Open for Business: True Stories of How Far We’ve Come With the RISC-V Ecosystem

Ted Speers, Head of Product Architecture and Planning
RISC-V Summit, San Jose, CA December 10, 2019
December 11, 2014

- ~10:25am
  - I become RISC-V Aware
- ~10:35am
  - I check out [www.riscv.org](http://www.riscv.org)
- ~10:40am
  - I recruit a convert to RISC-V (colleague Tim Morin)
2018: 360+
Why Not RISC-V?

- Free and open ISA
  - Clean slate design
  - Simple, Stable
  - Modular, Extendable

- RISC-V Extends Moore's Law
  - Provides an “architectural” license to innovate
“The speed of evolution here is mind-blowing.”
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Sample RISC-V Foundation Representation

(V Venture) Capital

Inputs

System

Value

Re-investment

Sources

Domains

Venture Capital

Feedback

Outputs
“It’s really unleashed the innovation.”

Sample RISC-V Foundation Representation

(V Venture) Capital
Innovation & Research
Sources
Investment
System
Value
Re-investment
Domains

(V Venture) Capital
Innovation & Research
Sources
Investment
System
Value
Re-investment
Domains

Innovation & Research

Sample RISC-V Foundation Representation

It’s really unleashed the innovation.
“It’s really unleashed the innovation.”

Sample RISC-V Foundation Representation

(Venture) Capital
Innovation & Research
Talent

Investment

System

2015
2016
2017
2018

Re-investment

Value

Sources

Domains
“… looking to RISC-V to provide ... reliable, cost-effective and future-proofed solutions for our customers”
"Every domain needs this. So that’s where RISC-V is going to be, it’s going to be everywhere."
"We definitely see funding new startups in the RISC-V ecosystem."

"We're excited to explore new possibilities with RISC-V."

Sample RISC-V Foundation Representation

Investment → System → Value

Sources: (Venture) Capital, Innovation & Research, Education & Talent

Re-investment

"Look at all the young people here!"

“You never see young people at hardware shows”

- Jim Hogan, Semiconductor Investor

May 2016
4th Workshop
Cambridge, MA
Taking a risk with RISC-V

On July 20, 2016, PolarFire® SoC was first conceived in this establishment.

July 20, 2016
Sushi Tomi
Mt. View, CA
The RISC-V PC
AI brought to you by PolarFire

May 2018
Barcelona Workshop
New Challenges at the ‘Edge’

4 Big Challenges

- Thermal Constraints
- Minimal Power Budgets
- Safety and Security
- Real-Time Requirements

Slam Dunk

- Security
- Low Power
- Reliability

4 = V

Determinism
• PolarFire SoC Architectural Details
• Product Family
  • 23 – 460K LE
  • 11x11 mm package
• Early Access Program
  • Software available
  • Separate SW/HW flows
  • Start design today
• Samples 3Q 2020
Mi-V Ecosystem

Middleware
- wolfSSL
- 0x5
- Veridify
- Mentor
- ECC

Compilers
- AdaCore
- GCC
- IAR Systems

RTOS
- NUCLEUS
- Amazon
- VxWorks
- Zephyr

Embedded Linux
- yocto

Embedded Solution Partners and SoM Vendors
- Sundance DSPing
- Aries Embedded
- Digital Core Technologies
- ENCLUSTRA
- antmicro
- DornerWorks
- Phytec
- Trenz

Icicle Kit
- UART
- WiFI/BT
- Raspberry Pi
- CAN
- 12V Supply
- PC
- USB2.0
- 10/100/1000
- Bootloader
- PCIe Gen2x4 Root Port
- JTAG
- EMMC
- SD Card
- HDMI 1.4
- USB - 4xUART
- System Services
- USB - Programming
- MSS Peripheral Drivers
San Mateo
ultrasoc

Cambridge, UK
Thank You