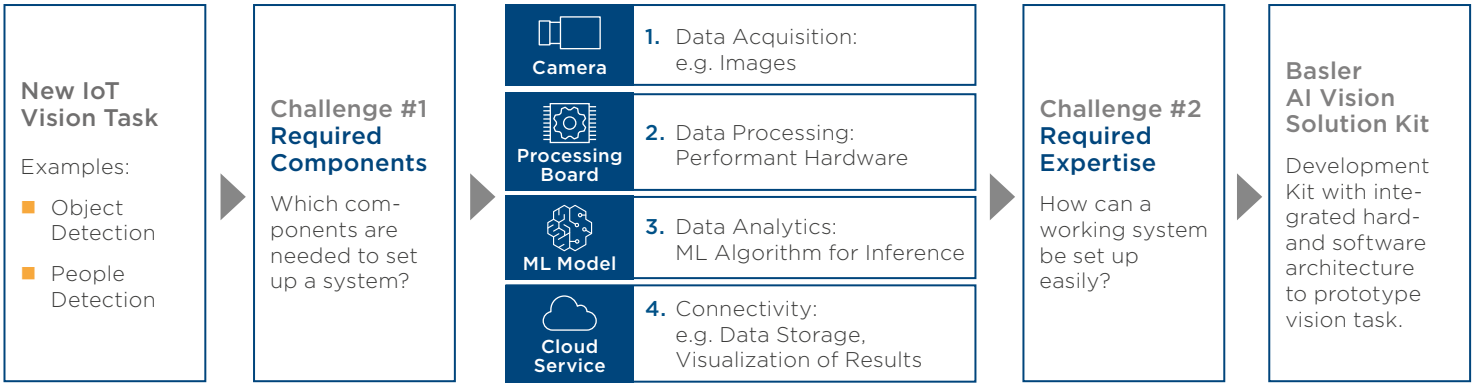
Basler AI Vision Solution Kit with Cloud Connectivity

YOUR STARTING POINT FOR THE NEXT GENERATION OF SMART VISION-BASED IOT EDGE DEVICES

The Internet of Things (IoT) and the many options for product enhancement that it provides are no longer a new phenomenon. Yet, developers still face significant challenges when being confronted with the development of new, vision based IoT tasks such as object or people detection, and others. First, they need to define all components needed to set up a system:

1. Data acquisition: A data stream of images, generated by a camera;
2. Data processing: Powerful hardware to process image data;
3. Data analytics: A Machine Learning algorithm needed to perform the inference and
4. Connectivity: Ability to use cloud services and send meta data to the cloud (data storage, analytics).

Secondly, all these parts have to fit together and operate seamlessly. Again, this requires extensive expert knowledge. Out of one hand, Basler offers the complete expertise needed to start developing an IoT vision system: With its AI Vision Solution Kit all necessary hard- and software components are integrated into a ready-to-use prototyping kit.



The AI Vision Solution Kit is Basler's answer to solve heterogeneous hard- and software landscapes when dealing with the prototyping of new IoT vision tasks.

TECHNICAL DETAILS

How It Works: The Functionality of the AI Vision Solution Kit with Cloud Connectivity

Targeted towards Data Scientists and Field Application Engineers, the AI Vision Solution Kit is an embedded vision system for easy prototyping of IoT vision solutions. Its integrated hard- and software design comprises Basler's newly developed IoT software architecture: Basler Container Management and Cloud Connector. They allow the easy deployment of optimized ML learning models and access to cloud services.

There are two options for machine learning models used on the system: Either Basler's ML models can be chosen or own ML models can be uploaded.

1. Basler's ML models are pre-trained ML models for object detection and people detection. These Basler ML models are optimized for the SoC and the generated image data: they seamlessly work together.

2. If developers use their own ML models, they are able to use the functionalities of AWS SageMaker and AWS SageMaker Neo to train, optimize and deploy them.

In the next step, the compiled ML model available in the Basler cloud is deployed on the kit using container management and AWS SageMaker.

Moreover, camera parameters can be adjusted using the camera configuration tool. pylon operates and configures the camera, a 13 MP Basler dart with BCON for MIPI interface. In this way, image quality can be adjusted and assured. This is important as the quality of the ML inference on the kit depends not only on the training of the model, but also on the quality of the acquired data from the camera and on the power of the processing unit. After the inference is done on the kit, resulting meta data is sent to the AWS cloud and stored using AWS IoT Core.

With the AI Vision Solution Kit, prototyping of IoT vision solutions based on embedded technology is taken to the next level. Basler also supports its customers beyond the prototyping stage and develops customized solutions based on its flexible toolbox approach of hard- and software components.