GigE Vision

GigE Vision is an industrial image processing standard first published in 2006. To be compliant to Dual-GigE and 10 GigE interfaces, the standard was upgraded in 2012.

Why is a GigE Vision standard important?

Consumer interfaces like USB 2.0 has no standard and for this reason one big disadvantage: Each manufacturer provides its own proprietary driver. As soon as a user decided to work with one specific manufacturer it was difficult to change the manufacturer without any software adaptions. For this reason the image processing GigE Vision was introduced for the Ethernet consumer interface. GigE Vision defines

1. a transport layer, which controls the detection of a device ("Device Detection"),
2. the configuration ("Register Access"),
3. the data streaming ("Streaming Data"), and
4. the handling of events ("Event Handling")

and establishes the interface to GenICam. GenICam again abstracts the access to the camera features for the user. The features are standardized (name and behavior) by the "Standard Feature Naming Convention" (SFNC). Additionally, it is possible to create specific features in addition to the SFNC to differentiate from other vendors ("Quality of Implementation").

Users even have the liberty to choose the software. As soon as an image processing library supports GigE Vision, it can use all kind of GigE Vision compliant cameras. This leads to a wide range of easy-to-integrate software.

This is a major reason why the market share of GigE Vision solutions is better than the share of USB 2.0 solutions.

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Products of the mvBlueCOUGAR series

- mvBlueCOUGAR-X - GigE Vision industrial camera
- mvBlueCOUGAR-XD - Dual GigE Vision industrial camera

About Gigabit Ethernet

Gigabit Ethernet was introduced in 1999. In the meantime, it is the network standard and available everywhere. For this reason exisiting network infrastructur can be used for image processing applications. The Gigabit Ethernet interface supports a **net bandwidth of 1000 MBit/s**, however, with Link Aggregation you can double the bandwidth. With a **max. cable length of 100 m** the interface is suitable for applications with

1. long distances and
2. existing network infrastructure,

as well as for applications, where you need a high

1. flexibility and
2. scalability.

The cost-effective Ethernet accessories are a further advantage.

	USB 2.0	USB 3.2 Gen 1	Gigabit Ethernet	Dual Gigabit Ethernet
Gross bandwidth [MBit/s]	480	5000	1000	2000
Net bandwidth [MB/s]	30	300 + x	120	240
Max. cable length [m]	3,5	8 (100 with optical cables)	100	100
Introduction interface	2000	2010	2004	2008
Introduction image processing standard	-	2013	2006	2012

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