



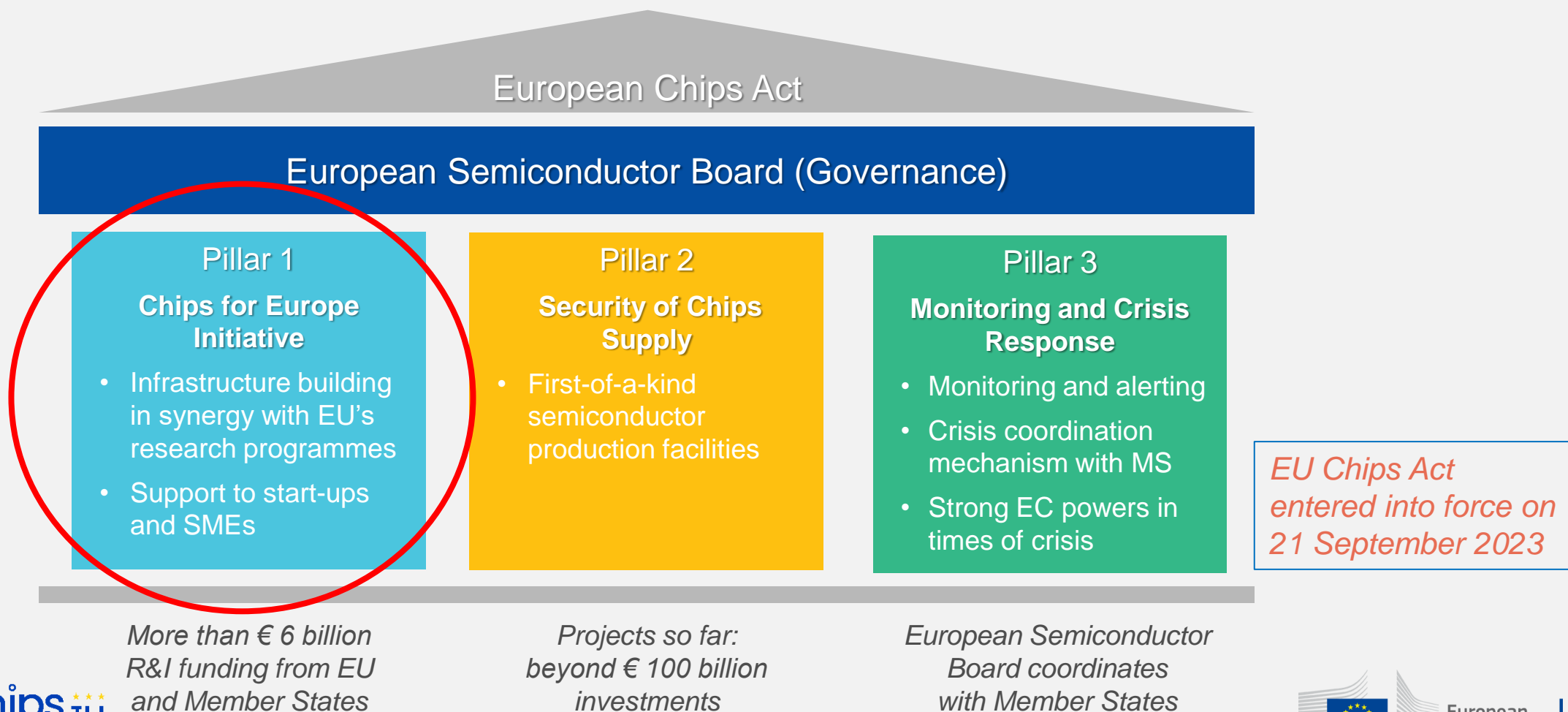
The calls on the Photonics pilot line – Chips-2024-CPL-5 – Introduction

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Microelectronics and Photonics Industry

A photograph of a blue European Union flag with yellow stars, being held up by two hands. The background is a blurred green landscape with trees.

Info Session, Chips JU
11 July 2024

The EU Chips Act



Towards more integrated photonics in the Chips JU

Rationale:

- EU Chips Act encompasses electronic and photonic chips.
- R&I project results in the Horizon part have reached technological maturity to be industrially relevant.
- Separation from micro/nano-electronic integration is artificial.
- Joint R&I is essential for co-integration of photonics and electronics.
- Mass-production challenges on wafer-scale are well addressed in the JU.

Research pilot line projects under the Photonics partnership - scaling up PIC production in Europe – Horizon2020



SiN PIC technology for health applications; visible wavelength domain: 400-700nm

2016-20

Total cost
€ 10 229 106



Open-access photonic integrated circuit assembly and packaging pilot line

2017-20

Total cost
€ 15 690 921



Impulse - JePPIX Manufacturing pilot line for InP PICs from first prototypes to commercialisation

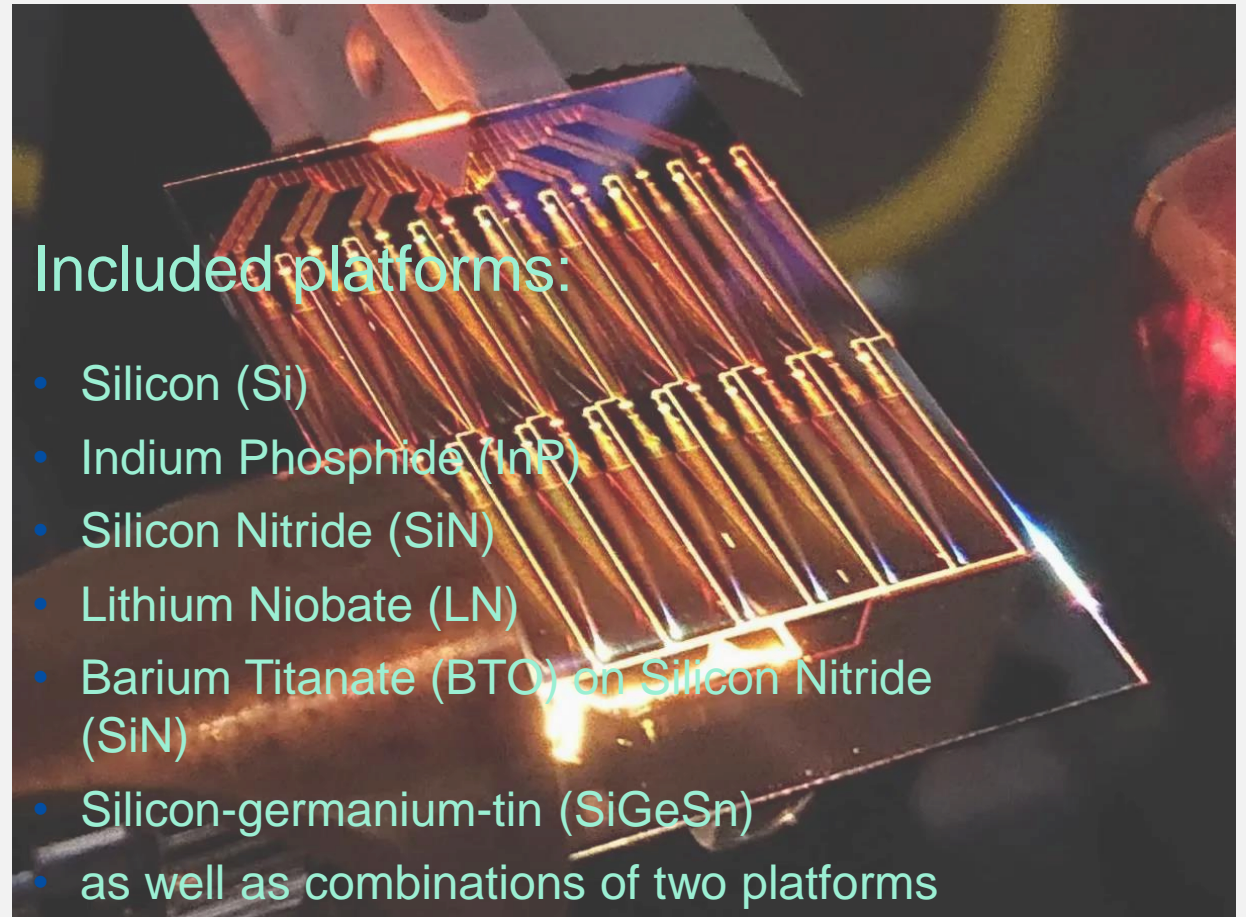
2016-22

Total cost
€ 17 281 093

Photonics Partnership triggered a variety of PIC activities in Horizon 2020 and Horizon Europe

- Building & supporting the PIC community in Europe for 20 years
- 35 PIC projects have been/are currently funded (last 5 years)
- **Total budget: about € 190 million**

See also [Photonics21 – A Key Enabling Technology for Europe](#)



Silicon Photonics Project under the Chips JU



Access to low-loss SiN and SOI based photonics platforms with InP and LN heterogenous integration capabilities

2023-26

Total cost € 42 million

Under KDT/Chips JU Programme



Roadmaps and White Papers for Integrated Photonics

1. The **Photonics21** Strategic Research and Innovation agenda presents R&I challenges on Integrated Photonics in chapter *Core Photonics*.
2. The **SRIA of the Chips JU** mentions photonics on many occasions.
3. **Photonics21** and **EPOSS** co-drafted and published a **White Paper on Integrated Photonics** addressing industry trends
 - a) *heterogeneous photonics integration*
 - b) *manufacturing at increasingly larger diameter wafers*
 - c) *co-integration of photonic and electronic IC*
 - d) *reducing power consumption.*

PICs Drive Future Markets

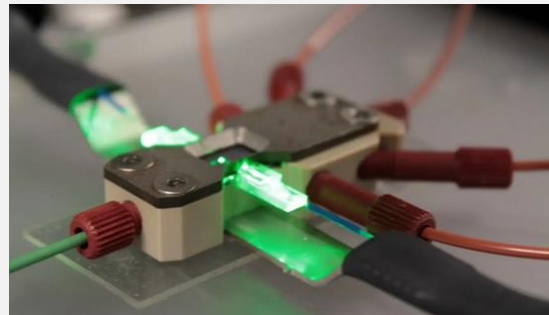
- ❑ Photonic integrated circuits drive digital markets in the multi-billion Euro range
- ❑ Trends are amongst other
 - The introduction of optical IO in data centres and edge computing
 - Integration of imaging in automotive (LiDAR etc.)
 - Advanced sensing and advanced displays in Virtual Worlds
- ❑ Application areas in Automotive, Datacom & Telecom, Augmented and Virtual Reality, Health, Agro and Food, Quantum, Defence and Security, Safety



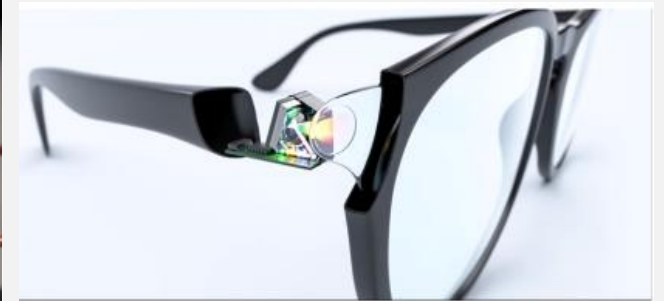
ChipsJU



Valeo - LiDAR



Lionix Int. – Lab on Chip



OQmented GmbH