

VITAMINCTRL PROGRAMMER'S GUIDE

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1. Introduction

This document describes the properties and methods supported by the Vitamin ActiveX control. Vitamin ActiveX control, in this release, supports all series model products.

Getting started with Vitamin Control

The main function of Vitamin Control is to provide a rapid development of the application that could be used to monitor, (PTZ or UART) control, record, and configuration update. It also provides decoded and compressed data access and AVI conversion. It supports various development tools such as Microsoft Visual Basic, Microsoft Visual C++ and Microsoft C#, and script languages such as VBScript and JavaScript. Notice that developing with Vitamin Control requires administrator privilege.

Installing the ActiveX control

To install the Vitamin Control on your PC, just follow these steps:

1. Download or the installation file VitaminDecoder.zip and unpack it. If you get the distribution disc, just find the VitaminDecoder.exe under \bin subdirectory.
2. Run the VitaminDecoder.exe.
3. The installed directory contains two subdirectories. The control itself is under lib and the cab-file and the sample html file using this cab-file is under cab subdirectory.

Using the Vitamin Control in web pages

You can get video/audio stream from VS server by using the control in your web pages. To access the Vitamin Control services, use HTML <OBJECT> tag and specify CLSID for the control. In addition, use the <PARAM> tag to assign [3.1.136 RemoteIPAddr property](#) for the server that you want to connect to. Also assign the

[3.1.161 UserName property](#) and [3.1.121 Password property](#) to pass the authentication of server. And also decide the server model by assign [3.1.144 ServerModelType property](#) to tell the control what kind of server you want to connect to.

The following example illustrates how to get video from 192.168.0.100 in your web page, suppose it's a 6000 series server.

```
<OBJECT ID="VitaminDecoder" WIDTH=362 HEIGHT=270
  CLASSID="CLSID:70EDCF63-CA7E-4812-8528-DA1EA2FD53B6"
  CODEBASE="VitCtrl.cab#version=1,0,0,4">
<PARAM NAME="RemoteIPAddr" VALUE="192.168.0.100 ">
<PARAM NAME="UserName" VALUE="root ">
<PARAM NAME="Password" VALUE="123">
<PARAM NAME="ServerModelType" VALUE="2 ">
</OBJECT>
```

NOTE: Please refer to the `sample.html` under the `cab` subdirectory of installed directory for more detail. Replace the followings with your settings:

- **server.domain.hostname** with the IP or domain name + hostname
- **plugin for CODEBASE** to the actual path on your web server
- **username and password** with the user you open for the internet user, usually, this is the demo user in video server.

The other samples `miscsample_xx.html` allows you to control more on the control by setting properties and calling functions of this control.

Turn off the error message box

If the control could not connect to server, there would be an error message box showing message. For users that does not need that message, please set the [3.1.55 DisplayErrorMsg property](#) to False.

Record via the control

The control supports two kinds of recording: one is proprietary format database recording. The other is AVI file base recording. For the database recording, users

could use the MediaDBPlayback control to play the data back. For AVI recording, users could use standard tool to play the AVI file back. These two methods are for different purpose, the former use much less CPU power so that it is possible to run up to tens of controls at the same time. But the latter way consumes much CPU power to encode the video into selected codec format. So in a moderate PC, it might stress the CPU usage to 100% if two or more controls record at the same time. Please refer to the [3.2.51 StartMediaRecord method](#), [3.2.52 StartMediaRecordEx method](#) for database recording. Please refer to [3.2.50 StartAVIConversion method](#) for AVI recording.

File structure

File	Description
doc\	
VitaminControl.pdf	This manual
lib\	
VitaminDecoder.exe	The installation file for the control itself and the cab file that signs the control.
sample\	
csharptest	Sample code for C#
vbtest	Sample code for VB
vctest	Sample code for VC++ 6.0
dynaloadcsharp	Sample code for C# to load control dynamically
dynaloadvb	Sample code for VB to load control dynamically
dynaloadvc	Sample code for VC++ 6.0 to load control dynamically
vcstring	Sample code for VC++ 6.0 to retrieve English string table

The csharptest, vbtest and vctest are designed to be able to connect to every supported model. Other sample codes are just for one model. But it is easy to extend to apply for other models.

Installed sample files and tools

File	Description
cab\	
mistsample_7kDual.html	Sample code to connect to 7K with dual-stream model
mistsample_7k.html	Sample code to connect to 7K
mistsample_6k.html	Sample code to connect to 6K
mistsample_3k.html	Sample code to connect to 3K
mistsample_2k.html	Sample code to connect to 2K with 1 channel
mistsample_2k4ch.html	Sample code to connect to 2K with 4 channels
mistsample_all.html	Sample code to support all models
sample.html	Simple sample code to view video and play audio, The setting value must be changed before it could be used
utility\	
GenerateRemoteIDString.exe	The tool to generate encrypted 3.1.135 RemoteIDStr property

2. Quick start guide

Adding ActiveX Control to your project

VC++ 6.0

To add a control into project's toolbox

1. From the Project menu, select Add to Project/Components and Controls. The Component and Controls Gallery dialog shows up.
2. Open the Registered ActiveX Controls folder. Choose VitaminCtrl class in the list box.
3. Click Insert button to close the dialog, and click OK on the confirm dialog. Then close the Components and Controls dialog. The VitaminCtrl object will now

appear in the toolbox.

4. Now you can drag the VitaminCtrl object into your dialog.
5. The wrapped class CVitaminCtrl is also available in your project workspace. The class could be used to access the control properties and method.

VB 6.0

To add a control into the project:

1. Please mouse content help (right button if the mouse button is not switched) button on ToolBox panel.
2. Choose "Component" item in the popup menu.
3. Locate and check VitaminDecoder 1.0 Type Library
4. Close Component dialog.
5. The Vitamin Control icon will appear in the ToolBox. You could use the control hereafter.

C

To add a control into the project

1. Move mouse to the ToolBox panel and wait until the panel shows up.
2. Click the General tab.
3. Right click mouse button to bring up the popup menu.
4. Choose "Customize ToolBox".
5. Locate and check VitaminCtrl class.
6. Close the dialog.

Create a member variable for your control

This is only applicable to VC++. Right click on the control and choose ClassWizard. In the ClassWizard window select the Member Variables tab and add a new member variable for the object, for example m_VitCtrl.

Set contact information to get live streaming

The basic operation is to get live video and audio streams from VS server. When using the control, you must set the [3.1.136 RemoteIPAddr property, 3.1.144 ServerModelType property, 3.1.161 UserName property](#) and [3.1.121 Password](#)

property. Optionally, you could also set the HTTP port. Note, you could assemble all the information into [3.1.159 Url property](#), but we recommend you to use the former way because different model needs different URL path. With correct settings above, you could now call [3.2.4 Connect method](#) to start the download of Video and Audio streams.

VC++ 6.0

Add the following sample code in your OnInitDialog function so that the program will start showing live images and playing waves as soon as it starts. The IP address in the [3.1.136 RemoteIPAddr property](#) must be the correct IP address to a visual server.

```
m_VitCtrl.SetUserName("root");  
m_VitCtrl.SetPassword("root");  
m_VitCtrl.SetRemoteIPAddr("192.168.0.100");  
m_VitCtrl.SetServerModelType(2); // we assume the model is 6000 server  
m_VitCtrl.Connect();
```

VB 6.0

Add the following sample code in your Form1_Load function so that the program will start showing live images and playing waves as soon as it starts. The IP address in the [3.1.136 RemoteIPAddr property](#) must be the correct IP address to a visual server.

```
VitaminCtrl1.UserName = "root"  
VitaminCtrl1.Password = "root"  
VitaminCtrl1.RemoteIPAddr = "192.168.0.100"  
VitaminCtrl1.ServerModelType = esrv456KServer  
VitaminCtrl1.Connect
```

C#

Add the following sample code in your Form1_Load function so that the program will start showing live images and playing waves as soon as it starts. The IP address in the [3.1.136 RemoteIPAddr property](#) must be the correct IP address to a visual server.

```
axVitaminCtrl1.UserName = "root";  
axVitaminCtrl1.Password = "root";  
axVitaminCtrl1.RemoteIPAddr = "192.168.0.100";  
axVitaminCtrl1.ServerModelType = VITAMINDECODERLib.EserverModelType.  
esrv456Kserver; // we assume the model is 6000 server  
axVitaminCtrl1.Connect();
```

Control PTZ camera attached to server

If you use camera that supports PTZ function on server or connect to a PTZ enabled IP camera, you can control the camera through [3.2.35 SendCameraCommand method](#). Note that you can change the URL for PTZ control by setting [3.1.128 PtzURL property](#), but usually there is no need to do this. And the control also has [3.2.36 SendCameraCommandMap method](#) that can be used to move the camera to the coordinate you assign (Note: some external camera might not support this). As for the Pan speed and Tilt speed, you could use [3.2.37 SendCameraControlSpeed method](#) to achieve this. They all use the same URL shown below.

VC++ 6.0

```
// There is a default value, usually, you don't have to set it  
m_VitCtrl.SetPtzUrl("/cgi-bin/ camctrl.cgi ");  
m_VitCtrl.SnedCameraCommand("up"); // move the camera up
```

VB 6.0

```
` There is a default value, usually, you don't have to set it  
VitaminCtrl1.PtzUrl = "/cgi-bin/ camctrl.cgi "`  
VitaminCtrl1.SnedCameraCommand "up" `move the camera up
```

C#

```
// There is a default value, usually, you don't have to set it  
axVitaminCtrl1.PtzUrl = "/cgi-bin/ camctrl.cgi ";  
axVitaminCtrl1.SnedCameraCommand("up"); // move the camera up
```

Save snapshot

You can save the current image to a local file using Bitmap or Jpeg format (the latter format is only available if the connection receives jpeg from server). Please refer to [3.2.34 SaveSnapshot method](#) for more details. The following code saves an image to D:\image.jpg file in BMP format. When calling this method, the connection must have been established.

VC++ 6.0

```
m_VitCtrl.SaveSnapshot(2, "D:\image.jpg");
```

VB 6.0

```
VitaminCtrl1. SaveSnapshot ePicFmtBmp , "D:\image.jpg"
```

C#

```
axVitaminCtrl1. SaveSnapshot  
( VITAMINDECODERLib.EPictureFormat.ePicFmtBmp, "D:\image.jpg");
```

How to load Vitamin control dynamically?

Sometimes, it is more flexible to create a control dynamically rather than create the control statically. This section depicts how to create control dynamically.

VC++ 6.0

In C++ the loading is by calling new operator for the control class and then Create function for the object just created. You have to save the control memory to be used for remove later on. You have to add Vitamin control into your project first. And add a dummy Vitamin control to your dialog or window and add the event-handling template if you need to handle the event. To handle batch events for multiple controls, you need to add ON_EVENT_RANGE macro manually. In the sample code, you could see the syntax.

```
m_lpVitamin = (CVitaminCtrl*)new CVitaminCtrl();  
m_lpVitamin-  
>Create("test",WS_CHILD|WS_VISIBLE,CRect(3,3,200,200),this,10001);  
m_lpVitamin->SetAutoServerModelType(TRUE);  
m_lpVitamin->SetUserName("root");  
m_lpVitamin->SetPassword("123");  
m_lpVitamin->SetRemoteIPAddr("192.168.1.240");  
m_lpVitamin->SetCurrentControlCam(1);  
m_lpVitamin->Connect();
```

```
m_lpVitamin->CloseConnect();  
delete m_lpVitamin;
```

VB 6.0

In VB the loading is by calling Form1.Controls.Add. The second argument for the call is the new name for the newly created control. You have to use this name as the identifier when delete the control later on. You have to add the Vitamin control into your project first. Note that, you have to uncheck the "Remove information about

unused ActiveX Controls” setting in Project Properties\Make tab to avoid VB from removing the information of the control at run time.

```
Dim WithEvents X As VitaminCtrl
Set X = Form1.Controls.Add("VITAMINDECODER.VitaminCtrl", "Test", Form1)
X.Visible = True
X.Move 1, 100 * 15, 300 * 15, 200 * 15
X.Url = "http://root:123@192.168.1.90/cgi-bin/video.vam"
X.ServerModelType = esrv3KServer
X.Connect
```

```
Form1.Controls.Remove "Test"
```

C#

In C# the loading is by calling Controls.Add. The argument is a newly created control by calling “new”. You have to save the control handle to be used for remove later on. You have to add Vitamin control into you project first. And add a dummy Vitamin control to your window form to let the IDE add references needed for the control (The dummy control could be removed right after added).

```
System.Resources.ResourceManager resources = new
System.Resources.ResourceManager(typeof(Form1));
this.axVitaminCtrl1 = new AxVADECODERLib.AxVaCtrl();
this.axVitaminCtrl1.Enabled = true;
this.axVitaminCtrl1.Location = new System.Drawing.Point(184, 72);
this.axVitaminCtrl1.Name = "axVitaminCtrl1";
this.axVitaminCtrl1.OcxState =
((System.Windows.Forms.AxHost.State)(resources.GetObject("axVitaminCtrl1.Oc
xState")));
this.axVitaminCtrl1.Size = new System.Drawing.Size(192, 192);
this.axVitaminCtrl1.TabIndex = 1;
Controls.Add(axVitaminCtrl1);
axVitaminCtrl1.Visible = true;
axVitaminCtrl1.Left = 1;
axVitaminCtrl1.Url = "http://root:123@192.168.1.90/cgi-bin/video.vam";
axVitaminCtrl1.Connect();
```

```
Controls.Remove(axVitaminCtrl1);
axVitaminCtrl1= null;
```

Application sample code

In the shipment, there are several sample codes. The following list the function for

the sample code.

csharptest

This project is the sample code written in C#. It demonstrates most of the function in this control. The functions include:

- Live streaming / Single jpeg
- Counting statistics data – Frame rate, Video bit rate, Audio bit rate, Reconnect count, connection time, total connection time
- Set DO
- Get DI by http command
- Motion Edit mode
- Misc. Options setting
- Recording
- AVI conversion
- InputPacket
- Server setting functions – Refresh, set, get, update
- Server Date/Time setting function
- Http command function
- Events - Video/Audio Decoded data notification, DI/DO notification, Packet notification
- Save snapshot in file

vbtest

This project is the sample code written in VB 6.0. It demonstrates most of the function in this control. The functions include:

- Live streaming / Single jpeg
- Counting statistics data – Frame rate, Video bit rate, Audio bit rate, Reconnect count, connection time, total connection time
- Set DO
- Get DI by http command
- Motion Edit mode
- Misc. Options setting
- Recording
- AVI conversion
- InputPacket
- Server setting functions – Refresh, set, get, update
- Server Date/Time setting function

- Http command function
- Events - Video/Audio Decoded data notification, DI/DO notification, Packet notification
- Save snapshot in file

vctest

This project is the sample code written in VC++ 6.0. It demonstrates most of the function in this control. The functions include:

- Live streaming / Single jpeg
- Counting statistics data – Frame rate, Video bit rate, Audio bit rate, Reconnect count, connection time, total connection time
- Set DO
- Get DI by http command
- Motion Edit mode
- Misc. Options setting
- Recording
- AVI conversion
- InputPacket
- Server setting functions – Refresh, set, get, update
- Server Date/Time setting function
- Http command function
- Events - Video/Audio Decoded data notification, DI/DO notification, Packet notification
- Save snapshot in file
- Get snapshot in memory and how to access the byte array
- How to assign AVI file by application

dynaloadcsharp

This project is the sample code written in C#. It demonstrates how to dynamically load the control into the program.

dynaloadvb

This project is the sample code written in VB 6.0. It demonstrates how to dynamically load the control into the program.

dynaloadvc

This project is the sample code written in VC++ 6.0. It demonstrates how to

dynamically load the control into the program.

vcstring

This project is the sample code written in VC++ 6.0. It demonstrates how to get the string table for English.

csharpfisheyetest

This project is the sample code written in C#. It demonstrates how to use fish eye function in this control. The function includes:

- Fish eye control in dewarping viewer: pan, tilt, zoom, home, rotate, auto pan
- Insert, remove preset information in/out rotation list.
- Get preset location
- Go preset location
- Adjust display ratio
- Save snapshot file

3. API Reference

This chapter contains the API function calls for the VA Control.

3.1. Properties

3.1.1. AntiTearing property

Set this value to True that force the control to do anti-tearing.

Type

Boolean

Attribute

R/W

Remarks

Default value is False. Do anti-tearing will cause a performance penalty.

3.1.2. AudioBitRate property

Retrieve the audio bit rate of current connection. This is only applicable to those models that support audio and the connection contains also audio data.

Type

Long

This is the audio bit rate in BPS.

Attribute

R/O

Remarks

To use this property, the application must set a timer to retrieve this value. Or the bit rate will be the average bit rate from connection starts. Once retrieved, the accumulated data bytes will be reset. And the next time when this property is called, the returned value is calculated from last retrieval time to current.

3.1.3. AutoAVISettings property

When convert the live stream to AVI file, should the control use the default settings or use the settings users selected. The settings include: video and audio compressors, video frame rate, video width and height. For the automatic mode, the control will try to decide the proper value. The default value is True.

Type

Boolean

True means to use default settings, False means not.

Attribute

R/W

Remarks

The proper value is per control base, so if there are two or more controls convert AVI at the same time, the estimation might be incorrect.

3.1.4. AutoReconnect property

Decide whether the control should try to reconnect to the server if it found the connection broken.

Type

Boolean

True means to reconnect automatically, False means not.

Attribute

R/W

Remarks

No matter what value this property is set, the control will send out a connection-broken event. The event receiver should not try to do reconnection if this value is set to TRUE since the control itself will handle the reconnection.

3.1.5. AutoServerModelType property

Decide whether the control should recognize the server model type automatically. With this setting, the users could now specify only the IP/User name/Password to get connected to server (though if the server is 4 channels model, the channel index must be set separately).

Type

Boolean

True means to get server model type automatically, False means not.

Attribute

R/W

Remarks

To decide the server type, the control needs to talk with server before connecting to for streaming. So it will take more time to get connected. After the server type is known, an [3.3.16 OnServerModelType event](#) will be fired (no matter what current server model is). Application could use this to change the UI setting.

3.1.6. AutoStartConnection property

Decide whether the control to start connecting automatically or start connecting manually.

Type

Boolean

True means to start connecting automatically, False means not.

Attribute

R/W

Remarks

If this property is set to false, you can use method Connect to do connection.

3.1.7. AVIFilePathName property

This property is used for application to specify the name of next generated AVI file. The name should include full path name. This property is only used when [3.1.8 AVIManualNaming property](#) is set to true. When [3.1.8 AVIManualNaming property](#) is set to true, the control will fire the event [3.3.15 OnRequestAVIFileName event](#) when a new AVI file name is needed.

Type

String

This is the file name set by application.

Attribute

R/W

Remarks

This name could point to any directory that control could access. The application should ensure that the control have right to write to the target directory, because the control dose little error handling for the correctness of the file path name.

3.1.8. AVIManualNaming property

This property tells the control if the AVI file name is given by user or generated by control itself. The default false as previous version, the control uses the PC time and prefix to generate file name whenever it needs file name. And the file will be put under AVIPath. But if this property is set to true, the control will fire [3.3.15 OnRequestAVIFileName event](#) when a new AVI file name is needed. Application could give the file name by setting the [3.1.7 AVIFilePathName property](#).

Type

Boolean

True if the AVI file name is given by application. False if the name is generated by control.

Attribute

R/W

Remarks

If application set this property to true and forgot to implement the event, the control will fall back to generate file name automatically after about 80 milliseconds of waiting. This is to prevent the whole control blocks forever.

3.1.9. AVIMaxFileSize property

This property is used to set the maximum AVI file size. If both this property and [3.1.9 AVIMaxFileSize property](#) are set, the first limitation that reaches would be used.

Type

Long

The minimum value allowed is 500K bytes. The maximum possible value is 2G. Set the property to 0 could record the file without auto changing file. But AVI has maximum size limitation for about 4G.

Attribute

R/W

Remarks

Note that the size is not exactly. So the final size could somehow larger than the set size. But it will not be larger too much. So if application needs exact size constraint, please set the size with margin. For example, if the size should not be larger than 100M, set the property to 99M could ensure that the size never over 100M.

3.1.10. AVIMaxFileTimeLength property

This property is used to set the maximum time in seconds an AVI file would contains.

If both this property and [3.1.9 AVIMaxFileSize property](#) are set, the first limitation that reaches would be used.

Type

Long

The minimum allowed value is 5 seconds. The maximum is 2G seconds though you seldom will use such large value. Set this value to 0 could turn off time limitation.

Attribute

R/W

Remarks

Note that the time period in file would be smaller or equals to the set seconds. It is in server time scale not in PC time scale. So it might not as what you expect if the network condition is bad.

3.1.11. AVIPath property

The property contains the default path for the AVI files. Each time when users start AVI recording, a new file named by using the recording date/time will be created under this directory.

Type

String

This is the default recording path.

Attribute

R/W

Remarks

If this path contains multiple layers of directories, the control will ensure the path to be created properly. If the directory could not be created, the recording won't start.

3.1.12. AVIRecordTimeout property

Set time length (second unit) to stop AVI conversion. User could use this property.

Type

Long

Attribute

R/O

3.1.13. AVIStatus property

Retrieve the AVI conversion status for the control. User could use this property

Type

EAVIRecordStatus enumeration

The enumeration for the AVI status

Attribute

R/O

3.1.14. AVIVideoFrameRate property

This property is to specify or retrieve the video frame rate used to convert A/V data in database to AVI file.

Type

Long

The permitted range for this value is from 1 to 30.

Attribute

R/W

Remarks

This frame rate could be different from the actual frame rate recorded in the database. The control will insert dummy frames or drop frames to meet this frame rate for the final AVI files. This means the video data in AVI files will not be played in fast or slow motion effect no matter what value this property is set to.

Requirements

This property is used only when [3.1.3 AutoAVISettings property](#) is set to False.

3.1.15. AVIVideoHeight property

This property is to specify or retrieve the video height for the final AVI file. This value could be different from the video height of the actual video frame in database.

Type

Long

The value should be a multiple of 8. If not, some video compressor would have problem. The maximum allowed value is 2048, but in some video compressor, the maximum is smaller than 2048, in such case, the conversion will be failed. Please change to a smaller value if this happens.

Attribute

R/W

Remarks

This property is only valid if the [3.1.17 AVIVideoSizeByStream property](#) is set to False. If [3.1.17 AVIVideoSizeByStream property](#) is set to be True, it's ignored. All the video frame would be stretched to meet this height if the size is different.

Requirements

This property is used only when [3.1.3 AutoAVISettings property](#) is set to False.

3.1.16. AVIVideoWidth property

This property is to specify or retrieve the video width for the final AVI file. This value could be different from the video width of the actual video frame in database.

Type

Long

The value should be a multiple of 8. If not, some video compressor would have problem.

Attribute

R/W

Remarks

This property is only valid if the [3.1.17 AVIVideoSizeByStream property](#) is set to False. If [3.1.17 AVIVideoSizeByStream property](#) is set to be True, it's ignored. All the video frame would be stretched to meet this width if the size is different.

Requirements

This property is used only when [3.1.3 AutoAVISettings property](#) is set to False.

3.1.17. AVIVideoSizeByStream property

This property is to determine if the video height and width is set according to the first video frame size when conversion or not.

Type

Boolean

True means to use the first video frame size as the output video size in the AVI file. All subsequent video frames would be stretched to the same size as the first frame is. False means to use the width and height specified in [3.1.15 AVIVideoHeight property](#) and [3.1.16 AVIVideoWidth property](#).

Attribute

R/W

Remarks

When this property is set to True, [3.1.15 AVIVideoHeight property](#) and [3.1.16 AVIVideoWidth property](#) are ignored.

Requirements

This property is used only when *3.1.3 AutoAVISettings property* is set to False.

3.1.18. BeRightClickEventHandler property

Tell the control has to response to the right mouse click event or not.

Type

Boolean

True means to handle right mouse click event, False means not.

Attribute

R/W

Remarks

Default value is false. In current the control will jump sub-menu about joystick button configuration.

3.1.19. BitmapFile property

This property let users set the bitmap to be shown when the control is not connected to any server device.

Type

String

The name of the bitmap file to be loaded.

Attribute

R/W

Remarks

If the server is connecting or connected to server, the bitmap file will not be shown. The file name could start with "http://". In such case, the control will retrieve the file from remote server and display it after finishing.

3.1.20. ChangePresentMode property

This property let user set the present mode of fish eye to show different dewarping effect.

Type

EFishEyePresentMode enumeration

The present mode type to be set.

Attribute

R/W

Remarks

The present mode could be change when connected with fish eye device, or set for presetting the present type and wait for connecting to fish eye device and show the present mode you want. The [3.1.61 EnableFishEye property](#) should be set, then the effect of fish eye control will be presented.

3.1.21. CircularMode property

This property decides if the control should delete the oldest file in current location if the file system full or the location size limitation reaches.

Type

Boolean

True means to be circular, False means not.

Attribute

R/W

Remarks

This property should be used very careful, or it could cause loss of data.

3.1.22. ClickEventHandler property

Tell the control how to response to the mouse click event.

Type

EClickEventHandler enumeration

HandleSelf is the default setting.

Attribute

R/W

Remarks

Please refer to [3.4.4 EClickEventHandler enumeration](#) for the possible value of this property.

3.1.23. ControlID property

This is the control ID used to write or read registry.

Type

Long

This is the control ID

Attribute

R/W

Remarks

If the control ID is 0, the registry is read from or written to the default registry root. If the value is not 0, the registry is read from or written to a sub-key under the registry root. The sub-key name is constructed base on the control ID.

3.1.24. ControlPort property

Tell the control the control port to use to communicate with the Visual Server.

Type:

Long

This is the port number.

Attribute

R/W

Remarks

For 2K servers, this property is not meaningless. For 3/4/5/6K servers the control port is retrieved automatically. For 7K servers, this value is important if the SDP port of server is not default value (554).

3.1.25. ConnectionProtocol property

Set the connection protocol used when connecting to server.

Type:*EConnProtocol enumeration*

The available protocol is listed in [3.4.6 EConnProtocol enumeration](#).

Attribute: R/W**Remarks**

Once set, the control will restart the connection if it is currently connecting to server. But there is no guarantee that the connection will use the protocol assigned, it could switch to other protocol if necessary. User could get the CurrentProtocol to know the protocol actually used.

3.1.26. ConnectionTimeout property

Set or get the timeout value used when connect to server. The default value is 25 seconds.

Type

Long

The value is in milliseconds.

Attribute

R/W

3.1.27. ControlButtonOpts property

Get or set the display state of the buttons on control bar. In other word, you could show or hide each button set individually.

Type

Long

This is the bit-wise Or-ed value of the type defined in [3.4.7 EControlButtonState enumeration](#).

Attribute

R/W

Remarks

Besides this property, the server model type also affects the control bar buttons' state. The following list the default button state for each model type:

- **2K (both 1 channel and 4 channel):** Digital zoom (show), AVI (hide)
- **3K:** Digital zoom (show), AVI (hide), Play volume (show)
- **4/5/6 K:** Digital zoom (show), Talk (show), AVI (hide), Play volume (show), Mic Volume (show)
- **7K:** Digital zoom (show), AVI (hide), Play/Pause/Stop (show), Play volume (show), Slider (show if file base playback)

3.1.28. ControlStatus property

Retrieve the control status. The control will maintain its status during operation.

Type

[EControlStatus enumeration](#)

This is the status for the control.

Attribute

R/O

3.1.29. ControlType property

This property is used to change the different UI supported by the control. This property is better not to be changed after control created. That is, if the control is used in IE, the value should be set in parameter list, and if used in non-script language, the property should be set in designed time.

Type

EControlType enumeration

This is the type for the control. If it is changed at runtime, the control will switch to the new interface.

Attribute

R/W

Remarks

For client setting interface, the [3.1.144 ServerModelType property](#) does not affect the outlook of the control.

3.1.30. ControlVersion property

This property is used to retrieve the current version of the control.

Type

String

The version of the control.

Attribute

R/O

3.1.31. CurrentAudioCodecType property

Read from local the codec type uses by the server.

Type:

EAudioCodecType enumeration

The element will be updated after media received.

Attribute

R/O

Remarks

This value is meaningful only after connecting to the server and the connection contains audio media.

3.1.32. CurrentAudioPort property

Read from local the audio port uses by server to provide audio stream service.

Type

Long

This is the port number.

Attribute

R/O

Remarks

This value is meaningful only after connecting to the server and the connection contains audio media.

3.1.33. CurrentAudioProtocol property

Read from local the audio protocol uses to connect to server.

Type

EConnProtocol enumeration

The enumeration now contains four elements: None, HTTP, UDP, and TCP.

Attribute

R/W

Remarks

This value is meaningful only after connecting to the server and the connection contains audio media.

3.1.34. CurrentControlCam property

Read or set the current control camera index.

Type

Long

The camera index.

Attribute

R/W

Remarks

For 1 channel model, this value is always treat as 1.

3.1.35. CurrentMediaType property

Read from local the current media type that is available for the connection to server.

Type

EMediaType enumeration

This is media type. The value is one of the value in [3.4.19 EMediaType enumeration](#).

Attribute

R/O

Remarks

This value is meaningful only after connecting to the server.

3.1.36. CurrentProtocol property

Read from local the protocol uses to connect to server.

Type

EConnProtocol enumeration

The enumeration now contains four elements: None, HTTP, UDP, and TCP.

Attribute

R/O

Remarks

This value is meaningful only after connecting to the server.

3.1.37. CurrentVideoCodecType property

Read from local the video codec type uses by the server.

Type:

EVideoCodecType enumeration

The elements are listed in [3.4.29 EVideoCodecType enumeration](#).

Attribute: R/O

Remarks

This value is meaningful only after connecting to the server and the connection contains video media.

3.1.38. CurrentVideoPort property

Read from local the video port uses by server to provide video stream service.

Type

Long

This is the port number.

Attribute

R/O

Remarks

This value is meaningful only after connecting to the server and the connection contains video media.

3.1.39. DarwinConnection property

Get or set the flag that the control is connecting to Darwin Server or not.

Type

Boolean

True means connecting to Darwin Server. False means not, this is the default value.

Attribute

R/W

3.1.40. DatabasePath property

Get the database path that is currently set to the control.

Type

String

This is a string that represents the database path. The path format is the same

as what you use under windows explorer.

Attribute

R/O

3.1.41. DBHierarchy property

Get or set the way the media files are saved under location path. It determines if subdirectory is created to hold the media files. This property is process-wide. It means if you have more than one controls in your system, change the setting in one control will affect all other controls.

Type:

Boolean

True means to create sub-directory, this is the default value. False means not.

Attribute

R/W

Remarks

In FAT32 partition, there is a file number limitation problem. Set this property to true will solve this problem because now each directory will not hold too many files. Sub-Directory solution also solve the problem that if there are large amount of files in the location, use explorer to browse that directory will spend "LONG" time (maybe half an hour).

3.1.42. DDrawOnePass property

Set or get the switch to decide the way to display video when in DirectDraw mode. The default value is False.

Type

Boolean

True means to show the video directly without shivering proof, False to provide shivering proof.

Attribute

R/W

Remarks

When drawing with DirectDraw, if the video is stretching, the video will be shivering when other window moving upon. The control will use some mechanism to cancel this shivering, but this mechanism won't work in some display card (the video looks bad if stretching or shrinking). The developing could turn this property one when the video quality is bad.

3.1.43. Deblocking property

Get or set the de-blocking mode when decode video stream.

Type

Boolean

True means to de-block the video image, False means not. Default value is False.

Attribute

R/W

Remarks

De-blocking could solve the blocky problem for video stream in low bandwidth, but it would consume more CPU power when decode. Please set this property carefully because it might cause the system to be insensitive for UI request because of CPU busy on decoding.

3.1.44. DecodeAV property

Get or set the flag that decides if the audio and video data should be decoded after received.

Type

Boolean

True means to decode the audio and video data. False means not decode.

Attribute

R/W

Remarks

The default value is to decode audio and video data. If the value is changed to false, no audio would be heard and no video data would be shown on screen. But the screen would still show the server time and location name if the Display flag is not turned off.

3.1.45. DecodeSnapshot property

Get or set the flag that decides if the snapshot must be decoded and composed when return.

Type:

Boolean

True means to decode the snapshot. False means using default setting.

Attribute

R/W

Remarks

The default value is false.

3.1.46. Deinterlace property

Get or set the flag that to decode video stream in de-interlacing mode.

Type

Boolean

True means to use de-interlacing mode. False means not.

Attribute

R/W

Remarks

The default value is false. This property is useful in VS7100.

3.1.47. DigitalInURL property

Set or get the URL for digital input.

Type:

String

This URL could include or exclude the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.48. DigitalOutURL property

Set or get the URL for digital input/output.

Type

String

This URL could include or exclude the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.49. DigitalZoomEnabled property

Set or get the digital zoom enabled property. This property controls if the digital zoom function is enabled when displaying video.

Type

Boolean

True means the digital zoom function is enabled. False means it's disabled.

Attribute

R/W

Remarks

It is possible to enable/disable digital zoom function even if the edit interface is not shown.

3.1.50. DigitalZoomEnableChk property

Set or get the property that controls if the “enable digital zoom” check box is shown or hidden in the zoom control panel.

Type

Boolean

True means check box is shown. False means it's hidden.

Attribute

R/W

Remarks

When the check box is hidden, the digital zoom enabling or disabling could only be set through the [3.1.49 DigitalZoomEnabled property](#). Users will not able to disable or enable digital zoom on UI.

3.1.51. DigitalZoomFactor property

Set or get the digital zoom factor property. This property controls the proportion of the video frame to be zoomed.

Type

Long

The range is between 100 and 400. Value outside this range would be normalized to 100 when setting.

Attribute

R/W

Remarks

The size of the viewable window is (Real Video Size * 100 / this factor). And the position of the viewable window might change when set a new factor. The rule is to enlarge or shrink the window centered at the original rectangle center. If any side of the viewable window is outside the real video, the window is moved to align the real video frame at that side.

3.1.52. DigitalZoomX property

Set or get the x coordinate of the left-upper corner of the viewable window. This and the [3.1.53 DigitalZoomY property](#) decide which portion of the video is viewable on screen.

Type

Long

The value range is between 0 and the width of half mode video size. So it depends on which kind of lens the server uses.

Attribute

R/W

Remarks

The control will adjust the value if the value is out of range.

3.1.53. DigitalZoomY property

Set or get the y coordinate of the left-upper corner of the viewable window. This and the [3.1.52 DigitalZoomX property](#) decide which portion of the video is viewable on screen.

Type

Long

The value range is between 0 and the height of half mode video size. So it depends on which kind of lens the server uses.

Attribute

R/W

Remarks

The control will adjust the value if the value is out of range.

3.1.54. Display property

Set or get the switch to turn on or turn off the display of graph on screen.

Type

Boolean

True means to show the graph, False means to disable display.

Attribute

R/W

Remarks

For computer that has slower graphic card, this switch would be very helpful to prevent the system loading from being filled up.

3.1.55. DisplayErrorMsg property

Set or get the switch to turn on or turn off the display of error message when error happens.

Type

Boolean

True means to show the message with message box. False means to disable display of error message. The default value is True.

Attribute

R/W

Remarks

Sometimes application need not to show users the error message could set this property to false. But now the message boxes are all timeout box that would be closed automatically after 20 seconds.

3.1.56. DisplayLastImage property

Set or get the switch to display last frame when connection broken or not.

Type

Boolean

True means to display last frame, False means not to display last frame.

Attribute

R/W

Remarks

The default value is False. If the connection is stopped by user, it will not display last frame even if set this property True.

3.1.57. DisplayMotionFrame property

Set or get the switch to turn on or turn off the display of motion detection triggered frame (red rectangle).

Type

Boolean

True means to show the motion rectangle when triggered, False means to hide the rectangle. The default value is True.

Attribute

R/W

Remarks

The default value is True.

3.1.58. DisplayPeriod property

Set or get the video display period. The setting value is the frame number that would be used to count before one frame is shown. For example, if the set value is 2, then the control will show one frame per two frames it receives. This property is useful to lower down the loading of the computer that running with several controls at the same time.

Type

Long

This is the frame numbers to be set. 0 or 1 means to show every frame, greater value means longer period before screen updated.

Attribute

R/W

Remarks

If the network speed is slow, for example if the control gets only one frame per second, this period count will be ignored. In other word, the DisplayPeriod will be

disabled automatically in slow speed link.

3.1.59. DisplayTimeFormat property

Set or get the format to display server time on control title.

Type

EDisplayTimeFormat enumeration

The enumeration elements are list in [3.4.12 EDisplayTimeFormat enumeration](#).

Attribute

R/W

Remarks

For eTimeFmtTwelves format, the position of “AM”/”PM” is always after the hour/minute/ second string. For the eTimeFmtUser, the position time marker is the same as what users see in Windows’ regional control panel.

3.1.60. DrawHwnd property

Set or get window handle that the video data will be drawn to. This is usefully if developers want to use this control in background and show the graph on existing application window.

Type

Long

This is the window handle of the target display window. This is actually a HWND type.

Attribute

R/W

Remarks

To restore the painting window to the original one, please set this property to 0 or call [3.2.28 RestoreControlHandle method](#).

3.1.61. EnableFishEye property

Enable the control to support fish eye or not.

Type

Boolean

True means it can support. False means not.

Attribute

R/W

Remarks

Default value is False.

3.1.62. EnableJoystick property

Enable the control to support joystick or not.

Type

Boolean

True means it can support. False means not.

Attribute

R/W

Remarks

Default value is False.

3.1.63. EnableRTSPProxy property

Enable the control connect to camera server through RTSP proxy server.

Type

Boolean

True means connect to camera server through RTSP proxy server. False means connecting without RTSP proxy server, this is default value.

Attribute

R/W

Remarks

Remember to set address and port of RTSP proxy server by setting [3.1.139 RTSPProxyAddress property](#) and [3.1.140 RTSPProxyPort property](#).

3.1.64. EnableRecordingTime property

Switch the time shown on caption from camera time to recording time.

Type

Boolean

True means showing recording time on caption. False means showing camera time.

Attribute

R/W

Remarks

Default value is False.

3.1.65. EnableSSL property

Enable the control connect to camera server through SSL protocol.

Type

Boolean

True means connect to camera server through SSL. False means not.

Attribute

R/W

Remarks

If the certificate in camera server for SSL is not a valid one, it will make the controller connecting failed. You can try to set the [3.1.91 IgnoreSSLCertificate property](#) false to ignore the invalid certificate. False is default value.

3.1.66. EnableTwoWayAudio property

Set or get the flag that decides to show talk button at control panel or not.

Type

Boolean

True means to show talk button at control panel. False means not.

Attribute

R/W

Remarks

False is default setting.

3.1.67. EnableVideoLoss property

Enable or disable video loss alert. When frame to frame timeout occurred, the control will display alert message. The frame to frame timeout please reference [3.1.163 VideoLossTimeout property](#).

Type

Boolean

True means to show video loss message. False means not.

Attribute

R/W

Remarks

False was default value.

3.1.68. EnglishString property

Return the string by index in English. This is useful if you want to translate the string to other language. User could use the vcstring sample to retrieve the string table and translate them into other language. Use [3.2.45 SetLangString method](#), [3.2.46 SetLangStringHex method](#), [3.2.44 SetGivenLangInfo method](#) to set the new language settings.

Type:

String

The string value for specified entry. If the index is out of scope, the returned value is empty string. So if application is to retrieve the whole table, it could stop when get empty string.

Parameters

lIndex [in]

The index number for each entry in the string table. It starts from 0.

Attribute

R/O

Remarks

The string table could be changed as the control version grows. So the application should compare the string table when got newer version of control.

3.1.69. EventTypes property

Set or get the types that will affect the event recording. The event type is combination of those bits defined in [3.4.10 EDBRecordEventType enumeration](#).

Type

Long

The bit combination of those types defined in [3.4.10 EDBRecordEventType](#)

enumeration.

Attribute

R/W

Remarks

For different servers, the number of DI information carried in video stream is also different. For DI bit 2, 3, 4, It's only meaningful for 4-channel models.

3.1.70. FileNameOfTime property

Set or get if appending timestamp on recording file name.

Type

Boolean

True means to append timestamp, false means not to.

Attribute

R/W

Remarks

True is default setting.

3.1.71. FishEyeAspectRatioHeight property

Set or get the height of aspect ratio of display viewer on fish eye stream.

Type

Long

The ratio height value of display viewer.

Attribute

R/W

Remarks

Default value is 0. The value will be set if the value is larger than 0.

3.1.72. FishEyeAspectRatioWidth property

Set or get the width of aspect ratio of display viewer on fish eye stream.

Type

Long

The ratio width value of display viewer.

Attribute

R/W

Remarks

Default value is 0. The value will be set if the value is larger than 0.

3.1.73. FishEyeInitLocationInfo property

Set the initial location information of last present mode in the first connecting to fish eye device.

Type

String

The string of location information with specific format.

Attribute

R/W

Remarks

The get function of this property is always null. The string for initialization is in order to presetting the last location information of each viewer of present mode in that time. The setting only work before connection. The format of this string value is: x:xPos,y:yPos,z:zPos,zf:zFactor,scroll:scrollValue,num:ViewerNum,fo cus:FocusIndex;x:xPos..... The colon separates parameter and value, and the semicolon separates each viewer's setting. For example, if your last present mode is

103R, it means you have four viewer and you can use [3.2.11 FishEyeGetPresetInfo method](#) to receive [3.3.6 OnFishEyePreset event](#) to get each viewer's location information. Use this information to construct your initial location string, then set it before connecting, and you will get last viewer's location position.

3.1.74. FishEyeMountType property

Set or get the mount type of fish eye lens.

Type

EFishEyePresentMode enumeration

The mount type to be set.

Attribute

R/W

Remarks

Default value is wall mount type. Choose correct mount type for different mounting lens of fish eye, then the dewarping effect will present correctly.

3.1.75. ForceGDI property

Should the control show video in GDI mode no matter the card supports DirectDraw or not.

Type

Boolean

Set this value to True to force to display video in GDI mode. Default value is False.

Attribute

R/W

Remarks

GDI has a worse performance but better compatibility than DirectDraw upon display

card. On the machine that has problem using DirectDraw, this property could be turned on.

3.1.76. ForceNonYUV property

Should the control show video in DirectDraw mode (if possible) without YUV surface.

Type

Boolean

Set this value to True to force to display video in non-YUV mode. Default value is False.

Attribute

R/W

Remarks

In some card, using YUV to show video would lead to green screen. In such case, set this flag could still use the DirectDraw capability but solve the green screen problem.

3.1.77. FrameRate property

Retrieve the frame rate of current connection. This is only applicable to those connection contains video data.

Type

Long

This is the frame rate in fps (frames per second).

Attribute

R/W

Remarks

To use this property, the application must set a timer to retrieve this value. Or the frame rate will be the average frame rate from connection starts. Once retrieved, the accumulated frame number will be reset. And the next time when this property is

called, the returned value is calculated from last retrieval time to current.

3.1.78. GDIUseStretchBlt property

Set or get the property that controls the underlying display function when showing video. When this property is turned on, the video quality will be better, but the performance is worse.

Type

Boolean

True to gain better video quality, False to gain better performance.

Attribute

R/W

Remarks

This property is only usable when the [3.1.75 ForceGDI property](#) is set to True or when the machine does not support DirectDraw. If the control runs in DirectDraw mode, this property is ignored. Note: when the control size is small so that video is shrinking, the motion detection window would sometimes not display when this property is not set to True. This is Windows API limitation. Turn on this property would somehow resolve this problem.

3.1.79. GetMaskEditParmUrl property

Get or set the mask edit parameters retrieving URL. Only works for VS2403

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.80. GetMDParmUrl property

Get or set the motion detection parameters retrieving URL.

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.81. HideConnectIP property

Get or set the switch to hide ip address when connecting.

Type

Boolean

True means to hide ip address, False means not to hide last frame.

Attribute

R/W

Remarks

The default value is False.

3.1.82. HttpPort property

Tell the control the http port to use to communication with the Visual Server.

Type

Long

This is the port number. Default value is 80. If you change the HTTP port used by Visual Server, you should also update this value.

Attribute

R/W

Remarks

Note this value is used to append to the several URLs properties if they are lack of the IP part.

3.1.83. HTTPProxyAddress property

Get or set the IP address of the HTTP proxy server.

Type

String

The format should be dotted IP, that is: 'a.b.c.d'.

Attribute

R/W

Remarks

This property is work when [3.1.86 HTTPProxyType property](#) is set to eHttpProxySet, and remember to set [3.1.85 HTTPProxyPort property](#), [3.1.87 HTTPProxyUserName property](#) (if need) and [3.1.84 HTTPProxyPassword property](#) (if need).

3.1.84. HTTPProxyPassword property

Set the password used for HTTP proxy server authentication.

Type

String

Attribute

W/O

Remarks

For security reason, this attribute is not retrievable.

3.1.85. HTTPProxyPort property

Get or set the port number of the HTTP proxy server.

Type

Long

This is the port number. Default value is 0.

Attribute

R/W

Remarks

This property is work when [3.1.86 HTTPProxyType property](#) is set to eHttpProxySet, and remember to set [3.1.83 HTTPProxyAddress property](#), [3.1.87 HTTPProxyUserName property](#) (if need) and [3.1.84 HTTPProxyPassword property](#) (if need).

3.1.86. HTTPProxyType property

Get or set the type that the control connects to camera server through HTTP proxy server.

Type

eHttpProxyType enumeration

Attribute

R/W

Remarks

Default value is eHttpProxyIE means connecting to camera server through HTTP proxy server which set in "Internet Option", and if there are no settings about proxy server in "Internet Option", the control will not do connection through HTTP proxy server. If the value is eHttpProxySet, then you must remember to set other information about HTTP proxy server by using the following properties, [3.1.83 HTTPProxyAddress property](#), [3.1.85 HTTPProxyPort property](#), [3.1.87 HTTPProxyUserName property](#) and [3.1.84 HTTPProxyPassword property](#).

3.1.87. HTTPProxyUserName property

Get or set the user name used for HTTP proxy server authentication.

Type

String

Attribute

R/W

3.1.88. HWnd property

Get or set the drawing target window handle.

Type

Long

The window handle used to draw.

Attribute

R/W

Remarks

Note this value is originally set to the handle of the window of the control. Once the value is changed, the original window will be hidden. To restore the original window, please refer to [3.2.28 RestoreControlHandle method](#).

3.1.89. IgnoreBorder property

Get or set if the control should display the border when showing video. The border is the 5-pixel wide gray line enclosing the video. When the value is True, the border will be ignored. The default value is False.

Type:

Boolean

Show or hide the border

Attribute

R/W

Remarks

When in Motion editing mode, the border could not be ignored.

3.1.90. IgnoreCaption property

Get or set if the control should display the caption when showing video. The border is the 20 pixels high text line above the video (and also above the border if any). When the value is True, the caption will be ignored. The default value is False.

Type

Boolean

Show or hide the caption

Attribute

R/W

Remarks

When in Motion editing mode, the caption could not be ignored.

3.1.91. IgnoreSSLCertificate property

Get or set flag that the control decides to connect to camera server through SSL will ignore certificate or not.

Type

Boolean

True means to ignore certificate.

Attribute

R/W

Remarks

If there is an invalid certificate in camera server, it will make the control connection failed through SSL protocol. So set this property false will solve the problems. True is default value.

3.1.92. IndexSize property

Get or set the index number use in a media file. The media file size is controlled by two factors: [3.1.101 MaxFileSize property](#) and IndexSize. Whenever one condition reaches, the media file will be closed, and a new media file will be opened and used.

Type:

Long

The index size value.

Attribute

R/W

3.1.93. IsRecording property

Retrieve the control's recording status. Note. The control recording status is automatically reset to false after connection closed.

Type:

Boolean

The control is recording or not.

Attribute

R/O

3.1.94. JpegQuality property

Get or set the quality value for the jpeg notified by the control.

Type

Long

The value should be within 1-125. The larger value means worse quality.

Attribute

R/W

Remarks

If the control uses single jpeg mode as its streaming mode, this property would not affect the quality of the jpeg notified. Because the quality is determined when server generates the file. There is no reason to re-generate a jpeg with worse quality in client side.

3.1.95. JpegSecsPerFrame property

Get or set the period to retrieve jpeg from server if the streaming mode is single jpeg.

Type

Long

This is the value in seconds. The default value is 1 second.

Attribute

R/W

Remarks

Please do not set the value too large, or the control would seem to be frozen.

3.1.96. JpegURL property

Get or set the URL for single jpeg mode to retrieve file.

Type:

String

This is the URL to retrieve jpeg. It could be full path or partial path. For partial path, the RemoteIPAddr must also be set.

Attribute

R/W

Remarks

The default value is good enough for use with the video server and IP camera. But if users intend to use with proxy server that could cache jpeg frames, this property could not change to satisfy such condition.

3.1.97. Language property

This property meaning is changed since 2.1.0.0. Now when application wants the control to refresh all the string with newly set value. He should set this value to ask the control to do the refreshment. The value is not important.

Type

String

Attribute

R/W

Remarks

If the language is not given, English will be used.

3.1.98. LeftTitleSpace property

Get or set the space between left border and the “text on video” text when drawing caption of the control. The unit is in pixels.

Type

Long

The default value is 2.

Attribute

R/W

3.1.99. Location property

Get current location setting for database. A location is a subfolder that saves the media files for a certain server (We don't recommend you to save several servers' data under a same location).

Type:

String

Any characters that are permitted for directory path are legal for location.

Attribute

R/O

Remarks

The length is dependent on database path length. Usually, you won't give a location longer than 32 characters.

3.1.100. MaxDigitalZoomFactor property

Get or set the maximum digital zoom factor rate (%).

Type

Long

Attribute

R/W

Remarks

The unit is percentage, so the minimum value that the property can supported os 100. The default value of this property is 400.

3.1.101. MaxFileSize property

Get or set the maximum file size of one media file.

Type

Long

Attribute

R/W

Remarks

The unit is in bytes. So you could give at most 2G bytes for one file. But this is not recommended since once file system error, the whole file may be lost. But for size too small, there will be another problem that the maximum file numbers under one subdirectory may be reached easily.

3.1.102. MaxLocationSize property

Get or set the maximum size a location allows to save media data when recording in

circular mode. This property is ignored when circular mode is disabled.

Type

Long

Attribute

R/O

Remarks

The unit is in kilobytes. So you could give at most 1T bytes for one location. This would be sufficient for current file system. The default value is 30M bytes, and the minimum value is 3M bytes.

3.1.103. MaxReconnectionCount property

Get or set the maximum reconnection count. This property is ignored when auto reconnect mode is disabled. The control will stop reconnecting when current reconnection time reaches the defined MaxReconnectionCount.

Type:

Long

The default value is -1, means do infinite reconnection.

Attribute: R/W

Remarks

This property is work when [3.1.4 AutoReconnect property](#) is true, and when the count of reconnection time reaches the MaxReconnectionCount, it will notify [3.3.13 OnReachMaxReconnection event](#).

The following situation will clear the current reconnection times.

- When users start or stop the connection manually.
- When connection is success.
- Current reconnection time reaches the MaxReconnectionCount.
- Re-set the MaxReconnectionCount.

3.1.104. MDEditMode property

Get or set the motion detection edit mode.

Type

Boolean

True to enable the edit mode, False to disable the edit mode. The former will show the window and meter, buttons.

Attribute

R/W

Remarks

When this property is changed to be true, the control will connect to the server to get the last setting of motion detection automatically. When the edit mode is turned off, all unsaved state will be lost.

3.1.105. MediaType property

Set the media type for connection.

Type

EMediaType enumeration

This is the new media type used by this control.

Attribute

R/O

Remarks

Once change, the control will reconnect to the server dependent on the new value. For 2K server, the media type could be only video only. For 3K servers, the protocol must be matched for the media type. Http contains video only, TCP and UDP supports both audio and video. Other models support video only, audio only or A/V mode.

3.1.106. MediaRecord property

Get the recording state of the control.

Type

Boolean

True means the recording flag of the control is turned on now. False means the control's recording flag is turned off.

Attribute: R/O

Remarks

To set the recording flag, please use [3.2.51 StartMediaRecord method](#) and [3.2.57 StopMediaRecord method](#) methods. This property is different from the [3.1.93 IsRecording property](#). The latter one is true only when the control is writing data into hard disk. But his property is true after [3.2.51 StartMediaRecord method](#) or [3.2.52 StartMediaRecordEx method](#) is called.

3.1.107. MicMute property

Get or set the microphone's mute state when talk.

Type

Boolean

True means to mute the microphone. False means not.

Attribute

R/W

Remarks

Mute the microphone is truly to send server silent audio packet. This property will not affect other program to use the audio capture capability. And it also not affects other (ActiveX) instance's mute state.

3.1.108. MicVolume property

Get or set the microphone's volume used when talk.

Type

Long

This is the volume range from 0 to 100. 100 is the loudest level.

Attribute

R/W

Remarks

Because of limitation, this value is global to all control instances. And it also affects the Windows system's audio capture volume level. In short, change the value will change the system's setting.

3.1.109. MP4Conversion property

Set or get the flag that decides to show mp4 recording button at control panel or not.

Type

Boolean

True means to show mp4 recording button at control panel. False means not.

Attribute

R/W

Remarks

The default value is False.

3.1.110. MP4MaxFileSize property

This property is used to set the maximum MP4 file size. If both this property and MP4MaxFileTime are set, the first limitation that reaches would be used.

Type

Long

Set the maximum file size in bytes. The default value is 600MB.

Attribute

R/W

3.1.111. MP4MaxFileTime property

This property is used to set the maximum MP4 file size. If both this property and MP4MaxFileSize are set, the first limitation that reaches would be used.

Type

Long

Set the maximum recording time in second. The default value is 1800 seconds.

Attribute

R/W

3.1.112. MP4Path property

The property contains the default path for the mp4 files. Each time when users start mp4 recording, a new file named by using mp4 prefix name and recording date/time will be created under this directory.

Type

String

This is the default recording path.

Attribute

R/W

Remarks

The default path is "C:\Record". Make sure the directory is existed or the recording

will not start. You can try to set prefix name by setting MP4Prefix property.

3.1.113. MP4Prefix property

The property contains the prefix file name when generate the mp4 files. Each time when users start mp4 recording, a new file named by using mp4 prefix name and recording date/ time will be generated.

Type

String

This is the default prefix name.

Attribute

R/W

Remarks

The default value is "CLIP".

3.1.114. MP4Status property

Retrieve the MP4 conversion status for the control. User could use this property.

Type

EAVIRecordStatus enumeration

The enumeration for the MP4 status

Attribute

R/O

3.1.115. NotifyImageFormat property

Set or get the image type to be notified when new video data arrive. This property will be meaningful only if [3.1.118 NotifyVideoData property](#) is set to be true.

Type:

EPictureFormat enumeration

The available format is defined in [3.4.21 EPictureFormat enumeration](#).

Attribute: R/W

Remarks

If the format is set the Jpeg, and the streaming option is set to normal streaming rather than single jpeg mode, the control needs to decode the video and re-encode it to jpeg. So the performance of the control would be even worse than just notify the decoded data (such as bmp24 or YUV). So please set this property carefully.

3.1.116. NotifyAudioPacket property

Determine if the control should send control owner each audio packet received from network. The content of the notified data is a binary array that could be converted to the TmediaDataPacketInfo (defined in MainProfile SDK) structure (it's the pbyBuff member, parse the content could re-generate the structure).

Type

Boolean

True means to notify for each piece. False means not.

Attribute

R/W

Remarks

The default value is False. This property is different from [3.1.117 NotifyNewAudio property](#). This one notify the un-decoded data, but the latter notify the PCM data format.

3.1.117. NotifyNewAudio property

Determine if the control should send control owner new audio piece arrival event.

Type

Type:

Boolean

True means to notify for each piece. False means not.

Attribute

R/W

Remarks

Because audio pieces are sent by byte array and it could be up to 6K bytes per piece. Notify too frequently would cause a performance penalty. The default value is False.

3.1.118. NotifyVideoData property

Determine if the control should send control owner new video decoded data by event.

Type

Boolean

True means to notify for each piece. False means not.

Attribute

R/W

Remarks

Because video pieces are sent by byte array and it could be up to 1.2M bytes sometimes. Notify too frequently would cause a performance penalty. The default value is False.

3.1.119. NotifyVideoPacket property

Determine if the control should send control owner each video packet received from network. The content of the notified data is a binary array that could be converted to the TmediaDataPacketInfo (defined in MainProfile SDK) structure (it's the pbyBuff member, parse the content could re-generate the structure).

Type

Boolean

True means to notify for each piece. False means not.

Attribute

R/W

Remarks

The default value is False. Note this property is different from [3.1.118 *NotifyVideoData* property](#). This packet notifies un-decoded data, but [3.1.118 *NotifyVideoData* property](#) notify decoded video.

3.1.120. PanelButtonStyle property

Determine the way to display RTSP control buttons (play, pause and stop).

Type:*EPanelBtnStyle enumeration*

Specify the way to show the button.

Attribute

R/W

Remarks

For 3K servers that support RTSP protocol, the servers do not support pause function. In such case, the control button will show only the play and stop in the same button. For 7K servers, 2 buttons will be used to show the play/pause and stop function. If users know the server model, set this property to switch the button type. If users do not know, please use auto setting to let control detect the server type and change the button type.

3.1.121. Password property

Get or set the password used for web page authentication.

Type

String

Attribute

W/O

Remarks

For security reason, this attribute is not retrievable.

3.1.122. PlayMute property

Turn on or off the audio when playing.

Type

Boolean

True means to turn on the audio. And 'false' means to turn it off.

Attribute

R/W

Remarks

This property could be changed from control's audio setting panel. But if the panel is dropped down and the value is changed by program, the value will not be reflected until the panel is closed and reopen again.

3.1.123. PlayVolume property

Get or set the audio volume used when playing.

Type

Long

The value range is 0-100. 0 is equivalent to mute and 100 is the loudest level.

Attribute

R/W

Remarks

This property shares the same value set in the audio setting panel of the control bar. So if users change the value from UI, this property will be changed. As [3.1.122 PlayMute property](#) is, change of the value will be reflected in next time the panel dropped down. Note: the volume value is for DirectSound play buffer, not global to the system. So it might happen that the sound is small even if the property is in maximum level. In such case, please adjust the global volume level from Windows' control panel.

3.1.124. PostEventTime property

Get or set the time in seconds that would keep recording after a event happens.

Type:

Long

This is the seconds to keep recording after event.

Attribute

R/W

Remarks

The default value is 5 seconds. The recording will not stop exactly on this value after event. If there is no other event happens before the recording stops, the recording will stop at $N + M$ seconds. Where N is $\text{PostEventTime} - 1$ and M depends when the 'I' frame is seen. If the 'I' frame appears right after N , then the recording stops at N seconds. The maximum value for M is 4.

If there are other events happen before recording stop, the recording will not stop until the stop criteria match the time setting for the latest event.

3.1.125. PrebufferMemorySize property

Get or set the pre-buffer size allocated for the control when event-recording mode is

selected. From version 2.0.0.0, the control use memory to save the pre-buffer data. Properly set the value to meet the Pre-Event time. This property is process-wide. It means if you have more than one controls in your system, change the setting in one control will affect all other controls.

Type:

Long

This is the size in bytes. Minimum value is 256K and maximum value is 20M bytes.

Attribute

R/W

Remarks

If the set value is too small, the pre-event data will not be kept, that means the recorded data will start from the first I after event happens. Set the value large would solve the problem but the memory usage for the system could increase dramatically.

3.1.126. PreEventTime property

Get or set the time in seconds that the control keeps the data before event happens. This property might be affected by [3.1.125 PrebufferMemorySize property](#).

Type:

Long

This is the seconds to keep recording before event.

Attribute

R/W

Remarks

The default value is 5 seconds. The control pre-buffers the data in temporary files. These files are removed if no event triggered after PreEventTime seconds. The kept media length will not be exactly PreEventTime seconds, but usually it will be longer. It's possible to have shorter pre-event recording if the event happens right after the control starts to pre-buffer. Please do not set this value too large to avoid video

blocking slightly when event record triggered.

3.1.127. PresetURL property

Get or set the URL for save camera position.

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.128. PtzURL property

Get or set the URL for camera PTZ control.

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.129. RecallURL property

Get or set the URL for recall camera position.

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.130. ReadSettingByParam property

Get or set the property that directs the control to read parameter from registry of by parameter list if used in IE.

Type

Boolean

True means to accept setting by parameter list. 'False' means to use only registry setting.

Attribute

R/W

Remarks

This property is meaningful only if the control is used in IE. For other developing tool, the settings are always set by properties.

If [3.1.105 MediaType property](#) is updated, this flag will be automatically set to True.

3.1.131. ReadWriteTimeout property

Get or set the timeout value for read/write from network.

Type

Long

This is the timeout value.

Attribute

R/W

Remarks

This timeout value is used after the connection is established to server. Please do not be confused with [3.1.26 ConnectionTimeout property](#).

3.1.132. ReconnectionWait property

Get or set the time to wait before the control tries to reconnect to server.

Type

Long

Time to wait in milliseconds. Value less than or equals to 0 means to reconnect at once. Default value is 30000 milliseconds.

Attribute

R/W

3.1.133. RegkeyRoot property

Get or set the registry root for saving control settings. It determines whether to save registry under HKEY_LOCAL_MACHINE or under HKEY_CURRENT_USER.

Type

[ERegistryRoot enumeration](#)

The default value is eRegLocalMachine, which means to save under HKEY_LOCAL_MACHINE.

Attribute

R/W

Remarks

This property lets users could save the setting under their own registry hierarchy.

3.1.134. RegSubKey property

Get or set the registry base for saving control settings. The base starts from the root specify by RegkeyRoot. The default value is "Software\Vitamin\Fsdk"

Type

String

Attribute

R/W

Remarks

This property lets users could save the setting under their own registry hierarchy.

3.1.135. RemoteIDStr property

Get or set the remote ID string. Remote ID string is an encrypted string that contains user name and password that are used to connect to remote server.

Type

String

This is the string content.

Attribute

R/W

Remarks

This property is to increase the security when this control is used in IE that user could view the content of the program. In such program, because end users could look at the content of the code, the end user could then retrieve the password setting. With this property, the developer could first generate the encrypted value by using GenerateRemoteIDString.exe program contained in the installed package. The control will decrypt the user name and password at run time and hence keep user from retrieving the secret data.

Note if the set value of this property is not a correctly encrypted string, the user name and password property will remain unchanged.

3.1.136. RemoteIPAddr property

Get or set the remote IP address of the Visual Server.

Type

String

The format should be dotted IP, that is: 'a.b.c.d'.

Attribute

R/W

3.1.137. RemotePort property

Get or set the remote control port of the Visual Server.

Type

Long

Attribute

R/W

Remarks

This property is set to hidden since it only means to be used in Internet Explorer.

3.1.138. RightTitleSpace property

Get or set the space between right border and the “server time” text when drawing caption of the control. The unit is in pixels.

Type

Long

The default value is 2.

Attribute

R/W

3.1.139. RTSPProxyAddress property

Set the address of RTSP proxy server.

Type

String

The format should be dotted IP, that is: ‘a.b.c.d’.

Attribute

R/W

Remarks

This property is work when If [3.1.63 EnableRTSPProxy property](#) is set to true. So, If you want to connect to camera server through RTSP proxy server, remember to set this property, [3.1.63 EnableRTSPProxy property](#) and [3.1.139 RTSPProxyAddress property](#).

3.1.140. RTSPProxyPort property

Set the port of RTSP proxy server.

Type

Long

Attribute

R/W

Remarks

This property is work when If [3.1.63 EnableRTSPProxy property](#) is set to true. So, If you want to connect to camera server through RTSP proxy server, remember to set this property, [3.1.63 EnableRTSPProxy property](#) and [3.1.139 RTSPProxyAddress property](#).

3.1.141. ServerConfig property

Retrieve the server's configuration setting by index.

Type:

String

This is the string value for an entry in the config.ini. Users could change the value to property according to the entry's property. For example, the ptzenable attribute is actually a number composed by bits.

Arguments:

ICfgIndex

a Long type argument that specify the ID of the setting. The IDs are partly defined in the [3.4.24 EServerConfig enumeration](#). The full set of IDs could be found in ServerUtl module document (which is part of MainProfile).

IExtraInx

Some properties in the configuration file contain three layers. So extra index is needed to locate the final value. For example, the user name and password has three layers. Set this value to 0 to get the name of first user, 1 to get name of second user, ...etc.

Attribute

R/O

Remarks

Before access this property, users must call [3.2.25 RefreshServerConfig method](#) to retrieve server settings.

3.1.142. ServerConfigEntry property

Retrieve the entry name of the server's configuration setting by index.

Type

String

Arguments

ICfgIndex

A Long type argument that specify the ID of the setting. The IDs are partly defined in the [3.4.24 EServerConfig enumeration](#) now. The full set of IDs could be found in ServerUtl module document (which is part of MainProfile).

Attribute

R/O

Remarks

Before access this property, users must call [3.2.25 RefreshServerConfig method](#) to retrieve server settings.

3.1.143. ServerConfigSection property

Retrieve the section name of the server's configuration setting by index.

Type

String

This is the section name. This name is common to server index.

Arguments

ICfgIndex

A Long type argument that specify the ID of the setting. The IDs are partly defined in the [3.4.24 EServerConfig enumeration](#) now. The full set of IDs could be found in ServerUtl module document (which is part of MainProfile).

Attribute

R/O

Remarks

Before access this property, users must call [3.2.25 RefreshServerConfig method](#) to retrieve server settings.

3.1.144. ServerModelType property

Set the server model type of the target to be connected. This type must be correct so that the control could connect to the server successfully.

Type[EServerModelType enumeration](#)

This is the he types of the server. When set, the control will also change the control bar outlook.

Attribute

R/W

Remarks

Please do not change the server type during connection. The ActiveX will response incorrectly if the server model changes during connection. Each model has different URLs for media streaming, single jpeg, PTZ URL, ...etc. Please do not set the misc. URLs if connect to server or IP camera directly. The ActiveX will use default value for each model automatically. Those URLs could be changed if the connection from client to IP camera is through proxy or agent server.

For VS3101 user, the URL for streaming is different from the default value of 3000 servers. Please set the URL manually (Sample code contains such processing).

For PT users, the Preset location URL is different from other 3000 servers. If the call

to add preset location is called before [3.2.17 GetPtzPresetPosition method](#), the functions (add or recall) will not work properly. If the target model is known when coding, the designers could set the [3.1.128 PtzURL property](#) manually to solve such problem. Once the [3.2.17 GetPtzPresetPosition method](#) is called, the add function could be working correctly.

3.1.145. SVCTDecodeLevel property

Set or get the decode level of SVCT control.

Type

Long

The level of decode value.

Attribute

R/W

Remarks

The default value is 8. The range of level is 0~8. 0 means I frame only. 8 means decode streaming frame normally.

3.1.146. SVCTFrameInterval property

Set or get the frame interval of SVCT control.

Type

Long

The interval of frame value.

Attribute

R/W

Remarks

This property is used in the Motion-Jpeg stream. When set this value at run time, it will auto reconnect, and the stream will be sent by interval value.

3.1.147. SVCTFrameLevel property

Set or get the frame level of SVCT control.

Type

Long

The level of frame value.

Attribute

R/W

Remarks

The default value is 8. The range of level is 0~8. 0 means 1 frame only. 8 means normal pace of streaming.

3.1.148. SetMaskEditParmUrl property

Get or set the mask edit parameters setting URL.

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.149. SetMDParmUrl property

Get or set the motion detection parameters setting URL.

Type:

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.150. Stretch property

Tell the control to stretch the graph to the size of the display window or not.

Type

Boolean

True means to stretch, False means not.

Attribute

R/W

Remarks

If the graph is not stretched, and the view part of the control is greater than the video frame, the frame would be put align to the upper left corner of the control. If the view part is smaller than the video frame, the center point of the view part and the frame would be put together.

3.1.151. StreamingBufferTime property

Get or Set the buffer time of streaming.

Type

Long

The value of buffer time in millisecond.

Attribute

R/W

Remarks

The default value is 0. Setting this value while streaming required reconnecting to let the new value to take effect.

3.1.152. StreamingOption property

Set or get the streaming option for the control.

Type

EStreamingOption enumeration

The available options are listed in [3.4.27 EStreamingOption enumeration](#).

Attribute

R/W

Remarks

When the streaming option is changed, the connection will be re-established.

3.1.153. TalkButtonStyle property

Get or set the talk button style when the target server is two-way model.

Type

ETalkBtnStyle enumeration

This is the style of the button.

Attribute

R/W

Remarks

The default value is toggle.

3.1.154. TextOnVideo property

Retrieve the text on video string that is shown on video. This is useful if users want to draw the graph themselves.

Type

String

The text on video received by control.

Attribute

R/O

Remarks

This value is only valid after connecting to server. And its value will be changed if someone changes the setting on server web page. Users could get this value periodically to check if it changes.

3.1.155. TitleBarColor property

Get or set the background color used to draw the caption.

Type

OLE_COLOR

This is the color value. The default color is black (R:0, G: 0, B:0)

Attribute

R/W

3.1.156. TitleTextColor property

Get or set the text color used to draw the caption.

Type

OLE_COLOR

This is the color value. The default color is white (R:255, G: 255, B:255)

Attribute

R/W

Remarks

The color is only applicable to control in non-recording mode. When in recording mode, the text color is set to RED(R: 255, G: 0, B: 0). So please do not set [3.1.155 TitleBarColor property](#) to RED or the caption would be not visible when recording.

3.1.157. UartURL property

Set or get the URL for UART control.

Type

String

This URL could be included or excluded the host IP.

Attribute

R/W

Remarks

The default value works fine for Visual Server. Usually, you don't need to change this value.

3.1.158. UpdateJoystickInterval property

Set or get the interval for the control to retrieve joystick input data.

Type

Long

The unit is millisecond unit.

Attribute

R/O

Remarks

The default value is 300ms.

3.1.159. Url property

Set or get the URL for video retrieving.

Type

String

This URL could include or exclude the host IP.

Attribute

R/W

Remarks

Each server type has its own default value. But the default value is used internal. If users set this property, the control will not use default value but the value set by users. Please set this value carefully.

If use this property for connection, suggest setting [3.1.144 ServerModelType property](#) and not use [3.1.5 AutoServerModelType property](#).

3.1.160. UserDateFormat property

Set or get the display server date format property.

Type

Boolean

True means to use the format set in Windows' regional control panel.

False means to use the YYYY/MM/DD format.

Attribute

R/W

Remarks

The default value is False.

3.1.161. UserName property

Set or get the user name for web authentication.

Type

String

Attribute

R/W

Remarks

This value could also be appended to the [3.1.159 Url property](#). The control will parse and retrieve it from the string you given.

3.1.162. VideoBitRate property

Retrieve the video bit rate of current connection. This is only applicable to those connection contains video data.

Type

Long

This is the video bit rate in Bps (Bytes per second).

Attribute

R/O

Remarks

To use this property, the application must set a timer to retrieve this value. Or the bit rate will be the average bit rate from connection starts. Once retrieved, the accumulated frame number will be reset. And the next time when this property is called, the returned value is calculated from last retrieval time to current.

3.1.163. VideoLossTimeout property

Set frame to frame timeout.

Type

Long

The default value was 200ms.

Attribute

R/W

Remarks

The Max/Min value was 200/2000ms.

3.1.164. VideoQuality2K property

Set or get video quality for current connection to 2000 servers.

Type

EVideoQuality2K enumeration

Attribute

R/W

Remarks

When set, the connection will be re-established to reflect the change. The default value is good.

3.1.165. VideoSize2K property

Set or get video size for current connection to 2000 servers.

Type

EVideoSize2K enumeration

Attribute

R/W

Remarks

When set, the connection will be re-established to reflect the change. The default value is normal size.

3.1.166. ViewStream property

Set or get video/audio stream that the control will connect to.

Type*EDualStreamOption enumeration***Attribute**

R/W

Remarks

The default value is eStream1. This property is used for supporting dual-stream model (for example IP7138). In non-dual stream model server, this property has no any affect for connection.

3.1.167. WheelEventHandler property

Should the control start mouse wheel event handler. The default setting is off. When mouse event handler is turned on, the control will send server a zoom in or zoom out command when mouse wheel is rolled. Roll upward will zoom in, roll downward will zoom out the view. The zoom in and zoom out command are only valid for cameras that have such capability. For those that do not, the command is sent but no effect.

Type

Boolean

True means to turn on mouse wheel event handle, and false means not.

Attribute

R/W

Remarks

When event handler starts. The control will grab the keyboard focus whenever the mouse pointer is moved inside the control. This is to ensure that the control could receive the wheel event. But it could not what application wants, turn off if this annoy you.

3.2. Methods

Because the OLE will raise exception when the return value of method is not S_OK, we always return S_OK for each method. And we add a parameter that is a pointer of long integer to hold the error code. Now when use these methods, just treat them as functions with return code of type long.

3.2.1. CloseConnect method

Request the control to close the current connection. This command is similar to [3.2.6 Disconnect method](#) except that the latter will wait until the connection is truly closed. But this command sends the close connection command and return immediately. The control will keep performing the connection closing until it is done. So in short, this is a non-blocking mode disconnect command.

Syntax

```
HRESULT CloseConnect ( );
```

Return value

Always S_OK.

Remarks

This command is used to speed up application that needs to include more than one control in their user interface. When the application is closing, if it calls [3.2.6 Disconnect method](#) one by one, the closing time would be a lot of time. With this method, the application could first call CloseConnect for each control, and then call the [3.2.6 Disconnect method](#) one by one. Because CloseConnect is non-blocking, the connection disconnecting is performed in background. Hence the overall closing time would be almost equivalent to close a single control.

3.2.2. ChooseAVIAudioCompressor method

This method is to choose the video compressor used when converting AVI.

Syntax

```
HRESULT ChooseAVIVideoCompressor ( String bstrDialogTitle, Long *plRet );
```

Parameters

bstrDialogFile [in]

This is the caption text for the video compressor picker dialog.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

After calling this method, the picked value will be applied to the control immediately (This does not apply to the conversion that starts before the settings change). And the settings are saved in the registry if the login user has right to access the registry. So next time when user opens this dialog again, the settings will keep the same no matter the control is restarted again or not.

3.2.3. ChooseAVIVideoCompressor method

This method is to choose the video compressor used when converting AVI.

Syntax

```
HRESULT ChooseAVIVideoCompressor ( String bstrDialog, Title Long *plRet );
```

Parameters

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

3.2.4. Connect method

Connect to the Visual Server to start the download.

Syntax

```
HRESULT Connect ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

If the connection is already established, this call will do nothing and return 0.

Requirements

The [3.1.136 RemoteIPAddr property](#), [3.1.82 HttpPort property](#), [3.1.159 Url property](#), [3.1.25 ConnectionProtocol property](#) value should be ready before calling this method.

3.2.5. DelPresetPosition method

Delete the preset position from the camera server.

Syntax

```
HRESULT DelPresetPosition ( String strPosition, Long *pIRet );
```

Parameters

strPosition [in]

This is the name of the position to be deleted.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.6. Disconnect method

Disconnect to the Visual Server to stop the download. This call is blocking mode, so it will not return until the connection is truly disconnected. To close the connection without being blocked, please use [3.2.1 CloseConnect method](#) instead.

Syntax

```
HRESULT Disconnect ( );
```

Return value

Always S_OK.

Remarks

If the connection is not connected, this call will do nothing.

3.2.7. DisplayStringOnVideo method

This method is used to display the input string on the video.

Syntax

```
HRESULT DisplayStringOnVideo ( String strText, Long IFontSize, EFontStyle  
eFontStyle, Long IX, Long IY, Long IFontColorR, Long IFontColorG, Long  
IFontColorB, Long IOutlineColorR, Long IOutlineColorG, Long IOutlineColorB, Long  
*plRet );
```

Parameters

strText [in]

This is the string that you want to display on the video.

eFontStyle [in]

The style of the typeface. This value must be an element of the EFontStyle enumeration or the result of a bitwise OR applied to two or more of these elements.

IX [in]

The x coordinate related to the upper-left corner of the control.

IY [in]

The y coordinate related to the upper-left corner of the control.

IFontColorR [in]

Byte that specifies the red component of font color.

IFontColorG [in]

Byte that specifies the green component of font color.

IFontColorB [in]

Byte that specifies the blue component of font color.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The default font color is white, and the default outline color is black. This method is worked when streaming is beginning, means the [3.1.28 ControlStatus property](#) is ctrlRunning. Set blank string to strText if you want to force the control not to display the input string on the video.

3.2.8. FishEyeResetPresetList method

This method is used to clean preset information in rotation list.

Syntax

```
HRESULT FishEyeResetPresetInfoList ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.9. FishEyeAddPresetInfoToList method

This method is used to add preset information into rotation list.

Syntax

```
HRESULT FishEyeAddPresetInfoToList ( Long IX, Long IY, Long IZ, Long IZFactor,  
Long IScroll, Long *pIRet );
```

Parameters

IX [in]

The x coordinate related to the fish eye viewer.

IY [in]

The y coordinate related to the fish eye viewer.

IZ [in]

The z coordinate related to the fish eye viewer.

IZFactor [in]

The z factor related to the fish eye viewer.

IScroll [in]

The scroll parameter related to the fish eye viewer.

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method provides an interface to insert related parameters of dewarping viewer, and provides the element for rotation by [3.2.10 FishEyeCtrl method](#).

3.2.10. FishEyeCtrl method

This method is used to control fish eye dewarping viewer.

Syntax

```
HRESULT FishEyeCtrl ( EFishEyeControl eControlType, String strCtrlMove, Long  
ISpeed, Long *plRet );
```

Parameters

eControlType [in]

The type of the control. This value must be an element of the [3.4.15 EFishEyeControl enumeration](#).

strCtrlMove [in]

The movement string for different control type.

ISpeed [in]

The speed of each control.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method provides an interface to control each fish eye dewarping viewer. The

control movement string would be different by each control type. The “Left” and “Right” fit pan control, the “Up” and “Down” fit tilt control, the “In” and “Out” for zoom control, and rotation control can use “Start” and “Stop” movement string. We input null string on “Home” and “AutoPan” control type. These controls only work on dewarping viewer.

3.2.11. FishEyeGetPresetInfo method

This method is used to get preset information on current fish eye present mode.

Syntax

```
HRESULT FishEyeGetPresetInfo ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method can use to get location information of each viewer on current present mode. You can get these information from [3.3.6 OnFishEyePreset event](#) callback. The location information order from callback is counterclockwise which is begin at right-top position of the present mode.

3.2.12. FishEyeGoPreset method

This method is used to go to the specific preset location on the dewarping viewer.

Syntax

```
HRESULT FishEyeGoPreset ( Long IX, Long IY, Long IZ, Long IZFactor, Long IScroll, Long *pIRet );
```

Parameters

IX [in]

The x coordinate related to the fish eye viewer.

IY [in]

The y coordinate related to the fish eye viewer.

IZ [in]

The z coordinate related to the fish eye viewer.

IZFactor [in]

The z foactor related to the fish eye viewer.

IScroll [in]

The scroll parameter related to the fish eye viewer.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method can use to get to the specific location that user defined on the focus dewarping viewer.

3.2.13. FishEyeRegionAspectRatio method

This method is used to set the ratio of viewer's region in width and height.

Syntax

```
HRESULT FishEyeRegionAspectRatio ( Long IAspectRatioWidth, Long IAspectRatioHeight, Long *plRet );
```

Parameters

IAspectRatioWidth [in]

The ratio width for region to show.

lAspectRatioHeight [in]

The ratio height for region to show.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

You can use the ratio to set each parameter or the real width and height as the factor. For instance, FishEyeRegionAspectRatio(4, 3) or FishEyeRegionAspectRatio(800, 600).

3.2.14. FishEyeRemovePresetInfoFromList

method

This method is used to clean preset information in rotation list.

Syntax

```
HRESULT FishEyeResetPresetInfoList ( Long *plRet );
```

Parameters

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.15. GetConnectionStatus method

Get the connection status.

Syntax

```
HRESULT GetConnectionStatus ( Variant *pvData, Long *plRet );
```

Parameters

pvData [out]

The buffer that holds the returned data. It's an array of type Long.

0: Reconnect Times

1: Live Time in seconds

2: Total Connection Time in seconds

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.16. GetDigitalIn method

Get the digital input value for the specified port.

Syntax

```
HRESULT GetDigitalIn ( Long lPort, Variant* pData, Long *plRet );
```

Parameters

lPort [in]

Specify the port index of the digital input device to get data. Port index starts from 1. For 4-channel model, this is to indicate the DI index. For 1 channel model, this should be always 1.

pData [out]

The buffer that holds the returned data. 0 is for low-level signal. 1 is for high-

level signal. Other values are reserved for future use. For script language to work properly, this parameter is set the Variant type.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This function works in blocking mode. It will not return until the data got or HTTP time out occurred.

3.2.17. GetPtzPresetPosition method

Retrieve the list of name of preset positions of camera.

Syntax

```
HRESULT GetPtzPresetPosition ( VARIANT *pvData, Long *plRet );
```

Parameters

pvData [out]

The buffer that holds the returned data. This value is actually an array of String that holds the preset position list.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The returned pvData is an array of Bytes. You could get the size of the image by testing the size of the array.

3.2.18. GetSnapshot method

Get the current decoded picture frame.

Syntax

```
HRESULT GetSnapshot ( EPixelFormat eFormat, Variant *pvData, Variant *pvInfo, Long *plRet );
```

Parameters

eFormat [in]

The format of image caller needs.

pvData [out]

The buffer that holds the returned data. This value is actually an array of Byte that holds the image data.

pvInfo [out]

Lists the information for the image. It's an array of Variant.

0: Width (Long)

1: Height (Long)

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

If the given picture format is incorrect, error will be returned.

3.2.19. GetUartData method

Get the data on the UART interface of server.

Syntax

```
HRESULT GetUartData ( Variant *pvData, Long IReadLen, Long IPort,, Long ITimeout, Long *pIRet );
```

Parameters

pvData [in]

The buffer that holds the returned data. This is a variant that contains a string that hold the hex string of the data read from COM port on Visual Server.

IReadLen [in]

This is the length user want. This value can't not be greater than 128.

IPort [in, defaultval(1)]

This value is the Uart port index for the reading action. For 4-channel model, it could be 1 or 2. For one channel model, only 1 is applicable. This value could be skipped under VB (but it only works for port 1 if not specified).

ITimeout [in, defaultval(3000)]

This value is the timeout value for the reading action. This value could be skipped under VB.

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This function works in blocking mode. It will not return until the data got or HTTP timeout occurred. So the timeout value should not be set to high.

3.2.20. GetUartDataBinary method

Get the data on the UART interface of server.

Syntax

```
HRESULT GetUartDataBinary ( Variant *pvData, Long IReadLen, Long IPort,, Long
```

```
lTimeout, Long *plRet );
```

Parameters

pvData [out]

The buffer that holds the returned data. This is an array of Byte. VC users need to free the memory by calling VariantClear() function.

lReadLen [in]

This is the length user want. This value can't not be greater than 128.

lPort [in, defaultval(1)]

This value is the Uart port index for the reading action. For 4-channel model, it could be 1 or 2. For one channel model, only 1 is applicable. This value could be skipped under VB (but it only works for port 1 if not specified).

lTimeout [in, defaultval(3000)]

This value is the timeout value for the reading action. This value could be skipped under VB.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This function works in blocking mode. It will not return until the data got or HTTP timeout occurred. So the timeout value should not be set to high.

3.2.21. HttpCommand method

Send a http command to server by either POST or GET.

Syntax

```
HRESULT HttpCommand ( String strUrlCommand, Boolean bPost, Boolean  
bReadData, Variant *pvReadData, Long *plRet );
```

Parameters

strUrlCommand [in]

This is the URL command to be sent to server.

bPost [in]

Is the command to be sent as POST or GET. True to be sent by POST. False to be sent by GET.

bReadData [in]

Should the control try to get the returned page data? If this argument is set to be False, the following argument will be ignored.

pvReadData [out]

This is a variant that contains a string to hold the retrieved data from server. The maximum data length this command could be handled is 50K. All data beyond this range will be lost.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This function works in blocking mode. It will not return until the data got or HTTP timeout occurred.

3.2.22. InputMediaPacket method

Input the data packet received from network. The packet must be a packet output by remote Vitamin control's [3.3.11 OnNewPacket event](#) or by DataBroker's A/V data callback.

Syntax

```
HRESULT InputMediaPacket ( Long lLength Variant *pvPacket, Long *plRet );
```


Parameters

lLength [in]

This is the packet length of the input data.

pvPacket [in]

This is a variant that contains the binary data part of a packet. Please refer remark section for more details.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

TMediaDataPacketInfo is a C structure. The pvPacket parameter of this method is actually the “pbyBuff” member of the structure. The lLength parameter describes the total length of the binary data. In other word, it’s value equals to “dwBitstreamSize + dwOffset”. The pvPacket could have larger size than lLength does. This could let application to reuse a buffer to pass data into this control.

3.2.23. InputMediaPacketX method

Input the data packet received from network. The packet must be a packet output by remote Vitamin control’s [3.3.11 OnNewPacket event](#) or by DataBroker’s A/V data callback. This method is designed for C/C++ application that could avoid COM wrapper when input packet.

Syntax

```
HRESULT InputMediaPacketX ( Long lLength Long IDataPtr, Long *plRet );
```

Parameters

lLength [in]

This is the packet length of the input data.

pvPacket [in]

This is an unsigned character pointer that holds the input data.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

TMediaDataPacketInfo is a C structure. The pvPacket parameter of this method is actually the “pbyBuff” member of the structure. The lLength parameter describes the total length of the binary data. In other word, it’s value equals to “dwBitstreamSize + dwOffset”. The pvPacket could have larger size than lLength does. This could let application to reuse a buffer to pass data into this control.

3.2.24. RecallPtzPosition method

Move the camera to some preset position.

Syntax

```
HRESULT RecallPtzPosition ( String strPosition, Long *plRet );
```

Parameters

strPosition [in]

This is the name of the position to be set.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.25. RefreshServerConfig method

Force the control to retrieve the server setting (config.ini) from the control again. This operation must be called after the server's remote IP, user name and password are set.

Syntax

```
HRESULT RefreshServerConfig ( Long *plRet );
```

Parameters

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This operation is operated in blocking mode, so before the connection is finished or failed, the call will not return.

In some server model, the operation will be finished by FTP protocol. So it might not work in some environment that allows only HTTP protocol. In such case, please upgrade the firmware. Newer firmware always provides a CGI that could let users retrieve config.ini.

3.2.26. RepairDatabase method

Repair the database when it could not opened correctly.

Syntax

```
HRESULT RepairDatabase ( String strDatabase, Long *plRet );
```

Parameters

strDatabase [in]

This is the full path name of the database path.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This function will create a new thread to repair the database, and once the repair finish, an [3.3.14 OnRecordStatus event](#) will be callback with eStatusDBRepairFinish status code, and a True or False for IParam. If the control is closing before the repair finish, the thread will be terminated and the database will be left in a inconsistent state (It's ok to call repair again to turn the database again in consistent state).

Application must be careful not to call repair database for the same database in more than one control at the same time. The result will be unpredicted.

If a database is open successfully, the call to this method will be failed with error code VS3ERR_DB_DATABASE_INITIALED. This is to prevent repairing a database that is under use.

When a control is repairing database, any call to database related functions will be failed with error code VS3ERR_DB_REPAIRING.

If a database could be opened and this method is called, an error code VS3ERR_DB_DONT_NEED_REPAIR is returned.

3.2.27. RepairLocation method

Repair the location when it could not opened correctly.

Syntax

```
HRESULT RepairLocation ( String strLocation, Long *plRet );
```

Parameters

strLocation [in]

This is the location name.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This function will create a new thread to repair the location, and once the repair finish, an event [3.3.13 OnReachMaxReconnection event](#)

The control would fire this event when reconnection time reaches the [3.1.103 MaxReconnectionCount property](#).

Syntax

```
HRESULT OnReachMaxReconnection ( );
```

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

OnRecordStatus event will be callback with eStatusLocRepairFinish status code, and a True or False for IParam. If the control is closing before the repair finish, the thread will be terminated and the database will be left in a inconsistent state (It's ok to call repair again to turn the database again in consistent state).

Application must be careful not to call repair location for the same location in more than one control at the same time. The result will be unpredicted. Usually, if one control maps to one location, this won't be an issue.

An application should not call repair to various location at the same time. This will cause IO contention condition. The result is a very bad system performance.

Before calling this method, the database must be opened first. If a location is open

successfully, the call to this method will be failed with error code VS3ERR_DB_LOCATION_OPENED. This is to prevent repairing a location that is under use.

When a control is repairing location, any call to database related functions will be failed with error code VS3ERR_DB_REPAIRING.

If a location could be opened and this method is called, an error code VS3ERR_DB_DONT_NEED_REPAIR is returned.

3.2.28. RestoreControlHandle method

Restore the window handle for drawing to the control itself.

Syntax

```
HRESULT RestoreControlHandle ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.29. RtspPlay method

Start streaming.

Syntax

```
HRESULT RtspPlay ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.30. RtspPause method

Pause streaming.

Syntax

```
HRESULT RtspPause ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.31. RtspStop method

Stop streaming.

Syntax

```
HRESULT RtspStop ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.32. SavePresetPosition method

Save the current position of the camera as a preset setting on server.

Syntax

```
HRESULT SavePresetPosition ( String strPosition, Long *plRet );
```

Parameters

strPosition [in]

This is the name of the position to be set.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.33. SaveSendMail method

Save the current frame of image to a file specified. And then invoke the default mailer program to let users send out the image to remote users.

Syntax

```
HRESULT SaveSendMail ( EPictureFormat eFormat, String strSendto, Long *plRet );
```

Parameters

eFormat [in]

The format of image caller needs. The format of image caller needs.

strSendTo [in]

This is the 'send to' field in the mailer. It's a default value. The value could be changed after the mailer program open.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.34. SaveSnapshot method

Save the current frame of image to a file specified.

Syntax

```
HRESULT SaveSnapshot ( EPixelFormat eFormat, String strFileName, Long *pIRet );
```

Parameters

eFormat [in]

The format of image caller needs. The format of image caller needs.

strFileName [in]

This is the name of the file used to save the image.

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.35. SendCameraCommand method

Send server the camera control command.

Syntax

```
HRESULT SendCameraCommand ( String strCommand, Long ITimeout Long *pIRet );
```

Parameters

strCommand [in]

This is the command that supported by the server now:

right, left, up, down, home, tele, wide, near, far, auto, pan, patrol, stop, irisauto, open, close, cust1~cust4, speedlink0~speedlink4

ITimeout [in, defaultval(30000)]

This is the timeout value for the first five command listed above. For VB users, it could also be skipped to use the default value.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The command supported by this control may not work for some model. That's because the server does not support the method. For example, "pan" command will only works for PT model, but not for VS model.

3.2.36. SendCameraCommandMap method

Send server the camera control command with relative or absolute coordinate.

Syntax

```
HRESULT SendCameraCommandMap ( Long IX, Long IY, Long *plRet );
```

Parameters

IX [in]

The x coordinate related to the upper-left corner of the control or the x amount of movement related to current position.

IY [in, optional]

The y coordinate related to the upper-left corner of the control or the y amount of movement related to current position.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method is only effective if the server is running with new firmware that supports click on image.

3.2.37. SendCameraControlSpeed method

Send server the camera control command to control the camera movement speed.

Syntax

```
HRESULT SendCameraControlSpeed ( ESpeedType eType, Long lSpeed, Long *plRet );
```

Parameters

eType [in]

The speed type defined in [3.4.26 ESpeedType enumeration](#).

lSpeed [in]

The speed value, the range should be 5~-5 include 0.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method is only effective if the server is running with new firmware that supports pan/ tilt speed setting.

3.2.38. SendDigitalOut method

Send server the digital output to certain port.

Syntax

```
HRESULT SendDigitalOut ( Long lPort, Long lValue, Long *plRet );
```

Parameters

IPort [in]

Specify the DO index of the digital output device to set data. Index starts from 1. It is not used if the server contains only one port.

IValue [in]

0 for low level signal, 1 for high level signal. Other values are reserved for future uses.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.39. SendUartCommand method

Send server the command to certain COM port.

Syntax

```
HRESULT SendUartCommand ( String strCommand, Boolean bFlush, Long IPort, Long *plRet );
```

Parameters

strCommand [in]

This is the command to send to UART on server. It's hex string converted from the binary command.

bFlush [in, defaultval(0)]

Should the server flush the COM port before sending data? The default value is False (default value is only working for VB)

IPort [in, defaultval(1)]

Specify the COM port index. For 4-channel model, it could be 1 or 2. For 1 channel model, it should be always 1. It could be skipped for VB users.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.40. SendUartCommandBinary method

Send server the command to certain COM port.

Syntax

```
HRESULT SendUartCommandBinary ( Variant vCommand, Boolean bFlush, Long IPort, Long *plRet );
```

Parameters

vCommand [in]

This is the command to send to UART on server. It's an array of Byte.

bFlush [in, defaultval(0)]

Should the server flush the COM port before sending data? The default value is False (default value is only working for VB)

IPort [in, defaultval(1)]

Specify the COM port index. For 4-channel model, it could be 1 or 2. For 1 channel model, it should be always 1. It could be skipped for VB users.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.41. SetBitmapHandle method

Set the bitmap to be shown when the control is not connected to any server.

Syntax

```
HRESULT SetBitmapHandle ( Long IBitmapHandle, Long *pIRet );
```

Parameters

IBitmapHandle [in]

This is the bitmap handle. Its value is a Win32 BITMAP handle. For example, in VB the Image property of Picture box contains a Handle sub property. And that's the BITMAP handle for the image.

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.42. SetDatabasePath method

Set the database path used by this control. This database is used only for recording.

Syntax

```
HRESULT SetDatabasePath ( String strPath, Boolean bAutoCreate, Long *pIRet );
```

Parameters

strPath [in]

This is the path points to when the database exists.

bAutoCreate [in]

Should the control create the database if it cannot find any media database at the path you specified?

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.43. SetFullScreen method

Set the control to display image in full screen mode.

Syntax

```
HRESULT SetFullScreen ( Boolean bFullScreen, Long *pIRet );
```

Parameters

bFullScreen [in]

Switch on/off full screen display. If you want to display image in full screen mode set True, otherwise set false.

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

When you start full screen display, you can enter ESCAPE (esc) or function keys (F1~F24) or application keys (Alt), or Windows logo key to stop full screen display.

3.2.44. SetGivenLangInfo method

Set the new language information. The control will use the new language for UI string.

Syntax

```
HRESULT SetGivenLangInfo ( long ICodePage, Long IFontSize, Long ICharSet, Boolean bPitch, Boolean bSwiss, String strFontName, Long *pIRet );
```

Parameters

lCodePage [in]

This is the code page for the new language. This value is important when translating the given string. In control, the strings will be translated between multi-byte and Unicode.

lFontSize [in]

The size of the font to be used to show the strings in control (non-message box part). Different language might need different font size. User could adjust this value to fit his need.

lCharSet [in]

The character set is useful when creating font. If the char set is not correct, the font might not be created successfully.

bPitch [in]

If the font should be created with pitch? Some language does need this.

bSwiss [in]

Some language need this flag to be set.

strFontName [in]

The name of the font to be created.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

Note this function must be called before SetLangStringHex or SetLangString is called.

The following table is the table for known languages that is tested well for this control. If your language is not in the list, please try the parameters yourself.

Language	Code page	Font size	Charset	bPitch	bSwiss	Font name
Traditional Chinese	950	14	0	False	False	Verdana
Simplified Chinese	936	14	134	False	False	
Japanese	932	16	128	True	True	
Germany	1250	14	0	False	False	Verdana
Czech	1252	16	238	False	False	
Spanish	1252	16	0	False	False	
French	1252	16	0	False	False	
Korean	949	14	129	True	True	

3.2.45. SetLangString method

Set one string for new language by index. The string is in Unicode.

Syntax

```
HRESULT SetLangString ( long lIndex, String strValue, Long *plRet );
```

Parameters

lIndex [in]

The index of the string to be set. If the index is out of range, VS3ERR_OUT_SCOPE would be returned.

strValue [in]

The string for the entry in Unicode.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

Note before calling this function, user must call [3.2.44 SetGivenLangInfo method](#) because the code page must be known when set string. The control would do conversion between multi-byte and Unicode.

After all string entries are set, please set an arbitrary language value to Language property to let the control to refresh UI.

For the item that is not set, English will be used.

3.2.46. SetLangStringHex method

Set one string for new language by index. The string is in multi-bytes and changed to hex value. The control will convert it back to multi-bytes and Unicode when needed.

Syntax

```
HRESULT SetLangStringHex ( long lIndex, String strValue, Long *plRet );
```

Parameters

lIndex [in]

The index of the string to be set. If the index is out of range, VS3ERR_OUT_SCOPE would be returned.

strValue [in]

The string for the entry in hex value.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

Note before calling this function, user must call [3.2.44 SetGivenLangInfo method](#) because the code page must be known when set string. The control would do conversion between multi-byte and Unicode.

This function is provided to help the web base user that need to set language in html file. After all string entries are set, please set an arbitrary language value to Language property to let the control to refresh UI.

For the item that is not set, English will be used.

3.2.47. SetLocation method

Set the location for storing media data.

Syntax

```
HRESULT SetLocation ( String strLocation, Boolean bAutoCreate, Long *plRet );
```

Parameters

strLocation [in]

This is the subdirectory under the database to store data.

bAutoCreate [in]

Should the control create the location if it can't find the matched location under current database?

plRet [out]

The return code of the function. 0 means success, others mean failed.

3.2.48. SetServerConfig method

Update a setting to the local copy of server configuration file. This command will not update the setting on server. Users must call [3.2.61 UpdateServerConfig method](#) to update all the changes to server.

Syntax

```
HRESULT SetServerConfig ( Long lCfgIndex, Long lExtraIndex, String strValue, Long *plRet );
```

Parameters

lCfgIndex [in]

Specifies the ID of the setting. The IDs are partly defined in the enumeration now. The full set of IDs could be found in ServerUtl module document (which is part of MainProfile)

lExtraldx [in]

Some properties in the configuration file contain three layers. So extra index is needed to locate the final value. For example, the user name and password has three layers. Set this value to 0 to get the name of first user, 1 to get name of second user, ...etc

strValue [in]

This is the new value for the specified setting entry.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Requirements

The [3.2.25 RefreshServerConfig method](#) must be called before this method could be called.

3.2.49. SetServerDateTime method

Update the server's date and time. The date and time could not be set along, that is, the two strings must be both valid value.

Syntax

```
HRESULT SetServerConfig ( String strDate, String strTime, Long *plRet );
```

Parameters

strDate [in]

The new date value to be set. The format is YYYY/MM/DD. The month and day value must be always formatted as two-digit value.

strTime [in]

The new time value to be set. The format is hh:mm:ss. All the hour, minute and second must be formatted as two-digit value.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method could be called before server is connected. But the remote server IP must be set before calling. Because it uses HTTP Post to update the server's date and time, if the call is made through Internet, there might be some time delay before the setting applied. So the result will be several second's lag for the time value.

Requirements

The [3.2.25 RefreshServerConfig method](#) must be called before this method could be called.

3.2.50. StartAVIConversion method

Start to record the AVI file. This method is only available when the control is connected.

Syntax

```
HRESULT StartAVIConversion ( Long *plRet );
```

Parameters

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The AVI conversion is a time consuming operation because it needs to encode the raw data into specify codec. To speed update the conversion, users is recommended to install third party's codec such as MSTR Mpeg4 encoder.

3.2.51. StartMediaRecord method

Set the [3.1.105 MediaType property](#) flag to true. This function will check if all the setting is correct for recording, for example, the [3.2.42 SetDatabasePath method](#) and [3.2.47 SetLocation method](#) must be called before calling this method. This method is the same as calling [3.2.52 StartMediaRecordEx method](#) with event record flag set to False.

Syntax

```
HRESULT StartMediaRecord ( EMediaType eMediaType, Long *pIRet );
```

Parameters

eMediaType [in]

Which media to record to the database? Currently, this parameter is not implemented and reserved for future.

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The recording will start after the control connects to server. So the return of this method doesn't always mean that the recording starts (It marks the recording flag internally). If you call this method during connecting mode, the recording starts immediately.

To let users knows that the control is recording. The caption of the control would turn RED when recording, and turn back to normal color after recording stops.

3.2.52. StartMediaRecordEx method

Set the [3.1.105 MediaType property](#) flag to true. This function will check if all the

setting is correct for recording, for example, the [3.2.42 SetDatabasePath method](#) and [3.2.47 SetLocation method](#) must be called before calling this method. This method is to replace [3.2.51 StartMediaRecord method](#). Users could specify if the recording is normal continuous recording or event recording.

Syntax

```
HRESULT StartMediaRecordEx ( EMediaType eMediaType, Boolean bEventRecord,  
Long *plRet );
```

Parameters

eMediaType [in]

Which media to record to the database? Currently, this parameter is not implemented and reserved for future.

bEventRecord [in]

Whether the recording is normal continuous recording or a event driven recording. For more detail about event recording, please see the remarks section below.

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The recording will start after the control connects to server. So the return of this method doesn't always mean that the recording starts (It marks the recording flag internally). If you call this method during connecting mode, the recording starts immediately.

Event recording means the control will start recording when events are triggered. Users could select which kind of events to start recording by setting [3.1.69 EventTypes property](#). To prevent the recording contains no important information because the time when event triggered the video is not I frame, the control will pre-buffer a sequence of video frame. The length of time to pre-buffer could be set by [3.1.126 PreEventTime property](#). The recording will stop automatically after a period

of time. The period could be adjusted by setting [3.1.124 PostEventTime property](#)(For DI high or DI low, the recording continues until the DI state changes). If events are triggered continuously, the recording might last for a long time. This is to prevent losing important information because event might happen between the time recording stopped and the next I frame comes. In such case, that event would be lost (not recorded).

To let users know that the control is recording. The caption of the control would turn RED when recording, and turn back to normal color after recording stops.

3.2.53. StartMicTalk method

Start talking by using microphone in 6K server.

Syntax

```
HRESULT StartMicTalk ( Long *pRet );
```

Parameters

pRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.54. StartMP4Conversion method

Start to record the MP4 file. This method is only available when the control is connected.

Syntax

```
HRESULT StartMP4Conversion ( Long *pRet );
```

Parameters

pRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.55. StartPacketInput method

Start to input packet into the control. The input packet mode is designed to let users to receive data from remote by its own protocol, and thus could provide proxy like solution.

Syntax

```
HRESULT StartPacketInput ( EMediaType enumeration eMediaType, Long *pIRet );
```

Parameters

eMediaType [in]

This is the media type of the data. The type is defined in [3.4.19 EMediaType enumeration](#).

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

The input packet mode and the connection mode could not be coexistent. So if users call this method, any existing connection will be closed first. For the control to play the video and audio correctly, the application must set correct media type. This is to let the control knows what media will be input in later method calls.

3.2.56. StopAVIConversion method

Syntax**Parameters****Return value****Remarks**

3.2.57. StopMediaRecord method

Set the recording flag of the control to false.

Syntax

```
HRESULT StopMediaRecord ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.58. StopMicTalk method

Stop talking by using microphone in 6K server.

Syntax

```
HRESULT StopMicTalk ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.59. StopMP4Conversion method

Start the MP4 conversion.

Syntax

```
HRESULT StopMP4Conversion ( Long *plRet );
```

Parameters

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.60. StopPacketInput method

Stop the packet input mode. The control will clear the video to bitmap or show in blank.

Syntax

```
HRESULT StopPacketInput ( Long *plRet );
```

Parameters

plRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

3.2.61. UpdateServerConfig method

Update the server configuration setting by upload the local copy. The local copy could be modified by calling [3.2.48 SetServerConfig method](#).

Syntax

```
HRESULT UpdateServerConfig ( Long *pIRet );
```

Parameters

pIRet [out]

The return code of the function. 0 means success, others mean failed.

Return value

Always S_OK.

Remarks

This method always uses FTP to upload the server setting. Currently, if the running environment does not support FTP protocol (for example, the running PC is inside NAT, and FTP port is blocked), there is no way to work around, please open the FTP port blocking to make it work.

The control will default change the configuration file to prevent server to reboot after the configuration is updated. If users want to change some setting that would be effective only if server reboots, please update the reboot setting to true before calling this method.

Some setting could not be changed by this method because the server will not apply the setting read from configuration file, such as the server's date and time. That's server limitation. Please use HTTP command to update those kinds of setting.

Requirements

The [3.2.25 RefreshServerConfig method](#) must be called before this method could be called.

3.3. Events

This control supports connection point. With this mechanism, control owner could receive certain events when certain condition happens. To receive these events, VC users should implement the event-sinking interface. Readers could find the example of how to implement the event-sinking interface using MFC in the sample codes. For those that don't use MFC, please search on the Internet for the ATL implementation of sinking target. VB users could easily implement the events by click on Procedures/Events Box to insert the events.

3.3.1. OnAVIStatus event

The control fires this event whenever the AVI conversion status is changed.

Syntax

```
HRESULT OnAVIStatus ( EAVIRecordState eStatus );
```

Parameters

eStatus [in]

The new status the control changes to.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.2. OnClick event

The control fires this event whenever user clicks on the control by using mouse pointer and the [3.1.22 ClickEventHandler property](#) is set to clickSendEvent or clickHandleSendEvent.

Syntax

```
HRESULT OnClick ( long IX, long IY );
```

Parameters

IX [in]

The x coordinate related to upper-left corner of the control where user clicked mouse.

IY [in]

The y coordinate related to upper-left corner of the control where user clicked mouse.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.3. OnConnectionBroken event

The control fires this event whenever the connection is broken by some reason other than user stop it.

Syntax

```
HRESULT OnConnectionBroken ( EConnectionType eConnType );
```

Parameters

eConnType [in]

This parameter indicates the connection type of connection that is broken. Two values are available now: connAudio, connVideo.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.4. OnConnectionOK event

Sent whenever the control connects to the Visual Server successfully.

Syntax

```
HRESULT OnConnectionOK ( EConnectionType eConnType, );
```

Parameters

eConnType [in]

This parameter indicates the connection type of connection that is broken. Two values are available now: connAudio, connVideo.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.5. OnDIDOAlert event

The control fires this event whenever it gets the window alert event from video stream.

Syntax

```
HRESULT OnDIDOAlert ( Long IChangeFlag, Long IDIDOValue );
```

Parameters

IChangeFlag [in]

This parameter contains DI & DO change flag, the low word saves DI change flag,

and the high word contains DO change flag. If bit 0 of low word is 1 means DI 1 changes, 0 means does not change. If bit 0 of high word is 1 mean DO 1 change (might be changed by other client), 0 means it does not change. The bit 1-3 of the low word has the similar meanings that apply to DI 2-4. This bit 1 of high word applies to DO 2. DI 2-4 and DO 2 are only available for 4-channel models.

IDODOValue [in]

This parameter contains DI & DO current value. The low word saves DI value, and the high word contains DO value. If bit 0 of low word is 1 means DI 1 is high, 0 means DI 1 is low. If bit 0 of high word is 1 mean DO 1 is high, 0 means DO 1 is low. The bit 1-3 of the low word has the similar meanings that apply to DI 2-4. This bit 1 of high word applies to DO 2. DI 2-4 and DO 2 are only available for 4-channel models.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.6. OnFishEyePreset event

The control fires this event whenever client use [3.2.11 FishEyeGetPresetInfo method](#).

Syntax

```
HRESULT OnFishEyePreset ( long IX, long IY, long IZ, long IZFactor, long IScroll, long IViewerNumber, long IFocusIndex );
```

Parameters

IX [in]

The x coordinate related to the fish eye viewer.

IY [in]

The y coordinate related to the fish eye viewer.

IZ [in]

The z coordinate related to the fish eye viewer.

IZFactor [in]

The z factor related to the fish eye viewer.

IScroll [in]

The scroll parameter related to the fish eye viewer.

IViewerNumber [in]

The viewer number on current present mode.

IFocusIndex [in]

The current focus viewer index on current present mode.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.7. OnHttpRequestFailed event

The control fires this event whenever it sends HTTP requests and server responses failed.

Syntax

```
HRESULT OnHttpRequestFailed ( Long IRetCode );
```

Parameters

IRetCode [in]

This parameter contains the HTTP status code. For example, the 401 status code means page not found.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.8. OnMDAlert event

The control fires this event whenever it gets the window alert event from video stream.

Syntax

```
HRESULT OnMDAlert ( Variant *pvStatus );
```

Parameters

pvStatus [in, ref]

This parameter contains a two-dimension array that holds the information for the three motion detection windows. vStatus[n][0] is a Boolean value that identifies if alert happens for the corresponding window. vStatus[n][1] is a Long value that hold the percentage of alert.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

Note: for the way to retrieve the array from the variant in various language, please refer to the sample code.

3.3.9. OnMP4Status event

The control fires this event whenever the MP4 conversion status is changed.

Syntax

```
HRESULT OnMP4Status ( EAVIRecordState eStatus );
```

Parameters

eStatus [in]

The new status the control changes to.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.10. OnNewAudioPiece event

The control fires this event whenever it comes the new audio piece from the connection. Users must set the [3.1.117 NotifyNewAudio property](#) to True to receive this event.

Syntax

```
HRESULT OnNewAudioPiece ( Variant *pvPiece );
```

Parameters

pvPiece [in, ref]

This parameter contains the new arrival audio data. This parameter contains an array of two variants. The first one is a three-element long integer array to indicate time in second, millisecond, and the length of the audio data. The second one is the byte array contain the audio PCM data.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.11. OnNewPacket event

The control fires this event whenever a new media packet is received from network. The packet could be video or audio. Users must set the [3.1.116 NotifyAudioPacket property](#) and [3.1.119 NotifyVideoPacket property](#) to request audio or video packets.

Syntax

```
HRESULT OnNewPacket ( Boolean bVideo, Variant *pvPiece );
```

Parameters

bVideo [in]

Indicates if the packet is video or audio. True if it is video. False if it is audio.

pvPiece [in, ref]

This parameter contains the new arrival media data. This parameter contains an array of two variants. The first one is a three-element long integer array to indicate time stamp second, millisecond, and the size of the byte array. The second one is the byte array contain the video or audio un-decoded data.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.12. OnNewVideo event

The control fires this event whenever a new image frame is received from server. If the [3.1.119 NotifyVideoPacket property](#) is not set to True, only bSignal, and the video time stamp is correct. This event is always fired even [3.1.119 NotifyVideoPacket property](#) is not set to notify the new coming of video data.

Syntax

```
HRESULT OnNewVideo ( Boolean bSignal, Boolean bDecodedImg, Variant *pvPiece );
```

Parameters

bSignal [in]

Indicates if there are signal for the new image. It's only available for new version firmware

bDecodedImg [in]

Indicates if the notification contains data. Users should access the video data byte array only if this flag is set to True.

pvPiece [in, ref]

This parameter contains the new arrival video data. This parameter contains an array of two variants. The first one is a three-element long integer array to indicate time stamp second, millisecond, and the size of the byte array (only valid if bDecodedImg is True). The second one is the byte array contain the video decoded data (only valid if bDecodedImg is True).

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

Please do not access the size element and the byte array part of pvPiece if the bDecodedImg is False. This will produce unpredicted result.

3.3.13. OnReachMaxReconnection event

The control would fire this event when reconnection time reaches the [3.1.103 MaxReconnectionCount property](#).

Syntax

```
HRESULT OnReachMaxReconnection ( );
```

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.14. OnRecordStatus event

The control fires this event whenever error happens during recording.

Syntax

```
HRESULT OnRecordStatus ( Long IStatus, Long IParam );
```

Parameters

IStatus [in]

Indicates the status code for this notification. The status code is defined in EDBStatusCode. If the status is 1 means the disk is full, no space left for recording. Note, you have to handle the disk full event by stopping the recording, or you will get this event each time when network packets arrive.

IParam [in]

This argument is now not used. Reserved for future.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.15. OnRequestAVIFilename event

The control would fire this event when it is going to generate a new AVI file. The application should response to this event by setting proper file name through the [3.1.7 AVIFilePathName property](#). The application should set the name immediately after it got the event because the control is waiting for the new name there, if the application does not respond immediately, the whole control will be blocked.

Syntax

```
HRESULT OnRequestAVIFilename ( Variant *pvTime );
```

Parameters

pvTime [in, ref]

This parameter contains the time value for the time that the file is going to be generated. Application could use this value to format the file name or it could use its own naming rule to generate the new file name. The time is the packet time, not the PC time.

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

Application must specify the file name through [3.1.7 AVIFilePathName property](#). And application should not do too many works in the event, because the control is blocked before this event returned.

3.3.16. OnServerModelType event

The control fires this event whenever the server model of the connected camera changes.

Syntax

```
HRESULT OnServerModelType ( EServerModelType Type );
```

Parameters

eType [in]

The new server model type in type [3.4.25 EServerModelType enumeration](#).

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.3.17. OnVideoSignalChange event

The control fires this event whenever the video signal input of video server model is changed.

Syntax

```
HRESULT OnVideoSignalChange ( EVideoSignalState eType );
```

Parameters

eType [in]

The video signal in type [3.4.31 EVideoSignalState enumeration](#).

Return value

Please always return S_OK.

Remarks

When implement this event function, the function should be declared as void. The return value here is used by OLE library internally.

3.4. Enumeration

The enumerations in this section are only available for VB and C#, if you need to pass value of the following enumerations as parameters in VC, please use the corresponding value.

3.4.1. EAudioCodecType enumeration

This enumeration is used when get current audio CODEC type.

Name	Value	Description
eAudioCodecLow	1	Sample rate is 8K bps. Used in 6K servers.
eAudioCodecMobile	2	Sample rate is also 8K. Used in RTSP servers.
eAudioCodecStandard	3	Sample rate is 16K bps. Used in 3K server and 6K servers.
eAudioCodecStereo	4	Sample rate is 16K/32/44.1K bps. Used in RTSP servers.

3.4.2. EAVIRecordStatus enumeration

This enumeration is used when get current [3.1.13 AVIStatus property](#).

Name	Value	Description
eAVINone	0	The control is current connected or the control is not able to perform AVI conversion now.
eAVIStop	1	The AVI conversion is not running now.
eAVIRecord	2	The AVI conversion is currently running.

3.4.3. EControlStatus enumeration

This enumeration is used with the [3.1.28 ControlStatus property](#).

Name	Value	Description
ctrlStopped	0	The control is now without any connection.
ctrlConnecting	1	The control is now connecting to remote server.
ctrlRunning	2	The streaming or single jpeg connection to server has been established.
ctrlDisconnecting	3	The connection is now disconnecting.
ctrlReConnecting	4	The control is now reconnecting to remote server.
ctrlConnectionBroken	5	The connection is now disconnected (Not stop by ourself).

3.4.4. EClickEventHandler enumeration

This enumeration is used with the [3.1.22 ClickEventHandler property](#).

Name	Value	Description
clickNone	0	Doesn't not handle when user click on control.
clickHandleSelf	1	The control will move the camera to be centered on when user click. This value is working only for new firmware that support click on image.
clickSendEvent	2	The control will fire an event with coordinate to notify that user click on the control.
clickHandleSendEvent	3	This value is the combination of clickHandleSelf and clickSendEvent. This value is working only for new firmware that support click on image.

3.4.5. EConnectionType enumeration

This enumeration is used when connection status (OK/Broken) event fired.

Name	Value	Description
eConnVideo	1	This is the video connection.
eConnAudio	2	This is the audio connection.

3.4.6. EConnProtocol enumeration

This enumeration is used when set/get audio or video protocol.

Name	Value	Description
eProtNone	0	The control is currently not connecting to visual server.
eProtUDP	1	Use UDP as the connecting protocol.
eProtTCP	2	Use TCP as the connecting protocol.
eProtHTTP	3	Use HTTP as the connecting protocol. HTTP protocol does not support audio.
eProtMulticast	4	Use multicast to receive the streaming data. This is only valid for 7K servers and the firmware must support this.

3.4.7. EControlButtonState enumeration

This enumeration is used to specify the control bar outlook. It controls each button's display or hide state.

NOTE: server model type will also affect the button's display state.

Name	Value	Description
ebutDigitalZoom	1	The digital zoom button.
ebutAVIConvert	2	The AVI conversion button.
ebutTalk	4	The talk button in two-way button.
ebutRtspPlayStop	8	The play and stop buttons in RTSP model.
ebutPlayVolume	16	The volume control buttons for audio enabled models (non-2K models)
ebutMicVolume	32	The microphone control buttons for two-way model.
ebutRtspSlider	64	The slider for RTSP model operates in file playback mode.

3.4.8. EControlType enumeration

This enumeration is used to specify the control UI type. Note: if the control type is switched dynamically, the setting could not be updated if the connection is not re-established.

Name	Value	Description
eCtrlNoCtrlBar	0	This setting asks the control not to display control bar.
eCtrlNormal	1	The control will show control bar and the image together.
eCtrlMotion	2	The control will be shown in motion detection edit mode. In such mode, no control bar will be shown.
eCtrlMaskEdit	4	The control will be shown in privacy mask edit mode. In such mode, no control bar will be shown.

3.4.9. ECoordinateType enumeration

This enumeration is used when control the camera by map coordinates.

Name	Value	Description
eCoordAbsolute	1	The coordinate value is related to the upper-left corner of the map.
eCoordRelative	2	The coordinate value is related to current camera position.

3.4.10. EDBRecordEventType enumeration

This enumeration is used in [3.1.69 EventTypes property](#).

Name	Value	Description
eMDAlertWin1	1	Motion is detected for the first motion detection window.
eMDAlertWin2	2	Motion is detected for the second motion detection

		window.
eMDAlertWin3	4	Motion is detected for the third motion detection window.
eDILow1	256	Digital input 1 is low (the recording will keep until DI 1 is not low)
eDILow2	512	Digital input 2 is low (the recording will keep until DI 2 is not low). For 4 Channel model only.
eDILow3	1024	Digital input 3 is low (the recording will keep until DI 3 is not low). For 4 Channel model only.
eDILow4	2048	Digital input 4 is low (the recording will keep until DI 4 is not low). For 4 Channel model only.
eDIHigh1	65536	Digital input 1 is high (the recording will keep until DI 1 is not high)
eDIHigh2	131072	Digital input 2 is high (the recording will keep until DI 2 is not high). For 4 Channel model only.
eDIHigh3	262144	Digital input 3 is high (the recording will keep until DI 3 is not high). For 4 Channel model only.
eDIHigh4	524288	Digital input 4 is high (the recording will keep until DI 4 is not high). For 4 Channel model only.
eDIRise1	2097152	Digital input 1 is changed from low to high.
eDIRise2	4194304	Digital input 2 is changed from low to high. For 4 Channel model only.
eDIRise3	8388608	Digital input 3 is changed from low to high. For 4 Channel model only.
eDIRise4	16777216	Digital input 4 is changed from low to high. For 4 Channel model only.
eDIFall1	33554432	Digital input 1 is changed from high to low.
eDIFall2	67108864	Digital input 2 is changed from high to low. For 4 Channel model only.
eDIFall3	134217728	Digital input 3 is changed from high to low. For 4 Channel model only.
eDIFall4	268435456	Digital input 4 is changed from high to low. For 4 Channel model only.

3.4.11. EDBStatusCode enumeration

This enumeration is used in [3.3.14 OnRecordStatus event](#).

Name	Value	Description
eStatusDiskFull	1	Disk is full when recording. The recording will be stopped when this status is called back.
eStatusDBRepairFinish	2	The database repair is finished. The IParam of the event means whether the repair success or not. Nonzero means success, 0 means not.
eStatusLocRepairFinish	3	The location repair is finished. The IParam of the event means whether the repair success or not. Nonzero means success, 0 means not.
eStatusNeedRepair	4	The location needs to be repaired. This often happens when recording procedure found that the location has consistency problem, such as some file are corrupted or deleted by other program.
eStatusRecordStart	5	Sent to users when the location starts to record. Often used when event recording to notify users that a new event happens and the recording starts.
eStatusRecordStop	6	Sent to users when recording stops.
eStatusSizeLimited	7	The control is not set to cycle recording, and the size of location limitation has been reached.

3.4.12. EDisplayTimeFormat enumeration

This enumeration is used in [3.1.59 DisplayTimeFormat property](#).

Name	Value	Description
eTimeFmtNormal	0	The normal 24 hours format
eTimeFmtTwelves	1	12/24-hour format decided by the system setting in regional control panel. For 12 hours, the time marker

is always “AM”/”PM” no matter what language the OS is.

eTimeFmtUser	2	12/24-hour format decided by the system setting in regional control panel. For 12 hours, the time marker is the same as the system setting.
---------------------	---	---

3.4.13. EDualStreamOption enumeration

This enumeration is used in [3.1.166 ViewStream property](#).

Name	Value	Description
eStream1	0	Stream 1
eStream2	1	Stream 2
eStream3	2	Stream 3
eStream4	3	Stream 4

3.4.14. EFontStyle enumeration

This enumeration specifies the style of the typeface of a font. Styles can be combined.

Name	Value	Description
eFontStyleRegular	0	Specifies normal weight or thickness of the typeface.
eFontStyleBold	1	Specifies bold typeface. Bold is a heavier weight or thickness.
eFontStyleItalic	2	Specifies italic typeface, which produces a noticeable slant to the vertical stems of the characters.
eFontStyleBoldItalic	3	Specifies the typeface as both bold and italic.
eFontStyleUnderline	4	Specifies underline, which displays a line underneath the baseline of the characters.
eFontStyleStrikeout	8	Specifies strikeout, which displays a horizontal line drawn through the middle of the characters.

3.4.15. EFishEyeControl enumeration

This enumeration is used in [3.2.10 FishEyeCtrl method](#).

Name	Value	Description
eFishEyeCtrlAutoPan	0	Auto pan on fisheye dewarping viewer.
eFishEyeCtrlPan	1	Pan control on fisheye dewarping viewer.
eFishEyeCtrlTilt	2	Tilt control on fisheye dewarping viewer.
eFishEyeCtrlZoom	3	Zoom control on fisheye dewarping viewer.
eFishEyeCtrlHome	4	Back to the initial position on fisheye dewarping viewer.
eFishEyeCtrlRotate	5	Rotate preset locations on fisheye dewarping viewer.

3.4.16. EFishEyeMountType enumeration

This enumeration is used in [3.1.74 FishEyeMountType property](#).

Name	Value	Description
eFishEyeMountType_Wall	0	Wall mount type of fisheye lens for dewarping.
eFishEyeMountType_Ceiling	1	Ceiling mount type of fisheye lens for dewarping.
eFishEyeMountType_Floor	2	Floor mount type of fisheye lens for dewarping.

3.4.17. EFishEyePresentMode enumeration

This enumeration is used in [3.1.20 ChangePresentMode property](#).

Name	Value	Description
eFishEyeModeSingleSourceStretch	0	Stretch source of fisheye

		stream.
eFishEyeModeSingleSourceConstrainprop	1	Constrainprop source of fisheye stream.
eFishEyeModeSinglePerspectView	2	Dewarping to present view on fisheye stream.
eFishEyeModeSinglePanoramaView	3	Dewarping to panorama view on fisheye stream.
eFishEyeModeDoubleSourcePerspect	4	Dewarping to double view with source and present on fisheye stream.
eFishEyeModeDouble	5	Dewarping to double view with panorama on fisheye stream.
eFishEyeModeTriple	6	Dewarping to triple view with two present and one panorama on fisheye stream.
eFishEyeModeQuadWithSoucreConstrainprop	7	Dewarping to quad view with one source constrainprop and three present views on fisheye stream.
eFishEyeModeQuadPerspectView	8	Dewarping to quad view with four present views on fisheye stream.
eFishEyeModeQuadPerspectViewInterfered	9	Dewarping to quad view with four present views by interfered on fisheye stream.
eFishEyeModeQuadWithPanoramaView	10	Dewarping to quad view with one panorama and three present views on fisheye stream.
eFishEyeModeNine	11	Dewarping to nine view with one source

constrainprop and eight present views on fisheye stream.

3.4.18. EHttpProxyType enumeration

This enumeration is used in [3.1.86 HTTPProxyType property](#). If you need to do authentication in HTTP proxy server, please set user name and password in [3.1.87 HTTPProxyUserName property](#) and [3.1.84 HTTPProxyPassword property](#).

Name	Value	Description
eHttpProxyNone	0	Connecting without through HTTP proxy server.
eHttpProxySet	1	Connecting through HTTP proxy server.
eHttpProxyIE	2	Connecting through HTTP proxy server which set in Internet Option.

3.4.19. EMediaType enumeration

This enumeration is used to specify the media to be got from servers.

Name	Value	Description
eMediaNone	0	There is no media now.
eMediaVideo	1	Only video data is meaningful for the control.
eMediaAudio	2	Only audio data is meaningful for the control.
eMediaAV	3	Both video and audio are meaningful for the control.

3.4.20. EPanelBtnStyle enumeration

This enumeration is used only for RTSP servers. It determines the outlook of the control bar.

Name	Value	Description
eBtnAuto	0	The control will detect the server type automatically.

eBtnPauseStop	1	The RTSP server is new model, both Pause and Stop button are shown.
eBtnStopOnly	2	The server is old model. Only stop button is used.

3.4.21. EPictureFormat enumeration

This enumeration is used when get image from control or for video data notification. For snapshot, the jpeg mode might need to encode the decoded data to jpeg again. The performance might be bad.

Name	Value	Description
ePicFmtJpeg	1	JPEG format.
ePicFmtBmp	2	Bitmap format. The first scanline is on bottom.
ePicFmtYUV	3	YUY2 format. It's ordering is Y1U1Y2V2Y3U3Y4U4...
EPicFmtRaw24	4	RGB24 format. The first scanline is on top.
EPicFmtIYUV	5	Planar format. All Ys follow by all Us and then all Vs
EPicFmtYV12	6	Planar format. All Ys follow by all Vs and then all Us

3.4.22. EPTZEnableFlag enumeration

This enumeration is used when retrieve the eCfgSystemPTZEnable1 setting. The setting is an integer that contains the combination of the above bits.

Name	Value	Description
eptzPTZOnOff	1	The camera in server has PTZ capability. For server that connects to fix camera, this bit is 0. And if this bit is 0, all other bits below are also 0.
eptzPTZBuiltIn	2	If the camera is built in or external. 0 for external, 1 (value 2) for built-in. For older firmware version. This bit is not set. Please update the firmware if necessary
eptzPTZPan	4	If the camera supports Pan capability? 0 for no, 1 (value 4) yes. For older firmware version. This bit is not set. Please update the firmware if necessary.
eptzPTZTilt	8	If the camera supports Tilt capability? 0 for no, 1 (value

8) yes. For older firmware version. This bit is not set. Please update the firmware if necessary.

eptzPTZZoom	16	If the camera supports Zoom capability? 0 for no, 1 (value 16) yes. For older firmware version. This bit is not set. Please update the firmware if necessary.
eptzPTZFocus	32	If the camera supports Focus capability? 0 for no, 1 (value 32) yes. For older firmware version. This bit is not set. Please update the firmware if necessary.

3.4.23. ERegistryRoot enumeration

This enumeration is used in [3.1.133 RegkeyRoot property](#).

Name	Value	Description
eRegLocalMachine	0	The registry key root is set to local machine.
eRegCurrentUser	2	The registry key root is set to current user.

3.4.24. EServerConfig enumeration

This enumeration is used when retrieve or set the server configuration.

Name	Value	Description
eCfgSystemResetSystem	0	Should the server reboot after config.ini is updated by calling 3.2.61 UpdateServerConfig method .
eCfgSystemSerialNumber	2	The serial number for the server. This is the MAC address of the server. It's a read-only property.
eCfgSystemCurrentDate	3	The current date value for the server. Format is YYYY/MM/DD It's a read-only property.
eCfgSystemCurrentTime	4	The current time value for the server. Format is hh:mm:ss. It's a read-only property.

eCfgSystemFirmwareVersion	6	The firmware version string. It's a read-only property.
eCfgSystemPTZEnable1	8	The PTZ enable property. Users could cast it into a number. For older firmware, there is no such property in config.ini, so the value is always 0. Upgrade the firmware if necessary. It's a readonly property.
eCfgSystemUserName	14	Retrieve or set the user name for the 20 system allowed users. The IExtrIdx is used to identify the user to be set. 0 is always for the root user.
eCfgSystemUserPwssword	15	Retrieve or set the user password for the 20 system allowed users. The IExtrIdx is used to identify the user to be set. 0 is always for the root user.
eCfgVideoCaptionText	101	Retrieve or set the video caption text.

3.4.25. EServerModelType enumeration

This enumeration is used to control the connectivity of the control to various servers. Users must specify correct server model type to get the control works correctly.

Name	Value	Description
esrv2KServer	0	The server is a 2K with 1 channel model.
esrv3KServer	1	The server is a 3K model.
esrv456KServer	2	The server is a 4/5/6K model.
esrv7KServer	3	The server is a RTSP model.
esrv2KServer4Ch	4	The server is a 2K with 4 channels model
esrv7KDualStream	5	The server is a 7K model which support dualstream (Mpeg4 and Motion Jpeg).
esrvDualStream	5	The server is a dual-stream model (Mpeg4 and Motion Jpeg).
esrvMultipleStream	6	The server is a multiple-stream model (Mpeg4 and Motion Jpeg).

3.4.26. ESPEEDTYPE enumeration

This enumeration is used when control the camera speed.

Name	Value	Description
ePanSpeed	1	This is the pan speed for camera control
eTiltSpeed	2	This is the tilt speed for camera control.
eZoomSpeed	3	This is the zoom speed for camera control.
eFocusSpeed	4	This is the Focus speed for camera control.
eAutoPanPatrolSpeed	5	This is the auto pan/patrol speed for camera control.

3.4.27. ESTREAMINGOPTION enumeration

This enumeration is used to specify the streaming option when playing live media.

Name	Value	Description
eStOpStreaming	1	Use streaming to get the media.
eStOpSingleJpeg	2	Get single jpeg from server by CGI. It would be slower and all the extra information such as DI/DO and motion information that are carried in stream would not be available in such case.

3.4.28. ETALKBTNSTYLE enumeration

This enumeration is used to specify the talk button type. It's only for two-way models.

Name	Value	Description
eTalkBtnToggle	1	The talk button in two-way connection is toggle type. It means that click on the talk button will enable talk session. The session will continue until users click the button again.

eTalkBtnPush	2	The talk button in two-way connection is push type. It means that users must keep on pressing the talk button to continue talk session. Once release, the talk session is ended.
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3.4.29. EVideoCodecType enumeration

This enumeration is used when get current video CODEC type.

Name	Value	Description
eViCodecMjpeg	1	Video codec is motion jpeg
eViCodecSP	2	Video codec is simple profile mode
eViCodecSHM	3	Video codec is short header mode

3.4.30. EVideoQuality2K enumeration

This enumeration is used when adjust the video quality for current connection (Only for 2K servers). It takes effect by re-establish the connection. These definitions are the same as those defined in server's home page.

Name	Value	Description
evqua2KMedium	1	Video quality is medium
evqua2KStandard	2	Video quality is standard
evqua2KGood	3	Video quality is good
evqua2KDetailed	4	Video quality is detailed
evqua2KExcellent	5	Video quality is excellent

3.4.31. EVideoSignalState enumeration

This enumeration is used when video signal is changed in video server model.

Name	Value	Description
eVideoSignalOff	1	Video signal is lost

eVideoSignalOn	2	Video signal is restored.
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3.4.32. EVideoSize2K enumeration

This enumeration is used when adjust the video size for current connection (Only for 2K servers). It takes effect by re-establish the connection. These definitions are the same as those defined in server's home page.

Name	Value	Description
evsz2KHalf	1	Video size is half (176x120 NTSC, 176x144 for PAL)
evsz2KNormal	2	Video size is normal (352x240 NTSC, 352x288 PAL)
evsz2KDouble	3	Vide size is double (704x480 NTSC, 704x576 PAL)

Appendix

Error Code List

The following is the error list for the control. The error code is returned by the last parameter of each method.

Code	Name/ Description
1002	VS3ERR_HTTP_BLK_ERR Error when doing http blocking operation, such as 3.2.17 GetPtzPresetPosition method , 3.2.16 GetDigitalIn method , 3.2.19 GetUartData method and 3.2.21 HttpCommand method .
1003	VS3ERR_CONNECT Error when connecting to server. It is returned when calling 3.2.4 Connect method , 3.2.25 RefreshServerConfig method , 3.2.49 SetServerDateTime method , 3.2.61 UpdateServerConfig method .
1004	VS3ERR_ALREADY_START_INPUT When call 3.2.55 StartPacketInput method and the control is already in input packet mode (has been called before but not stop yet).
1005	VS3ERR_INPUT_NOT_START When call 3.2.22 InputMediaPacket method or 3.2.23 InputMediaPacketX method but the 3.2.55 StartPacketInput method is not called yet.
1101	VS3ERR_DB_PATH_INCORRECT The database path is not correct. Either it doesn't exist or it points to a file rather than a path.
1102	VS3ERR_DB_NOT_EXIST Database doesn't exist. When giving database path, caller could ask to create the database automatically or just open existing database.

This error code is returned if callers want to open existing database, but it is not there.

1103 VS3ERR_DB_CR_FAILED

Failed to create database. Maybe the disk is full or because of permission denied.

1104 VS3ERR_DB_NOT_INIT

Database is not initialized.

1105 VS3ERR_DB_LOC_NOTFOUND

The specified location is not found. This is returned when callers don't want the control to create the location automatically and the location doesn't exist.

1106 VS3ERR_DB_LOC_CR_FAILED

Create location failed. The possible reasons are disk full or users have no permission to create directory or create file on the target directory.

1107 VS3ERR_DB_LOC_OTHER_ERR

Other location related error.

1110 VS3ERR_DB_LOC_NOT_INIT

The location is not initialized before calling [3.2.51 StartMediaRecord method](#) or [3.2.52 StartMediaRecordEx method](#).

1117 VS3ERR_DB_DONT_NEED_REPAIR

Database does not need to be repaired. It's healthy.

1118 VS3ERR_DB_REPAIRING

Database is under repairing; no other database operation is permitted.

1119 VS3ERR_DB_LOCATION_OPENED

Location is opened. In such case, repairing database or repairing

location are both not permitted.

1120 VS3ERR_DB_DATABASE_INITIALED

Database is opened. In such case, repairing database is not permitted.

1201 ~ 1215

Internal component Error

1301 ~ 1307

Memory related error

1401 VS3ERR_URL_MISS_DI

URL for retrieving DI status is empty.

1402 VS3ERR_DI_INCORRECT_FORM

The returned DI status page from server is not the format that we know. It's possible that the server is not in the list that this control supports.

1403 VS3ERR_PRESET_INCORRECT_FORM

The returned Preset location page from server is not the format that we know. It's possible that the server is not in the list that this control supports.

1404 VS3ERR_SNAPSHOT_FMT_UNSUPP

The snapshot output format is not in the supported list.

1405 VS3ERR_SNAPSHOT_FAILED

Snapshot failed.

1406 VS3ERR_URL_MISS_UART

URL for UART read/write is empty.

1407 VS3ERR_URL_MISS_PTZURL

URL for PTZ control is empty.

1408	VS3ERR_EXCEED_MAX_LEN The given buffer length exceeds the maximum COM port read/write buffer length (128)
1409	VS3ERR_POINT_NOTIN_CTRL The coordinate of the given point is not within control client area.
1410	VS3ERR_URL_MISS_DO URL for DO setting is empty.
1411	VS3ERR_PARAM_INCORRECT <ul style="list-style-type: none">■ The vData parameter for 3.2.39 SendUartCommand method or 3.2.40 SendUartCommandBinary method is not a byte array.■ At least one parameter for 3.2.49 SetServerDateTime method is empty string.■ 3.2.22 InputMediaPacket method detects that the given array is not a valid byte array.
1412	VS3ERR_URL_MISS_PRESET URL for preset page is empty.
1413	VS3ERR_URL_MISS_VAM URL for A/V stream is empty.
1415	VS3ERR_IPHOSTNAME_MISS Does not give any IP or hostname info before calling Connect.
1416	VS3ERR_SNAPSHOT_NOT_DECODE Snapshot is requested but the 3.1.44 DecodeAV property is set to False.
1417	VS3ERR_NOT_CONNECTED Snapshot could not be got if not connects to server. This could also happen if 3.2.48 SetServerConfig method , 3.2.49 SetServerDateTime method and 3.2.61 UpdateServerConfig method are called before

3.2.25 RefreshServerConfig method is called.

1419 VS3ERR_INVALID_PACKET
The input packet method detects that the input packet format is not correct.

1420 VS3ERR_SAVE_REG_FAIL
Error happens when saving setting to registry. Maybe the user is not authorized to modify registry.

1421 VS3ERR_OUT_SCOPE
The language index is out of scope.

1422 VS3ERR_STRING_TOO_LONG
The string entry for certain index is too long. The maximum length is 255 character in multi-bytes.

1501 ~ 1503
File system errors.

3001
No match items

4001
Control speed was wrong.

4002
No focus present information
