



## FOR IMMEDIATE RELEASE

### **Ferrous Systems First to Run Rust on Cortex-R52 Under Open Source License**

*See it in action at embedded world, Hall 4, Booth 4-402*

**embedded world 2025 – Nuremberg, Germany – March 11, 2025 – [Ferrous Systems](#),**

the leader in Rust solutions for safety-critical systems, announces that they have succeeded in porting Rust to the Armv8-R based Arm Cortex-R52 and are donating the [resulting libraries and example programs](#) to the Rust Project's Embedded Devices Working Group under a permissive open source license. Making these libraries freely available will help accelerate the development of real-time systems using Rust on Arm Cortex-R52.

In the Embedded space, while Rust has made great in-roads with microcontrollers based on the Arm Cortex-M, there has been a lack of public examples and support libraries for real-time-class processor like the Arm Cortex-R52. This has meant that getting started with Rust on mission- and safety-critical real-time systems has been more difficult than with microcontroller-based systems.

To resolve this, Ferrous Systems has now published a collection of Rust library crates and examples for Rust on Arm Cortex-R, mirroring those available for Rust on Arm Cortex-M. These include the cortex-r-rt crate which implements everything required to get an Armv8-R CPU from Reset to running a 'main' function written in Rust. This provides a solid foundation for Rust on Arm Cortex-R52, ready for others to build upon; whether integrating Rust with traditional RTOSes like Eclipse ThreadX, or for building pure-Rust applications. The library has been developed and tested using an NXP® Semiconductors S32Z2 safe and secure high-performance real-time processor. This processor includes eight Arm Cortex-R52 cores.

“As long-time advocates of open-source development, we are proud to be able to donate this project to the community,” said Jonathan Pallant, Senior Embedded Engineer at Ferrous Systems. “We believe this implementation will be especially valuable to Rust developers within the growing area of business- and mission-critical real-time systems, especially in automotive where Arm Cortex-R processors play a big role.”

### **About Ferrocene**

[Ferrocene](#) is the first open-source qualified Rust compiler toolchain for safety- and mission-critical applications. It is qualified to automotive (ISO 26262, ASIL-D), industrial development (IEC 61508, SIL4) and medical (IEC 62304, Class C) standards, with more to come. The source code of Ferrocene is fully open source under the MIT or Apache-2.0 licenses, including the full qualification documents.

The latest release, Ferrocene 25.02, is qualified for use on x86-64 Linux and Armv8-A (bare metal), as well as QNX Neutrino 7.1.0 for x86-64 and Armv8-A, and it offers Armv8-R (bare-metal) as a preview. Ferrocene 25.05 is planned to bring Armv8-R (bare metal) to Qualification Ready status. This means Ferrous Systems can make a Qualified version of this target available on request, alongside pre-certified versions of libcore and guidance on instruction tracing for software certification. Customers interested in this support are encouraged to reach out to discuss their requirements.

### **Ferrous Systems to Showcase Rust-Powered Embedded Solutions at embedded world – Hall 4, Booth 4-402**

Join us at embedded world in Hall 4, Booth 4-402 for a live demonstration of Ferrocene examples for Cortex-R52 running on NXP’s safe and secure high-performance real-time processor, in conjunction with Lauterbach’s TRACE32 debugger and PowerDebug X50 JTAG probe. Also, on display will be SEGGER’s J-Trace system analyzing the performance of Ferrocene applications running on STM32.

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### **About Ferrous Systems**

[Ferrous Systems](#) is a Berlin-based Rust consultancy with a collective 100 years of experience working with Rust. We provide [training courses](#) for programmers interested in furthering their Rust skills as well as customized training programs for corporate software development teams. Our flagship product, [Ferrocene](#), is the first open-source qualified Rust compiler toolchain for safety- and mission-critical applications, such as automotive, industrial and medical development. For more information, please visit our website or contact us directly at: [ferrous-systems.com/contact/](https://ferrous-systems.com/contact/).

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