GoIT: European initiative for free and open silicon

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Education

In 1979 Carver Mead and Lynn Conway published a textbook: "Introduction to VLSI Systems", transforming education as it became the cornerstone for teaching VLSI systems worldwide.

EDA

With the increasing complexity of ICs, electronic computer-aided design has become an integral part of the design, validation and verification, leading to ever-increasing productivity.

Fabless

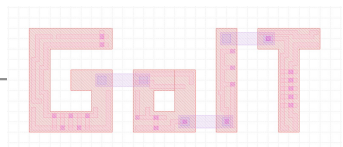
In 1986 Morris Chang piloted the first semiconductor wafer fabrication plant, currently known as TSMC, which shaped the modern fabless semiconductor design business model.

Standardization

The nineties establishment of open-standard, on-chip interconnect specification boosted the reusability and modularity of IC designs, leading to the modern System-on-Chip.

Open Ecosystem

- *Facilitating open-source silicon chips community*
- *Educating policymakers*
- *Releasing open PDKs*
- *Opening design toolchains*
- *Improving IP quality and reusability*
- *Establishing trustworthiness*



Consortium

- G.A. 101070660
- **01.09.2022. - 31.08.2025**
- **1.9M** EUR (Horizon Europe)
- **6 partners** (Latvia, France, Italy, Spain, Belgium)
- **SME** (FibraServi)
- Coordinator: **EDI**
- https://wiki.goit-project.eu/

Institute of Electronics and Computer Science

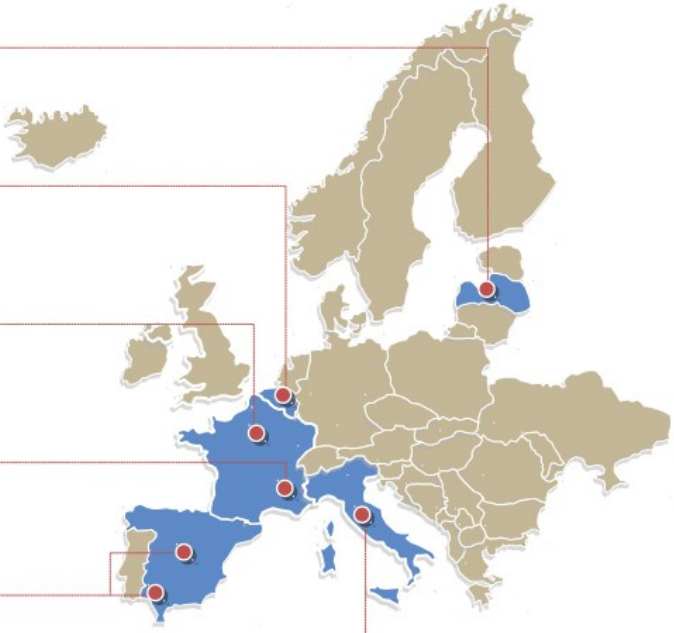
FibraServi (SME)

Sorbonne University (+CNRS, +LIP6)

Grenoble Institute of Technology

Spanish National Research Council

Free Silicon Foundation



Contribution summary

- Hardware license
- Certification and standardization
- Open-source Process Design Kit
- Root-of-Trust
- FSiC conferences
- Hub of open-source EDA software and hardware libraries
- Roadmapping and feedback to policy makers

Quick Survey

Who has heard about the European Chips Act?

Who has read the European Chips Act?

Who (generally) agrees with the European Chips Act?

EU Chips Act

“The proposal aims at reaching the strategic objective of increasing the resilience of Europe’s semiconductor ecosystem and increasing its global market share.”

EU Chips Act

“The proposal aims at reaching the strategic objective of increasing the resilience of Europe’s semiconductor ecosystem and increasing its global market share.”

Could free and open-source principles help to solve this objective?

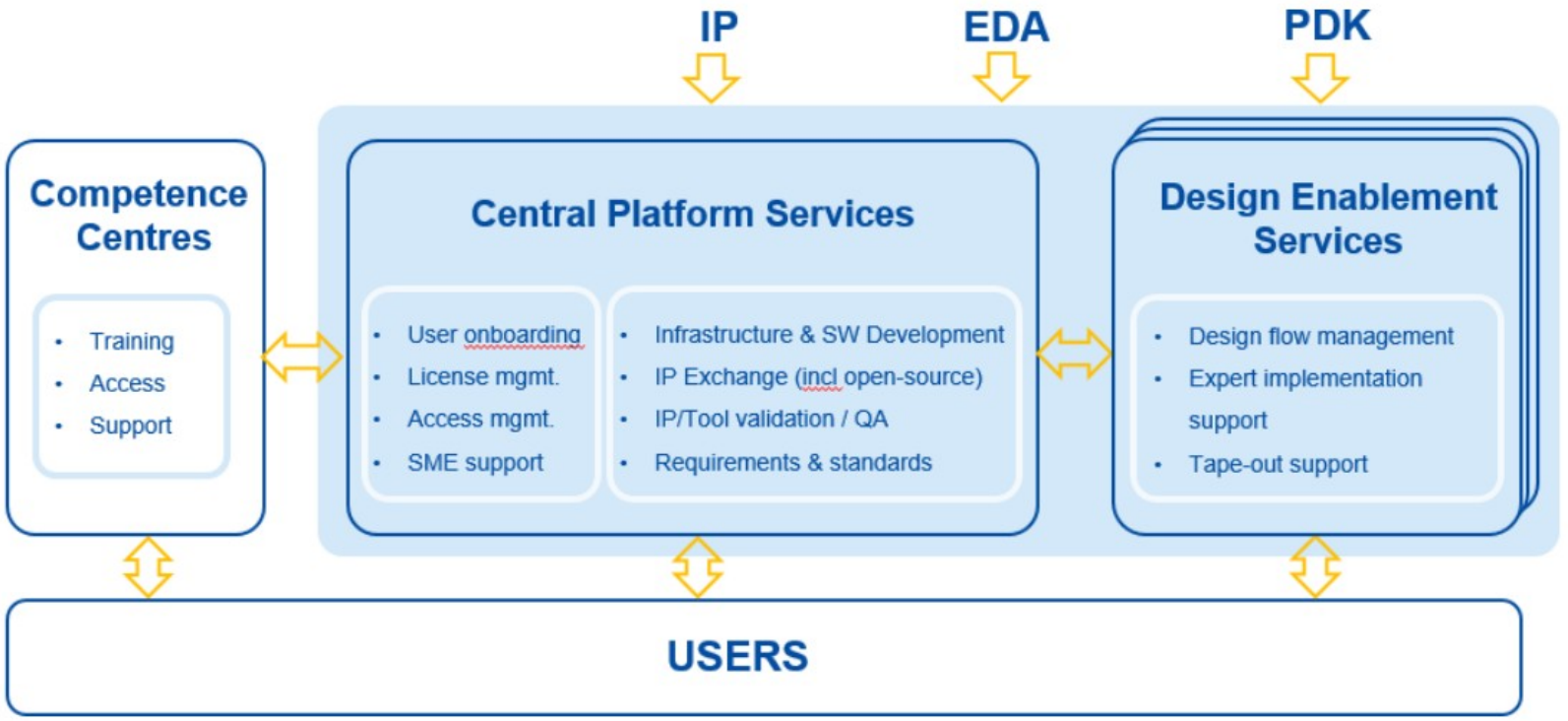
EU Chips Act

"The proposal aims at reaching the strategic objective of increasing the resilience of Europe's semiconductor ecosystem and increasing its global market share."

Could free and open-source principles help to solve this objective?

Not even mentioned in the document

Future of EDA availability?

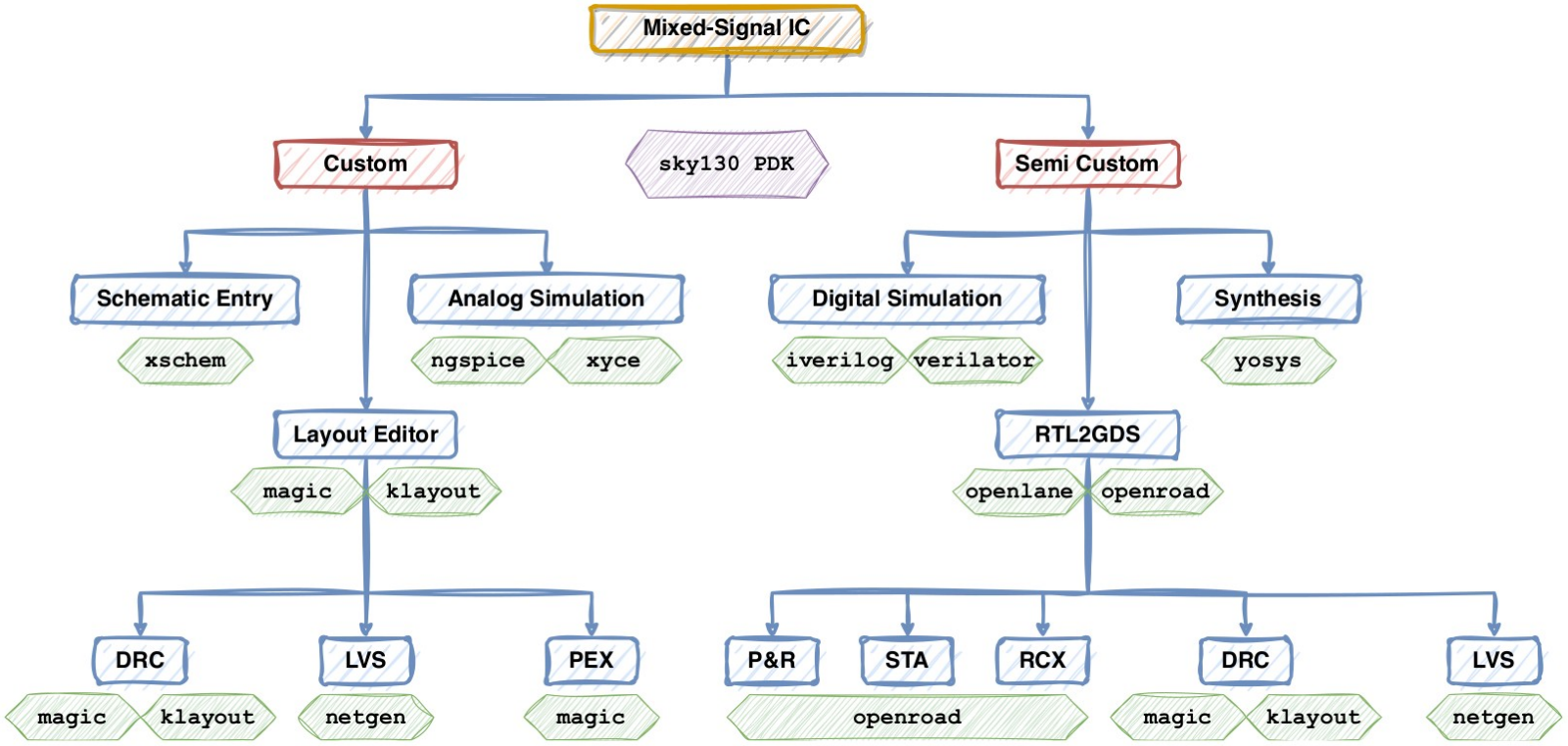


"Recomemendations and roadmap for a Design Platform in the context of the European Chips Act", Design Platform Working Group, June, 2023

Working Group Members

Ansys - Babis Bakolias, Christophe Bianchi, Alan Deeter
Arm - Neil Parris, Eric Lalardie
Cadence - Anton Klotz
Codasip - Karel Masarik, Jamie Broome, Mike Eftimakis
Dassault Systèmes - Manuel Rei, Sophie Batas, Smriti Joshi
Dolphin - Philippe Berger
Fraunhofer-Gesellschaft- Christoph Kutter, Andreas Brüning, Thorsten Edelhäußer
imec - Romano Hoofman, Maarten Burssens
Infineon - Holger Schmidt
Racyics - Holger Eisenreich, Jens-Uwe Schlüßler
Siemens - Jean-Marc Talbot, Thomas Heurung
SiPearl - Philippe Notton, Yang Yngchih, Vincent Casillas
STMicroelectronics - Roberto Zafalon
Synopsys - Steve McDonald, Alec Vogt

It is possible



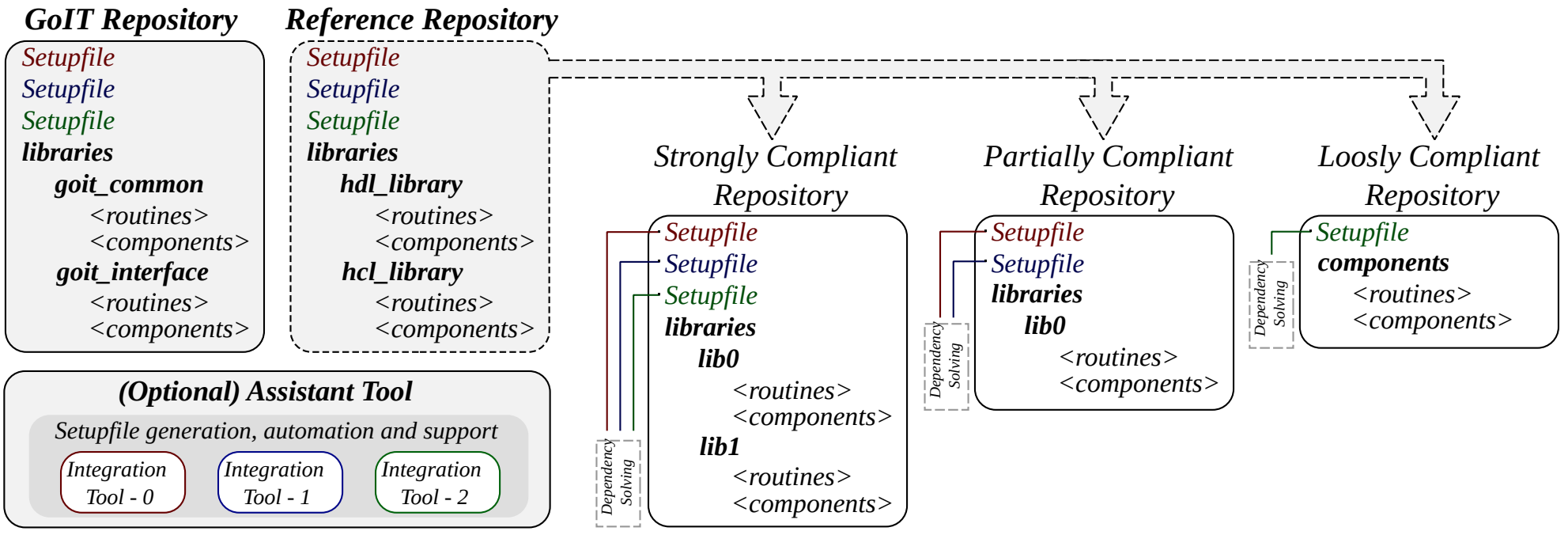
Open-Source IC design tools used for the design of the SAR-ADC circuit. Harald Pretl, FSiC2023

Silicon IP Reusability

Key challenges for the reusability of free and open-source IP

- Interfacing as the most persistent challenge
- Diversity of high and low-level design approaches and languages
- Reusability of non-RTL designs
- Design quality, including documentation
- Top-down vs bottom-up

Hub of free and open-source IP



Go IT!

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