

# Vimba

Vimba

## Vimba GigE TL Features Manual

1.9.0

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# 1 Contacting Allied Vision

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## 2 Document history and conventions



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## 2.1 Document history

Version	Date	Changes
1.0	2013-02-25	Initial version
1.1	2013-03-07	Different generation of document, small layout changes
1.2	2013-05-13	Refined some descriptions, changed the layout of document and feature tables, removed the exemplary camera features
1.3	2014-07-09	Changed the referenced GenTL version to 1.3, small corrections
1.4.1	2015-11-09	Renamed several Vimba components and documents ("AVT" no longer in use), links to new Allied Vision website
1.4.2	2016-02-27	New document layout
1.5.0	2016-02-27	Added Action Commands, updated document layout
1.5.3	2018-05-02	Bug fixes
1.6.0	June 2019	Bug fixes
1.7.0	October 2019	GenTL 1.5 support
1.8.0	October 2020	Added GevUseExtendedIDs feature, provided standard-compliant ForceIP feature
1.8.1	January 2021	Prepared for use with 5 GigE Vision cameras
1.8.2	May 2021	New feature: GVSPHostReceiveBufferSize
1.9.0	October 2021	New feature: DeviceUpdateTimeout, several bug fixes

## 2.2 Conventions used in this manual

To give this manual an easily understood layout and to emphasize important information, the following typographical styles and symbols are used:

## 2.2.1 Styles

Style	Function	Example
Emphasis	Programs, or highlighting important things	<b>Emphasis</b>
Publication title	Publication titles	<i>Title</i>
Web reference	Links to web pages	<a href="#">Link</a>
Document reference	Links to other documents	<a href="#">Document</a>
Output	Outputs from software GUI	<b>Output</b>
Input	Input commands, modes	<i>Input</i>
Feature	Feature names	<b>Feature</b>

## 2.2.2 Symbols



### Practical Tip



### Safety-related instructions to avoid malfunctions

Instructions to avoid malfunctions



### Further information available online

## 3 VimbaGigETL - Overview

The VimbaGigETL (Vimba GigE Transport Layer) transports the data from the network card to an application. It is a module according to the GenTL specification and complies to GenICam applications providing a GenTL consumer interface. It consists of several parts: the functional interface and the feature maps for the transport layer and for the camera.

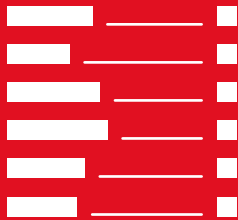
The **functional interface** is needed for dynamically controlling GigE cameras and it covers the functionality described in [GenTL specification 1.5](#). There is additional functionality, which is described in chapter 8, **Vimba extensions to the functional GenTL interface**.

The **features** exposed by XML files are GenAPI-conforming features described in the locations:

- Features of the GenTL **System module** in chapter 4. The System is a module for handling multiple GenTL Interfaces in one transport layer.
- Features of the GenTL **Interface module** in chapter 5. The Interface is a module for handling multiple GenTL Devices.
- Features of the GenTL **Device module** in chapter 6. The Device module is a host-side representation of the Camera aka "Remote Device".
- Features of the GenTL **Data Stream module** in chapter 7. The Data Stream module allows handling all streaming-related operations.
- Camera (**Remote Device**) features in [GigE Features Reference](#).

The **configuration file**, which is named VimbaGigETL.xml (according to the name of the VimbaGigETL.cti), must be located in the same directory as the Transport Layer file. The configuration options are described in the comments of the file itself.

# 4 VimbaGigETL System Features



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This chapter lists features that are potentially available in this module. Some features are only available under certain circumstances.

The following categories can be found below the Root category:

- SystemInformation
- InterfaceEnumeration
- CameraAddressForcing
- ActionControl

## 4.1 SystemInformation

Category that contains all System Information features of the System module.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.1.1 TLID

Name	TL ID
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Unique identifier of the GenTL Producer like a GUID.  
Corresponds to the TL\_INFO\_ID command of TLGetInfo function.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.1.2 TLVendorName

Name	TL Vendor Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Name of the GenTL Producer vendor.  
Corresponds to the TL\_INFO\_VENDOR command of TLGetInfo function.  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.1.3 TLModelName

Name	TL Model Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Name of the GenTL Producer to distinguish different kinds of GenTL Producer implementations from one vendor.  
Corresponds to the TL\_INFO\_MODEL command of TLGetInfo function.  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.1.4 TLVersion

Name	TL Version
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Vendor specific version string.  
Corresponds to the TL\_INFO\_VERSION command of TLGetInfo function.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.1.5 TLDisplayName

Name	TL Display Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

User readable name of the GenTL Producer.

Corresponds to the TL\_INFO\_DISPLAYNAME command of TLGetInfo function.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.1.6 TLPath

Name	TL Path
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Full path to the GenTL Producer driver including name and extension.

Corresponds to the TL\_INFO\_PATHNAME command of TLGetInfo function.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.1.7 TLType

Name	TL Type
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	GEV



Transport layer type of the GenTL Producer implementation.  
Corresponds to the TL\_INFO\_TLTYPE command of TLGetInfo function.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.1.8 GenTLVersionMajor

<b>Name</b>	<b>GenTL Version Major</b>
<b>Interface</b>	Integer
<b>Access</b>	Read
<b>Visibility</b>	Expert

Major version number of the GenTL specification the GenTL Producer implementation complies with.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.1.9 GenTLVersionMinor

<b>Name</b>	<b>GenTL Version Minor</b>
<b>Interface</b>	Integer
<b>Access</b>	Read
<b>Visibility</b>	Expert

Minor version number of the GenTL specification the GenTL Producer implementation complies with.  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.1.10 GevVersionMajor

Name	GEV Major Version Number
<b>Interface</b>	Integer
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Major version number of the GigE Vision specification the GenTL Producer implementation complies to. See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.1.11 GevVersionMinor

Name	GEV Minor Version Number
<b>Interface</b>	Integer
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Minor version number of the GigE Vision specification the GenTL Producer implementation complies to. See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2 InterfaceEnumeration

Category that contains all Interface Enumeration features of the System module. See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2.1 InterfaceUpdateList

<b>Name</b>	<b>Interface Update List</b>
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Update the internal interface list on this GenTL Producer.  
 See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2.2 InterfaceCount [Allied Vision]

<b>Name</b>	<b>Interface Count</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Number of interfaces on this GenTL Producer.

## 4.2.3 InterfaceSelector

<b>Name</b>	<b>Interface Selector</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Selector for the different GenTL Producer interfaces.  
 See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2.4 InterfaceID

Name	Interface ID
Interface	IString
Access	Read
Visibility	Beginner

GenTL Producer wide unique identifier of the selected interface.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2.5 GevInterfaceMACAddress

Name	Interface MAC Address
Interface	Integer
Access	Read/Write
Visibility	Expert

48-bit MAC address of the interface.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2.6 GevInterfaceDefaultIPAddress

Name	Interface IP Address
Interface	Integer
Access	Read/Write
Visibility	Expert

IP address of the interface.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.2.7 GevInterfaceDefaultSubnetMask

Name	Interface Subnet Mask
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Subnet mask of the interface.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 4.3 CameraAddressForcing [Allied Vision]

Category that contains all features of the System module for forcing access to cameras that are otherwise not detectable.

### 4.3.1 GevDeviceForceMACAddress [Allied Vision]

Name	Gev Device Force MAC Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

48-bit MAC address of the GEV camera to force IP setup.

### 4.3.2 GevDeviceForceIPAddress [Allied Vision]

<b>Name</b>	<b>Gev Device Force IP Address</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

IP address of the GEV camera to be forced.

### 4.3.3 GevDeviceForceSubnetMask [Allied Vision]

<b>Name</b>	<b>Gev DeviceForce Subnet Mask</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Subnet mask of the GEV camera to be forced.

### 4.3.4 GevDeviceForceGateway [Allied Vision]

<b>Name</b>	<b>Gev Device Force Gateway</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Gateway of the GEV camera to be forced.

### 4.3.5 GevDeviceForceIP [Allied Vision]

<b>Name</b>	<b>Gev Device Force IP</b>
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Send the force address command on all interfaces.

## 4.4 ActionControl

Category that contains all features of the System module for creating and sending Action Commands. See [GenTL specification 1.5 chapter 7](#) for more details.

### 4.4.1 ActionCommand [Allied Vision]

<b>Name</b>	<b>Action Command</b>
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Send created Action Command.

## 4.4.2 ActionDeviceKey [Allied Vision]

Name	Action Device Key
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

The Device Key for the Action Command to be created.  
This Key has to match Action Device Key within desired device(s).

## 4.4.3 ActionGroupKey [Allied Vision]

Name	Action Group Key
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

The Group Key for the Action Command to be created.  
This Key has to match Action Group Key within desired device(s).

## 4.4.4 ActionGroupMask [Allied Vision]

Name	Action Group Mask
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

The Group Mask Key for the Action Command to be created.  
This Key has to match Action Group Mask Key within desired device(s).

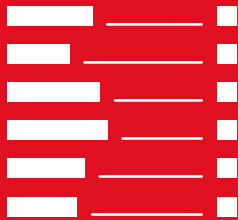


## 4.4.5 GevActionDestinationIPAddress [Allied Vision]

Name	Gev Action Destination IP Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Specifies destination the IP address for the Action Command.

# 5 VimbaGigETL Interface Features



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This chapter lists features that are potentially available in this module. Some features are only available under certain circumstances.

The following categories can be found below the Root category:

- InterfaceInformation
- DeviceEnumeration
  - Gev
- Settings
- ActionControl

## 5.1 InterfaceInformation

Category that contains all Interface Information features of the Interface module.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.1.1 InterfaceID

Name	Interface ID
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

GenTL Producer wide unique identifier of the selected interface.

Corresponds to the INTERFACE\_INFO\_ID command of IFGetInfo function.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.1.2 InterfaceDisplayName

Name	Interface Display Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

User readable name of the selected interface.

Corresponds to the INTERFACE\_INFO\_DISPLAYNAME command of IFGetInfo function.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.1.3 InterfaceType

Name	Interface Type
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	GEV

Identifies the transport layer technology of the interface.

Corresponds to the INTERFACE\_INFO\_TLTYPE command of IFGetInfo function.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2 DeviceEnumeration

Category that contains all Device Enumeration features of the Interface module.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.1 DeviceUpdateList

Name	Device Update List
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Updates the internal device list.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.2 DeviceUpdateTimeout

Name	Device Update Timeout
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	1..5000

Specifies timeout for the DeviceUpdateList Command in ms.

As long as no value has been specified by the user, the value is updated based on the selected discovery mode.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.3 DeviceCount [Allied Vision]

Name	Device Count
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Number of found devices.

## 5.2.4 DeviceSelector

<b>Name</b>	<b>Device Selector</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Selector for the different devices on this interface.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.5 DeviceID

<b>Name</b>	<b>Device ID</b>
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Interface wide unique identifier of the selected device.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.6 DeviceVendorName

<b>Name</b>	<b>Device Vendor Name</b>
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Name of the device vendor.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.7 DeviceModelName

Name	Device Model Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Name of the device model.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.2.8 DeviceType [Allied Vision]

Name	Device Type
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	GEV

Identifies the transport layer technology of the device.

Possible values:

- GEV: GigE Vision

## 5.2.9 DeviceDisplayName [Allied Vision]

Name	Device Display Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

User readable name of the selected device.

## 5.2.10 DeviceAccessStatus

Name	Device Access Status
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	Unknown, ReadWrite, ReadOnly, NoAccess

Gives the device's access status at the moment of the last execution of "DeviceUpdateList".

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.3 Gev [Allied Vision]

### 5.3.1 GevInterfaceMACAddress

Name	Interface MAC Address
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert



48-bit MAC address of this interface.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.2 GevInterfaceSubnetIPAddress

Name	Interface IP Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

IP address of the selected subnet of this interface.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.3 GevInterfaceSubnetMask

Name	Interface Subnet Mask
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Subnet mask of the selected subnet of this interface.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.4 GevDeviceIPAddress

Name	Device IP Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Current IP address of the GVCP interface of the selected remote device.  
 See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.5 GevDeviceSubnetMask

Name	Device Subnet Mask
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Current subnet mask of the GVCP interface of the selected remote device.  
 See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.6 GevDeviceMACAddress

Name	Device MAC Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

48-bit MAC address of the GVCP interface of the selected remote device.  
 See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.7 GevDeviceForceIPAddress

Name	Gev Device Force IP Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

IP address of the GEV camera to be forced.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.8 GevDeviceForceSubnetMask

<b>Name</b>	<b>Gev DeviceForce Subnet Mask</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Subnet mask of the GEV camera to be forced.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.9 GevDeviceForceGateway

<b>Name</b>	<b>Gev Device Force Gateway</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Gateway of the GEV camera to be forced.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.3.10 GevDeviceForceIP

<b>Name</b>	<b>Gev Device Force IP</b>
<b>Interface</b>	Command
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Send the force address command on all interfaces.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 5.4 Settings [Allied Vision]

### 5.4.1 InterfaceBeatRate [Allied Vision]

<b>Name</b>	<b>Interface Beat Rate</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	10..10000

Rate (in ms) at which the interface will perform device discovery.

### 5.4.2 InterfaceHailPace [Allied Vision]

<b>Name</b>	<b>Interface Hail Pace</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	1..10

Pace (as in every X beats) at which the interface will hail for devices to reply.

### 5.4.3 InterfacePingPace [Allied Vision]

<b>Name</b>	<b>Interface Ping Pace</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	1..10

Pace (as in every X beats) at which the interface will ping detected devices.

### 5.4.4 DiscoveryMode [Allied Vision]

<b>Name</b>	<b>Devices Discovery Mode</b>
<b>Interface</b>	IEnumeration
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	Off, Auto, Once

Defines how the interface should discover connected devices.

### 5.4.5 DiscoveryBroadcastMode [Allied Vision]

<b>Name</b>	<b>Devices Discovery Broadcast Mode</b>
<b>Interface</b>	IEnumeration
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	Local, Subnet

Defines how the interface should send its discovery broadcast.

## 5.5 ActionControl

Category that contains all features of the Interface module for creating and sending Action Commands.  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.5.1 ActionCommand

<b>Name</b>	<b>Action Command</b>
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Send created Action Command.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.5.2 ActionDeviceKey

<b>Name</b>	<b>Action Device Key</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

The Device Key for the Action Command to be created.  
This Key has to match Action Device Key within desired device(s).

See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.5.3 ActionGroupKey

Name	Action Group Key
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

The Group Key for the Action Command to be created.  
This Key has to match Action Group Key within desired device(s).  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.5.4 ActionGroupMask

Name	Action Group Mask
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

The Group Mask Key for the Action Command to be created.  
This Key has to match Action Group Mask Key within desired device(s).  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 5.5.5 GevActionDestinationIPAddress

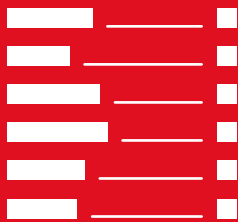
Name	Gev Action Destination IP Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Specifies destination the IP address for the Action Command.

See [GenTL specification 1.5 chapter 7](#) for more details.



## 6 VimbaGigETL Device Features



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This chapter lists features that are potentially available in this module. Some features are only available under certain circumstances.

The following categories can be found below the Root category:

- DeviceInformation
  - Gev
- StreamEnumeration
- GigE
  - GVCP

## 6.1 DeviceInformation

Category that contains all Device Information features of the Device module.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.1.1 DeviceID

Name	Device ID
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Interface-wide unique identifier of this device.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.1.2 DeviceVendorName

Name	Device Vendor Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Name of the device vendor.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.1.3 DeviceModelName

Name	Device Model Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Name of the device model.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.1.4 DeviceType

Name	Device Type
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	GEV

Identifies the transport layer technology of the device.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 6.1.5 DeviceDisplayName

Name	Device Display Name
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

User readable name of the device.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 6.2 Gev [Allied Vision]

### 6.2.1 GevDeviceIPAddress

Name	Device IP address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Current IP address of the GVCP interface of the remote device.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.2.2 GevDeviceSubnetMask

Name	Device Subnet Mask
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Current subnet of the GVCP interface of the selected remote device.  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.2.3 GevDeviceMACAddress

Name	Device MAC Address
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

48-bit MAC address of the GVCP interface of the selected remote device.  
See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.2.4 GevDeviceGateway

Name	Device Gateway
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Current gateway of the GVCP interface of the selected remote device.  
See [GenTL specification 1.5 chapter 7](#) for more details.

## 6.2.5 DeviceEndiannessMechanism

Name	Device Endianness Mechanism
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	Legacy

Identifies the endianness mode.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 6.3 StreamEnumeration

Category that contains all Stream Enumeration features of the Device module.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.3.1 StreamCount [Allied Vision]

Name	Stream Count
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Number of available streams.

## 6.3.2 StreamSelector

<b>Name</b>	<b>Stream Selector</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Selector for the different stream channels.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 6.3.3 StreamID

<b>Name</b>	<b>Stream ID</b>
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Device unique ID for the stream.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 6.4 GigE [Allied Vision]

## 6.5 GVCP [Allied Vision]

### 6.5.1 GevHeartbeatTimeout

<b>Name</b>	<b>Heartbeat Timeout</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	..100000

Interval of time (in ms) after which a device rejects control by a host if no heartbeat activity is registered. See [GenTL specification 1.5 chapter 7](#) for more details.

### 6.5.2 GevHeartbeatInterval [Allied Vision]

<b>Name</b>	<b>Heartbeat Interval</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Interval of time (in ms) after which a heartbeat is sent by the host.



### 6.5.3 GVCPCmdTimeout [Allied Vision]

<b>Name</b>	<b>Command Timeout</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

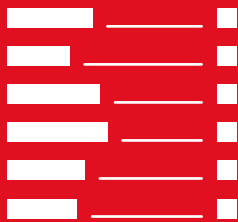
Timeout waiting for an answer from the device.

### 6.5.4 GVCPCmdRetries [Allied Vision]

<b>Name</b>	<b>Command Retries</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	1..9

Number of time a particular command to the device will be resent when no answer is being received.

## 7 VimbaGigETL Stream Features



This chapter includes:

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This chapter lists features that are potentially available in this module. Some features are only available under certain circumstances.

The following categories can be found below the Root category:

- StreamInformation
- BufferHandlingControl
- Stream
  - Multicast
  - Info
  - Settings
  - Statistics

## 7.1 StreamInformation

Category that contains all Stream Information features of the Data Stream module.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 7.1.1 StreamID

Name	Stream ID
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Device unique identifier for this data stream.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 7.1.2 StreamType

Name	Stream Type
<b>Interface</b>	IEnumeration
<b>Access</b>	Read
<b>Visibility</b>	Beginner
<b>Values</b>	GEV

Identifies the transport layer technology of the stream.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 7.2 BufferHandlingControl

Contains all features of the Data Stream module that control the used buffers.

See [GenTL specification 1.5 chapter 7](#) for more details.

### 7.2.1 StreamAnnouncedBufferCount

Name	Stream Announced Buffer Count
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Number of announced (known) buffers on this stream.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 7.2.2 StreamBufferHandlingMode

Name	Stream Buffer Handling Mode
<b>Interface</b>	IEnumeration
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	Default

Available buffer handling modes of this stream.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 7.2.3 StreamAnnounceBufferMinimum

Name	Stream Announce Buffer Minimum
<b>Interface</b>	Integer
<b>Access</b>	Read
<b>Visibility</b>	Beginner

Minimal number of buffers to announce to enable selected acquisition mode.

See [GenTL specification 1.5 chapter 7](#) for more details.

## 7.3 Stream [Allied Vision]

## 7.4 Multicast [Allied Vision]

Category for features dealing with multicast.

## 7.4.1 MulticastEnable [Allied Vision]

<b>Name</b>	<b>Multicast Enable</b>
<b>Interface</b>	IBoolean
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Enable multicast streaming.

## 7.4.2 MulticastIPAddress [Allied Vision]

<b>Name</b>	<b>Multicast IP Address</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	3758096384..4026531839

IP address of the target multicasting group.

## 7.5 Info [Allied Vision]

Category for Stream information features.

## 7.5.1 GVSPFilterVersion [Allied Vision]

<b>Name</b>	<b>GVSP Filter Version</b>
<b>Interface</b>	IString
<b>Access</b>	Read
<b>Visibility</b>	Expert

Version of the GVSP Filter driver.

## 7.6 Settings [Allied Vision]

### 7.6.1 GVSPTimeout [Allied Vision]

<b>Name</b>	<b>GVSP Timeout</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..5000

Timeout (in ms) used for stream packets (0 = OFF).

### 7.6.2 GVSPDriver [Allied Vision]

<b>Name</b>	<b>GVSP Driver Selector</b>
<b>Interface</b>	IEnumeration
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	Socket, Filter

Streaming driver to be used.

### 7.6.3 GVSPHostReceiveBufferSize [Allied Vision]

<b>Name</b>	<b>GVSP Host Receive Buffer Size</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	65536..

Number of bytes to be used by the OS' socket (hint, SO\_RCVBUF).  
The internally used value might be limited by the OS (e.g. /proc/sys/net/core/rmem\_max).

### 7.6.4 GVSPBurstSize [Allied Vision]

<b>Name</b>	<b>GVSP Burst Size</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	1..256

Maximum number of GVSP packets to be processed in a burst.



## 7.6.5 GVSPMaxLookBack [Allied Vision]

<b>Name</b>	<b>GVSP Max Look Back</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..1024

Size of the missing GVSP packets detection windows.

## 7.6.6 GVSPMaxRequests [Allied Vision]

<b>Name</b>	<b>GVSP Max Requests</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..512

Maximum number of requests (to the device) for a missing GVSP packet.

## 7.6.7 GVSPMissingSize [Allied Vision]

<b>Name</b>	<b>GVSP Missing Size</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..1024

Maximum number of simultaneous missing GVSP packets before dropping the frame (0 = OFF).

## 7.6.8 GVSP Tilting Size [Allied Vision]

<b>Name</b>	<b>GVSP Tilting Size</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..1024

Maximum number GVSP packets received from a following frame before dropping the frame (0 = OFF).

## 7.6.9 GVSP Max Wait Size [Allied Vision]

<b>Name</b>	<b>GVSP Max Wait Size</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	8..1024

Maximum number of received GVSP packets following a resend request to wait before requesting again.

## 7.6.10 GVSP Packet Size [Allied Vision]

<b>Name</b>	<b>GVSP Packet Size</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

GVSP Packet size (in bytes).

### 7.6.11 GVSPAdjustPacketSize [Allied Vision]

<b>Name</b>	<b>GVSP Adjust Packet Size</b>
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Request the packet size used to be adjusted automatically.

## 7.7 Statistics [Allied Vision]

Category for Stream statistics features.

### 7.7.1 StatFrameDelivered [Allied Vision]

<b>Name</b>	<b>Stat Frames Delivered</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Number of error-free frames that have been delivered to the TL consumer.

## 7.7.2 StatFrameDropped [Allied Vision]

<b>Name</b>	<b>Stat Frames Dropped</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Number of incomplete (due to missing packets) frames received by the host (not including shoved frames).

## 7.7.3 StatFrameUnderrun [Allied Vision]

<b>Name</b>	<b>Stat Frames Underrun</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..

Number of frames missed due to the non-availability of a user supplied buffer (buffer underrun).

## 7.7.4 StatFrameShoved [Allied Vision]

<b>Name</b>	<b>Stat Frames Shoved</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..

Number of frames dropped because the transfer of a following frame was completed earlier.

## 7.7.5 StatFrameRescued [Allied Vision]

Name	Stat Frames Rescued
Interface	Integer
Access	Read/Write
Visibility	Expert
Values	0..

Number of frames that initially had missing packets but were successfully completed after packet resend.

## 7.7.6 StatPacketReceived [Allied Vision]

Name	Stat Packets Received
Interface	Integer
Access	Read/Write
Visibility	Beginner
Values	0..

Number of error-free packets received and processed by the host (including successfully resent packets).

### 7.7.7 StatPacketMissed [Allied Vision]

<b>Name</b>	<b>Stat Packets Missed</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Number of packets expected and not received by the host (not including successfully resent packets).

### 7.7.8 StatPacketErrors [Allied Vision]

<b>Name</b>	<b>Stat Packets Errors</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..

Number of received packets that are erroneous (usually signal an hardware issue on the device).

### 7.7.9 StatPacketRequested [Allied Vision]

<b>Name</b>	<b>Stat Packets Requested</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Number of missing packets that were requested for resend from the device.

### 7.7.10 StatPacketResent [Allied Vision]

<b>Name</b>	<b>Stat Packets Resent</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0..

Number of missing packets that were resent by the device after having been requested.

### 7.7.11 StatFrameRate [Allied Vision]

<b>Name</b>	<b>Stat Frame Rate</b>
<b>Interface</b>	IFloat
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner
<b>Values</b>	0.0..

Rate (frames/s) at which the device is sending frames to the host (derived from the frame timestamps).

### 7.7.12 StatLocalRate [Allied Vision]

<b>Name</b>	<b>Stat Local Rate</b>
<b>Interface</b>	IFloat
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0.0..

Rate (frames/s) at which (complete and incomplete) frames have been received by the host (derived from the host clock).

### 7.7.13 StatTimeElapsed [Allied Vision]

Name	Stat Time Elapsed
Interface	IFloat
Access	Read/Write
Visibility	Expert
Values	0.0..

Elapsed time (in s) since the streaming was started.

### 7.7.14 StatPacketUnavailable [Allied Vision]

Name	Stat Packets Unavailable
Interface	Integer
Access	Read/Write
Visibility	Expert
Values	0..

Number of packets that could not be resent by the device after having been requested.



### 7.7.15 StatNonePendingBufferLists [Allied Vision]

<b>Name</b>	<b>Stat None Pending Buffer Lists</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..

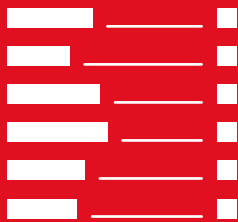
Number buffer lists provided by NDIS which are marked as none pending.

### 7.7.16 StatNoneContiguousBuffers [Allied Vision]

<b>Name</b>	<b>Stat None Contiguous Buffers</b>
<b>Interface</b>	Integer
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	0..

Number of none contiguous net buffers provided by NDIS.  
Processing these buffers invokes a memcopy.

## 8 Vimba functional extensions to GenTL



This chapter includes:

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Vimba transport layers provide additional functionality to the general GenTL interface. The provided extensions to Transport Layer Events allow monitoring system changes. Other extensions allow comfortable access to additional URL information.

## 8.1 Custom Transport Layer events

Custom additions to the following Enumerations are available:

- EVENT\_TYPE\_LIST (used in GCRegisterEvent and GCUnregisterEvent)
- EVENT\_DATA\_INFO\_CMD\_LIST (used in EventGetDataInfo)

Additionally, an enumeration for determining the type of a change is provided: IFCHANGE\_WHAT\_LIST

These extensions allow the users of Vimba transport layers to get informed about changes to either the interface list or the camera list.

### 8.1.1 Additions to EVENT\_TYPE\_LIST

Listing 1: Event types

```
enum EVENT_TYPE_LIST_VIMBA
{
    EVENT_SYSTEM_CHANGE          = 1000, // System detected some change
    EVENT_INTERFACE_CHANGE       = 1001  // Interface detected some change
}
```

### 8.1.2 Additions to EVENT\_DATA\_INFO\_CMD\_LIST

Listing 2: Change Events

```
enum EVENT_DATA_INFO_CMD_LIST_VIMBA
{
    // for event type EVENT_SYSTEM_CHANGE
    EVENT_DATA_SYSTEM_IFCOUNT = 1000, // UINT32   Number of detected interfaces

    // for event type EVENT_INTERFACE_CHANGE
    EVENT_DATA_IFCHANGE_DUID    = 1001, // STRING   Device UID
    EVENT_DATA_IFCHANGE_WHAT    = 1002, // UINT32   Bitfield of what has changed
                                     // (IFCHANGE_WHAT_LIST)
    EVENT_DATA_IFCHANGE_DATA    = 1003  // UINT32   Bitfield of current state of
                                     // the device (IFCHANGE_WHAT_LIST)
};
```

### 8.1.3 Additional enumeration IFCHANGE\_WHAT\_LIST

Listing 3: Change Event options

```
enum IFCHANGE_WHAT_LIST
{
    IFCHANGE_WHAT_VISIBILITY = 1, // Device visibility has changed
    IFCHANGE_WHAT_REACHABILITY = 2 // Device reachability has changed
};
```

## 8.2 Additional URL information

For the following Enumeration, extensions are available:

- URL\_INFO\_CMD\_LIST (used inGCGetPortURLInfo)

The extensions allow the user of the Vimba transport layers to access URL information without having to parse the URL string.

### 8.2.1 Additions to URL\_INFO\_CMD\_LIST

Listing 4: URL information

```
enum URL_INFO_CMD_LIST_VIMBA
{
    URL_INFO_FILENAME = 1000, // STRING   Filename of the port XML file
    URL_INFO_ADDRESS = 1001, // UINT64  Start address of the XML file
    URL_INFO_LENGTH = 1002, // SIZET   XML file length (in bytes)
    URL_INFO_ZIPPED = 1003 // BOOL8   Is the XML file zipped
};
```