3.1 Publishable summary

The objectives of the ESSenTIAL project are to support effective transfer of silicon photonics expertise to European industry, in particular small and medium sized enterprises (SMEs), and to support access for SMEs and researchers to silicon photonics IC and packaging technology and manufacturing. This is accomplished by expanding the capabilities of ePIXfab, the European support centre for access to silicon photonics.

During the second period of the project (April 2013 – December 2014), the consortium has continued on the momentum built during the first period. As a result, the partners had 100 contacts with companies, in particular small and medium sized enterprises (SMEs), which led to over 40 feasibility studies run for these companies. The hands-on training activities were continued at a half yearly pace, with an improved schedule and contents based on the feedback obtained during the first period. Each of these trainings attracted trainees from SMEs. These companies as well as academic and research users were attracted through participation in and co-organization of a wide range of events, targeting a wide user public. As a response to adoption barriers for SMEs identified during this work, several of the partners participate now in FP7 ACTPHAST.
The silicon photonic IC technology offering was expanded further, with the addition of full-fledged photonic IC technologies including waveguide devices, high-speed modulators and high-speed photodetectors, as well as waveguide technologies from IHP and VTT. Comparison tables between these technologies were made available. Significant effort was put into improving the design kits with device data. The practical access to most of these technologies was transferred to Europractice IC service.
The packaging offer was significantly expanded, amongst others with a small PCB platform with optical fiber array attachment and electrical wire bonding, as well as an expanded array of customized packaging services for companies. Design rules for packaging were created and publicized.

In summary, during its second period, ESSenTIAL has clearly brought the supply chain to a higher level of maturity, in terms of available IC technology, quality of the design kits, and available packaging solutions. With this offer, ESSenTIAL has attracted small and medium sized companies for whom integrated optics may be a solution in their product innovation path.

Information on ePIXfab and its services is available at www.epixfab.eu