GigE Vision Simulator ♦ GigE Vision Converter ♦ GigE Vision Server SDK

Overview

GigESim is a component software solution that allows end-users and developers to turn their computer into a virtual GigE Vision and GenICam compliant camera. Any GigE Vision compliant software running at the same or other computers on the network will treat *GigESim* as an actual GEV camera with adjustable features. The image source options include several generated patterns and pre-recorded AVI videos. The simulator can be used for prototyping a GigE Vision camera as well as performing GigE application development and testing when cameras are not available.

GigESim can also be used as a camera type converter by turning cameras of different types (analog, USB, 1394, CameraLink) into virtual GigE Vision cameras accessible from any computer on the network, with an ability of remote control over camera parameters. The main advantage of such a type conversion is the multicast feature of the GigE Vision standard which lets the video be transferred to multiple computers on the network.

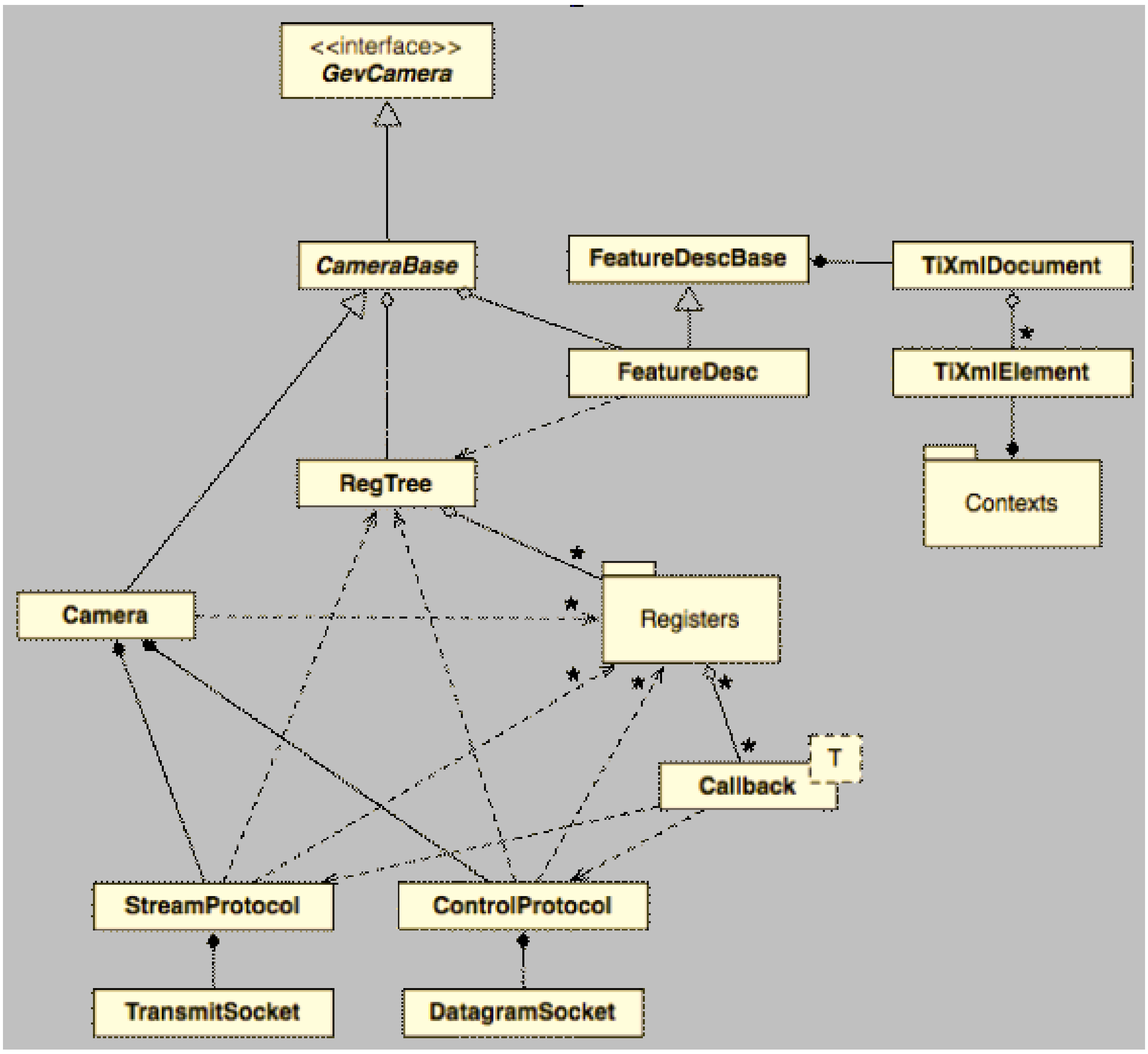
GigESim includes a powerful SDK that allows developers to assign images generated by their application to a simulated GigE Vision camera and stream them to the network for further processing and analysis. Developers can define individual features provided by such a simulated camera and exercise a full remote control over each feature. The images can be received on any computer on the network via a standard GigE Vision viewer or SDK such as A&B Software's ActiveGigE.

Main Features

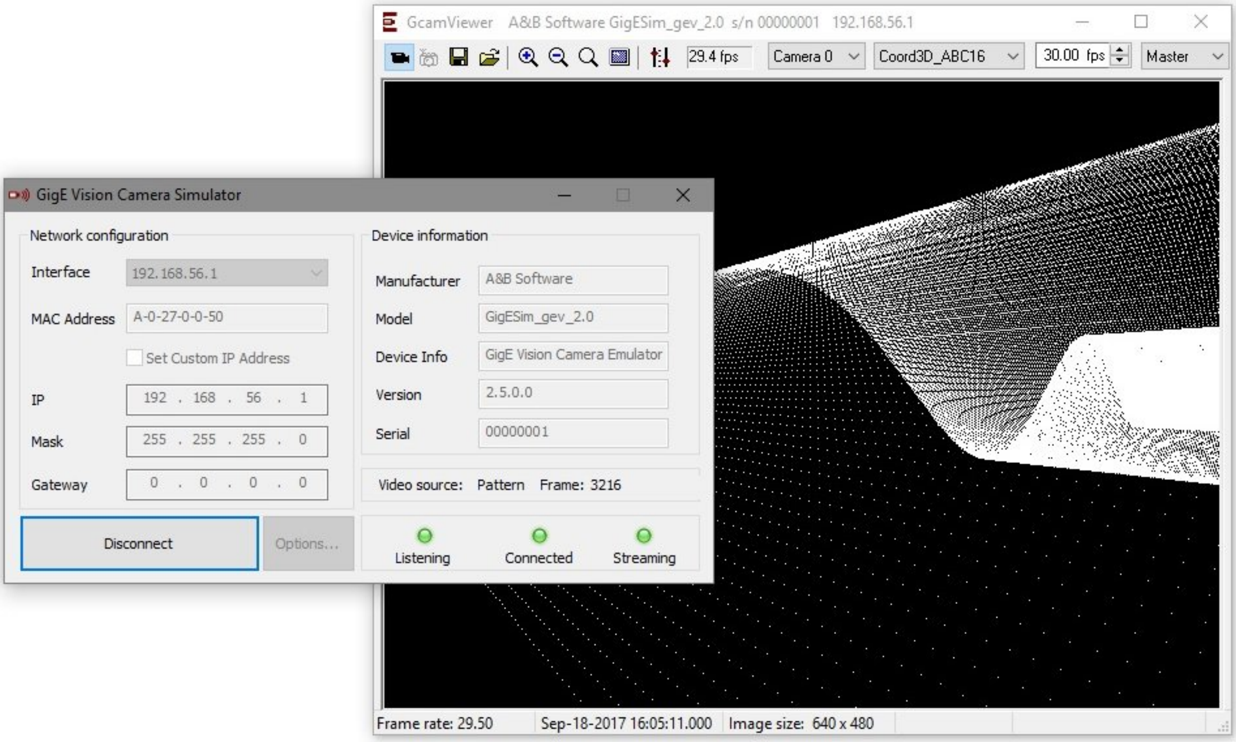
- Compatibility with Windows (XP/7/10) and Linux (Ubuntu, Debian, OpenSuse) OS.
- Selection between GEV 1.2 and GEV 2.x versions of the standard.
- Ability to run several virtual camera objects on one computer host.
- Ability to simulate areascan and linescan cameras.
- Assignment of arbitrary IP and MAC addresses to virtual cameras.
- Ability to stream individual images or video sequences to the network and receive it at a remote node using standard GigE Vision software.
- Support for 1 Gbit or 10 Gbit network equipment.
- Simulation of multi-port GigE Vision cameras via link aggregation.
- Sustained transmission speed of 0.93 Gbps on Gigabit connections.
- Streaming of GigE Vision video over Wi-Fi network.
- Transmission of video data from a virtual camera to multiple computers on the network in the multicast mode.
- Splitting video data into several stream channels with different destination addresses.

- Simulation of hardware triggering via built-in synchronization of multiple virtual camera objects.
- Built-in format converter with dozens of monochrome, color and 3D pixel formats.
- Built-in JPEG and H.264 real-time encoders.
- Ability to use generated patterns, standard images (bmp, jpg, tif) or pre-recorded AVI files as a streaming video source.
- Ability to add GenICam-compatible features to a virtual camera and control them from remote computers.
- Ability to send GenICam-compliant events from a virtual camera to remote clients on the message channel.
- Transmission of GenICam-compliant chunk data along with video frames.
- Ability to process action commands and scheduled action commands broadcast by remote clients.
- Ability to secure virtual cameras with a switchover access code.
- Adjustment of the virtual camera responsiveness, frame rate and inter-packet delay.
- Simulation of rigorous network conditions by disordering and skipping video packets.
- Included GigE Vision converter for DirectShow video sources.

Internal Architecture



Despite the complexity of GigESim's internal structure and code, the SDK's programming interface is very easy to use. No familiarity with GigE Vision or GenICam standards is required. Using a set of simple functions a developer can define individual features provided by a virtual camera, exercise a full remote control over each feature, and stream images and data to the network in the GigE Vision format.



GigESim **is an easy-to-use and flexible solution for software testing, distributing computing, application remote control, multi-node surveillance, pipeline video transfer and many more.** ***GigESim*** **can be used immediately, without adaptation. All you need is a Gigabit Ethernet connection between your computers!**

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