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*Text and photo available: http://www.congatec.com/press*

Press release

congatec showcases its vision for Embedded Vision

**Fusion of embedded computing and vision technologies**

**Munich/Deggendorf, Germany, 13 November 2018 \* \* \*** congatec’s showcase at this year’s electronica (Hall B5, Stand 402) focuses on the fusion of embedded computing and embedded vision technologies – including artificial intelligence (AI) and deep learning – to present holistic Embedded Vision platforms. The goal is to provide OEM customers with a comprehensive ecosystem that integrates as easily and efficiently as a standard USB device. Customers benefit from application-ready components with unified APIs, GPGPU, and AI compatibility, minimizing design effort and ensuring that new applications get into production more quickly.

“We see tremendous demand for a fusion of embedded computing and embedded vision technologies – including AI and deep learning – as the embedded vision market is forecast to grow at staggering rates; 140 percent growth is predicted for the autonomous robotic vehicle segment, for example. To establish and maintain a decisive innovative and competitive edge in this market, OEMs have to work extremely fast and efficiently. For this, they need a strong partner to help them implement camera, AI, and deep learning technologies, because ultimately it’s the embedded computing device that merges heterogeneous technology implementations and is the linchpin of the embedded vision market. This is why we are currently investing heavily in the delivery of application-ready embedded vision components to provide customers with high design security and shorter time-to-market,” says Christian Eder, Director of Marketing at congatec.

According to Yole Développement[[1]](#endnote-1), camera technologies will grow at a CAGR of around 140 percent in autonomous robotic vehicles over the next four to five years, increasing from USD 5 to USD 900 million. The overall market is also experiencing strong growth at a CAGR of 12 percent. The largest market segment is that of industrial vision systems; it is expected to generate approximately USD 1.4 billion in revenue in 2023. At the same time, the market for PC and board-based camera technologies is fragmented; as a result, standardized commercial-off-the-shelf (COTS) offerings with guaranteed long-term availability open up additional market opportunities.

Presenting three application-ready solutions for a variety of different embedded vision use cases, congatec aims to give OEMs a 360-degree view of embedded computer vision technologies. The solutions underscore congatec’s extensive embedded vision expertise, which is further enhanced by the company’s support of the new NXP i.MX 8 processor technology on SMARC 2.0 and Qseven modules.

**Automotive infotainment platform**

Co-developed by Intel and Luxoft, the Automotive Reference Platform (ARP) – which launches with the conga-SA5 as the first officially supported module – makes digital cockpit designs for next-generation vehicles smarter. The new platform enables clustering of previously separately managed functions such as head unit display, cockpit occupant monitoring and advanced driver assistance systems (ADAS). Using a standards-based SMARC 2.0 Computer-on-Module, developers benefit from high design efficiency with lowest NRE cost for the core and maximum scalability ranging from low cost to premium performance. You can find more information about this kit [here](https://www.congatec.com/en/congatec-ag/press-releases/article/congatec-powers-luxofts-modular-next-gen-automotive-reference-platform.html).

**Artificial intelligence with intensive GPGPU usage**

In cooperation with AMD, congatec is showing a vision based AI platform that impresses with seamless integration of GPGPU technologies. It features the new AMD Ryzen Embedded V1000 processors, which provide outstanding GPGPU and overall performance, and leverage the open source Smart Vision ecosystem. The platform was developed on the basis of widely used tools and frameworks such as TensorFlow, Caffe and Keras, and also utilizes the open source ROCm platform for GPGPU applications. The open source idea is particularly important in this context, as it prevents OEMs from becoming dependent on a proprietary solution. HIPfy is an available tool with which proprietary applications can be transferred into portable HIP C++ applications, so that the dangerous dependence on individual GPU manufacturers can be effectively avoided. AI development has also become much easier with the availability of OpenCL 2.2, because since then the OpenCL C++ kernel language has been integrated into OpenCL, which considerably simplifies writing parallel programs. With such an ecosystem, both knowledge-based AI and deep learning are comparatively easy to implement.

**Basler camera technology for face recognition**

The smart embedded image recognition platform that emerged from the new technology partnership between congatec and Basler focuses on face detection and is based on Basler’s dart camera series with USB 3.0 and conga-PA5 Pico-ITX boards with 5th generation Intel® Atom®, Celeron® and Pentium® processors. Further kits based on congatec boards and modules with LVDS, MIPI-CSI, GigE vision or other relevant interfaces will follow. The pylon camera software suite from Basler will also be integrated by congatec as standard software into appropriate kits. You can find more information about this kit [here](https://www.congatec.com/en/congatec-ag/press-releases/article/basler-and-congatec-agree-on-technology-partnership.html).

**About congatec**congatec is a leading supplier of industrial computer modules using the standard form factors COM Express, Qseven and SMARC as well as single board computers and customized services. congatec’s products can be used in a variety of industries and applications, such as industrial automation, medical, entertainment, transportation, telecommunication, test & measurement and point-of-sale. Core knowledge and technical know-how includes unique extended BIOS features as well as comprehensive driver and board support packages. Following the design-in phase, customers are given support via extensive product lifecycle management. The company’s products are manufactured by specialist service providers in accordance with modern quality standards. Headquartered in Deggendorf, Germany, congatec currently has entities in USA, Taiwan, China, Japan and Australia as well as United Kingdom, France, and the Czech Republic. More information is available on our website at [www.congatec.com](http://www.congatec.com) or via [Facebook](http://www.facebook.com/Congatec), [Twitter](https://mobile.twitter.com/congatecAG) and [YouTube](http://www.youtube.com/congatecAE).

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1. <http://www.eenewsanalog.com/news/machine-vision-market-12-cagr> [↑](#endnote-ref-1)