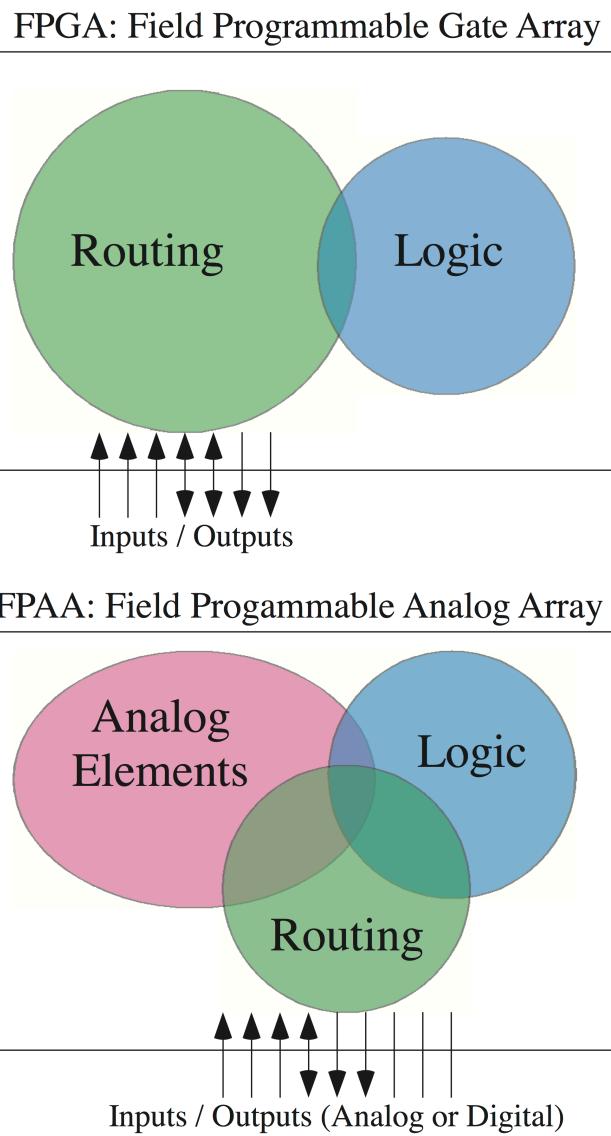
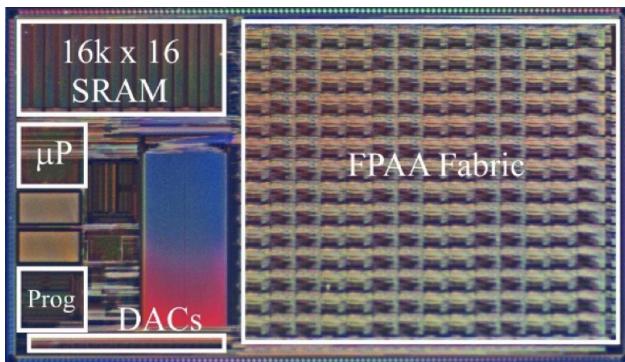


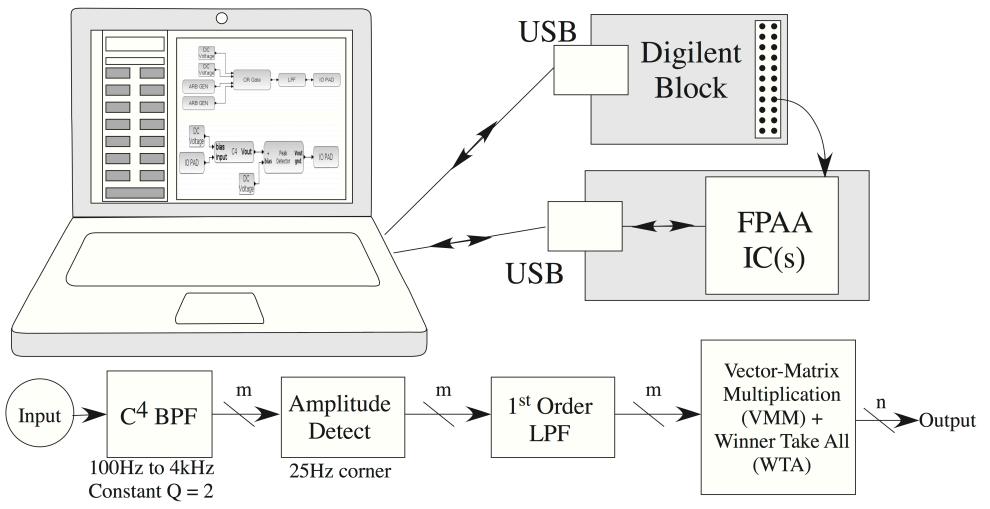
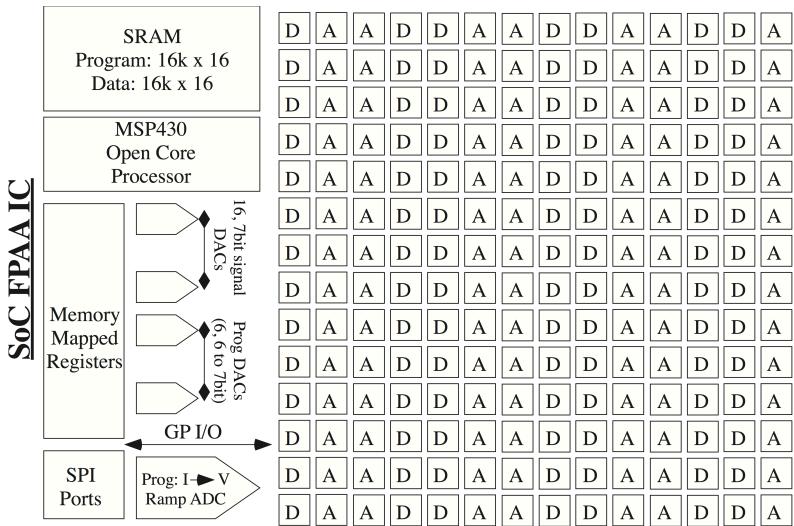
FPAA: FPGA Extension



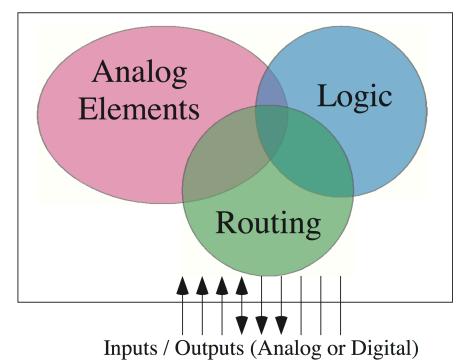
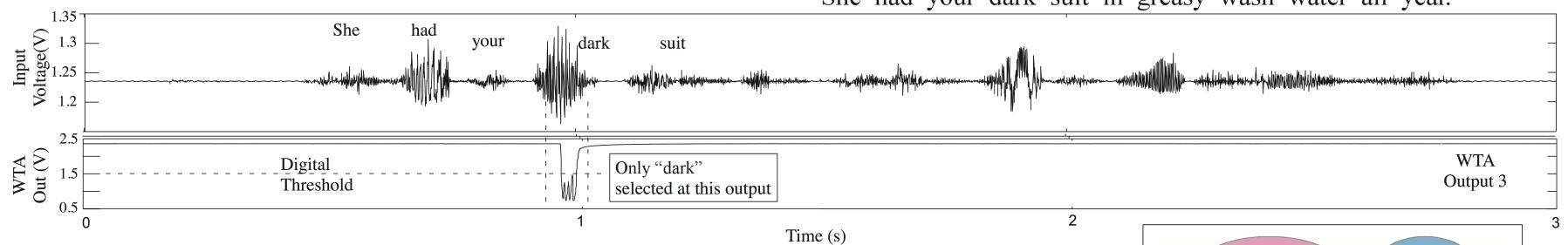
SoC FPAA



SoC FPAAs: Computing

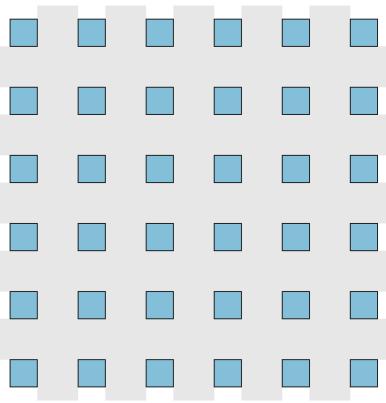


"She had your dark suit in greasy wash water all year."



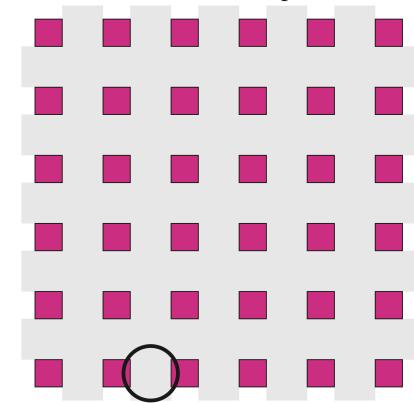
Classic
FPGA

Basic FPGA Concept

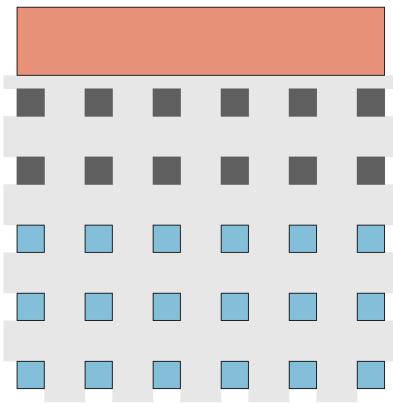


Basic
FPAA

FG enabled FPAA Concept



Practical FPGA with VMM Support



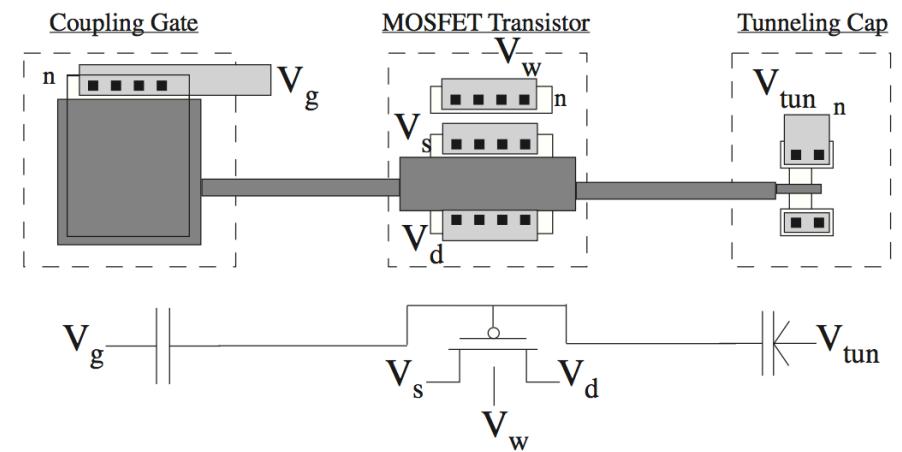
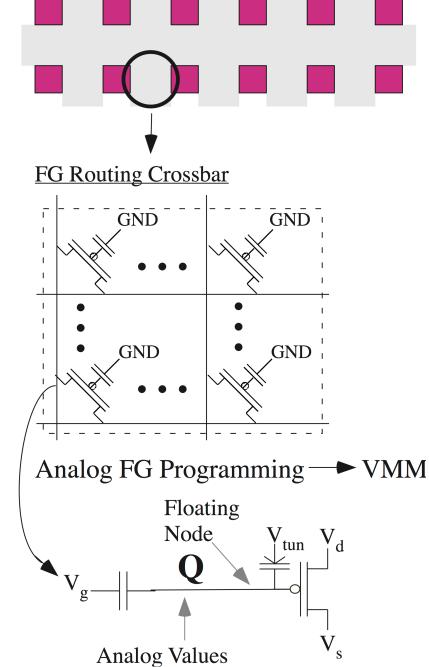
Coefficient RAM

Multiplier (and Add) Units

Large Scale FPAA Devices utilize high density of Programmable and Configurable components (often the same components)

FG circuits enable in one device:

- Programmable Memory
- Transistor for Computation
- Potential adaptation

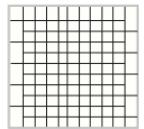


- FG 10 year lifetime, 10-100 μ V)
- Electron Tunneling (erasure)
- pFET channel Hot-Electron Injection (precision programming)

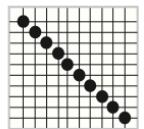
FPGA Routing



Computational
Analog and/or
digital Block

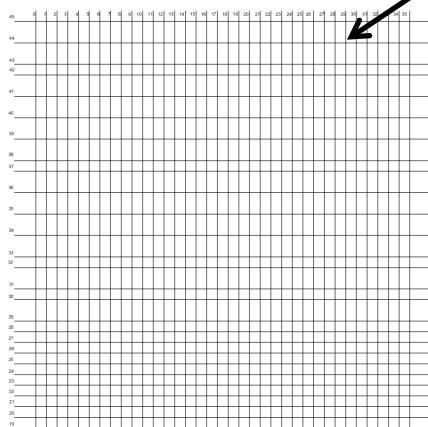


C Block:
Routing to CABs

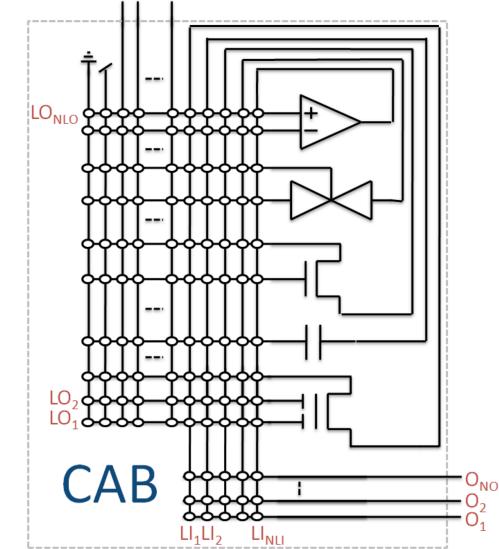
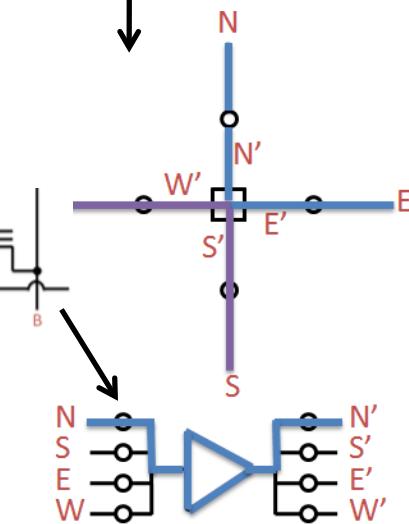
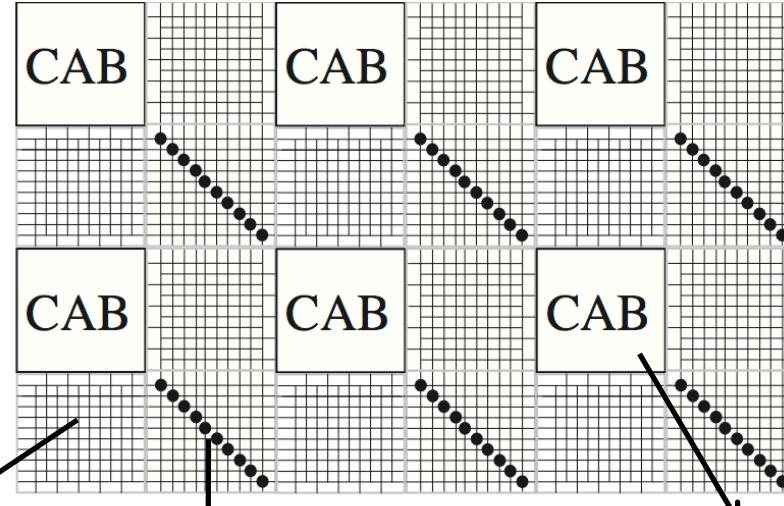


S Block:
Routing to Routing

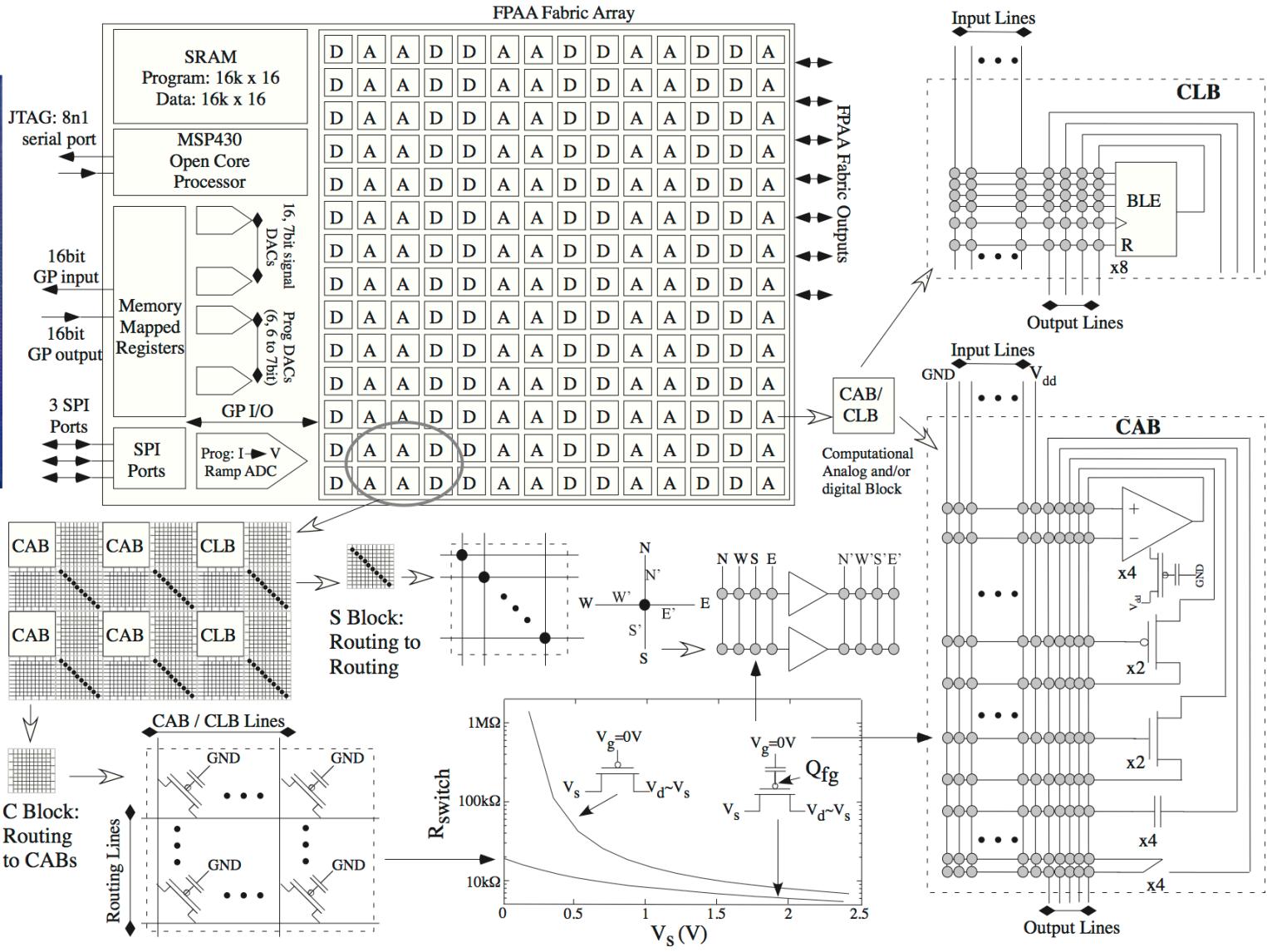
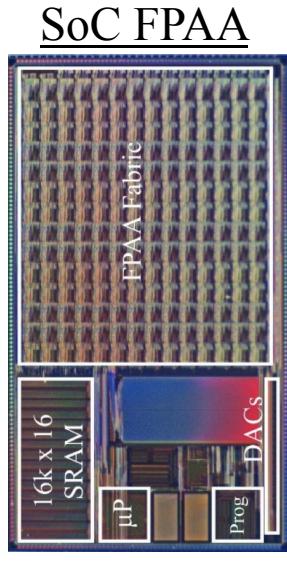
Crossbar FG Switches



Manhattan Geometry



RASP 3.0: First SoC FPAA IC (2016)



SoC FPAA Infrastructure

Circuit / System Application
Build on SoC FPAA

