## Instrumentation Software Stack

Instrumentation Implementation 1 (Hand-written, High-Assurance C)

Instrumentation
Implementation 2
(Automatically Synthesized,
High-Assurance C)

Actuator Implementation 1 (Automatically Synthesized, High-Assurance C)

Voting Implementation 1 (Automatically Synthesized, High-Assurance C)

Instrumentation Implementation 3 (Hand-written Bluespec SystemVerilog)

Instrumentation Implementation 4 (Automatically Synthesized, High-Assurance SystemVerilog)

Actuator Implementation 2 (Automatically Synthesized, High-Assurance SystemVerilog)

> Voting Implementation 2 (Automatically Synthesized, High-Assurance C)

> Instrumentation, Actuation, and Voting Hardware Stack

**Software Binaries** (RV32I Object Code) Soft-core RISC-V CPU+ Instrumentation IP (FPGA Bitstream)

**Lattice ECP-5** 

**FPGA**