

**EMVA Press Briefing  
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***Guest Speakers:***

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## **EMVA - Our Mission & Vision**

The EMVA, founded 2003 in Barcelona, is a non-for-profit association representing the entire vision industry in Europe. The association has been founded by industry representatives from all over Europe as a network to promote the development and use of imaging, machine vision and computer vision technologies.

EMVA is a platform for exchange, information and hands-on value for our members. EMVA is open for all types of organizations having stakes in vision and imaging technologies: manufacturers, integrators, distributors, consultancies, research institutes and academia. All members – as the owners of the association – benefit from the networking, cooperation and the numerous and diverse activities of the EMVA.

EMVA as the European machine vision industry lobby supports the interests and concerns of its members, and helps to ensure that imaging and vision technologies are widely applied throughout all industry sectors, manufacturing and non-manufacturing, in Europe and abroad.



## **New EMVA Standard Initiative: Embedded Vision Interface Standard**

Cameras and PCs as the main components of machine vision systems tremendously miniaturized over the last years. The combination of a processing board with a powerful small camera, make it possible to design a very compact vision system which can be integrated into a larger system. Such systems are called embedded vision systems and are of high interest to the machine vision industry. However, adaptation is needed in order to enable industrial solutions to use embedded systems. Hosted by the EMVA, in August 2018 a new standard initiative formed to address these needs.

### *Embedded systems for industrial solutions*

With an impressive support from the machine vision industry, the standardization group develops a standard to achieve an easy integration and exchange of different embedded cameras within embedded vision applications. Already more than 40 companies are showing interest in this initiative and the working group of the standard includes delegates from Adimec, Allied Vision, Alysium, Avaldata, Basler, Baumer, Euresys, Flir, Framos, Matrix Vision, and Sony Semiconductor Solutions Corporation.

Using reusable modules in kernel-mode, developers of embedded vision systems could reduce integration efforts, development time and – as a result – costs. The needed components such as light, lens, camera and computer could be integrated and connected to embedded boards more easily.

Another goal is to give embedded system designer access to the machine vision standard GenICam (Generic Interface for Cameras), a generic programming interface for all kinds of devices. With this standard they would also benefit from the advantages of an identical application programming interface (API) and the easy-to-use GenICam modules, regardless of the interface technology. In addition, standard group intends to define GenTL as the main kernel-to-user interface.

Another important aspect the Embedded Vision Standard is intended to solve is the enhancement of the sensor interface standards SLVS-EC / MIPI CSI-2 D-Phy with recommendations for hardware components, like cables and connectors.

The next steps of the standard initiative are a white paper with concepts and goals to be adopted early next year. A first release candidate is targeted in 2020.



## **New EMVA Standard Initiative: Open Lens Communication Standard**

Amazingly, there is one component in an image system that has not yet changed since the early days of the machine vision industry: the lens mount. C-mount is the most common type of screw lens mount and much older than the machine vision industry. In the constantly changing world of machine vision, the lens mount seems to be something rock solid. But this also hindered progress. Already in 1987 Canon introduced the Electro-Optical System (EOS) for digital information and power transmission between SLR cameras and lenses, and used it to produce lenses with built-in auto focus motors. Such a standardized system is still not available for the machine vision industry.

Take all the possibilities that have already been implemented in commercial system cameras plus modern methods of computational imaging, and combine these with the processing capacities of modern embedded vision systems. Only then one gets an idea of how powerful and different the next generation of image acquisition systems could be and what the machine vision industry still misses with an open standardized lens-to-camera communication. This includes auto focus systems (also with liquid lenses), setting the focal length for zoom lenses, control and reading the aperture setting, and inquiry of lens properties by the cameras, such as aperture dependent lens shading, geometrical distortion, and lateral chromatic aberration. With this information the camera can automatically correct these distortions. Automatically capturing a focus series, and computing depth maps and images with extended depth of field and correction or modification of the modulation transfer function (MTF) of the lens or camera system are also possible.

This is why the EMVA has decided to start a new standardization group on an open lens camera communication standard, which may have different mechanical connections but a common protocol closely linked to the GenICam Standard. A first meeting of the standardization group took place on 9 July at Heidelberg University with an initial setup of the group. Marcel Naggatz from Baumer Optronik and Erik Widding from Birger Engineering were elected as Chair and Vice-Chair of the standard initiative. Already, major camera and optics manufactures have joined the working group. The second meeting will take place from 3-4 December in Radeberg, Germany. All interested companies and research institutes are invited to join this standardization initiative.