CAES and Ashling announce Ashling's *RiscFree*™ C/C++ Toolchain for CAES' NOEL-V® Processors

Silicon Valley, CA and Arlington, VA Ashling and CAES announced today that Ashling's ***RiscFree*** Toolchain will provide software development support for CAES' NOEL-V fault tolerant RISC-V based processors.

NOEL-V is a synthesizable VHDL processor model based on the open RISC-V architecture targeting mission critical electronics for aerospace and defense industries. Seven different configurations are now available, ranging from a tiny 32-bit version to a 64-bit high performance version. NOEL-V complements the LEON line of processors and is suitable for fault and radiation-tolerant FPGAs and ASIC designs for space and satellite applications.

 "We are excited to partner with Ashling and have their RiscFree toolchain support our NOEL-V processors. CAES' customers will benefit from our expanding development tools ecosystem as it will help expedite time to market," said **Mike Elias, Senior Vice President and General Manager Space Division, CAES**.

RiscFree is Ashling's Integrated Development Environment (IDE) including a Compiler and Debugger and provides software development and debug support for NOEL-V. Since its introduction, Ashling's ***RiscFree*** toolchain has been steadily building market share within the embedded tools market and is particularly strong in the RISC-V market where its ease-of-use, broad functionality, plug-in architecture and upcoming Real-time Trace support have made it the go-to choice for 32-bit and 64-bit RISC core software development for the aerospace and defense industries.

"We are pleased to announce our support for CAES' recently announced NOEL-V processor and that our RiscFree is now part of CAES' eco-system of development and debug. We believe RiscFree support will offer the geospatial industry a leading Toolchain which will help in speeding up the deployment of any NOEL-V processor powered solutions." said **Hugh O'Keeffe, CEO of Ashling**.

Ashling ***RiscFree*** toolchain support for CAES' NOEL-V processor includes:
- Project Manager and Build Manager including Make and CMake support
- Source-code Creation and Navigation support
- GCC toolchain fully integrated into the ***RiscFree*** IDE with support for newlib run-time library
- Run-time Debug
- Debugger Register View support for Peripheral and CSR Registers
- RTOS Debugger FreeRTOS Task and Queue Views
- Custom instruction support including additions to the standard RISC-V ISA
- Real-time Trace (coming soon)

"The collaboration between Ashling and CAES on RISC-V is an example of progress made within the RISC-V community to support global adoption and proliferation of RISC-V." said **Calista Redmond, CEO, RISC-V International**. *"Together, the ecosystem is growing through IP and Toolchain providers working closely together."*

For more information on Ashling's ***RiscFree*** see: https://www.ashling.com/ashling-riscv/ and for details on CAES' NOEL-V see https://www.caes.com/gaisler

About Ashling
Ashling have been a leading provider of Embedded Development Tools & Services since 1982 with design centres in Limerick Ireland and Kochi India and sales and support offices in Europe, Asia Pacific, the Middle East and America. Visit www.ashling.com for more details.

About CAES
CAES is a pioneer of advanced electronics for the most technologically challenging military and aerospace trusted systems. As the largest provider of mixed-signal and radiation-hardened technology to the United States aerospace and defense industry, CAES delivers high-reliability RF, microwave and millimeter wave, microelectronic and digital solutions that enable our customers to ensure a safer, more secure planet. On land, at sea, in the air, in space and in cyberspace, CAES' extensive electronics and enhanced manufacturing capabilities are at the forefront of mission-critical military and aerospace innovation. www.caes.com

About RISC-V
The RISC-V open architecture ISA is under the governance of the RISC-V International. Visit https://riscv.org for more details.

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