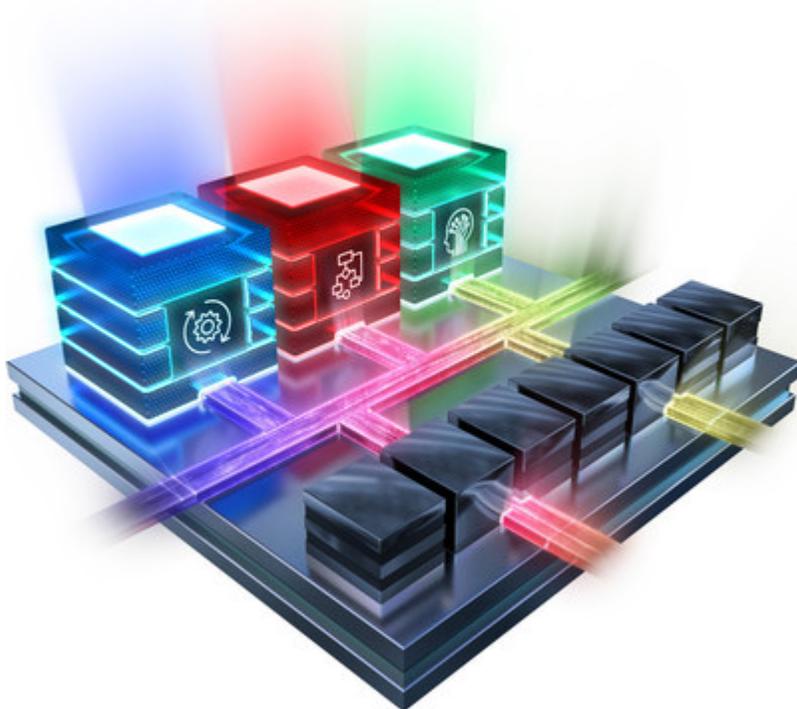




Xilinx Unveils Versal: The First in a New Category of Platforms Delivering Rapid Innovation with Software Programmability and Scalable AI Inference

October 2, 2018

SAN JOSE, Calif., Oct. 2, 2018 /PRNewswire/ -- **Xilinx Developer Forum (XDF)** – Enabling a new era of rapid innovation for any application by any developer, Xilinx, Inc. (NASDAQ: XLNX) CEO Victor Peng unveiled [Versal™](#) – the industry's first adaptive compute acceleration platform (ACAP). Versal ACAPs combine Scalar Processing Engines, Adaptable Hardware Engines, and Intelligent Engines with leading-edge memory and interfacing technologies to deliver powerful heterogeneous acceleration for any application. But most importantly, the [Versal ACAP's](#) hardware and software can be programmed and optimized by software developers, data scientists, and hardware developers alike, enabled by a host of tools, software, libraries, IP, middleware, and frameworks that enable industry-standard design flows.



Built on TSMC's 7-nanometer FinFET process technology, the Versal portfolio is the first platform to combine software programmability with domain-specific hardware acceleration and the adaptability necessary to keep pace with today's rapid pace of innovation. The portfolio includes six series of devices uniquely architected to deliver scalability and AI inference capabilities for a host of applications across different markets, from cloud to networking to wireless communications to edge computing and endpoints.

"With the explosion of AI and big data and the decline of Moore's Law, the industry has reached a critical inflection point. Silicon design cycles can no longer keep up with the pace of innovation," says Peng. "Four years in development, Versal is the industry's first ACAP. We uniquely designed it to enable all types of developers to accelerate their whole application with optimized hardware and software *and* to instantly adapt both to keep pace with rapidly evolving technology. It is exactly what the industry needs at the exact moment it needs it."

The portfolio includes the [Versal Prime series](#), Premium series and HBM series, which are designed to deliver industry-leading performance, connectivity, bandwidth, and integration for the most demanding applications. It also includes the [AI Core series](#), AI Edge series, and AI RF series, which feature the breakthrough [AI Engine](#). The AI Engine is a new hardware block designed to address the emerging need for low-latency AI inference for a wide variety of applications and also supports advanced DSP implementations for applications like wireless and radar. It is tightly coupled with the Versal Adaptable Hardware Engines to enable whole application acceleration, meaning that both the hardware and software can be tuned to ensure maximum performance and efficiency.

The portfolio debuts with the Versal Prime series, delivering broad applicability across multiple markets, and the Versal AI Core series, delivering an estimated 8X AI inference performance boost versus industry-leading GPUs*.

THE VERSAL AI CORE SERIES

The Versal AI Core series delivers the portfolio's highest compute and lowest latency, enabling breakthrough AI inference throughput and performance. The series is optimized for cloud, networking, and autonomous technology, offering the highest range of AI and workload acceleration available in the industry. The Versal AI Core series has five devices, offering 128 to 400 AI Engines. The series includes dual-core Arm Cortex™-A72

application processors, dual-core Arm Cortex-R5 real-time processors, 256KB of on-chip memory with ECC, more than 1,900 DSP engines optimized for high-precision floating point with low latency. It also incorporates more than 1.9 million system logic cells combined with more than 130Mb of UltraRAM, up to 34Mb of block RAM, and 28Mb of distributed RAM and 32Mb of new Accelerator RAM blocks, which can be directly accessed from any engine and is unique to the Versal AI series' – all to support custom memory hierarchies. The series also includes PCIe Gen4 8-lane and 16-lane, and CCIX host interfaces, power-optimized 32G SerDes, up to 4 integrated DDR4 memory controllers, up to 4 multi-rate Ethernet MACs, 650 high-performance I/Os for MIPI D-PHY, NAND, storage-class memory interfacing and LVDS, plus 78 multiplexed I/Os to connect external components and more than 40 HD I/Os for 3.3V interfacing. All of this is interconnected by a state-of-the-art network-on-chip (NoC) with up to 28 master/slave ports, delivering multi-terabit per-second bandwidth at low latency combined with power efficiency and native software programmability. The full [product table](#) is now available.

THE VERSAL PRIME SERIES

The Versal Prime series is designed for broad applicability across multiple markets and is optimized for connectivity and in-line acceleration of a diverse set of workloads. This mid-range series is made up of nine devices, each including dual-core Arm® Cortex-A72 application processors, dual-core Arm Cortex-R5 real-time processors, 256KB of on-chip memory with ECC, more than 4,000 DSP engines optimized for high-precision floating point with low latency. It also incorporates more than 2 million system logic cells combined with more than 200Mb of UltraRAM, greater than 90Mb of block RAM, and 30Mb of distributed RAM to support custom memory hierarchies. The series also includes PCIe® Gen4 8-lane and 16-lane, and CCIX host interfaces, power-optimized 32 gigabits-per-second SerDes and mainstream 58 gigabits-per-second PAM4 SerDes, up to 6 integrated DDR4 memory controllers, up to 4 multi-rate Ethernet MACs, 700 high-performance I/Os for MIPI D-PHY, NAND, and storage-class memory interfaces and LVDS, plus 78 multiplexed I/Os to connect external components, and greater than 40 HD I/O for 3.3V interfacing. All of this is interconnected by a state-of-the-art network-on-chip (NoC) with up to 28 master/slave ports, delivering multi-terabits per-second bandwidth at low latency combined with power efficiency and native software programmability. The full [product table](#) is available now.

VERSAL TOOLS AND SOFTWARE

The Versal portfolio is enabled by a development environment with a comprehensive software stack including drivers, middleware, libraries and software framework support. More details on the software programming tools will be made available next year.

Availability

Xilinx is currently engaged with multiple key customers through its early access program. The Versal Prime series and Versal AI Core series will be generally available in the second half of 2019.

Visit our website for more information on [Versal](#), the [AI Engine](#), the [Versal Prime](#) series and the [Versal AI Core](#) series. For more information on Xilinx and its breakthrough technologies, please visit www.xilinx.com. Follow Xilinx on [Twitter](#), [LinkedIn](#), and [Facebook](#).

About Xilinx

Xilinx develops highly flexible and adaptive processing platforms that enable rapid innovation across a variety of technologies—from the endpoint to the edge to the cloud. Xilinx is the inventor of the FPGA, hardware programmable SoCs, and the ACAP, designed to deliver the most dynamic processor technology in the industry and enable the adaptable, intelligent, and connected world of the future. For more information, visit www.xilinx.com.

*Sub-2ms Latency CNN performance vs. Tesla V100

©Copyright 2018 Xilinx, Inc. Xilinx, the Xilinx logo, Versal, and other designated brands included herein are trademarks of Xilinx in the United States and other countries. Arm and Cortex are trademarks of Arm Limited in the EU and other countries. PCI is a trademark of PCI-SIG and used under license. All other trademarks are the property of their respective owners.

PR Contact:

Xilinx

Tara Sims

media@xilinx.com



[View original content to download multimedia: http://www.prnewswire.com/news-releases/xilinx-unveils-versal-the-first-in-a-new-category-of-platforms-delivering-rapid-innovation-with-software-programmability-and-scalable-ai-inference-300721588.html](http://www.prnewswire.com/news-releases/xilinx-unveils-versal-the-first-in-a-new-category-of-platforms-delivering-rapid-innovation-with-software-programmability-and-scalable-ai-inference-300721588.html)

SOURCE Xilinx, Inc.