

# ePIXfab and European Silicon Photonics Platforms

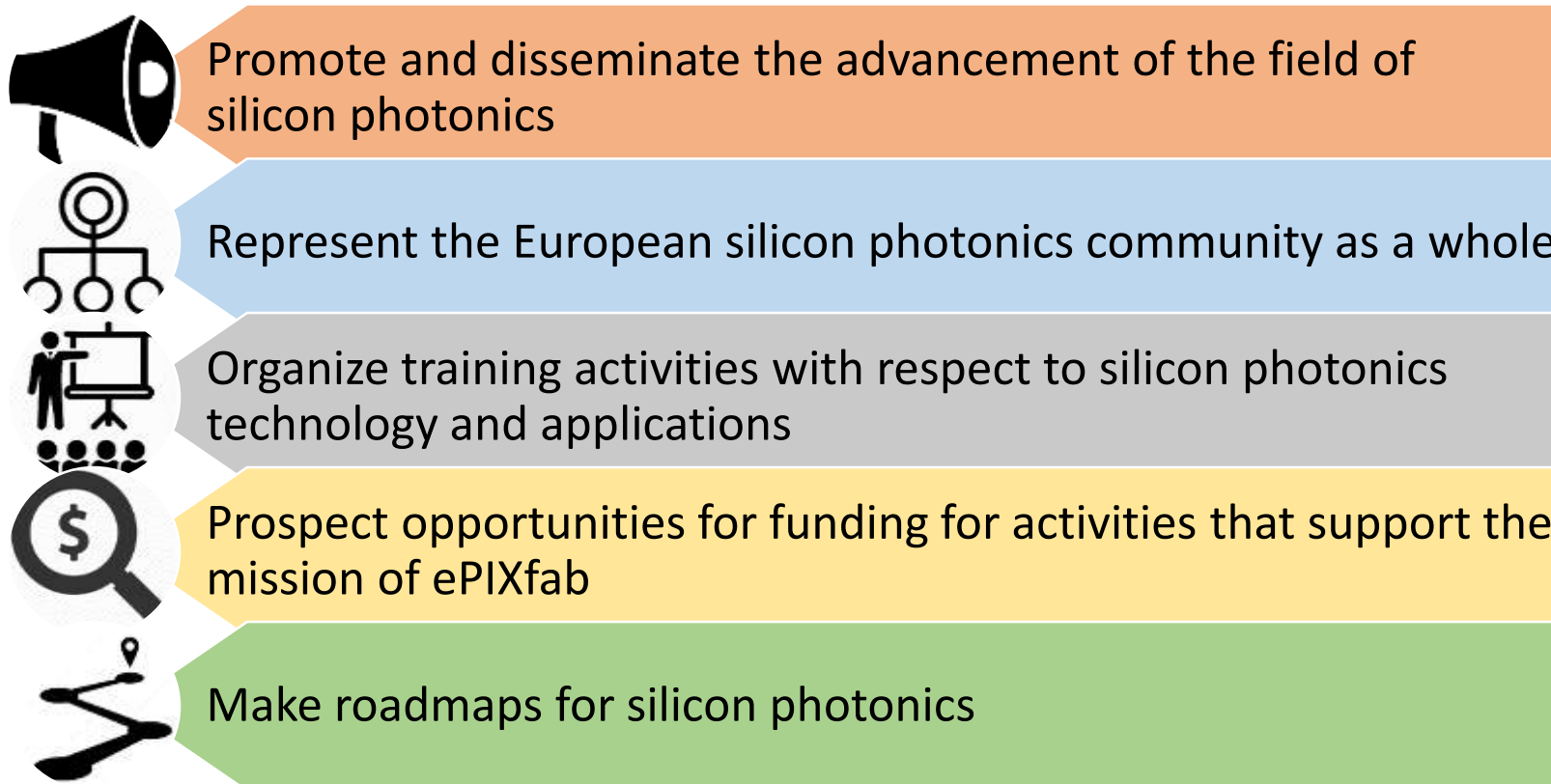
**ePIXfab – the European Silicon Photonics Alliance**



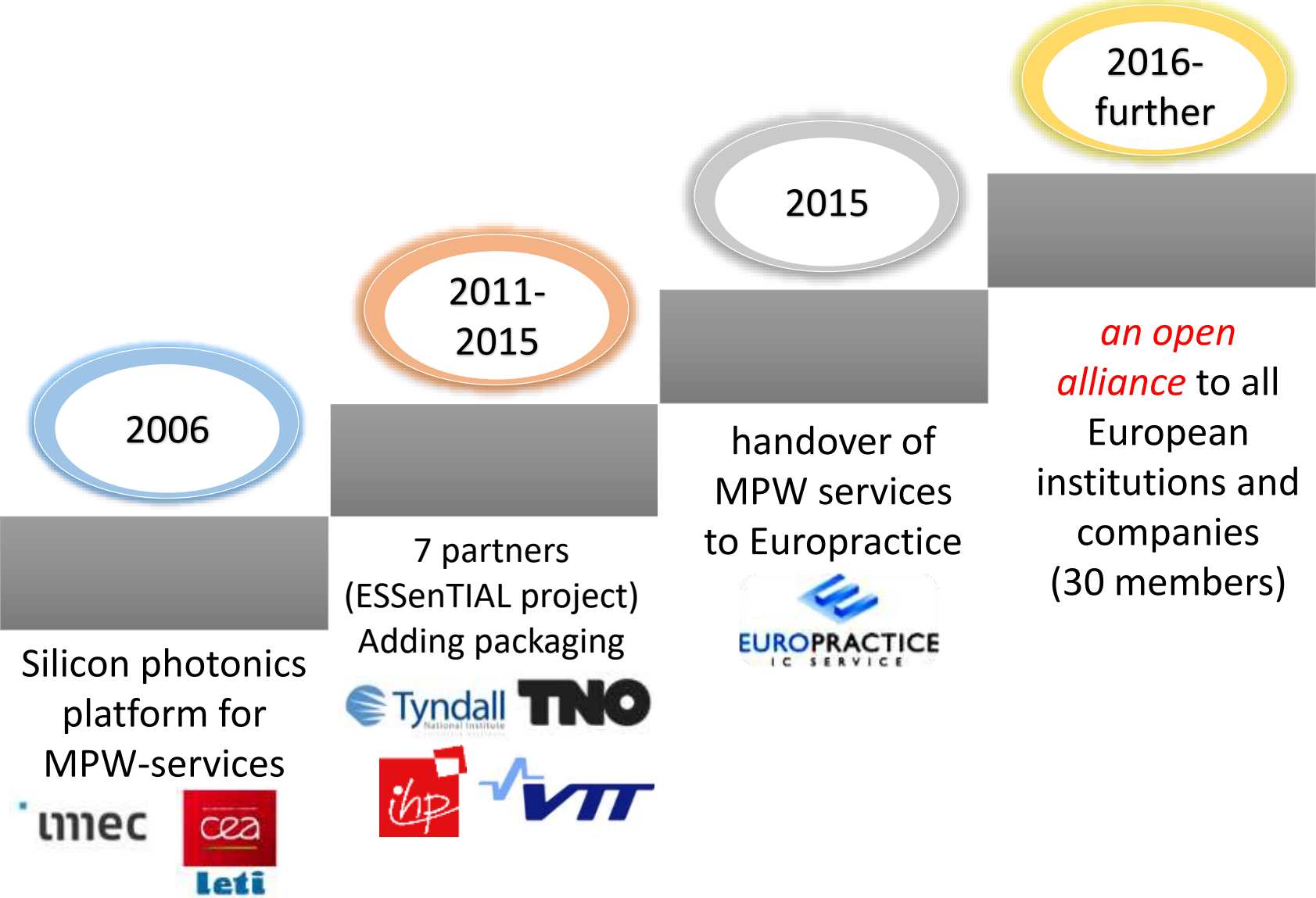
# ePIXfab – the European Silicon Photonics Alliance

## ***Mission Statement:***

ePIXfab is a European alliance of organizations that promotes silicon photonics science, technology and applications



# History of ePIXfab — from MPW service to a alliance



# ePIXfab members



UNIVERSITAT POLITÈCNICA DE VALÈNCIA



# Open Access SOI Technologies via MPW

**imec**  
**PSV**

**ISIPP50G**

220 nm SOI platform  
O and C band  
50G active devices

**leti**  
**Passive + heaters**

**Si310-PH**

310 nm SOI platform  
O band devices  
Compatible for III-V  
light source  
integration

**ihp**  
**IHP SG25\_PIC**

**IHP SG25\_EPIC**

Monolithic  
electronic-photonic  
integration

**VTT**  
**VTT Platform**

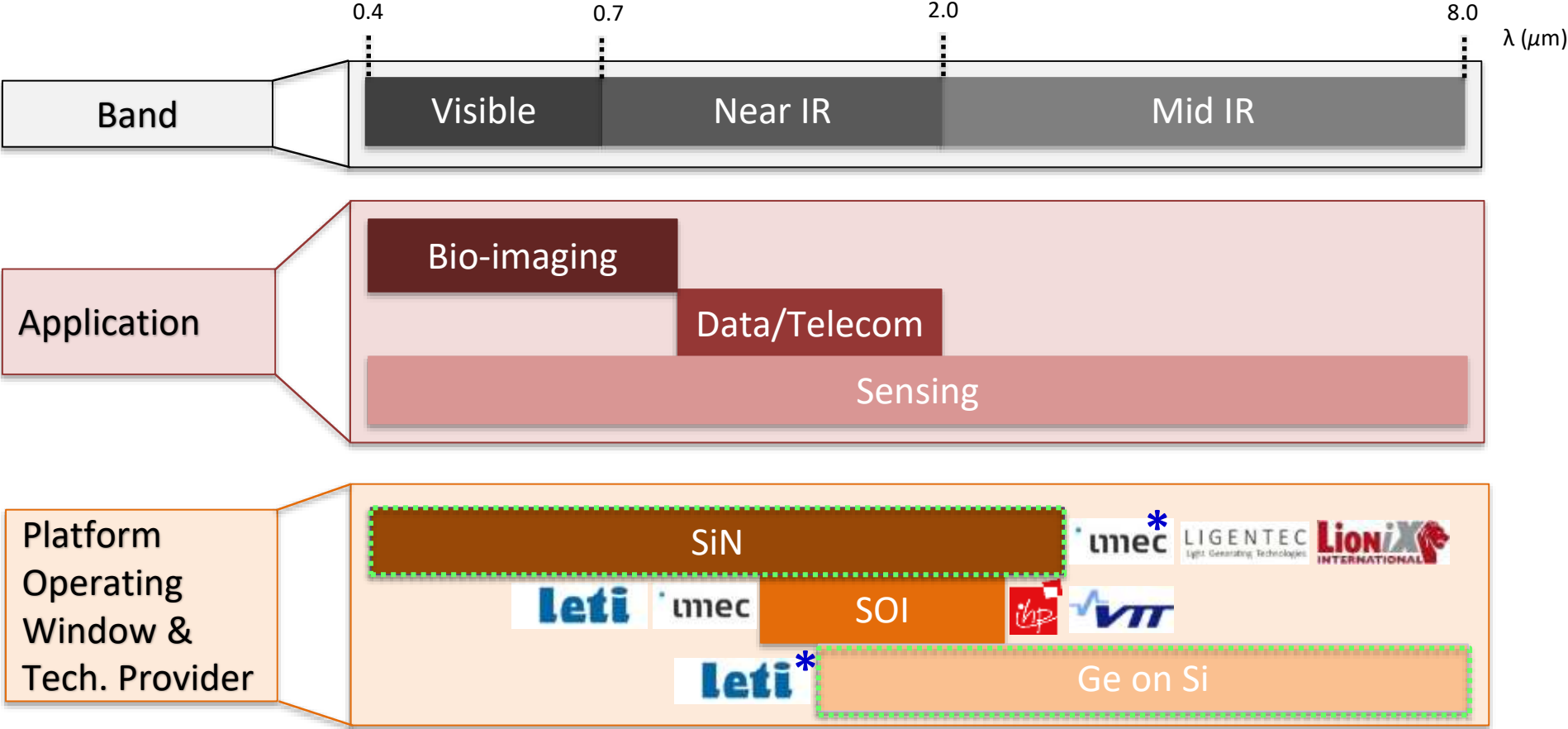
Compact passive  
devices using thick  
SOI  
Low loss

# Technology summary for SOI platforms

## Foundry

Substrate	200 mm SOI with 220 nm Si on 2 $\mu\text{m}$ BOX	200 mm SOI with 310 nm Si on 0.8 $\mu\text{m}$ BOX	200 mm SOI with 220 nm Si on 2 $\mu\text{m}$ BOX	100 mm SOI with 3 $\mu\text{m}$ Si on 2 $\mu\text{m}$ BOX
Technology	130 nm CMOS node & 193 nm lithography	130 nm CMOS node & 193 nm lithography	250 nm BICMOS node & 248 nm lithography	
Min. feature size	130 nm	120 nm	150 nm	---
Etch Levels	3 (full, shallow, deep), deep backside etching, poly silicon etching	3 (full, shallow, deep)	3 (full, shallow, deep), localized backside etching	2 (full, deep)
Doping Levels	6 (high, medium and low p and n)	4 (high and low p and n)	4 (high and low p and n)	---
Metallization	2 layer	1 layer	5 layer	1 layer

# Expanding silicon photonics portfolio



\* Under development

▤ New technology platforms

# Summary: European Silicon Photonics Platform Overview

