GigE Vision Compliant Camera ….Prototype Description

SDK selection for GEV (GigE Vision)

GgiE Vision version must use e-Bus driver (Universal or Optimal) or Window Stack. The SDK is 2.3.0 and 2.2.0 or iPort SDK cannot support GEV.

GigE Vision is open frame work for transferring imaging data and control signals between cameras and PCs over standard GigE connections. The four major elements are;

1. Device Discovery
   - Defines how compliant devices obtain IP addresses and are identified on the network
2. GigE Vision Control Protocol (GVCP)
   - Defines how to specify stream channels and control / configure compliant devices.
3. GigE Vision Stream Protocol (GVSP)
   - Defines how images are packetized and provides mechanism for cameras to send image data and other information to host computers.
4. XML Camera Description File
   - Computer-readable data sheet of features in compliant devices
   - Must be based on schema in EMVA's GenICam standard.
   - Seven mandatory features required for compliance.

GigE Vision standard requires 7 mandatory features to be compatible.
These features are;

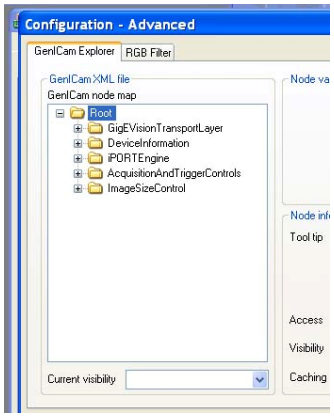
• Width	Image width
• Height	Image height
• PixelFormat	Pixel format defined in GVSP
• PayloadSize	Number of bytes transferred for each image on the stream channel
• AcquisitionMode	Manner in which images are sequenced from the camera
• AcquisitionStart	Starts image acquisition in the specified mode
• AcquisitionStop	Stops image acquisition in the specified mode

In GEViCAM prototype, these basic functions and test pattern are provided.

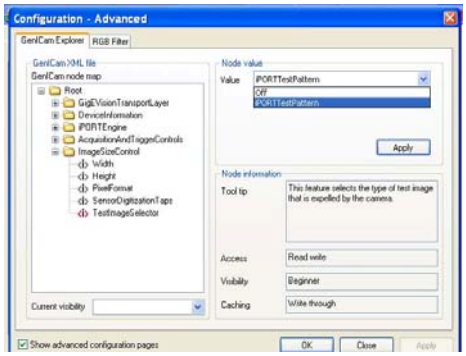
Accsess GEViCAM (GEV version)

Since GEV version is GigE Vision compliant, it can be accessed from any GigE Vision compliant drivers and PC software.
The prototype models are equipped with the test pattern to confirm the connectivity first. Once the device (camera) is found, the driver will be showing the connection.
Once image acquisition is activated, you will be able to see the test pattern in your display.

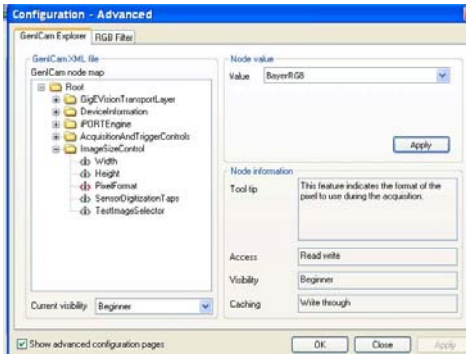
GenApi Explorer



Next, you can open up device configuration (or equivalent) tab of each application software. Typical GigE Vision application software will show device configuration explorer window. In GenApi application of Coyote SDK 2.3.0, the dialog looks like shown left. In "ImageSizeControl", there are mandatory required features.



To turn off the test pattern, "Stop" the image acquisition, then open GenICam Explorer and find TestImageSelector and turn it Off.



The Image width for XGA (GP-3780-0107GEV) is 1024, height is 778. The PixelFormat for Bayer is RG8.

Click OK and go back to image acquisition. You will see the continuous images.
Above example is part of Coyote application but it will be similar process to work with other API software.

Other Functions

Release of GEV-GenICam version is scheduled in April 2007. Please contact GEViCAM for the detail.