

REMOTE CONTROL API 5.0

SPECIFICATION

Preliminary

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1 Introduction

1.1 Description

Remote Control API 5.0 (a.k.a. Remote API) provides an interface for remote devices to communicate with the video conference system. Remote API can be accessed by Command Line Interface using RS232 or Telnet. This document contains information about the use of Remote API, and is intended for system integrators.

Note that Remote Control API 5.0 is only for SVC 100/500 series , not available on the legacy H & HVC series or EVC 130/900 series.

2 Functionality

2.1 Telnet Service

The telnet service provides controls to the video conference system. System integrators can retrieve system state and control the system.

Here is an example of telnet service input and output:

```
login 1234
*r ok
**end
action UI/IR/up
*r ok
**end
get System/MACAddress
*r ok
*r data="01:23:45:67:89:AB"
**end
logout
```

The user connects to the system, logs in with password, sends an up remote control key press, gets MAC address of the system, and then logs out.

2.1.1 Login

For security issues, you need the administration password to access the service first. The password can be set from the system UI.

2.1.2 Action command

An ACTION command triggers a certain system operation. For example, move the PTZ camera leftward a step.

2.1.3 Get command

A GET command receives certain information of a system. For example, get MAC address of a system.

2.1.4 Set command

A SET command sets a parameter of a system. For example, set IP address of a system.

2.1.5 Query command

A QUERY command gets a list of options within a parameter. For example, get a list of all supported languages.

2.1.6 Keep alive

For security issues, the system kicks users who have no action in 5 minutes. Once a user has been kicked, he should reconnect to the telnet service, and log in again.

To avoid this situation, users can send an NOP command to keep the session alive.

2.1.7 Logout

You have to logout from the telnet service at the end of session. Otherwise, the user management will run out of user quota. The upper limit is 10 users at the same time.

3 Caveats

None.

4 Other Requirement

None

5 Design Details

The full Remote Control API 5.0 syntax is introduced in section 5.1. It is a generic command sets, and can be extended to variety of system controls. These typical cases are listed in the later sections.

5.1 Remote API syntax

5.1.1 Login

Input:

```
login {password}
```

Output:

```
*r ok
```

```
*r error {reason}
```

Log in to the telnet service.

- password Administration password
- reason Reason of error. Typically:
 - invalid access code Wrong password
 - too many users There are too many users

5.1.2 Action command

Input:

```
action {xpath}
```

Output:

```
*r ok
```

```
*r error {reason}
```

Trigger a system operation.

- xpath Which Remote API to trigger. See Table 4.
- reason Reason of error. Typically:

- invalid object
- resource busy
- invalid session

5.1.3 Get command

Input:

```
get {xpath}
```

Output:

```
*r ok  
*r data="{data}"  
**end
```

```
*r error {reason}
```

Receive information of a system.

- xpath Which Remote API data to get. See Table 4.
- data Data got from system.
- reason Reason of error.

5.1.4 Set command

Input:

```
set {xpath} {data}
```

Output:

```
*r ok  
**end
```

```
*r error {reason}
```

Set parameter of a system.

- `xpath` Which Remote API parameter to set. See Table 4.
- `data` Data to be set.
- `reason` Reason of error.

5.1.5 Query command

Input:

```
query {xpath}
```

Output:

```
*r ok
*r value="0" alias="{option #0}"
*r value="1" alias="{option #1}"
...
*r value="{#n}" alias="{option #n}"
**end
```

```
*r error {reason}
```

- `xpath` Which Remote API options to list. See Table 4.
- `#n` Number of the item. Starts from 0.
- `option#n` Option string of Nth item.
- `reason` Reason of error.

5.1.6 Keep alive

Input:

```
nop
```

Output:

```
*r ok
```

```
*r error {reason}
```

- reason Reason of error.

5.1.7 Logout

Input:

```
logout
```

5.2 Remote Control Emulation

You can emulate remote control key presses using Remote API.

5.2.1 Key press

Input:

```
action UI/IR/{key}
```

Output:

```
*r ok  
**end
```

- key See Table 4 for full key list.

5.3 Call Control

You can dial or disconnect to an endpoint using Remote API.

5.3.1 Call-out

Input:


```
set Call/CallOutTo {name}|{addr}|{bitrate}|{protocol}
```

Output:

```
*r ok  
**end
```

Dial to an endpoint. See also Section 5.3.2.

- name Name of callee. It only effects GUI display when dialing.
- addr Address of callee.
- bitrate Bitrate of the call. Check the manual of the target video conference system to see supported bitrates.
- protocol h323 / sip

5.3.2 Call-out status

Input:

```
get Call/CallOutStatus
```

Output:

```
*r ok  
*r data="{status}"  
**end
```

Get call-out status. You should periodically read this data (recommended: 1 time/sec.) after a dial command until it is success or fail.

- status Status code
 - 0 Busy
 - 1 Call success
 - 2 Call fail

5.3.3 Address of connected endpoints

Input:

```
get Call/EpAddr[{n}]
```

Output:

```
*r ok  
*r data="{name}"  
**end
```

- n Nth of endpoint, starting from 1.
- name Name of Nth connected endpoint

5.3.4 Disconnect

Input:

```
action Call/Disconnect[{n}]
```

Output:

```
*r ok  
**end
```

Disconnect to Nth endpoint. See also 5.3.6.

- n Nth of endpoint, starting from 1, which is identical to Section 5.3.3.

5.3.5 Disconnect to all

Input:

```
action Call/DisconnectAll
```

Output:

```
*r ok  
**end
```

Disconnect to all connected endpoints. See also 5.3.6.

5.3.6 Disconnect status

Input:

```
action Call/DisconnectStatus
```

Output:

```
*r ok  
*r data="{status}"  
**end
```

Get disconnect status. You should periodically read this data (recommended: 1 time/sec.) after a disconnect command until it is done.

- status Status code
 - 0 Busy
 - 1 Done

5.4 Phonebook

You can access the phonebook using Remote API, such as contacts list, call history, etc.

5.4.1 Get contacts list

Input:

```
query Phonebook/ContactList
```

Output:

```
*r ok
*r total="{#n}" *r rev="1"
*r value="0" alias="{JSON of contact #0}"
...
*r value="{#n}" alias="{JSON of contact #n}"
```

- JSON of contact#n Data of contact #N in JSON format. It contains these fields:

Field	Type	Description
id	integer	ID of contact
name	string	Name of contact
h323	string	H.323 address
sip	string	SIP address
bitrate	integer	Bitrate of connection
group	object	The group object which the contact belongs to. See Table 2.

Table 1 JSON format of contact

```
{"id":2,"name":"Aver FAE","h323":"210.242.161.39", "sip": "", "bitrate":
"128", "group":{"id":2,"name":"Groupname"}}
```

5.4.2 Get groups list

Input:

```
query Phonebook/GroupList
```

Output:

```
*r ok
*r total="{#n}" *r rev="6"
*r value="0" alias="{JSON of group #0}"
...
*r value="{#n}" alias="{JSON of group #n}"
```

- JSON of group #n Data of group #N in JSON format. It contains these fields:

Field	Type	Description
id	integer	ID of contact
name	string	Name of contact

Table 2 JSON format of group

5.4.3 Get call history list

Input:

```
query Phonebook/CallHistoryList
```

Output:

```
*r ok
*r total="{#n}" *r rev="2"
*r value="0" alias="{JSON of history #0}"
...
*r value="{#n}" alias="{JSON of history #n}"
```

- JSON of history #n Data of history #N in JSON format. It contains these fields:

Field	Type	Description
name	string	Name of contact
addr	string	Address of the contact
epoch	integer	Time of this call since Jan 1, 1980, in seconds.
date	string	Date of this call.
time	string	Time of day of this call.
bitrate	integer	Bitrate of this call, in Kbps.
protocol	string	“h323” / “sip”
direction	string	“Call-in” / “Call-out” / “Call-in failed” / “Call-out failed”
isknown	integer	0 / 1, which means the contact has been added in the phonebook.

Table 3 JSON format of call history

The following is an example of JSON call history data:

```
{ "name": "AVerFAE", "addr": "210.242.161.39", "epoch": 1374127505, "date": "2013\7\18", "time": "06:05", "bit rate": "768", "protocol": "h323", "direction": "Call-out", "isknown": 1 }
```

5.5 Xpath of object

Note: The following list is only for reference. Object's xpath and method may be different from versions. The newest updated should be checked using list command.

Variable "Nth-Point" means the number N point that uses are connecting. But it starts from 0, not 1.

If you are using SVC100, Nth-Point = 0; you can set Nth-Point = 0, 1... 4 if you are using SVC500.

After activating license, the range of Nth-Point could be fom 0 to 15.

Xpath	Method	Type	Description
Audio/HdmiInput	get set query	type="integer" size="1" min="0" max="2"	0: Far Site / 1: Near Site / 2: Both Site
Audio/KeyTone	get set	type="boolean"	
Audio/LineinInput	get set query	type="integer" size="1" min="0" max="2"	0: Far Site / 1: Near Site / 2: Both Site
Audio/MicAecDisable	get set	type="boolean"	0: Disable AEC / 1: Do not disable AEC
Audio/MicGain	get set query	type="integer" size="1" min="0" max="8"	
Audio/MicInput	get set query	type="integer" size="1" min="0" max="2"	0: MIC in / 1: AUDIO IN with AEC / 2: AUDIO IN without AEC
Audio/SelectAudioOutput	get set query	type="integer" size="1" min="0" max="4"	0: Auto / 1: Line Out / 2: HDMI1 / 3: HDMI2 / 4: Broadcast
Audio/VoiceDetection	get set	type="boolean"	
Audio/Volume	get set	type="integer" size="1" min="1" max="32"	
Call/AnswerCall	action		
Call/AnswerCallStatus	get	type="integer"	0: busy / 1: done

		size="1"	
Call/AutoAnswer	get set query	type="integer" size="1" min="0" max="2"	
Call/AutoBitrate	get set query	type="integer" size="1" min="0" max="10"	
Call/BfcpOpMode	get set query	type="integer" size="1" min="0" max="2"	0: Off / 1: UDP / 2: TCP
Call/BroadcastMsg	get set	type="string" size="128"	
Call/BroadcastMsgAll	action		
Call/CallDirection[Nth-Point]	get	type="boolean"	true: call-out / false: call-in, no connection
Call/CallInStatus	get	type="integer" size="1"	0: busy / 1: done
Call/CallOutCancel	action		
Call/CallOutStatus	get	type="integer" size="1"	0: busy / 1: success / 2: failed
Call/CallOutTo	get set	type="string" size="255"	Set data "{ call-out name } { call-out address } { bit-rate }" to call-out
Call/CntBwRatio	get set query	type="integer" size="1" min="0" max="7"	0: 10% / 1: 20% / 2: 30% / 3: 40% 4: 50% / 5: 60% / 6: 70% / 7: 80%
Call/Connected[Nth-Point]	get	type="boolean"	
Call/CurrentCallDuration	get	type="string" size="8"	{HH:MM}
Call/DisconnectAll	action		
Call/DisconnectStatus	get	type="integer" size="1"	
Call/Disconnect[Nth-Point]	action		
Call/EnableAES	get set	type="boolean"	
Call/EnableBFCP	get set	type="boolean"	
Call/EnableHighRes	get set	type="boolean"	
Call/EnableQoS	get set	type="boolean"	
Call/EnableSIP	get set	type="boolean"	
Call/EnableSRTP	get set	type="boolean"	
Call/EnableSTUN	get set	type="boolean"	
Call/EpAddr[Nth-Point]	get	type="string" size="128"	
Call/EpBitrate[Nth-Point]/Recv	get	type="integer" size="2"	

Call/EpBitrate[Nth-Point]/Recv/Audio	get	type="integer" size="2"	
Call/EpBitrate[Nth-Point]/Recv/Video	get	type="integer" size="2"	
Call/EpBitrate[Nth-Point]/Send	get	type="integer" size="2"	
Call/EpBitrate[Nth-Point]/Send/Audio	get	type="integer" size="2"	
Call/EpBitrate[Nth-Point]/Send/Video	get	type="integer" size="2"	
Call/EpCallType[Nth-Point]	get	type="string" size="16"	
Call/EpCodec[Nth-Point]/Recv/Audio	get	type="string" size="16"	
Call/EpCodec[Nth-Point]/Recv/Video	get	type="string" size="16"	
Call/EpCodec[Nth-Point]/Send/Audio	get	type="string" size="16"	
Call/EpCodec[Nth-Point]/Send/Video	get	type="string" size="16"	
Call/EpIPv4[Nth-Point]	get	type="string" size="128"	
Call/EpName[Nth-Point]	get	type="string" size="128"	
Call/EpResolution[Nth-Point]/Recv	get	type="string" size="10"	
Call/EpResolution[Nth-Point]/Send	get	type="string" size="10"	
Call/EpSystem[Nth-Point]	get	type="string" size="255"	
Call/FarMuted[Nth-Point]	get	type="boolean"	
Call/GateKeeperAuth	get set	type="boolean"	0: enable / 1: disable
Call/GatekeeperIPv4	get set	type="string" size="16"	
Call/GatekeeperRegSvrStatus	get	type="integer" size="1"	0:unconnect/1:connecting/2:register
Call/GatekeeperStatus	get	type="integer" size="1"	0: busy / 1: done
Call/GatekeeperUserName	get set	type="string" size="128"	
Call/GetBroadcastMsg	get	type="string" size="128"	
Call/GrpCalleesName[Nth-Point]	get	type="string" size="128"	
Call/GrpCalleesStatus[Nth-Point]	get	type="integer" size="1" min="0" max="4"	0: unused / 1: waiting call / 2: calling / 3: offline / 4: online
Call/GrpCalling	get set	type="boolean"	
Call/H239Bitrate/Recv	get	type="integer" size="2"	

Call/H239Bitrate/Send	get	type="integer" size="2"	
Call/H239Codec/Recv	get	type="string" size="16"	
Call/H239Codec/Send	get	type="string" size="16"	
Call/H239Connected	get	type="boolean"	
Call/H239Resolution/Recv	get	type="string" size="10"	
Call/H239Resolution/Send	get	type="string" size="10"	
Call/H239RtcpInfo/Recv/Bitrate	get	type="integer" size="2"	
Call/H239RtcpInfo/Recv/Fps	get	type="string" size="6"	
Call/H239RtcpInfo/Recv/PacketLossTotal	get	type="integer" size="4"	
Call/H239RtcpInfo/Send/Bitrate	get	type="integer" size="2"	
Call/H239RtcpInfo/Send/Fps	get	type="string" size="6"	
Call/H239RtcpInfo/Send/PacketLossTotal	get	type="integer" size="4"	
Call/H323Name	get set	type="string" size="128"	
Call/H460Status	get	type="integer" size="1"	0: busy / 1: done
Call/IWB	action		
Call/LocalAddr/AUTO	get	type="string" size="255"	
Call/LocalAddr/EXT	get	type="string" size="255"	
Call/LocalAddr/IPv4	get	type="string" size="255"	
Call/LocalAddr/IPv6	get	type="string" size="255"	
Call/LocalAddr/PPPoE	get	type="string" size="255"	
Call/LocalAddr/SIP	get	type="string" size="255"	
Call/LocalExtension	get set	type="string" size="128"	
Call/LocalMuted	get	type="integer" size="4"	
Call/MaxEndpoints	get	type="integer" size="1" min="1" max="15"	
Call/MaxHTTPBandwidth	get set query	type="integer" size="1" min="0"	0: 128k / 1: 256k / 2: 512k / 3: 768k / 4: 1024k / 5: 2048k / 6: 3072k / 7: 4096k / 8: 5120k / 9: 6144k / 10: 7168K

		max="10"	
Call/MaxRecvBandwidth	get set query	type="integer" size="1" min="0" max="3"	SVC 100: 0: 2M / 1: 4M SVC 500: 0: 2M / 1: 4M / 2: 12M / 3: 20M
Call/MaxSendBandwidth	get set query	type="integer" size="1" min="0" max="3"	SVC 100: 0: 2M / 1: 4M SVC 500: 0: 2M / 1: 4M / 2: 12M / 3: 20M
Call/Mute	action		
Call/NATMode	get set query	type="integer" size="1" min="0" max="2"	0: off/1:on/2:auto
Call/NATPublicIPv4	get set	type="string" size="16"	
Call/NetworkTest	get	type="integer" size="1" min="0" max="2"	0: busy / 1: success / 2: fail
Call/NetworkTest/Ack	get	type="string" size="24"	
Call/NetworkTest/Connect	get	type="string" size="24"	
Call/NetworkTest/Recv/Audio	get	type="string" size="24"	
Call/NetworkTest/Recv/Video	get	type="string" size="24"	
Call/NetworkTest/Send/Audio	get	type="string" size="24"	
Call/NetworkTest/Send/Video	get	type="string" size="24"	
Call/NetworkTestAddr	get set	type="string" size="128"	
Call/NetworkTestMode	get	type="integer" size="1" min="0" max="2"	0: idle / 1: network testing / 2: network test done
Call/NetworkTestProgress	get	type="integer" size="1" min="0" max="99"	show percentage (%)
Call/NetworkTestStatus	get	type="boolean"	0: no error / 1: detected error
Call/PortScanProgress	get	type="integer" size="1" min="0" max="99"	show percentage (%)
Call/ProtocolPriority	get set query	type="integer" size="1" min="0" max="1"	0: H323 / 1: SIP
Call/RTMPAndRecord	action		

Call/RTMPOnly	action		
Call/RTMPStart	action		
Call/RTMPStop	action		
Call/Record	get set	type="boolean"	0: not support recording / 1: support recording
Call/RecordOnly	action		
Call/RecordState	get	type="integer" size="1"	0: idle / 1: recording
Call/RecordStatus	get	type="integer" size="1"	0: busy / 1: done
Call/RegisterGatekeeper	action		
Call/RegisterSIPServer	action		
Call/RejectCall	action		
Call/ResetCloudSer	action		
Call/ResetStackCapability	action		
Call/RtcpInfo[Nth-Point]/Recv/Audio/Jitter	get	type="integer" size="2"	
Call/RtcpInfo[Nth-Point]/Recv/Audio/ PacketLossRate	get	type="string" size="6"	
Call/RtcpInfo[Nth-Point]/Recv/Audio/ PacketLossTotal	get	type="integer" size="4"	
Call/RtcpInfo[Nth-Point]/Recv/Video/Bitrate	get	type="integer" size="2"	
Call/RtcpInfo[Nth-Point]/Recv/Video/Fps	get	type="string" size="6"	
Call/RtcpInfo[Nth-Point]/Recv/Video/Jitter	get	type="integer" size="2"	
Call/RtcpInfo[Nth-Point]/Recv/Video/ PacketLossRate	get	type="string" size="6"	
Call/RtcpInfo[Nth-Point]/Recv/Video/ PacketLossTotal	get	type="integer" size="4"	
Call/RtcpInfo[Nth-Point]/Send/Audio/Jitter	get	type="integer" size="2"	
Call/RtcpInfo[Nth-Point]/Send/Audio/ PacketLossRate	get	type="string" size="6"	
Call/RtcpInfo[Nth-Point]/Send/Audio/ PacketLossTotal	get	type="integer" size="4"	
Call/RtcpInfo[Nth-Point]/Send/Video/Bitrate	get	type="integer" size="2"	
Call/RtcpInfo[Nth-Point]/Send/Video/Fps	get	type="string" size="6"	
Call/RtcpInfo[Nth-Point]/Send/Video/Jitter	get	type="integer" size="2"	
Call/RtcpInfo[Nth-Point]/Send/Video/ PacketLossRate	get	type="string" size="6"	
Call/RtcpInfo[Nth-Point]/Send/Video/ PacketLossTotal	get	type="integer" size="4"	

Call/SIPAccountActive	get set	type="boolean"	
Call/SIPBindPort	get set	type="integer" size="2"	
Call/SIPClientMutualCall	get set	type="boolean"	0: idle / 1: support Client to Client call
Call/SIPClientMutualCallStatus	get set	type="boolean"	0: no connection / 1: connecting
Call/SIPInterProtocol	get set query	type="integer" size="1" min="0" max="1"	0:IPv4/1:IPv6
Call/SIPName	get set	type="string" size="128"	
Call/SIPProxyServer	get set	type="string" size="128"	
Call/SIPRegSvrStatus	get	type="integer" size=1	0:unconnect/1:connecting/2:register
Call/SIPRegistrarServer	get	type="string" size="128"	
Call/SIPServerAuthMode	get set query	type="integer" size="1" min="0" max="1"	0: Anonymous mode/1:password mode
Call/SIPServerBusy	get	type="boolean"	0: idle/1:busy
Call/SIPServerDomainName	get set	type="string" size="128"	
Call/SIPServerName	get set	type="string" size="128"	
Call/SIPServerOpMode	get set query	type="integer" size="1" min="0" max="1"	0:client mode/1:server mode
Call/SIPServerPassword	get set	type="string" size="128"	
Call/SIPServerUsers	query	type="string"	{ user name }
Call/SIPTerminalName	get set	type="string" size="128"	
Call/SIPTerminalPassword	get set	type="string" size="128"	
Call/SIPTransportProtocol	get set query	type="integer" size="1" min="0" max="1"	
Call/SIPUserName	get set	type="string" size="128"	
Call/STUNPort	get set	type="integer" size="16"	
Call/STUNServer	get set	type="string" size="128"	
Call/SetQos/AUDIO	get set	type="integer" size="1"	
Call/SetQos/DATA	get set	type="integer" size="1"	

Call/SetQos/FECC	get set	type="integer" size="1"	
Call/SetQos/H239	get set	type="integer" size="1"	
Call/SetQos/VIDEO	get set	type="integer" size="1"	
Call/ShowCallTimer	get set	type="boolean"	
Call/StackCapability/1080p	get set	type="boolean"	
Call/StackCapability/4CIF	get set	type="boolean"	
Call/StackCapability/4SIF	get set	type="boolean"	
Call/StackCapability/720p	get set	type="boolean"	
Call/StackCapability/AAC-LD	get set	type="boolean"	
Call/StackCapability/CIF	get set	type="boolean"	
Call/StackCapability/Content/H263	get set	type="boolean"	
Call/StackCapability/Content/H263+	get set	type="boolean"	
Call/StackCapability/Content/H264	get set	type="boolean"	
Call/StackCapability/Content/H264HP	get set	type="boolean"	
Call/StackCapability/Content/H264SVC	get set	type="boolean"	
Call/StackCapability/Content/SVGA	get set	type="boolean"	
Call/StackCapability/Content/VGA	get set	type="boolean"	
Call/StackCapability/Content/XGA	get set	type="boolean"	
Call/StackCapability/G711/aLaw	get set	type="boolean"	
Call/StackCapability/G711/uLaw	get set	type="boolean"	
Call/StackCapability/G722	get set	type="boolean"	
Call/StackCapability/G722.1/24k	get set	type="boolean"	
Call/StackCapability/G722.1/32k	get set	type="boolean"	
Call/StackCapability/G722.1c/24k	get set	type="boolean"	
Call/StackCapability/G722.1c/32k	get set	type="boolean"	
Call/StackCapability/G722.1c/48k	get set	type="boolean"	
Call/StackCapability/G728	get set	type="boolean"	
Call/StackCapability/H261	get set	type="boolean"	
Call/StackCapability/H263	get set	type="boolean"	
Call/StackCapability/H263+	get set	type="boolean"	
Call/StackCapability/H264	get set	type="boolean"	
Call/StackCapability/H264HP	get set	type="boolean"	
Call/StackCapability/H264SVC	get set	type="boolean"	

Call/StackCapability/QCIF	get set	type="boolean"	
Call/StackCapability/QSIF	get set	type="boolean"	
Call/StackCapability/SIF	get set	type="boolean"	
Call/StartGroupCall	get set	type="integer" size="1"	
Call/StartH239/VGA	action		
Call/StartH239Status	get	type="integer" size="1"	0: busy / 1: success / 2: failed
Call/StopH239	action		
Call/StopH239Status	get	type="integer" size="1"	0: busy / 1: done
Call/StopRTMPAndRecord	action		
Call/StopRecord	action		
Call/SupportAAC	get	type="boolean"	
Call/SupportAES	get	type="boolean"	
Call/SupportSRTP	get	type="boolean"	
Call/TcpPortLimit	get set	type="integer" size="16"	
Call/TcpPortLimitEnd	get	type="integer" size="16"	
Call/ThisCallDoNotDisturb	action		
Call/Transmit	get	type="integer" size="1"	Number of slots currently transmitting
Call/UdpPortLimit	get set	type="integer" size="16"	
Call/UdpPortLimitEnd	get	type="integer" size="16"	
Call/UseGatekeeper	get set	type="boolean"	
Call/UseH460	get set	type="boolean"	
Call/UseUPnP	get set	type="boolean"	
Camera/AcceptFecc	get set	type="boolean"	
Camera/CamContiAF	get set	type="boolean"	0: idle / 1: continue auto focus
Camera/CamPos	get set	type="boolean"	0: idle / 1: upside down
Camera/CameraBaudrate	get set query	type="integer" size="1" min="0" max="7"	0: 1200 / 1: 2400 / 2: 4800 / 3: 9600 / 4: 19200 / 5: 38400 / 6: 57600 / 7: 115200
Camera/CameraDataBits	get set query	type="integer" size="1" min="0" max="3"	0: 5 / 1: 6 / 2: 7 / 3:8
Camera/CameraDataParity	get set query	type="integer" size="1" min="0"	0: none / 1: odd / 2: even

		max="2"	
Camera/CameraProtocol	get set query	type="integer" size="1" min="0" max="2"	0: VISCA / 1: PELCO-D / 2: PELCO-P
Camera/CameraSelector	get set query	type="integer" size="1" min="0" max="1"	0: VC Camera / 1: HDMI Camera
Camera/CameraStopBits	get set query	type="integer" size="1" min="0" max="1"	0: 1 / 1: 2
Camera/CamerattyUSB	get set query	type="integer" size="1" min="0" max="1"	0: USB 1 / 1: USB 2
Camera/ContinuousMove/Down	action		
Camera/ContinuousMove/Left	action		
Camera/ContinuousMove/Right	action		
Camera/ContinuousMove/Up	action		
Camera/ContinuousMove/ZoomIn	action		
Camera/ContinuousMove/ZoomOut	action		
Camera/Coordinate	set get	type="integer" size="8"	
Camera/Denoise	set get	type="boolean"	0: disable / 1: enable denoise
Camera/EnterDirectControl	action		
Camera/ExitDirectControl	action		
Camera/Exposure	get set query	type="integer" size="1" min="0" max="9"	
Camera/ExposureScenario	get set query	type="integer" size="1" min="0" max="1"	0: Motion / 1: Static
Camera/Fecc	action		
Camera/FlickerFrequency	get set query	type="integer" size="1" min="0" max="2"	
Camera/FocusMode	get set query	type="integer" size="1" min="0" max="2"	0: one shot / 1: face / 2: continue
Camera/FocusPos	get set	type="integer" size="1"	
Camera/InputSourceSwitch	action		

Camera/InputSourceSwitchStatus	get	type="boolean"	0: busy / 1: done
Camera/LoadPreset	set get	type="integer" size="1" min=0 max=99	
Camera/SavePreset	set get	type="integer" size="1" min=0 max=99	
Camera/SaveSnapshot	action		
Camera/Sharpness	get set query	type="integer" size="1" min="0" max="3"	
Camera/SnapshotStatus	get	type="boolean"	
Camera/StepMove/Down	action		
Camera/StepMove/Left	action		
Camera/StepMove/Right	action		
Camera/StepMove/Up	action		
Camera/StepMove/ZoomIn	action		
Camera/StepMove/ZoomOut	action		
Camera/StopMove	action		
Camera/SwitchCameraCtrl	action		
Camera/SwitchSrc/1stCam	action		
Camera/SwitchSrc/HDMICam	action		
Camera/SwitchSrc/NoCam	action		
Camera/SwitchSrc/S2S	action		
Camera/VgaSource/DUALCT	action		
Camera/VgaSource/DVIVGA	action		
Camera/VgaSource/HDMI	action		
Camera/WhiteBalance	get set query	type="integer" size="1" min="0" max="4"	
Ldap/BaseDn	get set	type=" string " size="128"	
Ldap/DeleteAll	action		
Ldap/LdapBusy	get	type="boolean"	
Ldap/Port	get set	type=" string " size="128"	
Ldap/Refresh	action		
Ldap/ServerAddr	get set	type=" string " size="128"	
Ldap/UserName	get set	type=" string "	

		size="128"	
Phonebook/AccountList	query	type=" string "	
Phonebook/AddAccount	set	type=" string "	Set JSON-format data to add a new group <pre>{ "id": integer (optional) "name": string, must be unique "mailto": string "backup_name": string "backup_pw": string "backup_type": string, only google now. "smtp_name": string "smtp_pw": string "smtp_server": string(include port), ex:smtp.gmail.com:587 "isupload": integer "grp": integer }</pre>
Phonebook/AddContact	set	type=" string "	Set JSON-format data to add a new contact <pre>{ "id": integer (optional) "name": string, must be unique "bitrate": integer (optional) "h323": string (optional) "sip": string (optional) "group":integer, group ID (optional). }</pre>
Phonebook/AddGroup	set	type=" string "	Set JSON-format data to add a new group <pre>{ "id": integer (optional), given to edit existing group "name": string, must be unique }</pre>
Phonebook/CallHistoryList	query	type="string"	
Phonebook/ClearHistory	action		
Phonebook/ClearPhonebook	action		
Phonebook/ContactList	query	type="string"	
Phonebook/DeleteAccount	set	type="integer"	
Phonebook/DeleteContact	set	type="integer"	
Phonebook/DeleteGroup	set	type="integer"	
Phonebook/GetFavorite	query	type=" string "	<pre>{ "id": Integer, "contact": Integer }</pre>
Phonebook/GetGroupId	set	type="integer"	
Phonebook/GroupList	query	type="string"	
Phonebook/SetFavorite	set	type="string"	<pre>{ "id": Integer, must be unique "contact": integer, given to set existing contact }</pre>
Playback/Backward	action		
Playback/CopyFileToUsb	set		ex: 20170518_034116.vc
Playback/DeleteList	action query		delet files in USB ex: 20170518_034116.vc

Playback/DeleteListInternal	action query		delet files in internal storage ex: 20170518_034116.vc
Playback/Forward	action		
Playback/CopyFileToUsb	set		ex: 20170518_034116.vc
Playback/Pause	action		
Playback/PlayFile	action		
Playback/PlaybackInternalList	action		
Playback/PlaybackList	query	type="string"	"{ fileName.vc },{ fileSize }" File size: Mega
Playback/Resume	action		
Playback/Status	get	type="boolean"	0: no playback / 1: playing / 2: paused
Playback/Stop	action		
Skype/Account	get	type="string" size="128"	
Skype/AutoLogin	get set	type="boolean"	
Skype/CallHistoryList	query	type="string"	
Skype/CallOutStatus	get	type="integer" size="1" min="0" max="2"	0: busy / 1: success / 2: fail
Skype/CallsAvailable	get	type="integer" size="1" min="0" max="4"	
Skype/Contacts/OnlineStatusList	query	type="string"	
Skype/Conversation/AccountList	query	type="string"	
Skype/DoLogin	action		
Skype/HangUp[Nth-point]	action		
Skype/LocalServer	get set	type="string" size="128"	
Skype/LoginStatus	get	type="integer" size="1" min="0" max="2"	0: busy / 1: success / 2: failed
Skype/Logout	action		
Skype/LogoutStatus	get	type="integer" size="1" min="0" max="1"	0: busy / 1: done
System/AspectRatio	get set query	type="integer" size="1" min="0" max="2"	0:auto/1:"1024 x 768(4:3)"/2:"1280 x 720(16:9)"
System/CheckUpdate	get set	type="boolean"	
System/CurrentNetworkIPv4	get	type="string"	

		size="16"	
System/DateFormat	get set query	type="integer" size="1" min="0" max="2"	0: YMD / 1: MDY / 2: DMY
System/EAP8021xUser	get	type="string" size="128"	
System/Enable8021x	get set	type="boolean"	
System/Enable8021xstatus	get	type="boolean"	
System/EnableAdmin	get set	type="boolean"	
System/EnableCollectData	get set	type="boolean"	
System/EnableKeypad	get	type="boolean"	
System/EnableNTP	get set	type="boolean"	
System/EnableRTMP	get set	type="boolean"	
System/EnableWebAdmin	get set	type="boolean"	
System/FactoryReset	action		
System/FanStatus	get	type="boolean"	
System/FirmwareVersion	get	type="string" size="48"	
System/FormatInternalStorage	action		
System/InternalStorageFreeCapacity	get	type="integer" size="4"	
System/InternalStorageReady	get	type="boolean"	
System/InternalStorageSnapshot	get	type="boolean"	0 : dosen't exist / 1: exist DCIM folder
System/InternalStorageTotalCapacity	get	type="integer" size="4"	
System/IsNetworkBusy	get	type="boolean"	
System/IsSystemBusy	get	type="boolean"	
System/Language	get set query	type="integer" size="1"	
System/LocalTime	get set	type="integer" size="64"	Get / set system time in second format 1970/01/01 00:00:00 = 0 sec 2014/06/17 10:39:00 = 1403001540 sec
System/MACAddress	get	type="string" size="18"	
System/MaxEndPoints	get	type="string" size="1"	
System/ModelName	get	type="string" size="8"	
System/NTPServer	get set	type="string" size="64"	
System/NetworkSetting	get set	type="string" size="255"	
System/NetworkSetting8021x	get set	type="string"	

		size="255"	
System/NetworkSettingIPv6	get set	type="string" size="255"	
System/NetworkVlanApply	action		
System/NetworkVlanEnable	get set	type="boolean"	
System/NetworkVlanPriority	get set query	type="integer" size="1" min="0" max="7"	
System/PPPoEStatus	get	type="boolean"	
System/PowerSaver	get set query	type="integer" size="1" min="0" max="5"	
System/ProductID	get	type="string" size="128"	
System/RTMPBitrate	get set query	type="integer" size="1" min="0" max="3"	0: 1M / 1: 2M / 2: 3M / 3: 4M
System/ RTMPKey	get set	type="string" size="128"	
System/RTMPPeopleURL	get set	type="string" size="128"	
System/Reboot	action		
System/ScreenSaver	get set query	type="integer" size="1" min="0" max="4"	
System/Shutdown	action		
System/Status8021x	get	type="boolean"	
System/StorageReady	get	type="boolean"	
System/USBFreeCapacity	get	type="integer" size="4"	
System/USBTotCapacity	get	type="integer" size="4"	
System/Underscan	get set	type="boolean"	
System/WOL	get set	type="boolean"	
System/iSCSIConnect	action		
System/iSCSIDisconnect	action		
System/iSCSIEnable	get set	type="boolean"	
System/iSCSIFormatHDD	action		
System/iSCSIFreeCapacity	get	type="integer" size="4"	
System/iSCSIIP	get set	type="string" size="128"	

System/iSCSIPort	get	type="integer" size="2"	
System/iSCSITargetName	get set	type="string" size="128"	
System/iSCSITotalCapacity	get	type="integer" size="4"	
System/iSCSIUsername	get set	type="string" size="128"	
UI/IR/0	action		
UI/IR/1	action		
UI/IR/2	action		
UI/IR/3	action		
UI/IR/4	action		
UI/IR/5	action		
UI/IR/6	action		
UI/IR/7	action		
UI/IR/8	action		
UI/IR/9	action		
UI/IR/back	action		
UI/IR/blue	action		
UI/IR/call	action		
UI/IR/delete	action		
UI/IR/dot	action		
UI/IR/down	action		
UI/IR/dual	action		
UI/IR/enter	action		
UI/IR/far	action		
UI/IR/green	action		
UI/IR/hangup	action		
UI/IR/home	action		
UI/IR/input	action		
UI/IR/layout	action		
UI/IR/left	action		
UI/IR/mute	action		
UI/IR/phonebook	action		
UI/IR/present	action		
UI/IR/record	action		

UI/IR/red	action		
UI/IR/right	action		
UI/IR/sharp	action		
UI/IR/up	action		
UI/IR/vol_down	action		
UI/IR/vol_up	action		
UI/IR/yellow	action		
UI/IR/zoom_in	action		
UI/IR/zoom_out	action		
UI/IRLong/blue	action		
UI/IRLong/down	action		
UI/IRLong/green	action		
UI/IRLong/input	action		
UI/IRLong/layout	action		
UI/IRLong/left	action		
UI/IRLong/mute	action		
UI/IRLong/red	action		
UI/IRLong/right	action		
UI/IRLong/up	action		
UI/IRLong/yellow	action		
UI/IRLong/zoom_in	action		
UI/IRLong/zoom_out	action		
UI/IRRelease /blue	action		
UI/IRRelease/down	action		
UI/IRRelease /green	action		
UI/IRRelease /input	action		
UI/IRRelease /layout	action		
UI/IRRelease/left	action		
UI/IRRelease /mute	action		
UI/IRRelease /red	action		
UI/IRRelease/right	action		
UI/IRRelease/up	action		
UI/IRRelease /yellow	action		
UI/IRRelease/zoom_in	action		

UI/IRRelease/zoom_out	action		
Video/DefaultLayoutNoContent	get set query	type="integer" size="1" min="0" max="3"	
Video/DefaultLayoutWithContent	get set query	type="integer" size="1" min="0" max="5"	
Video/Display	query	type="string" size="128"	monitor information
Video/EnableOffsetFrame	get set	type="boolean"	0: disable / 1: enable
Video/LocalPIptime	get query	type="integer" size="1" min="0" max="5"	0: always / 1: 5 seconds / 2: 1 minutes / 3: 10 minutes / 4: 30 minutes / 5: 60 minutes
Video/SetLayout	get set	type="integer" size="1" min="0" max="5"	
Video/SwitchLayout	action		
Video/SwitchOsdDisplay	action		
Video/SwitchSingleDualMonitor	action		

Table 4 List of supported Remote API Xpath

6 Compatibility Issues

7 Notes

8 Glossary

9 Review Comments

10 Reference

11 Revision History

Date	Rev.	Author	Content
2010.10.28	0.0	Drama	Draft
2010.12.06	0.1	Drama	Ver. 0.1
2010.12.06	0.2	Drama	Modify example.
2010.12.08	0.3	Drama	Modified login, add logout and add phonebook total count response.

2010.12.10	0.4	Drama	Modified. Root tag from AVerComm to VC.
2010.12.23	0.5	Drama	Modified block diagram and command line response.
2011.01.04	0.6	Drama	Add GetJpeg
2011.01.21	0.7	Drama	Add Error code, object xpath
2011.03.02	0.8	Drama	Modify example. Add object xpath.
2011.03.08	0.9	Drama	Modify nop & logout response.
2011.04.18	0.10	Drama	Modify Xpath of object, session id attach by client.
2011.04.19	0.11	Drama	Modify Xpath of object.
2011.06.24	0.12	Drama	Add password attribute.
2011.11.16	0.13	Drama	Modify logo, and examples.
2011.11.30	0.14	Leav	Add Skype box related objects
2012.01.02	0.15	Leav	Refined objects for VCBridge (previously Skype Box)
2013.07.17	2.00	Leav	Refined for 2.0 specification. Add use cases.
2013.10.18	2.01	Drama	Remove not support command.
2014.06.19	9.00	Iris	Branch a new version for EVC900
2014.06.20	9.01	Iris	Remove invalid command
2016.05.16	9.02	J.M.Huang	Add RTMP and Customized Cmd
2017.05.12	5.00	J.M.Huang	Branch a new version for SVC500

Draft