



# **AVT GigE TL**

## **Feature Manual**

V1.3  
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# 1 Contacting Allied Vision Technologies

## Note



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## 2 Introduction

### 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

### 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
Bold	Programs, inputs or highlighting important things	<b>bold</b>
Courier	Code listings etc.	Input
Upper case	Constants	CONSTANT
Italics	Modes, fields, features	<i>Mode</i>
Blue and/or parentheses	Links	( <a href="#">Link</a> )

#### 2.2.2 Symbols

##### Note



This symbol highlights important information.

##### Caution



This symbol highlights important instructions. You have to follow these instructions to avoid malfunctions.

##### www



This symbol highlights URLs for further information. The URL itself is shown in blue.

Example: <http://www.alliedvisiontec.com>



## 3 AVTGigETL - Overview

The AVTGigETL 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 complete functionality described in [GenTL specification 1.3](#). There is additional functionality, which is described in chapter 8, **AVT extensions to the functional GenTL interface**.

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

- 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.

The XML file of the cameras is located in the device itself and conforms to the GenICam Standard Features Naming Convention, e.g. [GenICam SFNC 1.2.1](#).

## 4 TL System RegisterMap

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

### 4.1 SystemInformation

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

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 4.1.1 TLID

<b>Name</b>	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 1.3 chapter 7](#) for more details.

#### 4.1.2 TLVendorName

<b>Name</b>	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 1.3 chapter 7](#) for more details.

#### 4.1.3 TLModelName

<b>Name</b>	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 1.3 chapter 7](#) for more details.

#### 4.1.4 TLVersion

<b>Name</b>	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 1.3 chapter 7](#) for more details.

#### 4.1.5 TLDisplayName

<b>Name</b>	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 1.3 chapter 7](#) for more details.

#### 4.1.6 TLPath

<b>Name</b>	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 1.3 chapter 7](#) for more details.

### 4.1.7 TLType

<b>Name</b>	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 1.3 chapter 7](#) for more details.

### 4.1.8 GenTLVersionMajor

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

Major version number of the GenTL specification the GenTL Producer implementation complies with.  
See [GenTL specification 1.3 chapter 7](#) for more details.

### 4.1.9 GenTLVersionMinor

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

Minor version number of the GenTL specification the GenTL Producer implementation complies with.  
See [GenTL specification 1.3 chapter 7](#) for more details.

### 4.1.10 GevVersionMajor

<b>Name</b>	GEV Major Version Number
<b>Interface</b>	IInteger
<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 1.3 chapter 7](#) for more details.

### 4.1.11 **GevVersionMinor**

<b>Name</b>	GEV Minor Version Number
<b>Interface</b>	IInteger
<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 1.3 chapter 7](#) for more details.

## 4.2 **InterfaceEnumeration**

Category that contains all Interface Enumeration features of the System module.  
See [GenTL specification 1.3 chapter 7](#) for more details.

### 4.2.1 **InterfaceUpdateList**

<b>Name</b>	Interface Update List
<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 1.3 chapter 7](#) for more details.

### 4.2.2 **InterfaceCount [AVT]**

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

Number of interfaces on this GenTL Producer.

### 4.2.3 **InterfaceSelector**

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

Selector for the different GenTL Producer interfaces.  
See [GenTL specification 1.3 chapter 7](#) for more details.

#### 4.2.4 InterfaceID

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

GenTL Producer wide unique identifier of the selected interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 4.2.5 GevInterfaceMACAddress

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

48-bit MAC address of the interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 4.2.6 GevInterfaceDefaultIPAddress

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

IP address of the interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 4.2.7 GevInterfaceDefaultSubnetMask

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

Subnet mask of the interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 4.3 CameraAddressForcing [AVT]

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

### 4.3.1 **GevCameraForceAddressMAC [AVT]**

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

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

### 4.3.2 **GevCameraForceAddressIP [AVT]**

<b>Name</b>	Gev Camera Force Address IP
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

IP address of the GEV camera to be forced.

### 4.3.3 **GevCameraForceAddressSubnetMask [AVT]**

<b>Name</b>	Gev Camera Force Address Subnet Mask
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Subnet mask of the GEV camera to be forced.

### 4.3.4 **GevCameraForceAddressGateway [AVT]**

<b>Name</b>	Gev Camera Force Address Gateway
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert

Gateway of the GEV camera to be forced.

### 4.3.5 **GevCameraForceAddressSend [AVT]**

<b>Name</b>	Gev Camera Force Address Send
<b>Interface</b>	ICommand
<b>Access</b>	Read/Write
<b>Visibility</b>	Beginner

Send the force address command on all interfaces.

## 5 TL Interface RegisterMap

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

### 5.1 InterfaceInformation

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

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 5.1.1 InterfaceID

<b>Name</b>	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 1.3 chapter 7](#) for more details.

#### 5.1.2 InterfaceDisplayName

<b>Name</b>	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 1.3 chapter 7](#) for more details.



### 5.1.3 InterfaceType

<b>Name</b>	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 1.3 chapter 7](#) for more details.

## 5.2 DeviceEnumeration

Category that contains all Device Enumeration features of the Interface module.  
See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.2.1 DeviceUpdateList

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

Updates the internal device list.  
See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.2.2 DeviceCount [AVT]

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

Number of found devices.

### 5.2.3 DeviceSelector

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

Selector for the different devices on this interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.2.4 DeviceID

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

Interface wide unique identifier of the selected device.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.2.5 DeviceVendorName

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

Name of the device vendor.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.2.6 DeviceModelName

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

Name of the device model.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.2.7 DeviceType [AVT]

<b>Name</b>	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

### 5.2.8 DeviceDisplayName [AVT]

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

User readable name of the selected device.

### 5.2.9 DeviceAccessStatus

<b>Name</b>	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 1.3 chapter 7](#) for more details.

## 5.3 Gev [AVT]

### 5.3.1 GevInterfaceMACAddress

<b>Name</b>	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 1.3 chapter 7](#) for more details.

### 5.3.2 **GevInterfaceSubnetIPAddress**

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

IP address of the selected subnet of this interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.3.3 **GevInterfaceSubnetMask**

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

Subnet mask of the selected subnet of this interface.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.3.4 **GevDeviceIPAddress**

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

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

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.3.5 **GevDeviceSubnetMask**

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

Current subnet mask of the GVCP interface of the selected remote device.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 5.3.6 **GevDeviceMACAddress**

<b>Name</b>	Device MAC Address
<b>Interface</b>	IIInteger
<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 1.3 chapter 7](#) for more details.

## 5.4 **Settings [AVT]**

### 5.4.1 **InterfaceBeatRate [AVT]**

<b>Name</b>	Interface Beat Rate
<b>Interface</b>	IIInteger
<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 [AVT]**

<b>Name</b>	Interface Hail Pace
<b>Interface</b>	IIInteger
<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 [AVT]**

<b>Name</b>	Interface Ping Pace
<b>Interface</b>	IIInteger
<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 [AVT]

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

Defines how the interfaces should discovers connected devices.

#### 5.4.5 DiscoveryBroadcastMode [AVT]

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

Defines how the interfaces should send its discovery broadcast.

## 6 TL Device RegisterMap

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 1.3 chapter 7](#) for more details.

#### 6.1.1 DeviceID

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

Interface-wide unique identifier of this device.

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 6.1.2 DeviceVendorName

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

Name of the device vendor.

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 6.1.3 DeviceModelName

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

Name of the device model.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.1.4 DeviceType

<b>Name</b>	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 1.3 chapter 7](#) for more details.

### 6.1.5 DeviceDisplayName

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

User readable name of the device.

See [GenTL specification 1.3 chapter 7](#) for more details.

## 6.2 Gev [AVT]

### 6.2.1 GevDeviceIPAddress

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

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

See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.2.2 GevDeviceSubnetMask

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



Current subnet of the GVCP interface of the selected remote device.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.2.3 **GevDeviceMACAddress**

<b>Name</b>	Device MAC Address
<b>Interface</b>	IInteger
<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 1.3 chapter 7](#) for more details.

### 6.2.4 **GevDeviceGateway**

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

Current gateway of the GVCP interface of the selected remote device.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.2.5 **DeviceEndiannessMechanism**

<b>Name</b>	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 1.3 chapter 7](#) for more details.

## 6.3 **StreamEnumeration**

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

See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.3.1 StreamCount [AVT]

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

Number of available streams.

### 6.3.2 StreamSelector

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

Selector for the different stream channels.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.3.3 StreamID

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

Device unique ID for the stream.

See [GenTL specification 1.3 chapter 7](#) for more details.

## 6.4 GigE [AVT]

## 6.5 GVCP [AVT]

### 6.5.1 GevHeartbeatTimeout

<b>Name</b>	Heartbeat Timeout
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	..10000

Interval of time (in ms) after which a device rejects control by a host if no heartbeat activity is registered. See [GenTL specification 1.3 chapter 7](#) for more details.

### 6.5.2 GevHeartbeatInterval [AVT]

<b>Name</b>	Heartbeat Interval
<b>Interface</b>	IIInteger
<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 [AVT]

<b>Name</b>	Command Timeout
<b>Interface</b>	IIInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	100..1000

Timeout waiting for an answer from the device.

### 6.5.4 GVCPCmdRetries [AVT]

<b>Name</b>	Command Retries
<b>Interface</b>	IIInteger
<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 TL Stream RegisterMap

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 1.3 chapter 7](#) for more details.

#### 7.1.1 StreamID

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

Device unique identifier for this data stream.

See [GenTL specification 1.3 chapter 7](#) for more details.

#### 7.1.2 StreamType

<b>Name</b>	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 1.3 chapter 7](#) for more details.

## 7.2 BufferHandlingControl

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

See [GenTL specification 1.3 chapter 7](#) for more details.

### 7.2.1 StreamAnnouncedBufferCount

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

Number of announced (known) buffers on this stream.

See [GenTL specification 1.3 chapter 7](#) for more details.

### 7.2.2 StreamBufferHandlingMode

<b>Name</b>	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 1.3 chapter 7](#) for more details.

### 7.2.3 StreamAnnounceBufferMinimum

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

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

See [GenTL specification 1.3 chapter 7](#) for more details.

## 7.3 Stream [AVT]

## 7.4 Multicast [AVT]

Category for features dealing with multicast.

### 7.4.1 MulticastEnable [AVT]

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

Enable multicast streaming.

### 7.4.2 MulticastIPAddress [AVT]

<b>Name</b>	Multicast IP Address
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	224..4294967279

IP address of the target multicasting group.

## 7.5 Info [AVT]

Category for Stream information features.

### 7.5.1 GVSPFilterVersion [AVT]

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

Version of the GVSP Filter driver.

## 7.6 Settings [AVT]

### 7.6.1 GVSPTimeout [AVT]

<b>Name</b>	GVSP Timeout
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	10..5000

Timeout (in ms) used for stream packets.

### 7.6.2 GVSPDriver [AVT]

<b>Name</b>	GVSP Driver Selector
<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 GVSPHostReceiveBuffers [AVT]

<b>Name</b>	GVSP Host Receive Buffers
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	256..2048

Number of receive buffers to be used by the OS' socket (hint).

### 7.6.4 GVSPBurstSize [AVT]

<b>Name</b>	GVSP Burst Size
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	GVSP Max Look Back
<b>Interface</b>	IInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	1..1024

Size of the missing GVSP packets detection windows.

### 7.6.6 GVSPMaxRequests [AVT]

<b>Name</b>	GVSP Max Requests
<b>Interface</b>	IIInteger
<b>Access</b>	Read/Write
<b>Visibility</b>	Expert
<b>Values</b>	1..512

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

### 7.6.7 GVSPMissingSize [AVT]

<b>Name</b>	GVSP Missing Size
<b>Interface</b>	IIInteger
<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 TiltingSize [AVT]

<b>Name</b>	GVSP Tilting Size
<b>Interface</b>	IIInteger
<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 GVSPMaxWaitSize [AVT]

<b>Name</b>	GVSP Max Wait Size
<b>Interface</b>	IIInteger
<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 GVSPPacketSize [AVT]

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

GVSP Packet size (in bytes).

### 7.6.11 GVSPAdjustPacketSize [AVT]

<b>Name</b>	GVSP Adjust Packet Size
<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 [AVT]

Category for Stream statistics features.

### 7.7.1 StatFrameDelivered [AVT]

<b>Name</b>	Stat Frames Delivered
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Frames Dropped
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Frames Underrun
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Frames Shoved
<b>Interface</b>	IInteger
<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 [AVT]

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

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

### 7.7.6 StatPacketReceived [AVT]

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

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

### 7.7.7 StatPacketMissed [AVT]

<b>Name</b>	Stat Packets Missed
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Packets Errors
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Packets Requested
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Packets Resent
<b>Interface</b>	IInteger
<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 [AVT]

<b>Name</b>	Stat Frame Rate
<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 [AVT]

<b>Name</b>	Stat Local Rate
<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 [AVT]

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

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

## 8 AVT extensions to the functional GenTL interface

AVT 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 `GCTUnregisterEvent`)
- `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 AVT 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

```
1 enum EVENT_TYPE_LIST_AVT
2 {
3     EVENT_SYSTEM_CHANGE          = 1000, // System detected some change
4     EVENT_INTERFACE_CHANGE       = 1001  // Interface detected some change
5 }
```

#### 8.1.2 Additions to `EVENT_DATA_INFO_CMD_LIST`

Listing 2: Change Events

```
1 enum EVENT_DATA_INFO_CMD_LIST_AVT
2 {
3     // for event type EVENT_SYSTEM_CHANGE
4     EVENT_DATA_SYSTEM_IFCOUNT = 1000, // UINT32    Number of detected interfaces
5
6     // for event type EVENT_INTERFACE_CHANGE
7     EVENT_DATA_IFCHANGE_DUID    = 1001, // STRING    Device UID
8     EVENT_DATA_IFCHANGE_WHAT    = 1002, // UINT32    Bitfield of what has changed
9                                     // (IFCHANGE_WHAT_LIST)
10    EVENT_DATA_IFCHANGE_DATA     = 1003  // UINT32    Bitfield of current state of
11                                     // the device (IFCHANGE_WHAT_LIST)
12 };
```

#### 8.1.3 Additional enumeration `IFCHANGE_WHAT_LIST`

Listing 3: Change Event options

```
1 enum IFCHANGE_WHAT_LIST
2 {
3     IFCHANGE_WHAT_VISIBILITY    = 1,    // Device visibility has changed
4     IFCHANGE_WHAT_REACHABILITY  = 2     // Device reachability has changed
5 };
```

## 8.2 Additional URL information

For the following Enumeration, extensions are available:

- URL\_INFO\_CMD\_LIST (used in GCGetPortURLInfo)

The extensions allow the user of the AVT 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

```
1 enum URL_INFO_CMD_LIST_AVT
2 {
3     URL_INFO_FILENAME           = 1000,    // STRING    Filename of the port XML file
4     URL_INFO_ADDRESS            = 1001,    // UINT64    Start address of the XML file
5     URL_INFO_LENGTH             = 1002,    // SIZET     XML file length (in bytes)
6     URL_INFO_ZIPPED             = 1003     // BOOL8     Is the XML file zipped
7 };
```