

FabCat European Chips Act 2.0 Contribution

Title: European Network of Semiconductor Resilience and Skills Fabs (ERSFabs)

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Collaboration:

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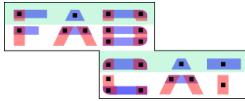
Executive Summary

The current European Chips Act has successfully mobilized large-scale investments in leading-edge nodes. However, a critical gap remains in the resilience of **mature nodes** (22nm - 130nm), which are essential for Europe's strategic sectors (Automotive, IoT, Defence, and Health). Furthermore, the shortage of skilled workforce remains the primary bottleneck for growth.

We propose the creation of the **European Network of Semiconductor Resilience and Skills Fabs (ERSFabs)**. This initiative envisions a distributed network of approximately six mid-sized foundries across Member States. These facilities will serve a dual purpose: guaranteeing strategic **resilience production** of mature nodes during crises and acting as advanced training academies (**Skills Fabs**) to bridge the talent gap.

Problem Statement: The Resilience & Skills Gap

- **Vulnerability in Mature Nodes:** While investment flows to <2nm technologies, Europe's core industries (automotive, industrial automation, defence) rely heavily on mature nodes (>22nm). Europe remains dangerously dependent on non-EU supply chains for these essential components
- **The Talent Bottleneck:** The EU ambition to reach 20% of global market share is threatened by a severe lack of qualified personnel, from technicians to process engineers.
- **SME Barrier to Entry:** European SMEs and startups face prohibitive costs and lack of access to "low-volume" manufacturing capacities for prototyping and industrialization.



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The ERSFabs Proposal

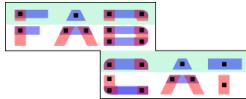
The **ERSFabs** initiative **proposes a new instrument** for the Chips Act 2.0: a coordinated network of "**Resilience & Skills Hubs**" located in key regional ecosystems (**e.g., Catalonia/Spain, Flanders/Belgium, Saxony/Germany, etc.**).

Key Pillars of the ERSFabs Model:

1. **Resilience Manufacturing (Security of Supply):** Each hub operates a flexible foundry focused on mature nodes (22nm CMOS, 65nm, 130nm).
 - a. **Peacetime Function:** Dedicated to low-volume production for SMEs, innovation pilots (lab-to-fab), and strategic sectors (Defence/Space).
 - b. **Crisis Function:** Mandated capacity reservation ("Priority Rated Orders") to secure the supply chain for essential European industries during geopolitical shocks.
2. **Skills & Training (The Academy Model):** Unlike purely commercial foundries, ERSFabs are designed as "**Teaching Hospitals**" for **semiconductors**. They provide hands-on training infrastructure for **Vocational Education and Training (VET)**, **Master's degrees**, and **industry upskilling**, directly feeding the European talent pipeline.
3. **Democratization of Access:** Providing affordable MPW (Multi-Project Wafer) runs and design kits (PDKs) for European SMEs and research institutes, bridging the "Valley of Death" between R&D and industrialization.

Implementation Strategy & Pilot Case

- **Investment Estimate:** A 10-year program with an estimated investment of €4.8 billion for infrastructure (~€800M per hub) and €2.4 billion for operations.
- **Pilot Proposal (FabCat - Catalonia):** We propose the FabCat project (Catalonia) as a pilot node for this network. Located in the Southern Europe-France corridor, it leverages a strong existing ecosystem (IMB-CNM, BSC, ALBA Synchrotron) to establish a 22nm foundry focused on automotive and industrial IoT resilience.



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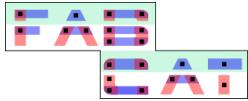
Recommendations for the Chips Act 2.0 Review

To enable initiatives like ERSFabs, the reviewed Chips Act should:

1. **Create a "Strategic Resilience Facility" Definition:** Legally recognize mid-sized, mature-node foundries as strategic assets eligible for fast-track permitting and funding, distinct from "First-of-a-Kind" mega-fabs.
2. **Integrate Skills with Infrastructure Funding:** Allow Chips Fund resources to co-finance operational costs for facilities that dedicate a significant percentage of capacity to training and education.
3. **Promote Trans-Regional Consortia:** Incentivize cross-border ownership and governance of these hubs (e.g., utilizing the European Semiconductor Regions Alliance - ESRA) to ensure they serve the wider European interest.

Conclusion

The **ERSFabs model** offers a cost-effective, scalable solution to Europe's twin challenges of manufacturing **resilience and talent generation**. By **securing the "backbone" of our industry**—mature nodes—we ensure that the digital transition is built on a **sovereign European foundation**.



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