Open Camera concept - customized cameras for real-time applications

The GigEPRO camera series enables the integration of real-time algorithms directly in the camera and which opens up new possibilities for optimizing applications. The GigE Vision, GenTL/GenIcam-compatible camera comes with the Open Camera concept that enables customers to create an "application specific camera" using the algorithms provided by NET, their own algorithms or a combination of both, for real-time applications. Based on this functionality and flexibility, developers are provided with everything they need to start programming their GigEPRO immediately.

GigEPRO - GigE Vision camera featuring integrated image pre-processing function for real-time applications

Advantages at a glance

- GigEPRO offers system integrators a camera for the development of application-specific image processing solutions for real-time applications
- Companies are able to protect their competitive advantage as it is impossible to apply their know-how
- GigEPRO is able to encrypt sensitive image data using personalized algorithms that only you, the customer knows
- Compared to standard vision cameras, the GigEPRO Open Camera concept offers more built-in options as it is not only possible to program specific functions, but in addition a wide variety of library-based functions can also be added and combined with each other
- As a complete all-rounder with image pre-processing functions, GigEPRO reduces the load on the host PC's computing capacity and significantly reduces the infrastructure costs
- GigEPRO is compliant with industry standards - the extended functions can be easily integrated into a GenICam-based environment
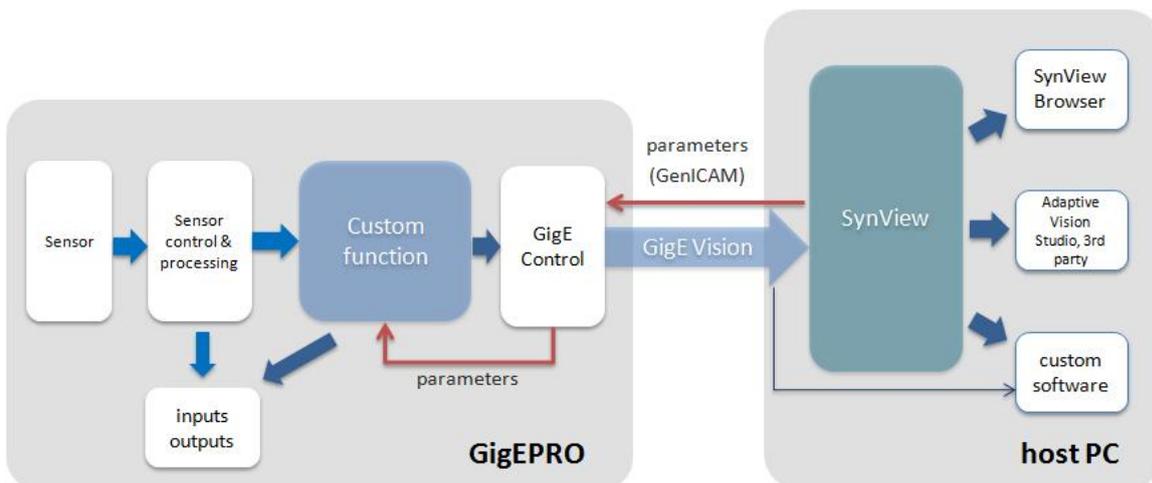
Fig.: Implementation of the Open Camera concept in the GenIcam structure

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GigEPRO is developer-friendly

- Image pre-processing functions can be implemented in the camera simply and easily with the free and easy-to-use SynView (find out more about the free software interface SynView) SDK. This does not affect the GigE Vision environment and the host system does not need to be adapted in any way.
- The extended functionality of the FPGA is based on the popular and widely-used XILINX SPARTAN hardware and software environment
- GigEPRO has an integrated debugging function for the inspection and correction of program codes. Specific developments simply follow a predefined functional flow.
- Customer-programmed functions cannot be read externally - this prevents undesired reverse engineering
- Getting started is easy: NET offers training courses for developers to familiarize themselves with the programming of independent functions in GigEPRO in just one day
- GigEPRO comes with an extensive range of sample codes such as Flat Field Correction (FFC) calibration, Geometry Correction (GeoC) and color correction.

Key features of GigEPRO:

- Compatible with GigE Vision, GenTL/GenIcam standards
- Standard and customized algorithms available
- "Open Camera concept" incl.
- Sensor resolutions from 0.4 to 10 MP
- Image sensors: Color, monochrome/NIR
- ROI on chip
- Software interface SynView incl.:
  - supports established (licensable/free) software packages
  - compatible with Win XP/7™ and Linux
  - supports C, C++, .NET environment
  - has a "code generator" for generating sample codes from Explorer

2/2

Conclusion

Image pre-processing functions, which reduce the load on the host PC's computing capacity and significantly reduce the infrastructure costs, can be executed in real-time with the camera series' programmable FPGA. The Open Camera concept enables the customer to program their own sophisticated applications offering a considerably wider range of functions compared to other GigE Vision cameras. The camera's ability to perform specific image pre-processing tasks such as a combination of line scan, optical triggers, sequence storage, direct machine control, data encryption, and much more, can help companies gain a competitive advantage in many cases.

Tip: Download the White Paper and discover new approaches with GigEPRO >>>

NET New Electronic Technology has been developing and manufacturing cameras for industry and medicine since 1996. NET's products and innovative concepts increase the efficiency of industrial processes and, in the field of medicine, improve the patient's chance of recovery. Throughout the globe, the employees and partners of NET contribute towards achieving customers' application goals with its goal-oriented product and solution consultancy. NET's portfolio includes compact cameras in industrial and board-level versions, customized camera modules and control units, Smart Vision systems, medical imaging devices, lenses and lighting, image processing algorithms and Machine Vision software. Find out more about NET >>>

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