

innokaupungit

Terveysteknologiat kehittyvät fotoniiikan avulla

Fotoniikan kaupunkiekosysteemi- FKE

Kick-off meeting 28.11.2023

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VTT



**European unionin
osarahoittama**

Photonics in Medical Devices



Many health challenges ahead

- Ageing society
- Keep ever more performant health care affordable for society
- Towards participatory and preventive healthcare

Many opportunities for photonics-enabled devices

- Low-cost personal, bed-side and point-of-care medical devices
- Minimally invasive devices (cathetered approaches, implants, electronic pills)
- Rapid diagnostics
- Data acquisition for AI and digitalization

Applicability of photonics in various medical domains



Hospital Use

Users → Medical Professionals

Technology → Fiber optics, reader and laser units, imaging



Home Care Diagnostics Services

Users → Citizens jointly with professionals

Technology → Wearable photonics



Equipment for in-vitro Diagnostics

Users → Professionals in laboratories

Technologies → Disposable optofluidic cartridges, reader units



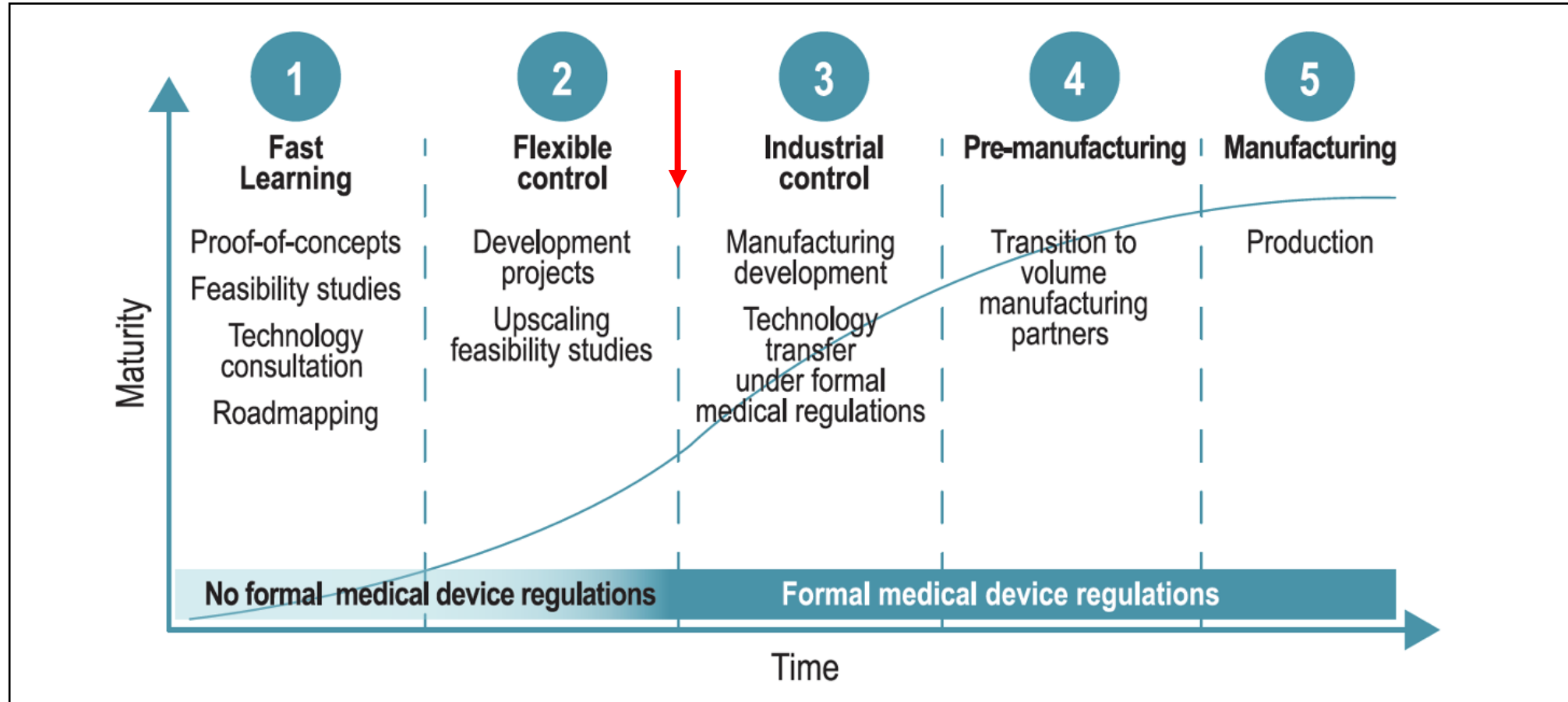
Photonics business in medtech

- Photonics, next to electronics, is a key underpinning technology in medical solutions.
- The global market of photonics systems for healthcare is >50 EUR billion corresponding ~10% of the total market size.
- The European photonics industry is particularly well positioned in the global medical device market creating about 16 EUR billion value in 2019.
- About 5000 companies with ~390 000 employees -> comprises mainly SMEs

Europe's age of light!

How photonics will power growth and innovation

R&D collaboration between stakeholders towards market launch



Stakeholders

Academia	Legal manufacturers
Clinical partners	Industrial suppliers
Regulatory support	

Competences

Clinical relevance
Technology
Fabrication
Validation

Need for ecosystems and collaboration

Photonics21 Strategic research and innovation agenda 2023-2030

New Horizons

Securing Europe's strategic autonomy through Photonics

Multi-annual Strategic Research and Innovation Agenda of the Horizon Europe Photonics Partnership



PHOTONICS PUBLIC PRIVATE PARTNERSHIP

like MedPhab, "Europe's first Pilot Line dedicated to manufacturing, testing, validation, and upscaling of new photonic technologies for medical diagnostics", will

Cooperation needs with Horizon Europe Missions or partnerships



Technology ecosystems

MedPhab association for photonics based medical devices medphab.com



Printocent for Printed Intelligence printocent.net



Regional interests and support

EUROOPAN PARAS DIGITAALISUUDESTA GLOBAALIA LISÄARVOA TUOTTAVA EKOSYSTEEMI



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