

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 SystemVerilog)

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

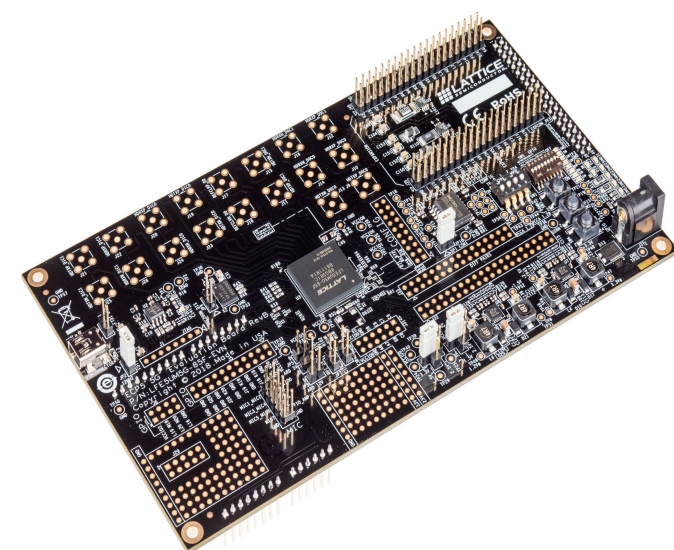
Actuator Implementation 2  
(Automatically Synthesized,  
High-Assurance SystemVerilog)

Voting Implementation 2  
(Automatically Synthesized,  
SystemVerilog)

Instrumentation, Actuation,  
and Voting Hardware Stack

Software Binaries  
(RV32I Object Code)

Soft-core RISC-V CPU  
+ Instrumentation IP  
(FPGA Bitstream)



Lattice ECP-5 FPGA