energy, IT, healthcare, defence and security. Leti is focused on creating value and innovation through technology transfer to its industrial partners. It specializes in nanotechnologies and their applications, from wireless devices and systems, to biology, healthcare and photonics. NEMS and MEMS are at the core of its activities. An anchor of the MINATEC campus, CEA-Leti operates 8,000-m² of state-of-the-art clean room space on 200mm and 300mm wafer platforms. It employs 1,700 scientists and engineers including 240 Ph.D. students and 200 assignees from partner companies. CEA-Leti owns more than 1,880 patent families. In 2011, CEA-Leti entered the capital of III-V lab. The public-private partnership between Alcatel-Lucent Bell Labs, Thales and CEA-Leti is combining III-V and silicon semiconductor technologies, opening up new research perspectives and dynamics. For more information, visit www.leti.fr [1].

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