# Ambarella Launches 4K, 5nm Edge AI SoC for Mainstream Security Cameras With New Highs in AI Performance Per Watt, Image Quality and Sensor Fusion

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CV72S SoC Increases On-Camera Intelligence Via New CVflow® 3.0 Architecture, Radar Sensor Fusion, Color Night Vision and Better HDR for Single, Fisheye and Multi Imagers

SANTA CLARA, Calif., March 21, 2023 (GLOBE NEWSWIRE) -- Ambarella, Inc. (NASDAQ: AMBA), an edge AI semiconductor company, today announced in advance of ISC West the CV72S 4K, 5nm AI vision system-on-chip (SoC) for mainstream professional security cameras, built on its latest CVflow® 3.0 AI architecture. That architecture allowed Ambarella to create this new CV72S SoC with the security industry's highest AI performance per watt and fusion of radar and camera data, for better nighttime and all-weather AI perception. Its dedicated AI hardware efficiently runs the latest transformer neural networks (NNs), which now outperform convolutional NNs for many vision tasks. Additionally, the CV72S offers 6x greater AI performance than its predecessor, enabling it to also run Ambarella's groundbreaking AISP for neural network-enhanced 4K, long-range color night vision and HDR at very low lux levels with minimal noise and no external illumination, while leaving plenty of headroom for additional, concurrent NNs (e.g., person tracking and mask detection). As a result of the CVflow architecture's efficiencies, combined with 5nm process technology, the CV72S consumes less than 3W of power, offering the mainstream security market's highest AI performance per watt.
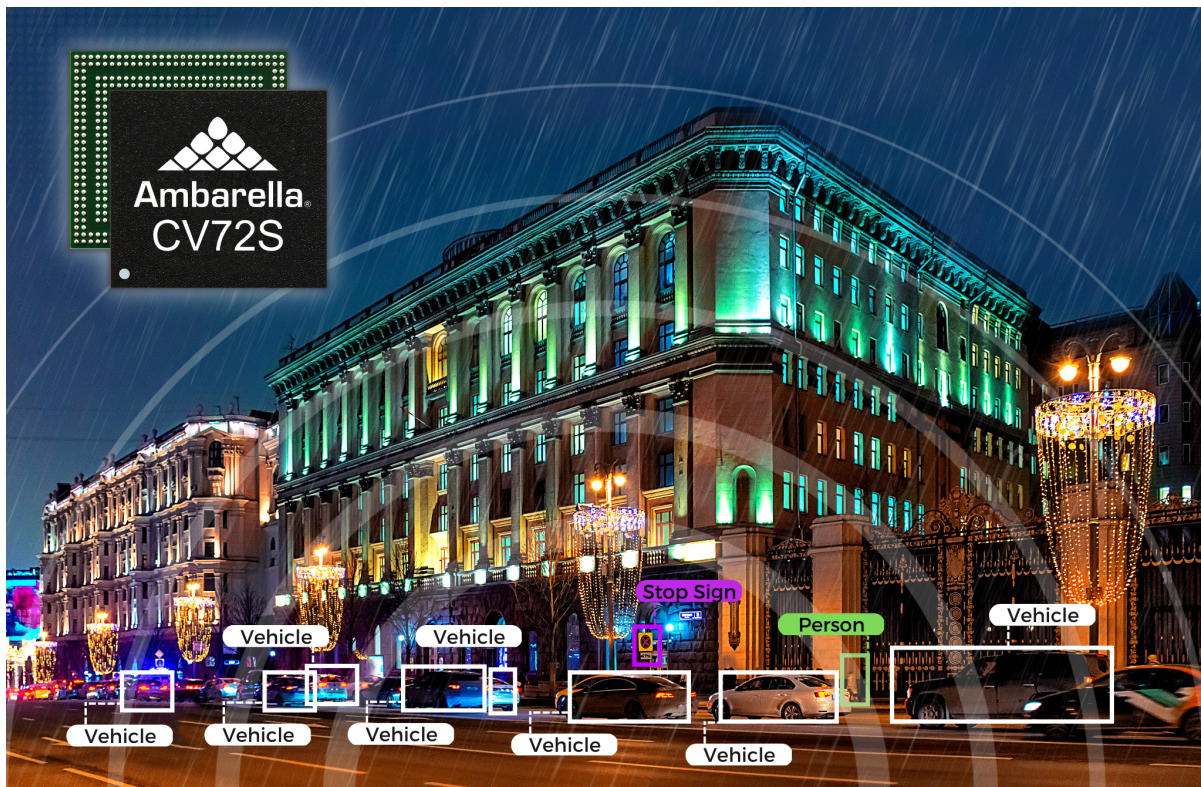
"Ambarella's CV72S fits perfectly into the ongoing trend for security cameras to integrate more and more AI capabilities at the edge via camera processors, while maintaining a low power and thermal budget," commented **Florian Domengie, Senior Technology & Market Analyst, Imaging at Yole Intelligence, part of Yole Group**. "The growth of infrastructure cameras powered by a processor with advanced AI acceleration is expected to increase significantly in the coming years, with a CAGR22-27 of 23% (1)."

"To take their mainstream professional security cameras to the next level, designers are looking for a solution that provides more AI performance, better image quality and the ability to cover wider areas, across weather and lighting conditions without increasing power budgets," said Fermi Wang, President and CEO of Ambarella. "We are accelerating their innovation by offering our latest CVflow 3.0 architecture and 5nm process technology in the new CV72S SoC, which was purpose built for the mainstream security market using our algorithm-first approach and in-depth knowledge of vision processing, radar and AI."

Through its deep understanding and experience in the security market, Ambarella designed the CV72S to also enable higher-end cameras with advanced 16MP30 fisheye dewarping and 4x 5MP30 multi-imager AI capabilities. For single-imager cameras, the CV72S supports 4KP60 encoding

for AVC and HEVC—a 2x performance increase over its predecessor. These features are ideal for a broad range of mainstream security cameras, including smart city and traffic applications, as well as monitoring crowded areas (e.g., retail stores, malls and stadiums). Additionally, the CV72S provides rich details for human viewing while enabling advanced video analytics such as long-distance object detection and license plate recognition.

Ambarella's in-house Oculii™ virtual aperture imaging (VAI)AI radar technology equipped the company with the know-how to integrate hardware acceleration into the CV72S for fusion with camera data, as well as dynamic load switching between radar and cameras. Ambarella's Oculii technology features 10-100x better radar resolution than any other radar solution on the market today. These radar capabilities are particularly important for applications such as perimeter security and nighttime monitoring, as well as any system that needs to operate in rain, snow or fog. Additionally, radar can accurately measure the distance, speed and direction of separate objects over a long range, for applications such as traffic cameras.

Other features of the new CV72S SoC include a 2x increase in CPU performance over the prior generation, via dual Arm$^{®}$ Cortex-A76 1.6GHz cores. It also features 2x the DRAM bandwidth, with support for 32-bit LPDDR4x/LPDDR5/LPDDR5x DRAM. Additionally, this SoC integrates hardware security to prevent hacking, including secure boot, OTP and Arm TrustZone technology. The CV72S also has new high-speed PCIe and USB 3.2 interfaces, enabling more complex, multi-chip security system designs.

Ambarella's CVflow AI development platform provides a full set of tools for easy porting, and supports all common CV frameworks. With its rich set of features, as well as Ambarella's tools that are compatible across its entire AI security portfolio, the CV72S lowers design costs and maximizes software reuse.

The new CV72S SoC is available now for sampling, and will be demonstrated during ISC West 2023 in Las Vegas next week. For more information or to schedule a demonstration during the show, please contact your Ambarella representative.

About Ambarella
Ambarella's products are used in a wide variety of human vision and edge AI applications, including video security, advanced driver assistance systems (ADAS), electronic mirror, drive recorder, driver/cabin monitoring, autonomous driving and robotics applications. Ambarella's low-power systems-on-chip (SoCs) offer high-resolution video compression, advanced image and radar processing, and powerful deep neural network processing to enable intelligent perception, fusion and planning. For more information, please visit www.ambarella.com.

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(1): Imaging for Security report, Yole Intelligence, 2022

A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/f1b69016-8999-4fee-b704-66f2994541da

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