ETH zürich

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HeiChips--Snitch

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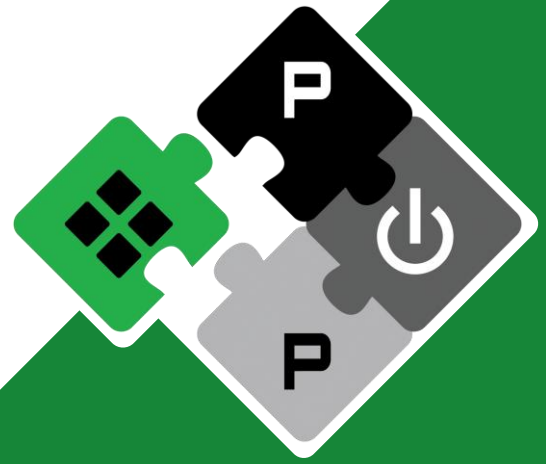
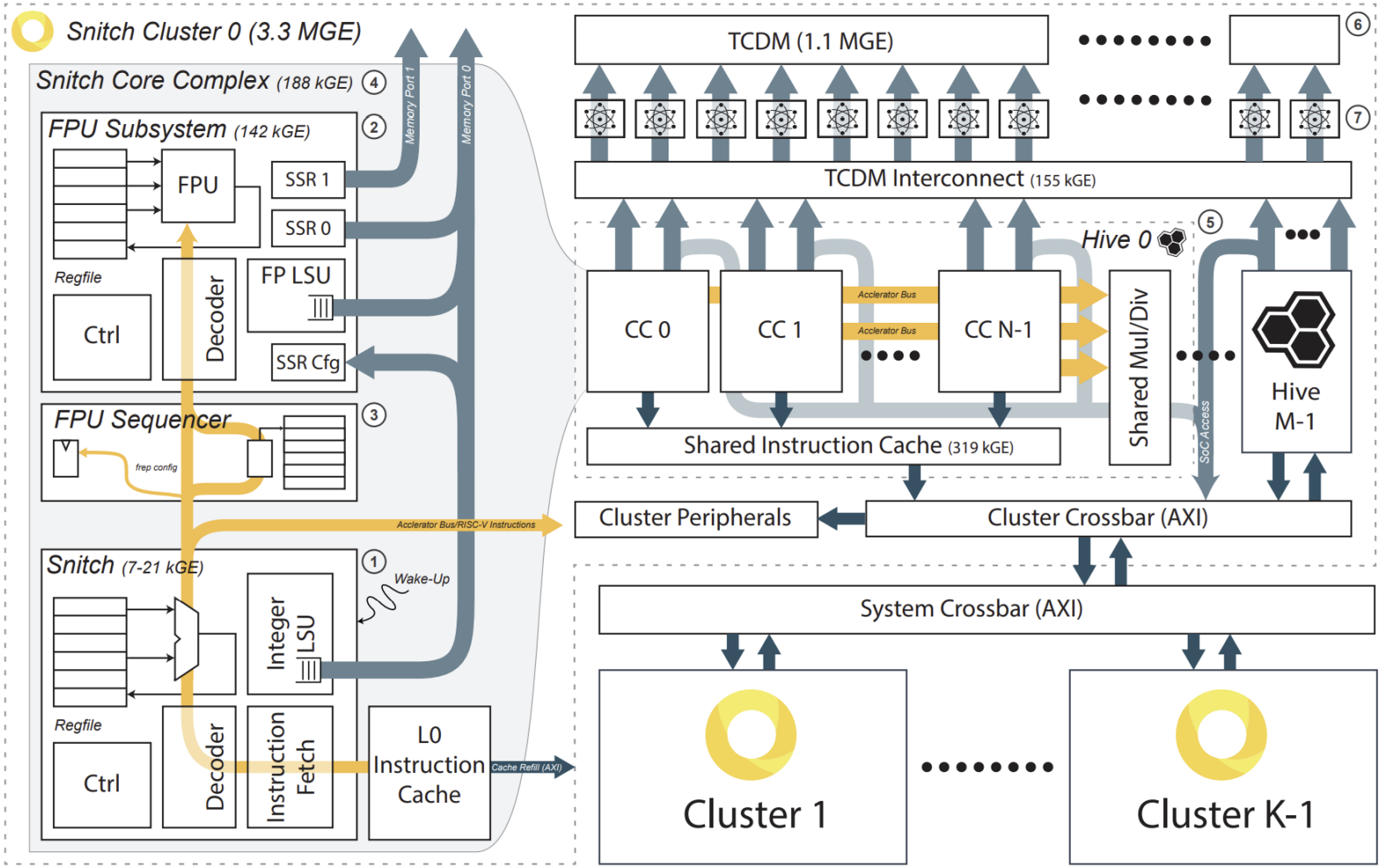


pulp-platform.org
@pulp_platform
company/pulp-platform
youtube.com/pulp_platform

PULP Platform
Open Source Hardware, the way it should be!

Snitch! Tiny and Fast!

- **Adapted from Snitch Cluster**
  - 32-bit, RISC-V
  - Single Core
  - No extra extensions
  - No outstanding LD/ST



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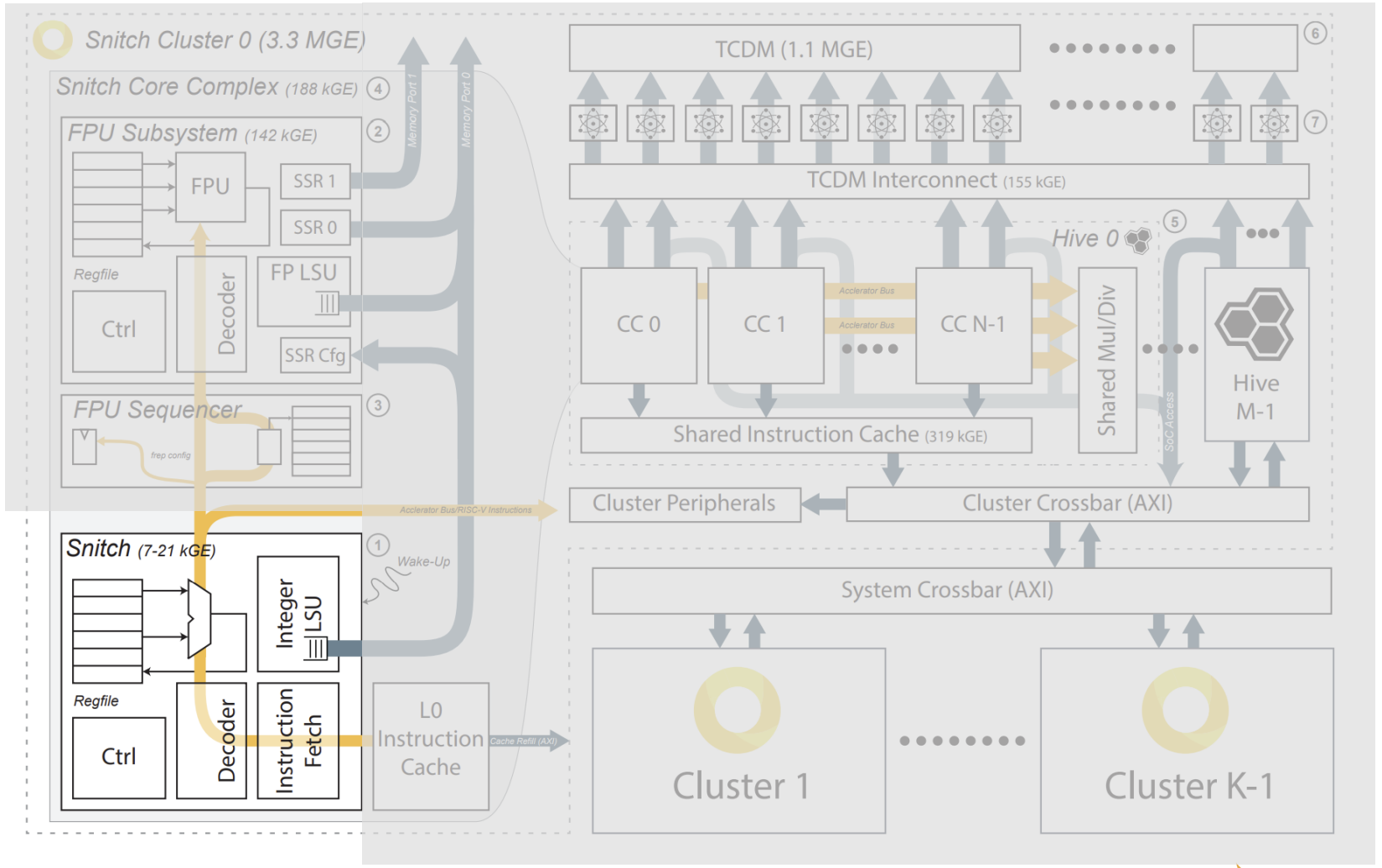

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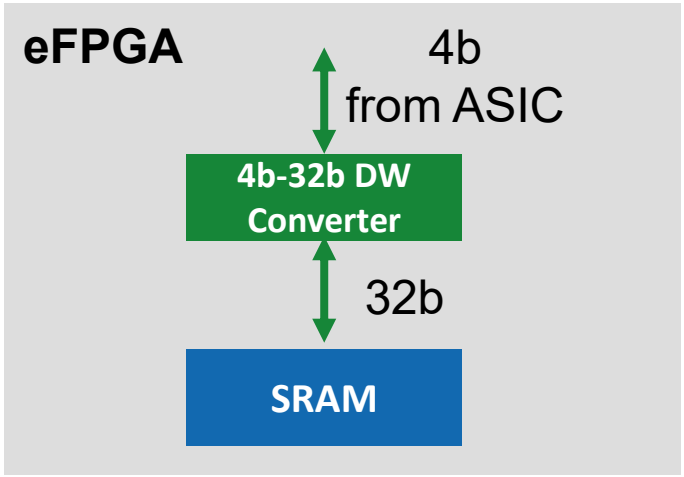

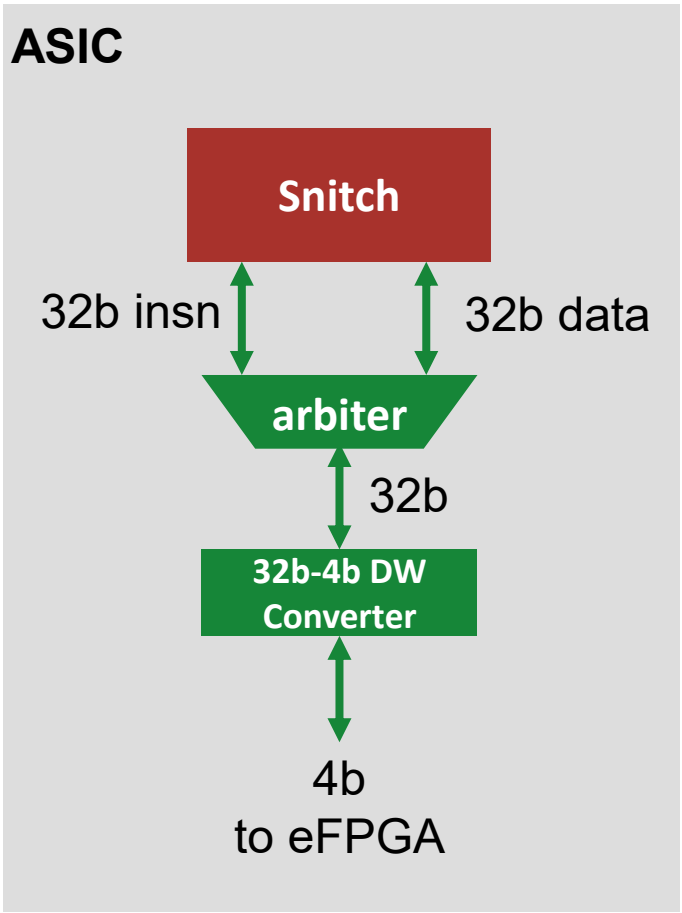

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- **Early backend results**
  - Area: 113744 um2
    - Fit well in large tile
    - Need to enable RVE (reduced register) if only have small tile
  - Timing (100MHz)
    - Hold clean
    - Setup: WNS of -1.5ns, plan to divide the clk internally to resolve the problem

Direction	Name	Usage
Out	uio_out[3:0]	req data out
Out	uio_out[7:4]	addr high out
Out	uo_out[7:4]	addr low out
Out	uo_out[3]	write enable
Out	uo_out[2]	strb enable
Out	uo_out[1]	rsp ready
Out	uo_out[0]	req valid
In	ui_in[7:4]	rsp data in
In	ui_in[3]	unused
In	ui_in[2]	wake up
In	ui_in[1]	rsp valid
In	ui_in[0]	req ready

Snitch! Tiny and Fast!

- **Verification plan**
  - TB in sv
  - Compile assembly code into a simulation memory
  - load, macc/mul/add, store data
  - Maybe a Hello World to UART later