FAMES

greener electronics

FD-SOI · NVM · 3D · RF · PMIC

Towards energy-saving chips for digital, analog, RF

The FAMES Pilot Line of the Chips JU is funded by Horizon Europe and Digital Europe Programmes and the National Public Authorities of the partners involved.

Chips JU

FRANCE 2030

BUSINESS FINLAND

Ministry of Science and Higher Education Republic of Poland

GOBIERNO DE ESPAÑA MINISTERIO PARA LA TRANSFORMACIÓN DIGITAL Y DE LA FUNCIÓN PÚBLICA

Bundesministerium Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie

PERTE Chip

Member of UAR INNOVATION NETWORK

LAND KÄRNTEN

Das Land Steiermark

SFG

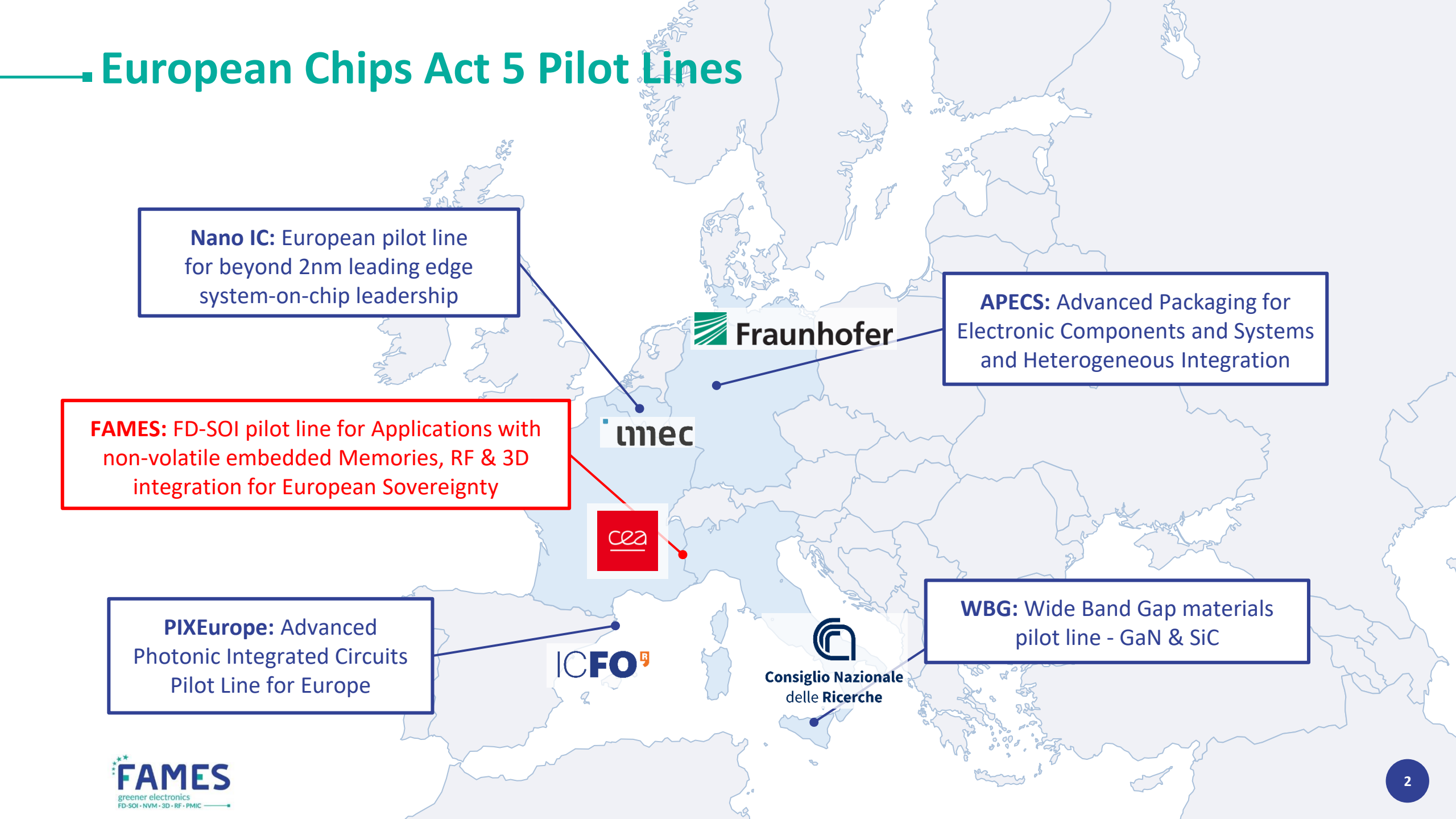
FEEI

ober österreich

ZUKUNFTSFONDS STEIERMARK

Update: 24/11

European Chips Act 5 Pilot Lines



FAMES Pilot Line: Aim & Status

- The FAMES Pilot Line will provide **opportunities for disruptive chips architecture** with performance improvement and significant energy savings

- All Pilot Line agreements completed in December 2024, project is running at full speed (procurements, R&D programs, communication & dissemination)

- First Open Access call (request for Access) in March 2025

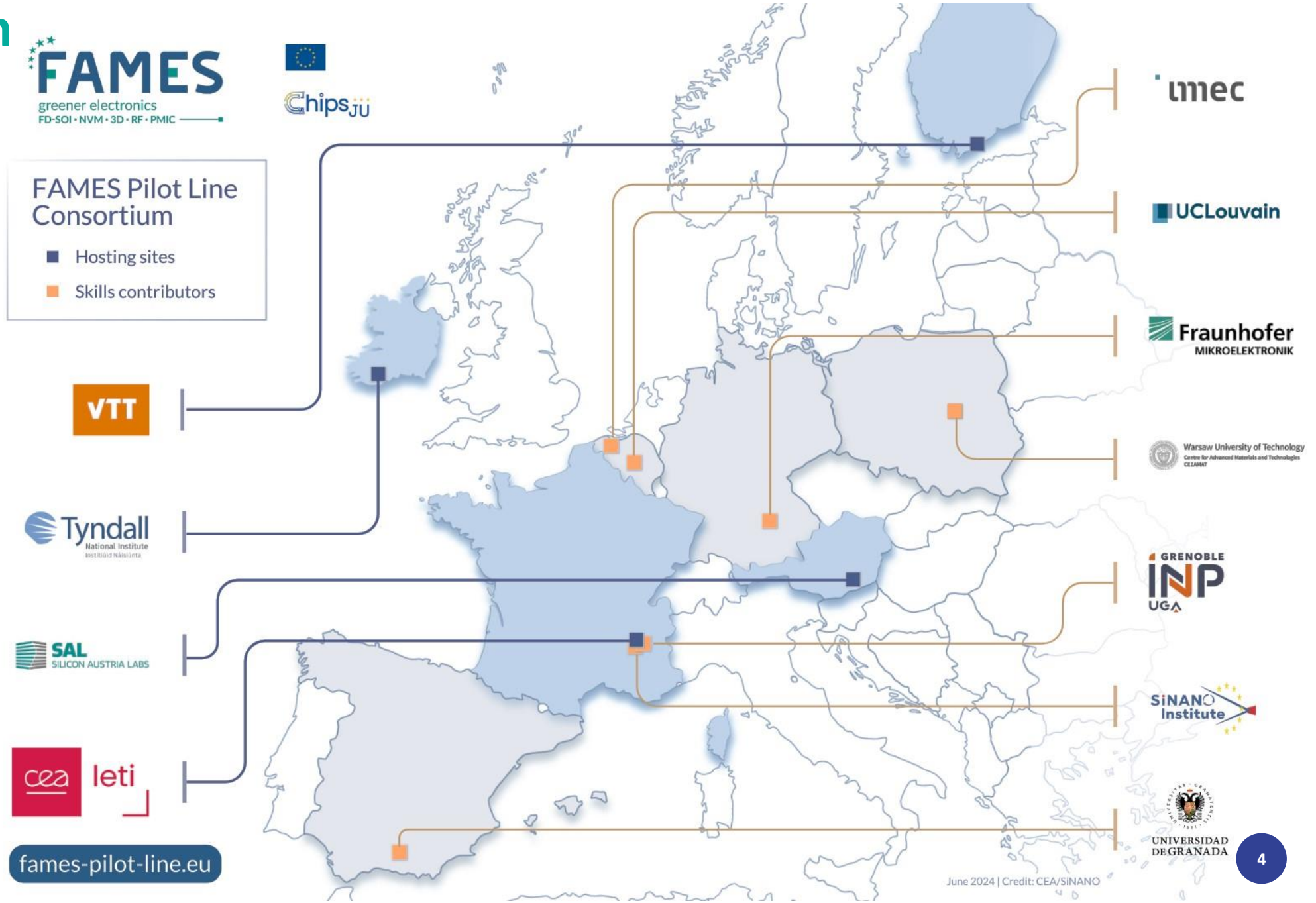
Consortium

Budget : €830 M

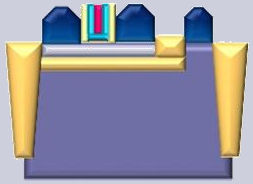
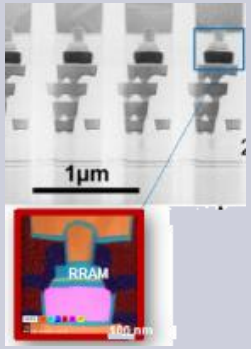
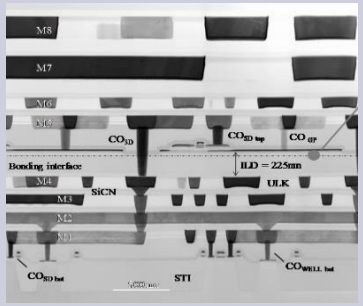
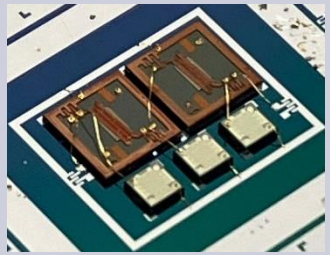
- CAPEX: €382 M
- OPEX: €448 M

Funding:

- 50% Chips JU
- 50% Member States



FAMES Technological Portfolio

FD-SOI	Embedded non-volatile memories	Radiofrequency components	3D integration	Small inductors for DC-DC converters
10 nm and 7 nm nodes	OxRAM, FeRAM, MRAM and FeFET	Switches, filters, and capacitors	Heterogeneous and sequential	Power management integrated circuits (PMIC)
 0,7V 57CPP 48/40MPP				
cea leti, imec, UCLouvain	cea leti, VTT, imec, UCLouvain, Fraunhofer, Universidad de Granada	cea leti, VTT, SAL Silicon Austria Labs	cea leti, Tyndall National Institute	Tyndall National Institute

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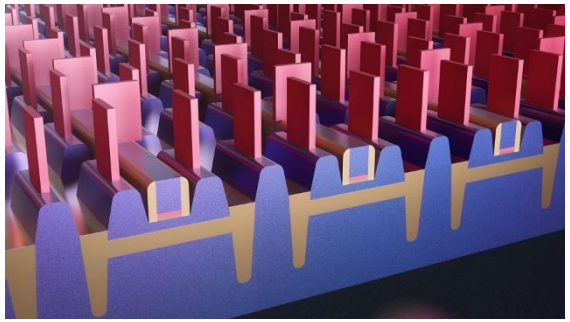
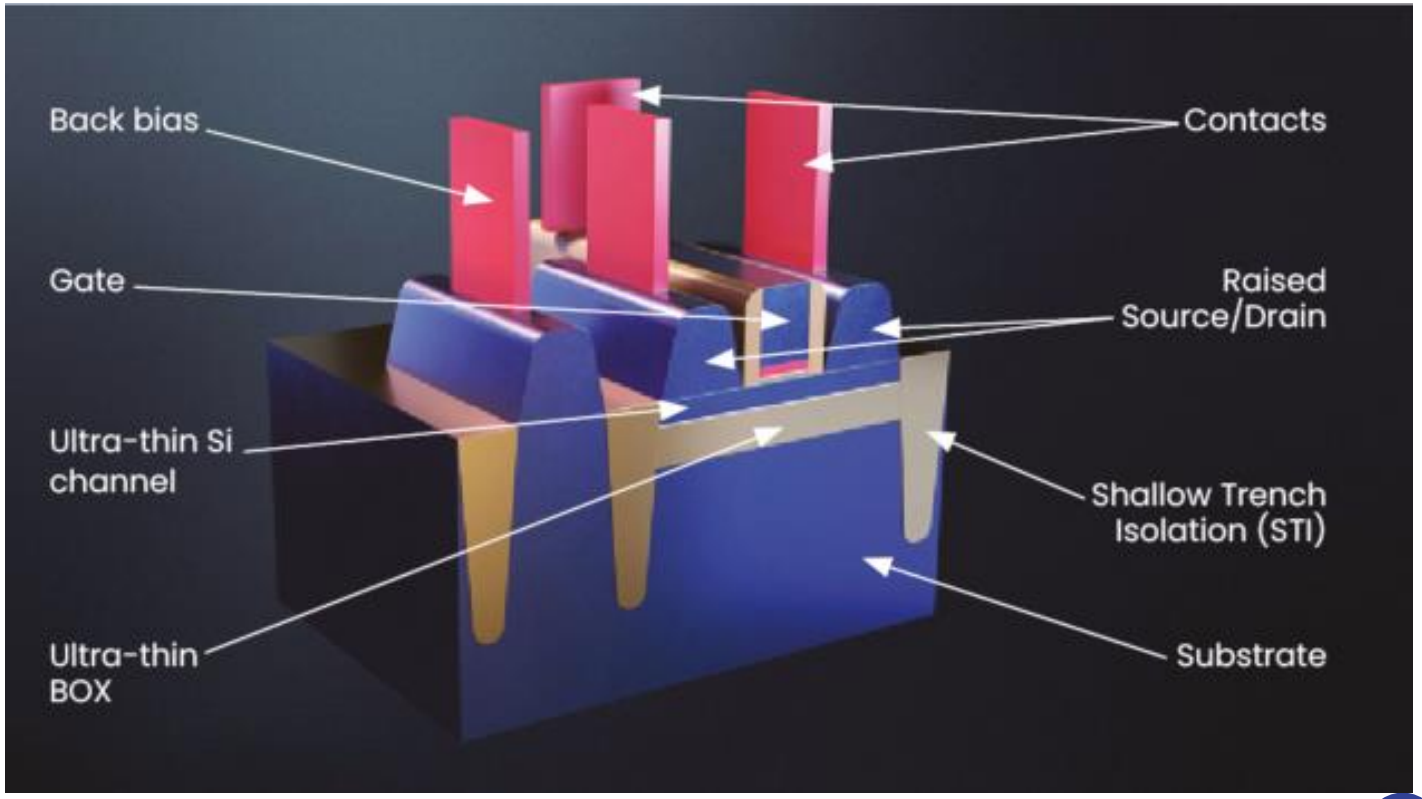
FD-SOI 10nm and 7nm nodes



An innovative generation of chips with the best balance in Power, Performance, Area, Cost and Environment (PPAC-E) for highly energy efficient applications

- Transistor density
- High-performance/low-power trade-off
- Radiation resistance
- Reduced current leakage
- Manufacturing costs

- Over **150 patents** filed by CEA-Leti



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FD-SOI is selected by worldwide key players

Communications

- FD-SOI is ideal for 5G mmWave
- 5G sub-6 GHz
- Mobile infrastructure
- WiFi 6

SAMSUNG / Google

November 2021
Google Pixel 6 5G mmW with Samsung FD-SOI

Qualcomm

August 2022
Next gen 5G mmw RFIC by Qualcomm will use 22FDX technology

MEDIATEK

July 2022
Mediatek 5G mmWave platform uses 22 FDX

NORDIC SEMICONDUCTOR

April 2023
Nordic redefines its leadership in Bluetooth Low Energy with the annoucement of the nRF54 Serie

Automotive

- Autonomous cars
- Infotainment

BOSCH

March 2021
Bosch mmW radar ECSEL projet OCEAN 12

NXP

March 2021
NXP for ultra-low power in automotive

ST

ST unveils its new MCU Stellar MCU for Auto

Smart Devices

- Edge computing
- 3D sensing & healthcare
- Smart home & smart cities
- Data centers

LATTICE SEMICONDUCTOR

January 2022
NXP for ultra-low power in automotive

SONY

GNSS
Development of 0.7 V RF circuits with efficient energy use

SONY

GPS
The watch launched by the company Huami features a GPS circuit built on FD-SOI

Innovative, Differentiated Developments for Key Markets

Computing

- Microcontrollers
- MPU
- Trusted IC
- AI/ML chips

Sovereignty fields

- Quantum chips
- CryoCMOS chips
- Trusted IC
- New space components

More Than Moore

- Automotive
- 5G/6G chips
- RF connectivity
- Smart sensors
- Smart imagers
- Smart displays
- IoT devices
- Cybersecurity
- Wearables

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Opening the Pilot Line to European stakeholders

44 support letters

FAMES Eco Innovation Offer

What expertise do industrial partners receive?

Materials:

- Solutions to reduce, replace, and recycle materials and to implement circular economy principles.
- Critical raw materials (CRM) analysis.

Technologies and systems:

- Eco-innovation to leverage the advantages of ecodesign and to mitigate the factors contributing to the climate crisis
- Analysis of value chains and rebound effects to reduce overall environmental impacts.

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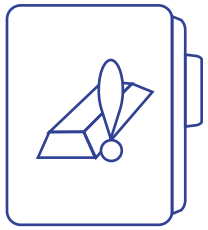
FAMES Eco Innovation Offer

E-waste



Critical Raw Materials

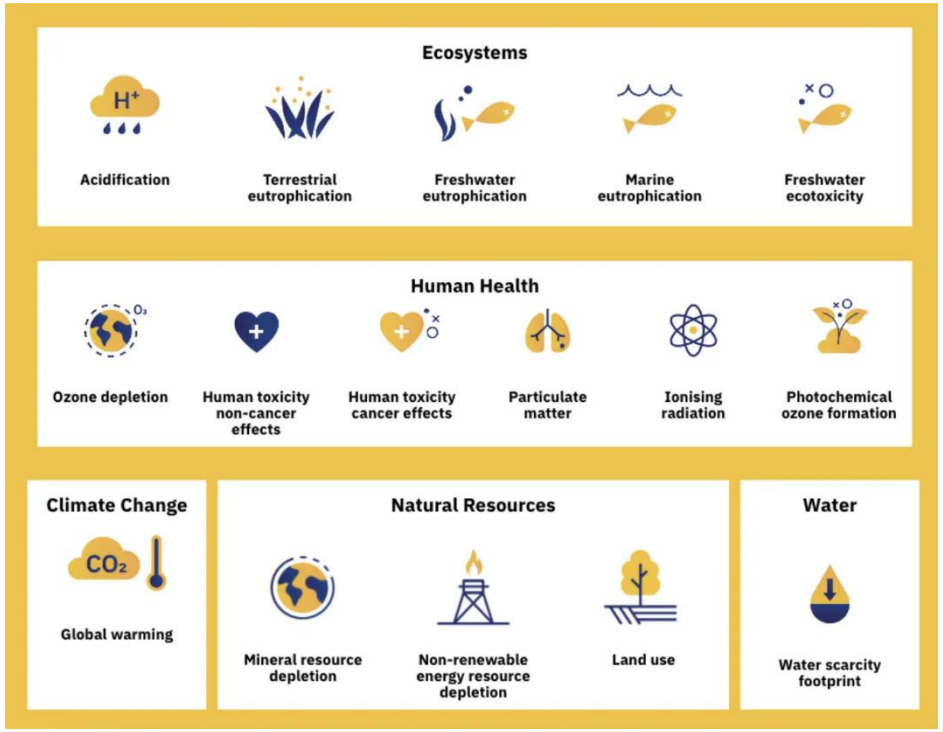
Planetary boundaries

Environmental regulations

Eco-innovation for more sustainable electronics
Reducing the impacts of electronics through R&D

- The development and implementation **of lifecycle analysis (LCA)**
- The validation of eco-innovative solutions in a production-like environment
- The development of technologies and end-to-end systems to meet specific environmental criteria for identified use cases.

16 environmental footprint criteria



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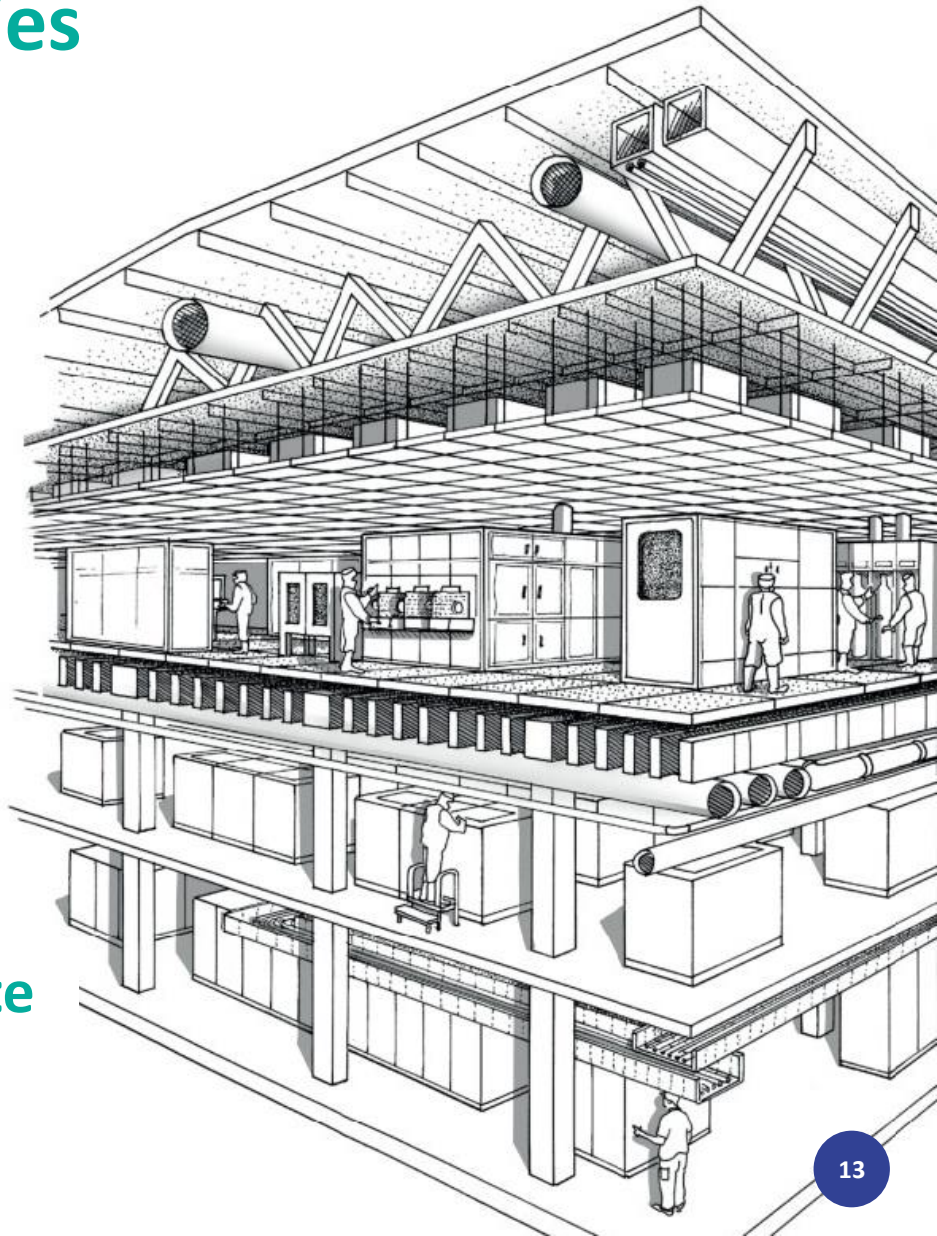
Accessing the FAMES Pilot Line

FAMES European open-access pilot line for advanced semiconductor technologies

To gain access to:

- Two types of PDKs (multi-project wafer or IC design assessment)
- The FAMES technologies (FD-SOI 10 nm and 7 nm, embedded non-volatile memories, RF components, 3D integration options) for performance evaluation
- Specific process steps, modules, integration flows, and demonstrator results
- Education and training on the FAMES technologies

as they become available



➔ **Request an access to the Pilot Line and receive a quote**

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The FAMES Pilot Line is open to all types of Users

LARGE COMPANIES

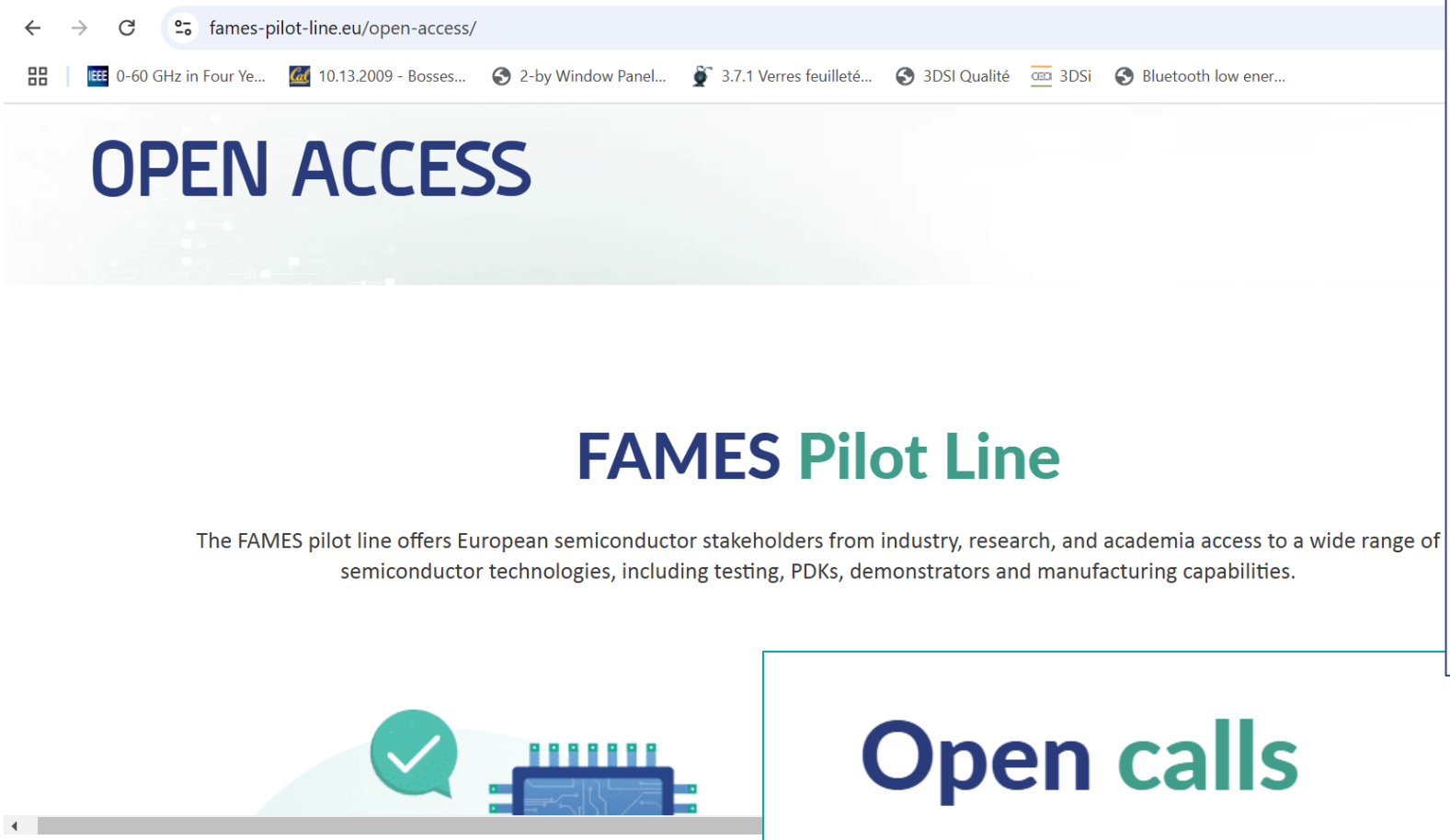
SMEs

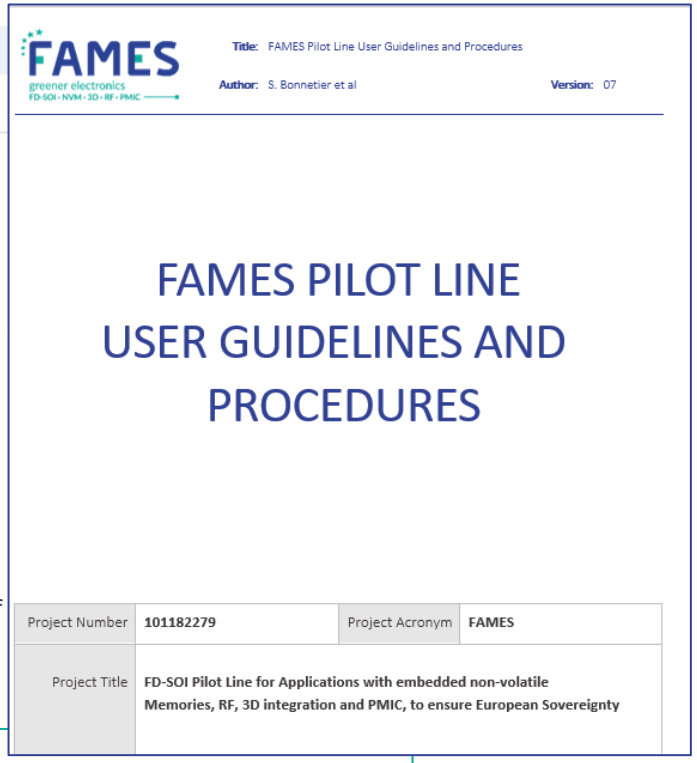
START-UPs

RESEARCH COMMUNITY

Design Houses
Fabless
Foundries
Integrated Device Manufacturers
Material and Tool Suppliers
Universities
Research Centers

Open Access calls: request for Access to the Pilot Line





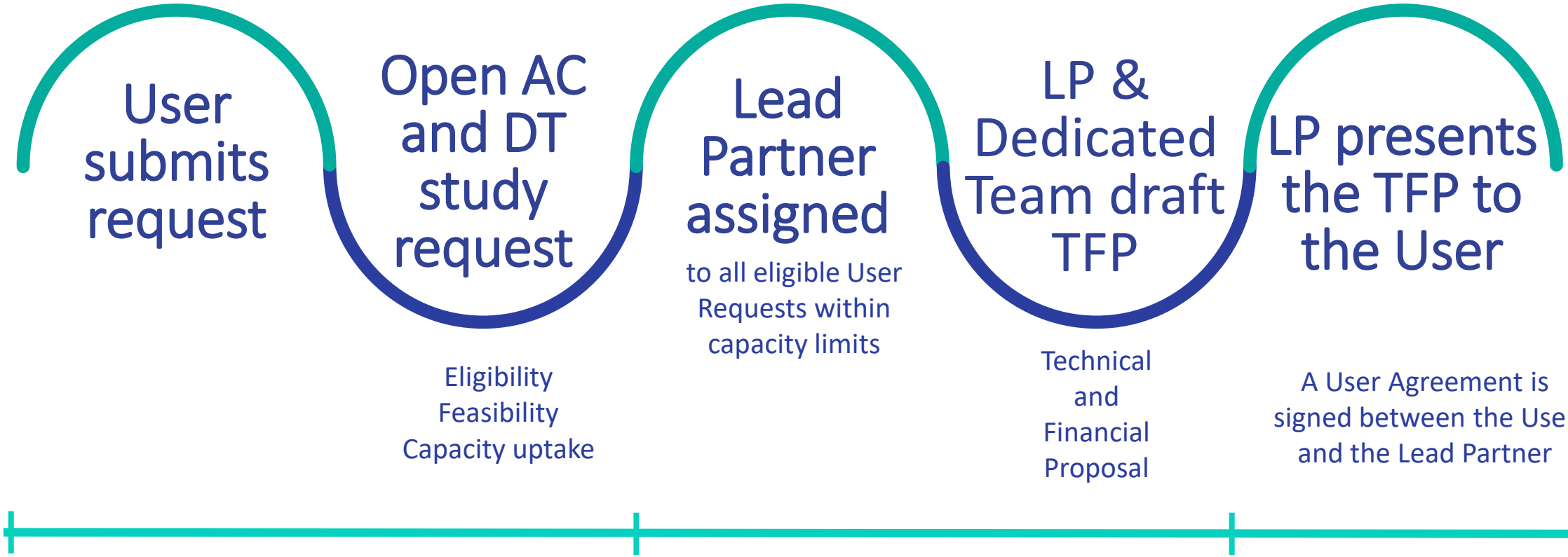
Open calls

The first call should open by the spring of 2025. You will find the submission details on this page as soon as the call is open.

https://fames-pilot-line.eu/open-access/

Open Calls: User Request timeline

fames-pilot-line.eu



Approximate timeline

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Access form – User Request for access to the Pilot Line

- Name and email of the person submitting the request
- Position in the organisation
- Organisation name and address (country from a pull-down menu)
- Organisation's website address
- Organisation type (pull down menu – large group, SME, Start-up, Academic)
- Organisation's activity sector (pull down menu)
- Technologies requested (pull down menu)
  - Portfolio technologies you are requesting (pull-down menu)
  - Other technologies you are requesting
- Comments/Explanations
- How did you hear about FAMES Pilot Line? (pull-down menu)
- ☐ "I agree with the Personal Data Protection policy of this Open Call"

Forthcoming Key Dates

Mid-March, 2025

FAMES Pilot Line Open Call (Request for Access)

Online opening

fames-pilot-line.eu

March 18, 2025

FAMES Dedicated Workshop

Launch of the 1st open call

Brussels, Belgium

fames-pilot-line.eu

June 19, 2025

FAMES School

Initial training

Grenoble, France

leti-innovation-days.com


cea
leti
Leti Innovation Days
June 17-19, 2025 | Grenoble, France
leti-innovation-days.com


Contact: bruno.paing@cea.fr
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PARTNER WITH US
to fast track
your innovation project