MICROPRINCE H2020 PROJECT

Coordinator:

X-FAB MEMS Foundry GmbH

Dr. Ronny Gerbach

E-Mail: ronny.gerbach@xfab.com

Pilot Line for micro-transfer-printing of functional components on wafer level

This project has received funding from the ECSEL Joint Undertaking under grant agreement No 737465. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and Germany, Belgium, Ireland.

General Project Information

- Project reference: **737465**
- Project start and duration: **01/04/2017** for **36 month**
- EC funding: **EUR 3.340.035,74**
- **13 Partners** from **4** different European countries
- Mission: to create a pilot line for heterogeneous integration of smart systems by micro-transfer-printing (µTP) in a semiconductor foundry manufacturing environment
- Website: www.microprince.eu

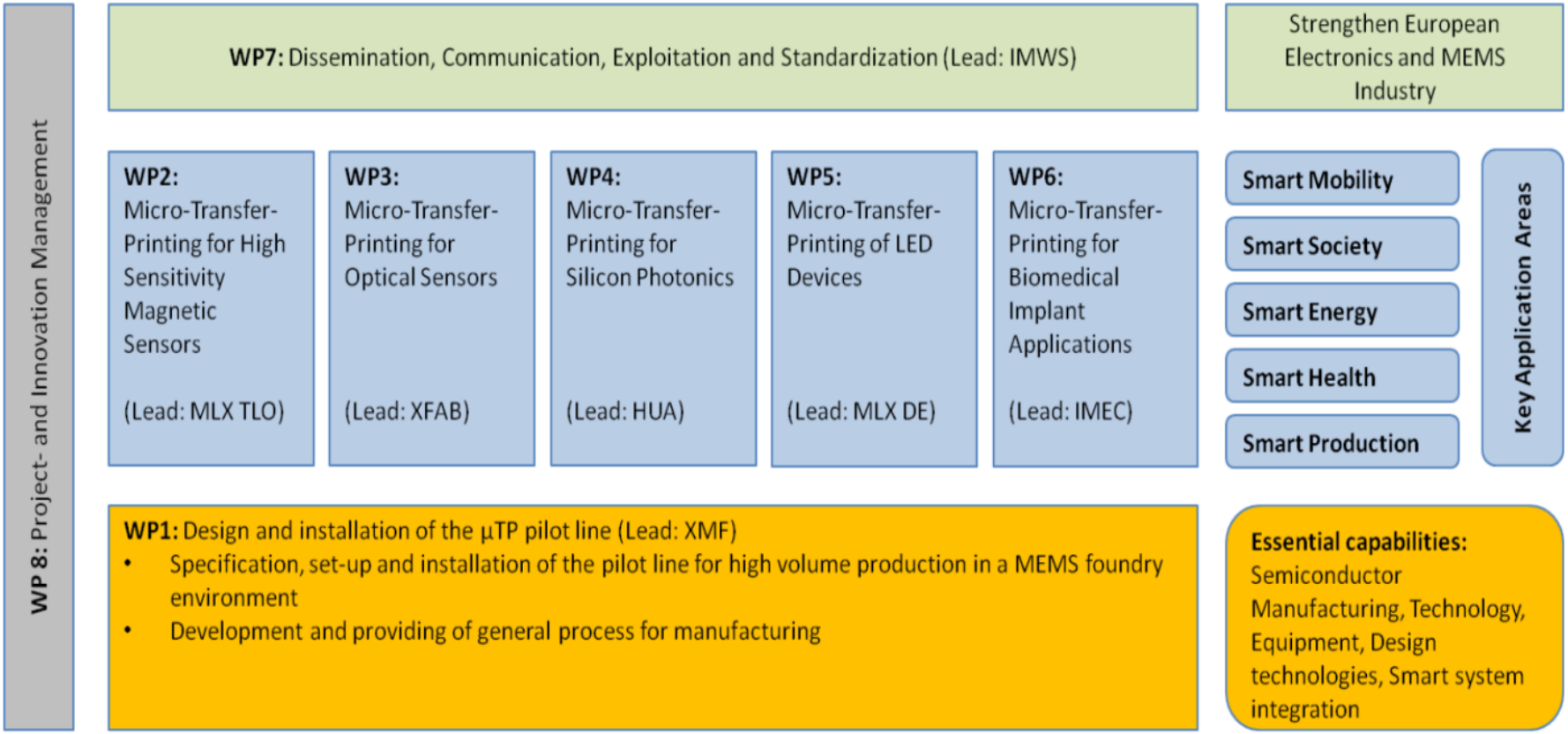
Project Goals (I)

- Transfer of the µTP-technology for microelectronics application from laboratory to an industrial environment
- Bridging the “Valley-of-Death” to industrialization
- Creation, installation and demonstration of a pilot line for the µTP in manufacturing environment for open access
- Development of design rules (DR) and its implementation in Process-Design-Kits (PDK)

Project Goals (II)

- Technology demonstration for five defined target applications for magnetic and optical sensing and photonic systems
- Development of processes for heterogeneous system integration for CMOS and MEMS wafers
- Realization of printing processes on 200 (150) mm silicon wafers

WP Interaction



IMPACT

- Strengthen the industrial competitiveness of the involved industrial partners
- Worldwide first open access foundry process for heterogeneous integration by µTP -> will lead to a stable and sustainable growth of business in Europe.
- Enable next generation sensors for future markets
- Base for significantly improved magnetic sensor systems -> enabling superior miniaturization desired by the market.
- Integration of silicon photonics with smaller form factors, lower power consumption and lower cost
- Technology base for life science applications, where photonic integrated sensors can be made so cheap that they can be considered as disposables (e.g. for medical tests) and can be miniaturized.

MICROPRINCE Consortium

- Consortium: 13 partners from 4 different countries
- Duration: 36 month (3 years) 01.04.2017 – 31.03.2020

- **Germany**
  - X-FAB-MEMS Foundry GmbH (XMF)
  - X-FAB Semiconductor Foundries AG (XFAB)
  - Melexis GmbH (MLX DE)
  - Optics Balzers Jena GmbH (OBJ)
  - Fraunhofer Gesellschaft zur Förderung der angewandten Forschung E.V. (FhG)
  - Technische Universität Dresden (TUD)
- **Switzerland**
  - Melexis Technologies SA (MLX BEV)
- **Belgium**
  - Melexis Technologies NV (MLX TLO)
  - Melexis NV (MLX NV)
  - Huawei Technologies Research & Development Belguim (HUA)
  - Interuniversitair Micro-Electronica Centrum (IMEC)
- **Ireland**
  - X-Celeprint Limited (X-CEL)
  - University College Cork – National University of Ireland, Cork (TYN)

MICROPRINCE Grant Agreement No. 737465

"The **MICROPRINCE** project has received funding from the European Union's H2020 Programme (ECSEL) under grant agreement number 737465"

If you need further information, please contact the coordinator:

X-FAB MEMS Foundry GmbH
Haarbergstrasse 67, 99097 Erfurt, GERMANY
Tel: +49 361 427 6508 Fax: +49 361 427 6171
E-Mail: ronny.gerbach@xfab.com