

Codeplay Software and CoreAVI Partner to Enable Safety Critical Open Standards Programming for Graphics Intensive AI and HPC Applications

Combining Codeplay's Acoran Platform Supporting SYCL™ and OpenCL™ with CoreAVI's VkCore® SC Vulkan SC-based GPU Acceleration Solution will Empower Safety Critical Embedded Multicore Applications for Autonomous Systems

Edinburgh, May 18, 2022 – Codeplay Software, a leader in enabling acceleration technologies for Artificial Intelligence (AI) and High-Performance Computing (HPC) development solutions, and CoreAVI, a global developer of real-time safety-critical GPU acceleration solutions, today announced their partnership to develop high-performance, embedded applications for safety critical automotive and industrial applications running on multicore real-time systems.



The combined software solutions from these companies will empower developers of advanced applications for automotive and other functional safety systems to develop, port, and execute their code on complex multiprocessor systems.

The result brings enhanced safety and ease of driving for motorists embracing the latest technologies available to car manufacturers.

According to Market Research, AI and vision processing solutions for ADAS (Advanced Driver-Assistance Systems) and autonomous vehicles are projected to grow at a 21% annual rate and Computer Vision applications to grow 34% annually over the same period.

Both companies are pioneers in their respective fields. Codeplay leads the definition and creation of SYCL, The Khronos Group's open standard C++ programming model for heterogeneous processor architectures in AI and HPC. CoreAVI is the premier provider of safety critical software for certifiable GPU acceleration solutions for safety-critical markets. CoreAVI also heads the Vulkan SC Working Group for Khronos. Through this partnership, Codeplay will integrate their [Acoran Software Platform](#) with [CoreAVI's VkCore SC Platform](#).

Codeplay's Acoran Software Platform provides programmability, optimized processor-specific routines, and a wide ecosystem of domain-specific optimized libraries for exascale and artificial intelligence. A key foundation of Acoran is [SYCL](#) (pronounced "sickle"), an open standard programming model that enables heterogeneous programming based on standard ISO C++. Heterogeneous programming is the basis for today's growing HPC, AI, and machine learning applications. SYCL has been gaining momentum as embedded C++ developers look for a non-proprietary programming model.

VkCore SC is the foundation of CoreAVI's Platforms for Safety Critical Applications, addressing the needs of any safe GPU acceleration applications across all market verticals. The product suite is available with ISO 26262 ASIL D or IEC 61508 SIL 3 Safety Packages for automotive or industrial platforms, as well as the DO-178C/ED-12C safety certification packages required for avionics applications.

"Our wide range of customers in automotive, industrial and avionics have the highest demands for quality and safety and they're eager to apply AI and HPC to their embedded systems to meet the growing demand for autonomous solutions," said Damian Fozard, CEO at CoreAVI. "We are excited to partner with Codeplay to extend open standards into heterogeneous programming models to our customers."

"All ADAS systems require true real-time decisions when fusing the data from many cameras and sensors", said Andrew Richards, CEO and founder of Codeplay Software, "By combining our SYCL implementation with CoreAVI's Vulkan SC implementation, we bring extensive programmability and real time performance to application developers. Safety is critical with both companies focused on the highest standards in software."

"The Khronos Group is excited to see members work together to create cutting edge solutions," said Neil Trevett, President, Director of The Khronos Group. "We are the standards group for major technology initiatives and safety is incredibly important to the growth of AI and HPC."

About CoreAVI

CoreAVI is the global leader in architecting and delivering safety critical graphics and compute software drivers and libraries, embedded 'system on chip' and discrete graphics processor components, and certifiable platform hardware IP. CoreAVI's comprehensive software suite enables development and deployment of complete safety critical solutions for automotive, industrial and aerospace applications requiring certification to the highest integrity levels coupled with full lifecycle support. CoreAVI's solutions support both graphics and compute applications including safe autonomy, machine vision and AI in the automotive, unmanned vehicle and industrial IoT markets, as well as commercial and military avionics systems. www.coreavi.com

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About Codeplay Software

Codeplay Software is a world pioneer in enabling acceleration technologies used in AI, HPC and automotive. Codeplay was established in 2002 in Edinburgh, Scotland and developed some of the first tools enabling complex software to be accelerated using graphics processors. Today, most AI software is developed using graphics processors designed for video games, and more recently specialized AI and computer vision accelerators. Codeplay continues to work with global technology leaders to make the latest complex AI systems programmable using open standards based programming languages and allows application developers to quickly bring

software to the market. Codeplay is also deeply involved with the definition of open standards, especially OpenCL™, SPIR™, SYCL™, and Vulkan™ through The Khronos Group, and MISRA C++ for automotive.

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