# SiFive Automotive

In addition to the announcement of our own new RISC-V automotive product portfolio, SiFive is pleased to have the support of a wide base of ecosystem partners who are collaborating closely with us as we work to create the industry's most comprehensive automotive solutions offering.

# Ashling

Ashling's toolchain and RISC-V have grown to be synonymous as the embedded market continues to move from general purpose chips to fully/semi-custom multi-core solutions. Ashling's RiscFree™ toolchain offers full customization package that allows development of a comprehensive, multi-core, heterogeneous, SDK tool suite tailored and optimized for any RISC-V based IP or device. Since the early days of RISC-V, Ashling's comprehensive debug and trace solutions have supported SiFive Essential™ processors, with strong customer adoption, and we have plans to support SiFive's RISC-V processor roadmap.

"For more than thirty years, Ashling's toolchain and its various trace development solutions, including Ashling's VITRA trace debug product, have been used by leading automotive companies. We are happy to extend our collaboration with SiFive to join in their automotive initiative by adding support for new SiFive Automotive processor portfolio, including work already underway for the SiFive Automotive™ E6-A. We are confident our Ashling toolchain and trace solution will offer significant added value to customers adopting SiFive Automotive processors," said Hugh O'Keeffe, CEO of Ashling.

# Cadence

"Cadence looks forward to collaborating with SiFive on an automotive reference flow that utilizes our industry-leading digital, custom and verification solutions to enable mutual customers to design and deliver their SoCs quickly with optimal power, performance and area," said KT Moore, vice president, Corporate Marketing, Cadence

# -----Canonical

"Canonical is thrilled to collaborate with SiFive in co-creating automotive solutions. With the advent of autonomous and connected cars, open-source software has become essential in fueling innovation in the automotive industry," said Gordan Markus, silicon alliances partner manager, Canonical. "With the growing need to manage hardware and software complexity, Canonical and SiFive are perfectly positioned to allow our partners to bring efficient and performant automotive solutions to market at an accelerated pace. Furthermore, Ubuntu provides our partners with development simplicity, while ensuring enterprise-grade support and security."

# -----Elektrobit

"Elektrobit is a leading provider of software solutions and services for the automotive industry with years of deep expertise in developing safety-critical applications to the highest standards," said Mike Robertson, vice president, global product management and strategy, Elektrobit. "We see RISC-V building momentum in processor IP. As the automotive market continues to grow and evolve, Elektrobit is excited about the opportunities to develop applications based on SiFive's extensive roadmap of RISC-V Automotive processors."

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## **Green Hills**

"As a global leader in embedded software with the broadest portfolio of ASIL D certified software solutions for 32-bit MCU to 64-bit MPUs, Green Hills is excited to be supporting SiFive's impressive range of automotive-focused RISC-V CPU IP," said Dan Mender, Vice President, Business Development, Green Hills Software. "To complement this remarkable new SiFive Automotive portfolio, Green Hills brings its unique ability to deliver MCU-to-MPU production-proven FuSa-certified tools, C/C++ compilers and RTOSes, along with decades of safety program expertise."

### IAR Systems

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"SiFive is a leading provider in the RISC-V ecosystem and has a long-standing relationship with IAR Systems. We are equally both excited and committed to supporting their increased focus on the Automotive-vertical," said Anders Holmberg, CTO at IAR Systems. "The combination of innovative Automotive Functional Safety IP from SiFive and the certified development tools from IAR Systems is a perfect match. Building on IAR Systems' 20+ years of experience supporting Functional Safety use cases, and the tens of thousands of developers using our products, there is now a true better-together offering to accelerate innovation in automobiles."

#### iSystem AG

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"We are working with SiFive and other ecosystem partners on early support of RISC-V cores as we see them as an important contender in the future automotive market," said Erol Simsek, CEO of iSYSTEM AG. "Our tools are designed to verify stringent safety requirements for automotive electronics, and a close cooperation with SiFive ensures that the very first device will offer all the necessary debug and real-time trace capabilities. Early adopters looking to evaluate RISC-V architecture can already use iSYSTEM tools to do so on existing SiFive devices or pre-silicon FPGA platforms."

#### Lauterbach

"It has always been a priority for Lauterbach to work closely with innovation leaders like SiFive to provide our customers with proven tools as soon as they are needed," said Markus Herdin, head of marketing at Lauterbach. "We see the automotive industry as one of the big growth areas for RISC-V and are here to help with debug and trace solutions that meet the specific needs of this industry. We believe that with SiFive's E6-A series, RISC-V will gain further momentum in automotive applications, which we will be delighted to support with our tools."

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#### Resiltech

"Resiltech, aware of the importance of the role of RISC-V products and its ecosystems for the next generation automotive applications, is fully committed to confirm long-term support to SiFive to enable compliance of its automotive IP with the highest automotive safety requirements." – Dr. Rosaria Esposito, CEO, Resiltech s.r.l.

# SEGGER

"SEGGER has been supporting RISC-V since 2017, and we support the complete range of RV32 and RV64 cores from SiFive," said Rolf Segger, founder of SEGGER. "The SEGGER Software Platform – including the Embedded Studio IDE, the J-Link debug probes, as well as our embOS RTOS and associated middleware – provides a comprehensive one-stop solution for complete product development with microcontrollers based on the RISC-V architecture. We are excited to be part of SiFive's Automotive initiative, and we are looking forward to supporting the E6-A product series in the near future."

## Siemens

"Siemens Digital Industries Software has a long history of offering leading embedded software solutions for the automotive industry and is excited to extend our existing partnership with SiFive to enable even greater innovation in future automotive products," said Jeff Hancock, Sr. Product Manager, Siemens Digital Industries Software.

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#### Solid Sands

Over the past few years, we have seen accelerated adoption of RISC-V worldwide. What surprises us is the speed of this also happening in the safety-critical automotive market, which is known to be conservative. Which implies that SiFive, with its RISC-V solution, solves a problem that is hard to crack. We are happy to assist SiFive customers with compiler and library automotive qualifications and see no inherent roadblocks to prevent open hardware and software from being used in safety-critical applications. - Marcel Beemster, CTO - Solid Sands

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### Synopsys

"In the era of software-defined vehicles, Synopsys is helping to drive safety, security, reliability, and quality in the automotive digital value chain," said Kiran Vittal, senior director of marketing in the Silicon Realization Group at Synopsys. "By collaborating with SiFive, we are enabling mutual customers to leverage our EDA design and verification solutions to achieve the optimal performance, power, area, and prototyping efficiency, while accelerating automotive-compliance for their RISC-V designs."

### SYSGO

"SYSGO is proud to be a leading partner of SiFive with support for SiFive's portfolio of RISC-V processors," said Franz Walkembach, VP Marketing & Alliances at SYSGO. "With our certifiable hard real-time PikeOS operating system and hypervisor software combined with extensive technology expertise in functional safety, we will further support SiFive's RISC-V solutions in markets such as Automotive, Space, Railway and Avionics."

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# TASKING

"As a trusted supplier to the automotive industry, TASKING is pleased to support the market introduction of SiFive Automotive processors. The TASKING® VX-toolset for RISC-V is a complete solution for code development for RISC-V based automotive ECUs. The VX-toolset for RISC-V produces fast and compact code and is being certified according to ISO 26262 functional safety and ISO/SAE 21434 cybersecurity standards," said Gerard Vink, RISC-V Product Line Responsible, Tasking.

#### VIRTUAL OPEN SYSTEMS

At Virtual Open Systems (VOSyS) we are excited to port our ISO26260 certifiable mixed criticality virtualization solution VOSySmonitoRV to the SiFive automotive product family. The work at VOSyS side is well started, and we have proven Linux OS with FreeRTOS co-execution; this activity continues, and we are proceeding with MISRA and functional coverage. The plan is to complete ASIL certification based on the S7-A processor series in 2023.

- Daniel Raho, CEO

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#### WITTENSTEIN

"As RISC-V becomes more popular, WITTENSTEIN high integrity systems' partnership with SiFive allows us to support customers with the most cutting-edge processors, said Stephen Ridley, Engineering Manager at WHIS. "We are excited to see the ever-expanding automotive portfolio of SiFive and look expectantly to what is to come. SiFive have made it possible to develop new hardware faster than ever before, a must in the evolving automotive market. SiFive's automotive offerings are a great fit with SAFERTOS, our safety critical RTOS. Together they make a compelling package for automotive. WHIS and SiFive look forward to a continuation of our close collaboration in the future."