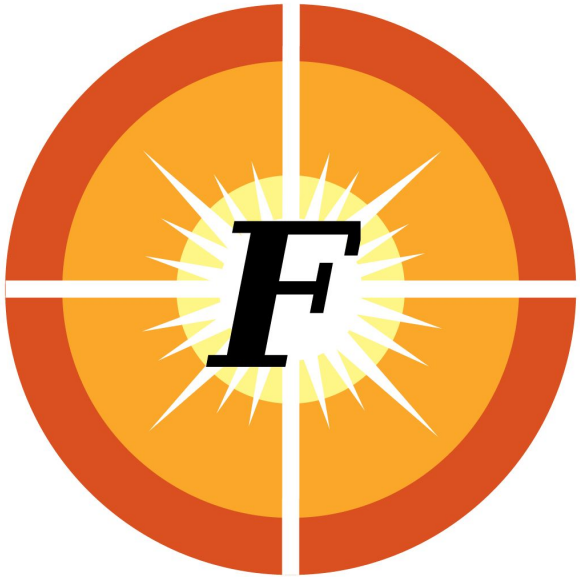


FuseSoc - cores never been so much fun

Olof Kindgren
Qamcom Research & Technology, FOSSi Foundation

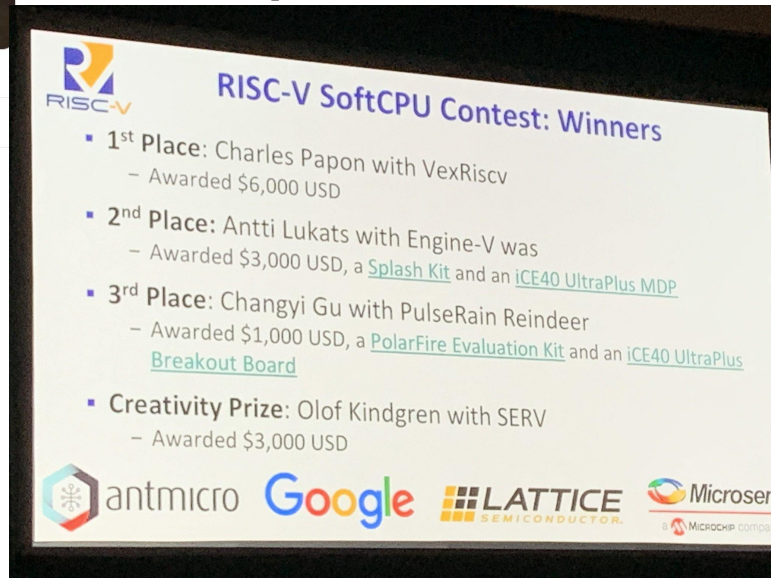
Who am I?

ORConf

Portland Oregon

LATCH-UP

May 4-5 2019



qamcom

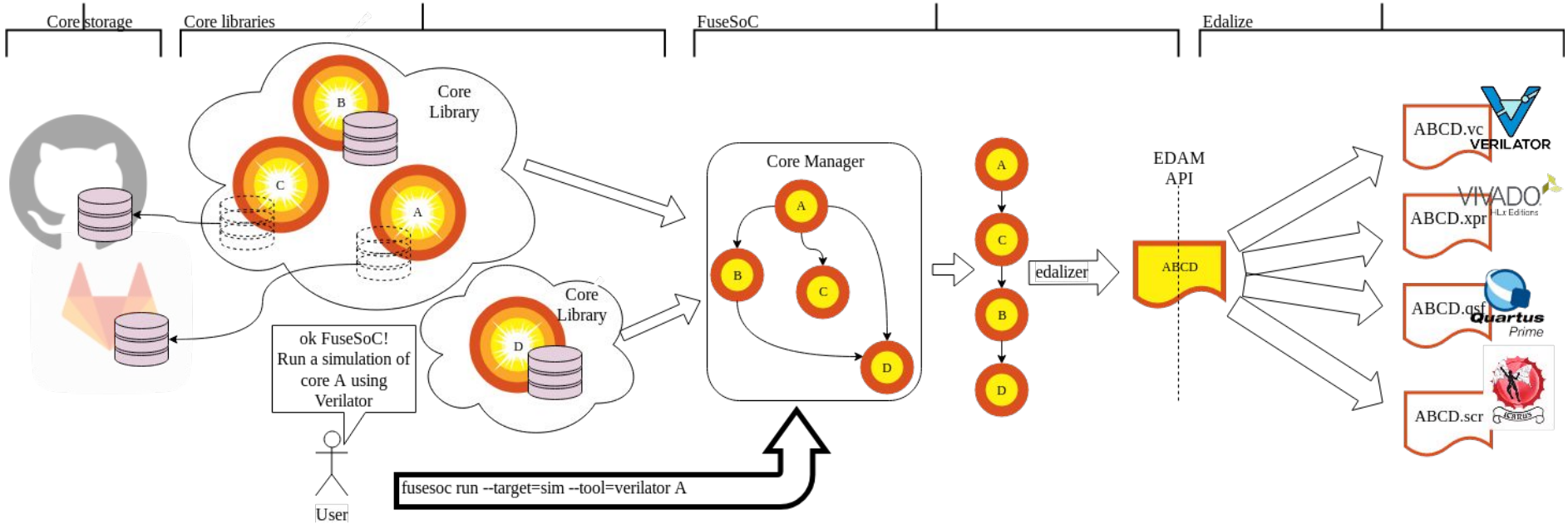
FOSSi Foundation

What is FuseSoc?

FuseSoC is a package manager…

...and a build tool for HDL

What is FuseSoc?



FuseSoC is a package manager…

...and a build tool for HDL

Why use FuseSoc?

Increase portability

Reduce maintenance

“Focus on your core business, not your cores”

FuseSoC is

the most used package manager

non-intrusive

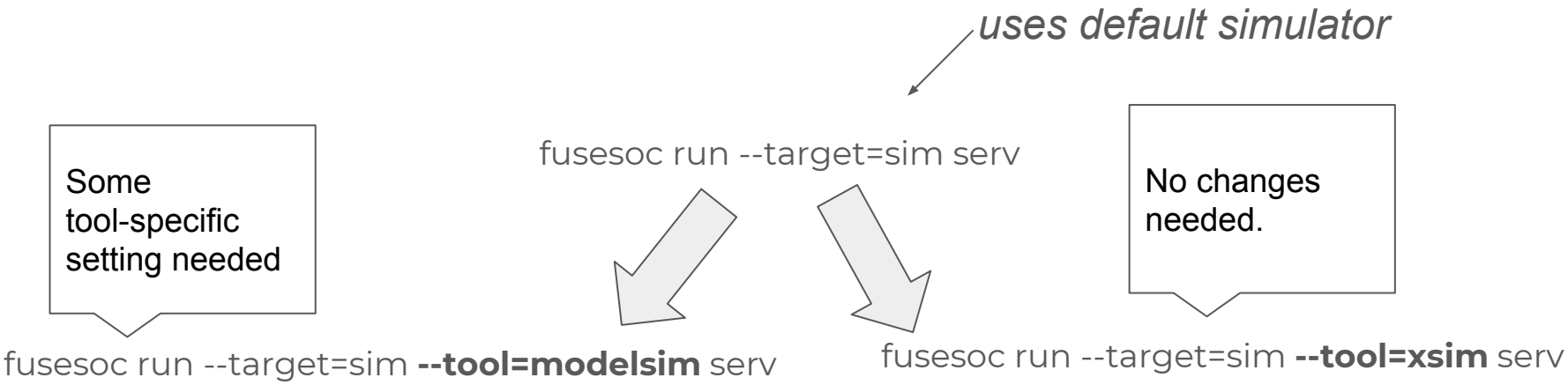
modular

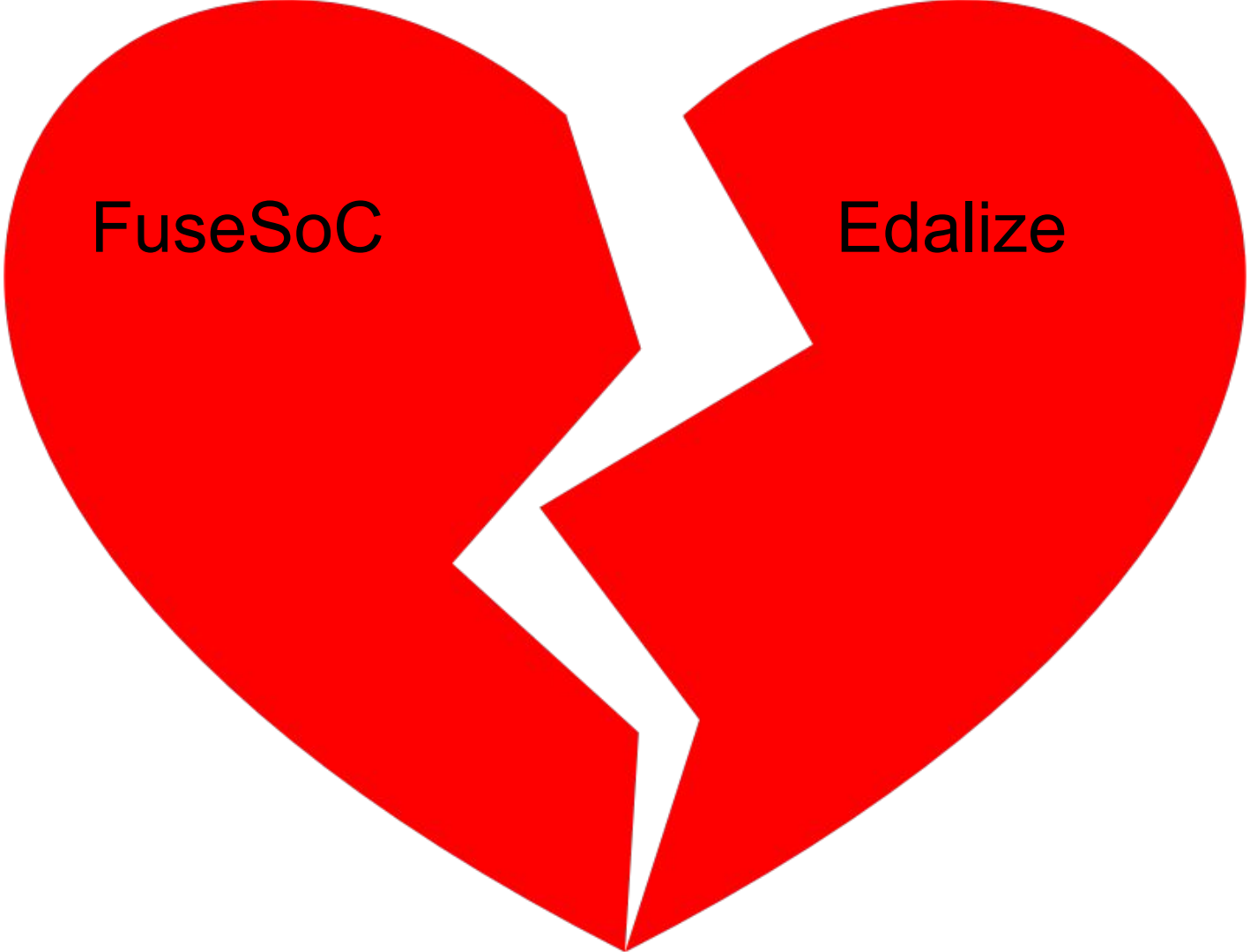
extendable

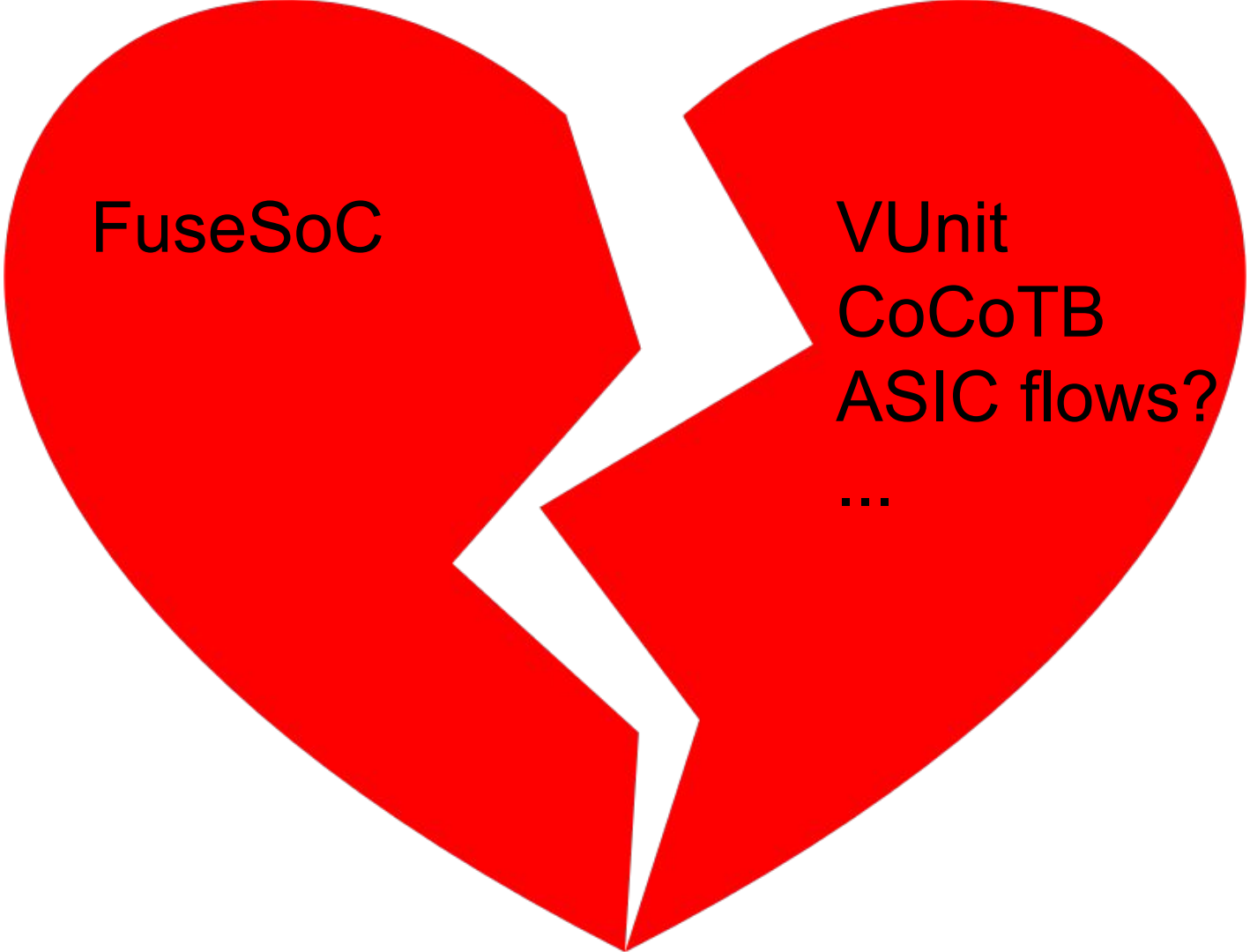
resourceful

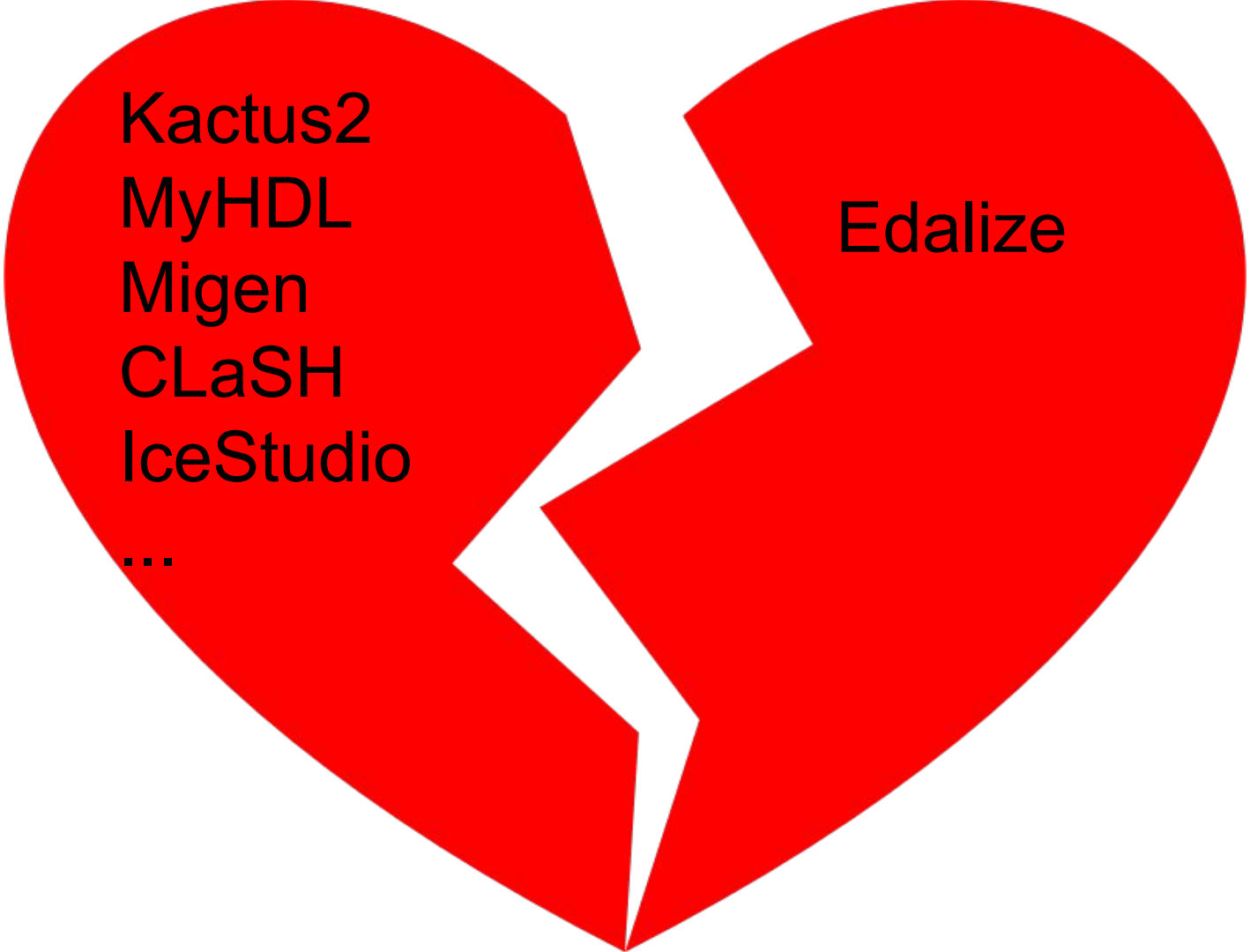
battle-proven

Case : Target different tools




FuseSoC
Edalize


FuseSoC
VUnit
CoCoTB
ASIC flows?
...

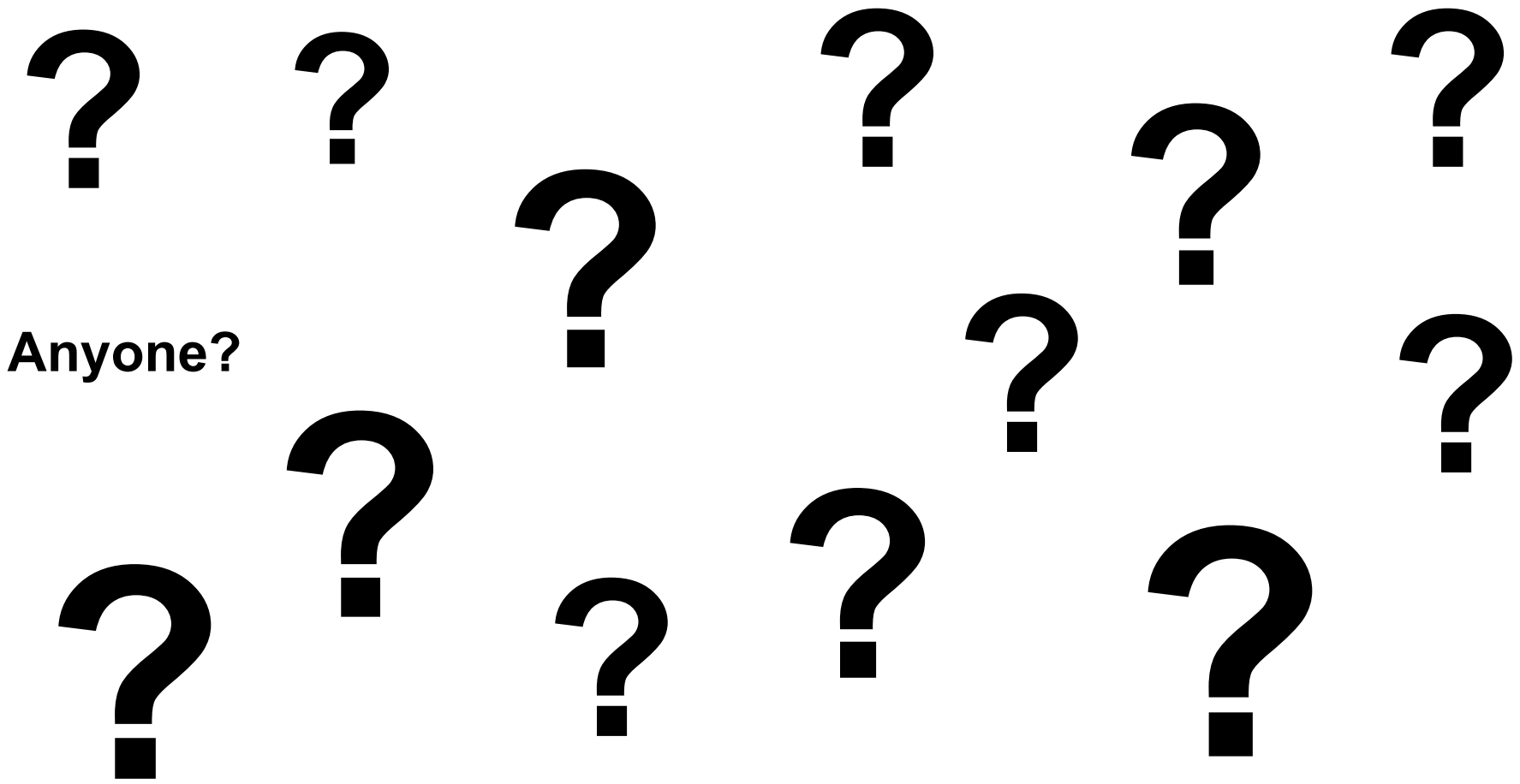

Kactus2
MyHDL
Migen
CLaSH
IceStudio
...
Edalize

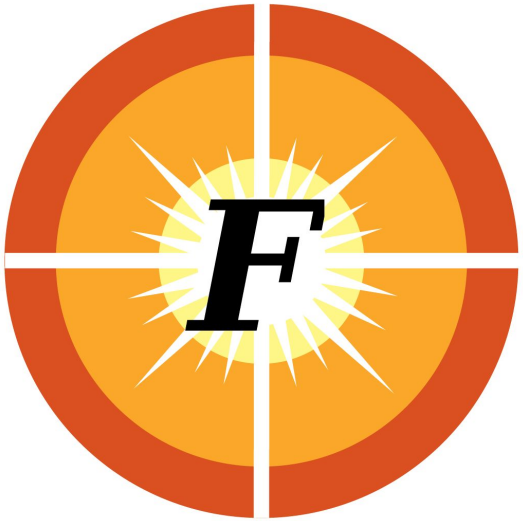
Tomorrow

- Generators
- Formal verification
- Use flags

Future

- Librecores integration
- Edalize everywhere
- Industry standard - World domination


Anyone?



That's it folks!

https://github.com/olofk/fusesoc
http://fusesoc.net
https://gitter.im/librecores/fusesoc

Don't miss...

Core description files (example)

name : *::picorv32:0-r1*
filesets:
  rtl:
    files: [picorv32.v]
    file_type : *verilogSource*
  tb:
    files: [testbench.v]
    file_type : *verilogSource*
  tb_verilator:
        files: [testbench.cc : {file_type : *cppSource*}]
parameters:
  firmware: {datatype : file, paramtype : plusarg}
  COMPRESSED_ISA:
        datatype : str
        default   : 1
        paramtype : vlogdefine

targets:
  default:
    filesets: [rtl]
  test:
    default_tool: icarus
    filesets: [rtl, tb, "tool_verilator? (tb_verilator)"]
    parameters: [COMPRESSED_ISA, firmware]
    toplevel:
      - "tool_verilator? (picorv32_wrapper)"
      - "!tool_verilator? (testbench)"

supported tools

- Synthesis/P&R support with icestorm, ise, quartus, trellis, vivado
- Simulations with ghdl, icarus, isim, modelsim, rivierapro, vcs, verilator, xsim
- Linting with spyglass, verilator
- In the works
  - Lattice Diamond, icecube2, radiant
  - ncsim
  - Formal verification with symbiyosys