28 February 2023 to 2 March 2023
FBK, Trento
Europe/Rome timezone

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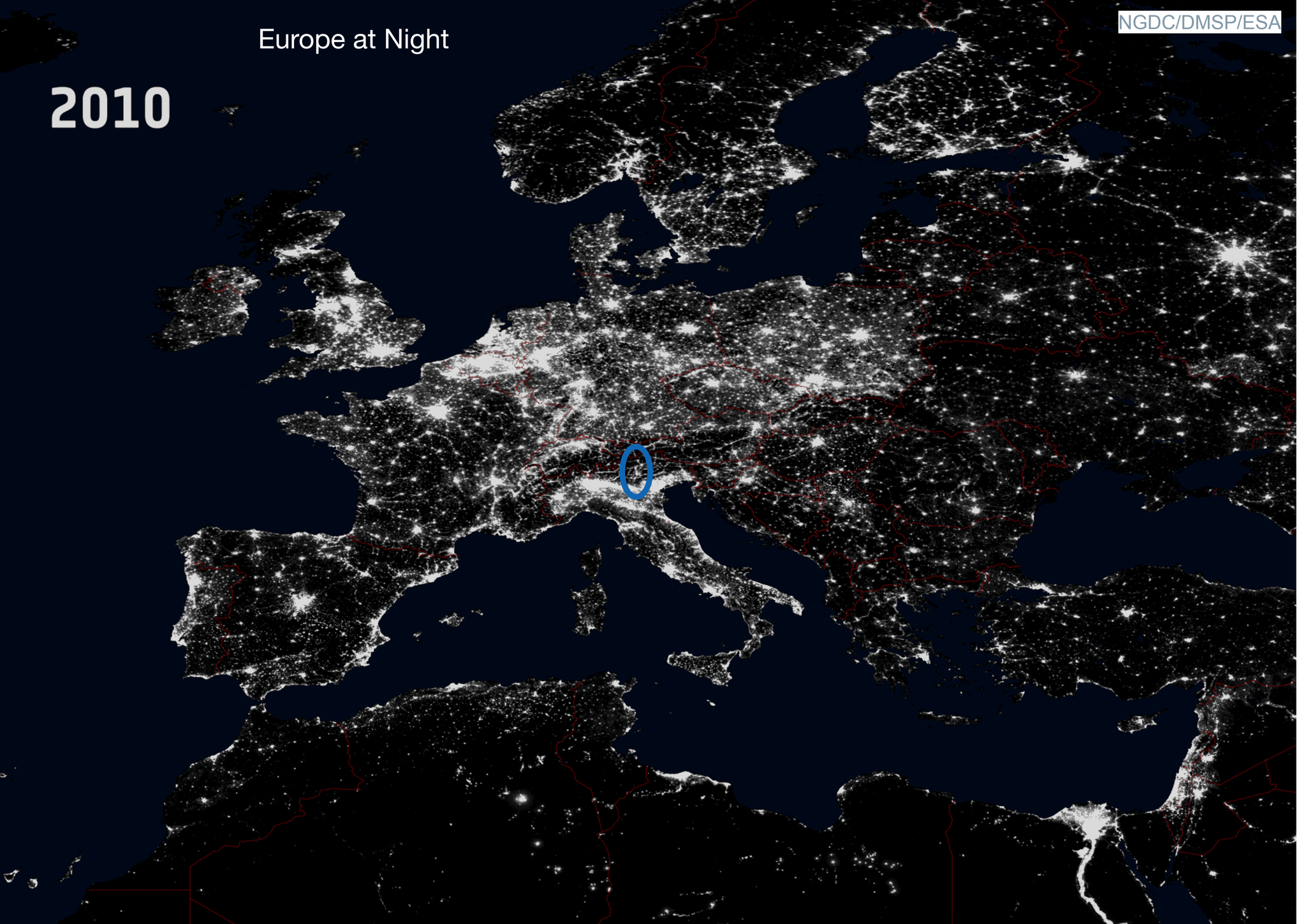
Continuing in its tradition, the goal of the workshop is to bring together experts on sensor technology (design and processing), front-end electronics, system issues, detector applications (e.g., particle tracking, medical and biological imaging), etc. for discussions of the present state of the art, establishment of requirements of the fields and future programs.

After two virtual editions due to Covid, we are going back to an in-person only meeting.

The workshop will consist of invited talks and contributed oral presentations, with ample time for discussions.

Welcome

Prof. Richard Hall-Wilton
Director FBK-Sensors and Devices Centre



- Trento is on one of the main north - south Europe routes
- Region close to Austria and Switzerland
- On the language border

Trade routes and borders are drivers of ideas and creativity

- Competition to develop talent and expertise is nothing new …
- Workshop is in this spirit - about enhancing contact between experts in a very exciting field
- Enjoy it! Be Creative!
- Use the environment and location to tickle your creativity and innovation

FBK-Sensors & Devices Centre
at a glance

10-12mil €
ANNUAL BUDGET

130+
PUBLICATIONS/YEAR

65 Researchers
20 Technicians
20 PhD

100+
EMPLOYEES

65+
ACTIVE FINANCED PROJECTS

20 EU projects

6
RESEARCH UNITS
+ Partnership with CNR

2
MAIN INFRASTRUCTURES
(MicroNanoFacility + Labssah)

40+
COMPANY COLLABORATIONS
Inc. 1 newco

41
ACTIVE PATENTS

FBK is a research centre with a 60 year heritage

Bleeding Edge Sensors and Devices based around technological platforms

Scalable: silicon et al. fabrication techniques

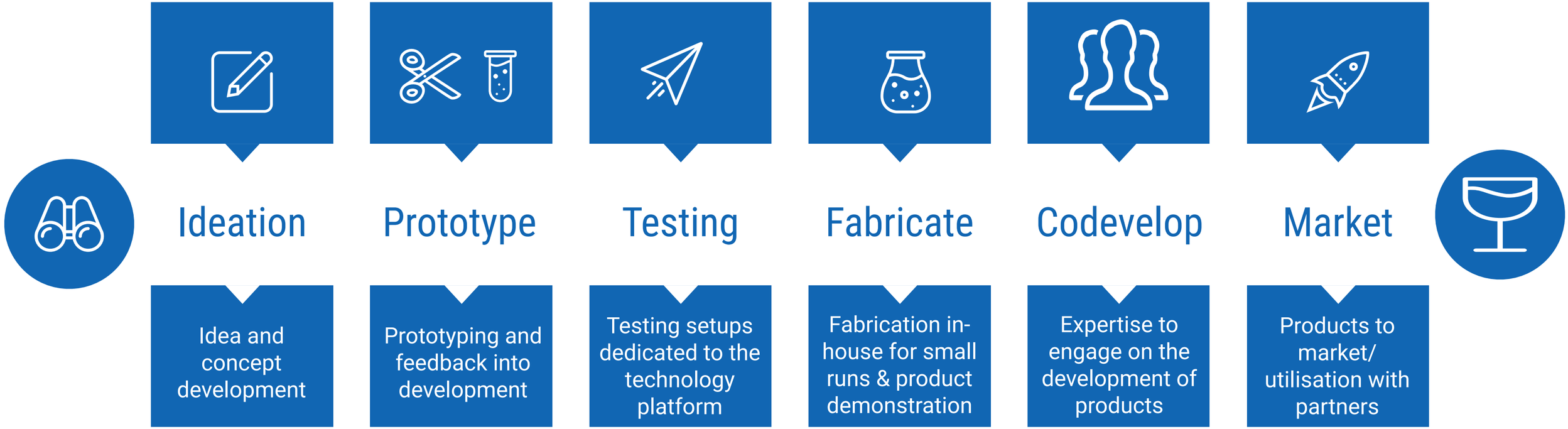
Contribution across the development chain: ideation to fabricate in-house to bring to market

For science and society

Development Philosophy: *Unique capability*

SD Centre Modus Operandi
Technological Platforms

The technology platforms have expertise over the whole development chain

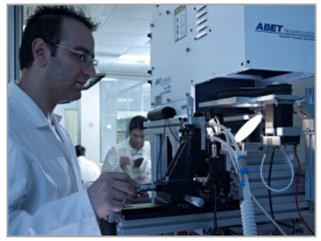


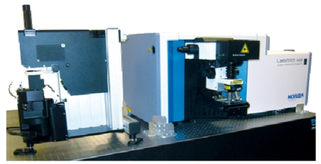
Feedback loop: advances in the technology platforms lead to seeds for the idea creation

This represents a unique capability from the centre to collaborate and contribute at any and all stages of the development chain

Micro and Nano fabrication Facility
IPCEI1: 1200m² moving to >2000m² semiconductor ISO4-6 cleanrooms







6” Microfabrication Area

Clean Room Detectors

700 m²; Class 10/100 0,8 um CMOS pilot line: Ion Implantation, Oxidation, Diffusion, RIE, Deep RIE (silicon and oxide), Lithography (stepper 0.35 um and mask aligner), metal sputtering, optical profilometry

Clean Room MEMS

500 m² Class 100/1000 diffusion, lithography (mask aligner), wafer bonding, electroplating, Si bulk micromachining, metal evaporation, RIE, mechanical and optical profilometry,

Testing Area

300 m² manual parametric testing, automatic parametric/functional testing, optical testing (spectral responsivity, quantum efficiency), solar cells efficiency characterization, gas and pressure sensors test benches

Integration Area

100 m² clean room Class 1000 Microassembly station; screen printing, bonding (ball & wedge bonder), Shear-Pull Tester, reflow oven, CNC micro-mill, pick and place

Nano- and Micro- Analytical Facility

Nano Ramen, FIB-SEM-EDX-EBSD, D-SIMS, TOF-SIMS, XPS, AFS, XRD/XRF

SD Centre
Technological Pillars

Integrated Optics

Silicon Radiation Detectors: strip, pixel, SDD, LGAD, 3D, …

SiPMs

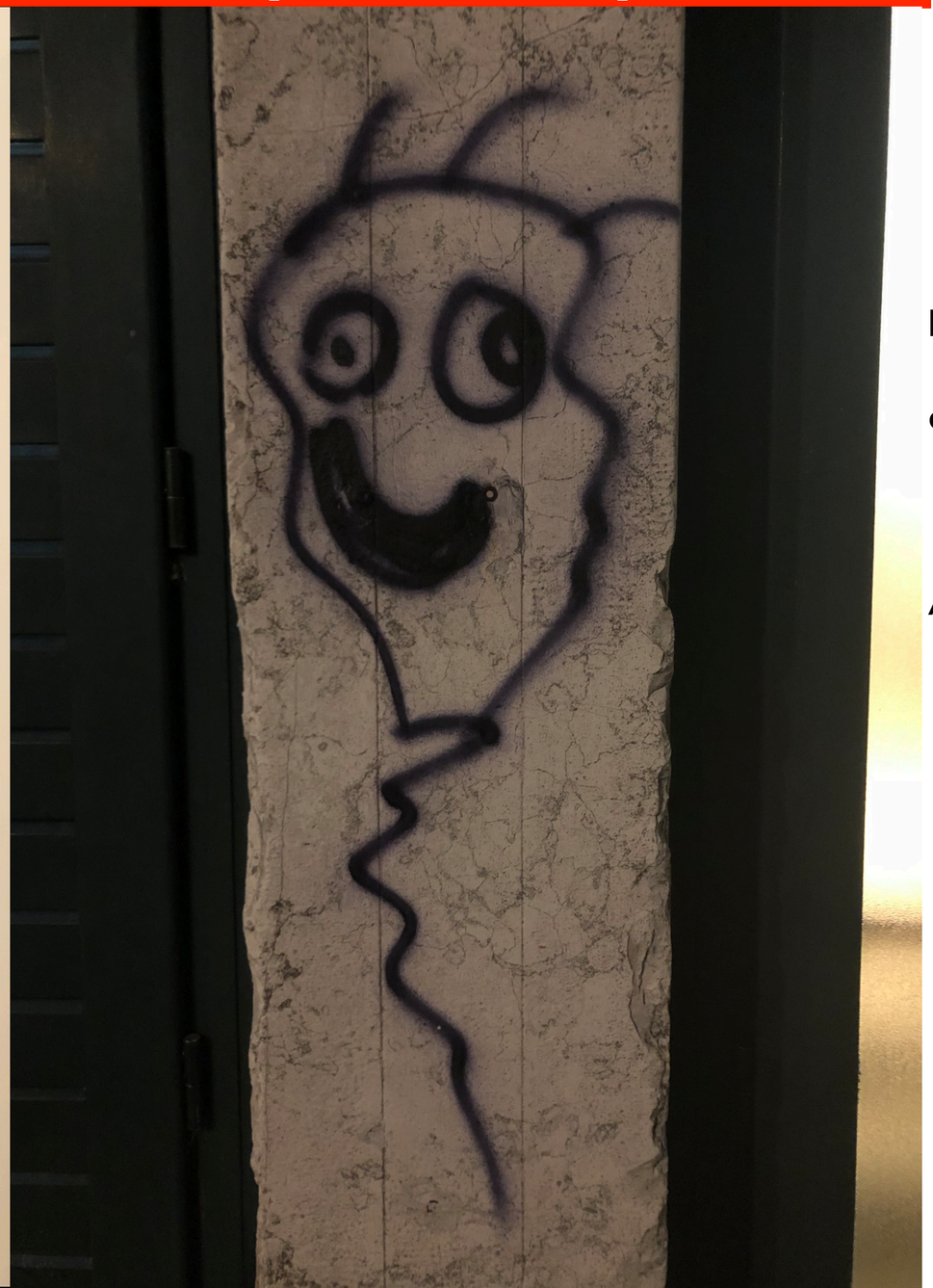
CMOS: SPADs, MAPs, ASICS, …

MEMs and Mechatronics

Surface Interfaces

Superconducting devices: Bolometers, Josephson junctions, Josephson Parametric Amplifies, SQUIDs, …

… capability is only limited by creativity …



In terms of capability, this means:

- processing capabilities of silicon to a very fine scale
- crafting features
- ability to scale

Ability to create:

- 1D features of considerable length
- 2D features
- 3D designs and integration

"Sculpting on silicon"

- Collaboration is typically needed with the application experts

RESEARCH POSITION ON ADVANCED TECHNOLOGIES FOR SILICON RADIATION SENSORS AND DEVICES

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Apply online

The FBK Centre for Sensors and Devices, FBK-SD is an applied research centre that operates in the following scientific and technological areas: materials and interfaces, devices and microsystems, integrated systems. FBK-SD has extremely advanced technical know-how in applied materials science, as well as innovative detector design and fabrication technologies. The strategic mission of FBK-SD is scientific excellence combined with the ability to exploit research results. The innovation model is open to collaboration in national and international networks.

The available position is in the Custom Radiation Sensors (CRS) unit of FBK-SD. The CRS Research Unit carries out R&D activities on advanced radiation and image sensors fabricated with full custom technologies. The main research activities of the group are on the design, development and characterization of silicon radiation detectors, single-photon sensors and advanced image sensors.

More information about CRS is available at https://sd.fbk.eu/en/crs. FBK actively seeks diversity and inclusion in the workplace and is also committed to promoting gender equality.

- If you have colleagues looking for their next career step, please tell them

https://jobs.fbk.eu/

Welcome!

Trento, Italy

- Looking forward to an interesting and creative workshop!