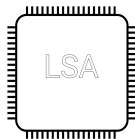


Breaking the microchip monopoly

leviathan/talamon
(Lanceville Technology)

December 18, 2017



Libre Silicon Alliance

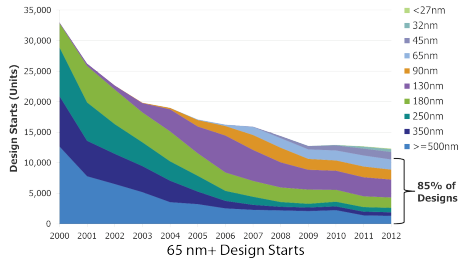
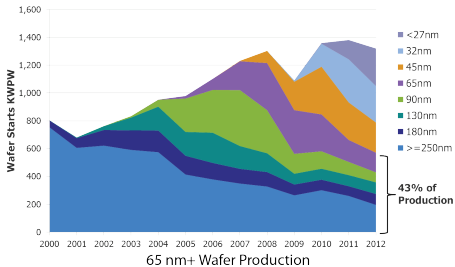
What we do

- We make **free silicon**
- Breaking the monopoly of big semiconductor manufacturers
- Eliminating the vendor lock-in to big semiconductor manufacturers
- Making semiconductor development super quick and inexpensive
- Introducing the LSPL (LibreSilicon public license)
- Attracting commercial design houses to develop **free silicon**

Why are we doing this?

- MPWs cost around 20'000 USD nowadays
- MPWs take around 2-9 months nowadays
- All manufacturers want NDAs (some NDAs even have NDAs!)
- Your design for a vendor process contains process specific design quirks (also under NDA!)
- No manufacturer provides the GDS2 files in order to manufacture the designs in your basement (there is **no** free silicon yet)
- You can't even publish your own designs!

Closed silicon market



¹<http://semimd.com/favre/2016/08/24>

Community projects



Icarus Verilog

Yosys Open SYNthesis Suite



Companies and institutions

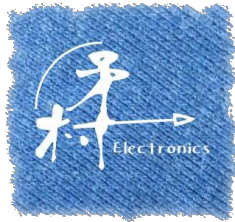


香港科技大學
THE HONG KONG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY

NFF

Nanoelectronics Fabrication Facility

efables.com



Reward IP developers

- Chip designer is rewarded when IP is used on collaboration platforms
- Smart contracts track usage and pay contributors
- Hash of IP + desired return value

How we do it

- Introducing an open source chip manufacturing process standard specification
- Introducing a fully integrated free EDA for ASIC design¹
- Renting the clean room and manufacturing equipment at HKUST every 2 weeks for around 12 hours



¹<https://github.com/leviathanch/qtflow>

Libre Silicon EDA Tools

- QtFlow EDA²
 - EDA suite written in Qt5
 - Wave viewer
 - Planned:
 - Integration of higher level HDLs (CLash)
 - Plugins through PythonQt
- Icarus Verilog simulation³
- QRouter maze router⁴
- GrayWolf floor planner⁵

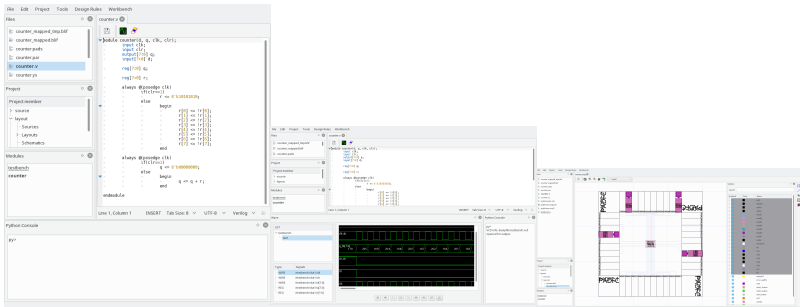
²<https://github.com/leviathanch/qtflow>

³<http://iverilog.icarus.com>

⁴<https://github.com/leviathanch/qrouter>

⁵<https://github.com/leviathanch/graywolf>

QtFlow screen shots



Help needed

- Work on developing QtFlow
 - GrayWolf issues⁶
 - QRouter issues⁷
 - Front end issues⁸
- Work on the LibreSilicon process⁹ and technologies¹⁰
 - Work on the standard logic cells
 - Work on developing FreeFLASH
 - Work on developing FreeDRAM
 - Develop ADCs and stuff
- Financial contributions/Investments

⁶<https://github.com/leviathanch/graywolf>

⁷<https://github.com/leviathanch/qrouter>

⁸<https://github.com/leviathanch/qtflow>

⁹<https://github.com/leviathanch/libresiliconprocess>

¹⁰<https://github.com/leviathanch/ls018>

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Thank you!

Thank you very much!
Vielen herzlichen Dank!
非常感谢你们!

