WowWee Group Limited

API Specification
for
Rovio

Version 1.2

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Introduction

WowWee Rovio^{TM} is a mobile wireless IP camera with a three-wheeled drive system. Rovio is equipped with an IR sensor on the front for basic obstacle avoidance. Rovio also has a NorthStar II sensor (also known as the TrueTrack^{TM} sensor in WowWee terms). This sensor enables Rovio to self-navigate as it follows pre-programmed paths. The NSII (NorthStar II) system reads the two IR spots projected onto the ceiling by the TrueTrack Beacon integrated into the Rovio docking base or projected by a Rovio TrueTrack standalone beacon (Room Beacon). The data acquired from the NS2 sensor provides an x- and y- coordinate and theta as well some other useful information.

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	ChangeFramerate.cgi	Change the frame rate setting of camera's images.
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	SetCamera.cgi	Change camera sensor's settings
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	DelUser.cgi	Delete a user account.
	GetUser.cgi	Get the users list of IP Camera.
	SetUserCheck.cgi	Enable or disable user authorization check.
Time	SetTime.cgi (not tested)	Set time zone and time.
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	SetLogo.cgi	Set a logo string on the image.
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Network	SetIP.cgi	Tell IP Camera how to set an initial IP.
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	GetMac.cgi	Get Mac address
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	GetHttp.cgi	Get HTTP server's settings.
Mail	SetMail.cgi	Configure email for sending IPCam images.
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	SendMail.cgi	Send an email with IPCam images.
Other	SetName.cgi	Set name of the camera.
	GetName.cgi	Get camera's name.
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	GetLog.cgi	Get IP Camera's system logs information.
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	Reboot.cgi	Reboot IP Camera.
	GetData.cgi	Get images/status with "multipart/x-mixed-replace" mime-type.
	GetAudio.cgi	Send audio to server and playback at

		the server
	SetMediaFormat.cgi	Set media format
	GetMediaFormat.cgi	Get media format
	Upload.cgi	Upload firmware image (*.bin)
	Cmd.cgi	Use this command to combine several commands to a single http request,

* - not cgi command

Movement Commands Specifications

Action number	Function Name	Description
1	GetReport()	Generates report of current status
2	StartRecoding()	Start recording a path.
3	AbortRecording()	Terminates recording a path
4	StopRecording(string PathName)	Stop recording and store the path
5	Deletepath(string PathName)	Delete specific path
6	GetPathList()	Return stored paths
7	PlayPathForward(string PathName)	Replay a stored path from closest point to the end
8	PlayPathBackward (string PathName)	Replay a stored path from closest point to the beginning
9	StopPlaying()	Stop playing a path
10	PausePlaying()	Pause playing a path
11	RenamePath(string OldPathName, string NewPathName)	Rename the path name
12	GoHome()	Drive to home location without docking
13	GoHomeAndDock()	Drive to home location with docking
14	UpdateHomePosition()	Update home location
15	SetTuningParameters()	Set homing, docking and driving parameters
16	GetTuningParameters()	Return homing, docking and driving parameters
17	ResetNavStateMachine()	Stop and reset to idle
18	ManualDrive()	Accepts manual driving commands
19	RESERVED TestCommand()	RESERVED
20	GetMCUReport()	Return MCU report
21	ClearAllPaths()	Delete all paths
22	GetStatus()	Return navigation status
23	SaveParameter(long index, long value)	Stores robot parameters
24	ReadParameter(long index)	Return robot parameters
25	GetLibNSVersion()	Return libNS and NS sensor versions
26	EmailImage(string email)	Email current image / set an action (in path recording mode)
27	ResetHomeLocation()	Clear home location

Response Code Commands Table

Code	Error Code	Description
0	SUCCESS	CGI command successful
1	FAILURE	CGI command general failure
2	ROBOT_BUSY	Robot is executing autonomous function
3	FEATURE_NOT_IMPLEMENTED	CGI command not implemented
4	UNKNOWN_CGI_ACTION	CGI nav command: unknown action requested
5	NO_NS_SIGNAL	No NS signal available
6	NO_EMPTY_PATH_AVAILABLE	Path memory is full
7	FAILED_TO_READ_PATH	Failed to read FLASH
8	PATH_BASEADDRESS_NOT_INITIALIZED	FLASH error
9	PATH_NOT_FOUND	No path with such name
10	PATH_NAME_NOT_SPECIFIED	Path name parameter is missing
11	NOT_RECORDING_PATH	Save path command received while not in recording mode
12	FLASH_NOT_INITIALIZED	Flash subsystem failure
13	FAILED_TO_DELETE_PATH	Flash operation failed
14	FAILED_TO_READ_FROM_FLASH	Flash operation failed
15	FAILED_TO_WRITE_TO_FLASH	Flash operation failed
16	FLASH_NOT_READY	Flash failed
17	NO_MEMORY_AVAILABLE	NA
18	NO_MCU_PORT_AVAILABLE	NA
19	NO_NS_PORT_AVAILABLE	NA
20	NS_PACKET_CHECKSUM_ERROR	NA
21	NS_UART_READ_ERROR	NA
22	PARAMETER_OUTOFRANGE	One or more parameters are out of expected range
23	NO_PARAMETER	One or more parameters are missing

Movement Control – GetReport()

Description
Generates a report from libNS module that provides Rovio's current status.

Grammar
/rev.cgi?Cmd=nav&action=*value*

Input Parameter
value = 1

Privilege
None

Return Value

Parameter	Description	Value
responses	Error checking	0 – no error
x, y, theta	Average location of Rovio in relation to the strongest room beacon	x,y = -32767 – 32768 theta = -PI – PI
room	Room ID.	0 = Home base. 1-9 = Mutable room projector.
ss	Navigation Signal strength.	0 – 65535 (16bit) (Strong signal > 47000) (No signal < 5000)
beacon	Signal strength for docking beacon when available	0 – 65535 (16bit)
beacon_x	Horizontal poition of beacon as seen by NS	-32767 – 32768
next_room	The next strongest room beacon ID seen.	-1 = no room found. 1-9 = Mutable room ID
next_room_ss	The signal strength of the next strongest room beacon.	0 – 65535 (16bit) (Strong signal > 47000) (No signal < 5000)
state	Status of the Rovio	0 (idle) 1 (driving home) 2 (docking) 3 (executing path) 4 (recording path)
resistance	Status of robot resistance to drive into NS deprived areas	NOT IN USE
sm	Current status of the navigation state machine.	(For Debug purposes)
pp	Current way point when using path.	1 - 10
flags	Flags	1 = home position 2 = obstacle detected 4 = IR detector activated
brightness	Indicates the current brightness level	1 (dimmest) – 6 (brightest)

Resolution	Resolution	0 = [176x144] 1 = [320x240] 2 = [352x240] 3 = [640x480]
video_compression	Video compression	0 = Low 1 = Med 2 = High
frame_rate	Frame rate.	1 - 30
privilege	Show current user privilege status.	0 = administrator 1 = guest user.
user_check	Whether need to have login and password.	0 = request on username and password 1 = no request on username and password
speaker_volume	Speaker Volume.	0 (lowest) – 31 (highest)
mic_volume	Microphone Volume.	0 (lowest) – 31 (highest)
wifi_ss	Wifi Signal strength.	0 - 254
show_time	Whether show time in the image	0 = Not showing the time. 1 = Showing time.
ddns_state	DDNS update status	0 = no update, 1 = updating, 2 = update successfully 3 = update failed
email_state	Current status of e-mail client.	NOT IN USE
battery	Battery status	< 100 = turn itself off 100-106 = try to go back home 106 – 127 = normal
charging	Whether it is charging	0 – 79 = not charging 80 = charging
head_position	Head position	204 = position low 135-140 = position mid-way 65 = position high
ac_freq	Projector's frequency	0 = not detected 1 = 50 Hz 2 = 60 Hz

Movement Control – StartRecoding()

Description
Start recording a path.

Grammar
/rev.cgi?Cmd=nav&action=*value*

Input Parameter
value = 2

Privilege
None

Return Value

response (Please refer to "Response Code Commands Table")

Remark

Rovio will resist going outside NorthStar coverage area while recording path
Rovio will stop recording if coverage is lost
Rovio will stop recording if user connection is lost

Movement Control – AbortRecording()

Description

Terminates recording of a path without storing it to flash memory.

Grammar

/rev.cgi?Cmd=nav&action=_value_

Input Parameter

value = 3

Privilege

None

Return Value

response (Please refer to "Response Code Commands Table")

Movement Control – StopRecording(string PathName)

Description

Stops the recoding of a path and stores it in flash memory; javascript will give default name if user does not provide one.

Grammar

/rev.cgi?Cmd=nav&action=_value_**&name=**_n_value_

Input Parameter

value = 4
n_value = (name of the path)

Privilege

None

Return Value

response (Please refer to "Response Code Commands Table")

Movement Control – Deletepath(string PathName)

Description

Deletes specified path.

Grammar
/rev.cgi?Cmd=nav&action=_value_**&name=**_n_value_

Input Parameter
value = 5
n_value = (name of the path)

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – GetPathList ()

Description
Returns a list of paths stored in the robot.

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 6

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – PlayPathForward(string PathName)

Description
Replays a stored path from closest point to the end; If the NorthStar signal is lost, it stops.

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 7

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – PlayPathBackward (string PathName)

Description
Replays a stored path from closest point to the beginning; If NorthStar signal is lost it stops.

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 8

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – StopPlaying ()

Description
Stop playing a path.

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 9

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – PausePlaying ()

Description
Pause the robot and waits for a new pause or stop command.

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 10

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – RenamePath(string OldPathName, string NewPathName)

Description
Rename the old path.

Grammar
/rev.cgi?Cmd=nav&action=_value_**&name=**_OldPathName_**&newname=**_NewPathName_

Input Parameter
value = 11

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – GoHome()

Description
Drive to home location in front of charging station.

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 12

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – GoHomeAndDock()

Description
Drive to home location in front of charging station and dock

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 13

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – UpdateHomePosition ()

Description
Define current position as home location in front of charging station.

Grammar
/rev.cgi?Cmd=nav&action=*value*

Input Parameter
value = 14

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – SetTuningParameters()

Description
Change homing, docking and driving parameters – speed for driving commands

Grammar
/rev.cgi?Cmd=nav&action=*value*

Input Parameter
value = 15

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – GetTuningParameters()

Description
Returns homing, docking and driving parameters.

Grammar
/rev.cgi?Cmd=nav&action=*value*

Input Parameter

value = 16

Privilege

None

Return Value

Response (Please refer to "Response Code Commands Table")
LeftRight
Forward
Reverse
DriveTurn
HomingTurn
ManDrive
ManTurn
DockTimeout

Movement Control – ResetNavStateMachine ()

Description

Stops whatever it was doing and resets to idle state.

Grammar

/rev.cgi?Cmd=nav&action=_value_

Input Parameter

value = 17

Privilege

None

Return Value

response (Please refer to "Response Code Commands Table")

Movement Control – ManualDrive()

Description

Accepts manual driving commands.

Grammar

/rev.cgi?Cmd=nav&action=_value_**&drive=**_d_value_**&speed=**_s_value_

Input Parameter

value = 18
d_value = 0 (Stop)
        1 (Forward)
        2 (Backward)
        3 (Straight left)
        4 (Straight right)
        5 (Rotate left by speed)
        6 (Rotate right by speed)

7 (Diagonal forward left)
8 (Diagonal forward right)
9 (Diagonal backward left)
10 (Diagonal backward right)
11 (Head up)
12 (Head down)
13 (Head middle)
14 (Reserved)
15 (Reserved)
16 (Reserved)
17 (Rotate left by 20 degree angle increments)
18 (Rotate right by 20 degree angle increments)
s_value = 1 (fastest) – 10 (slowest)

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – GetMCUReport ()

Description
Returns MCU report including wheel encoders and IR obstacle avoidance.

Grammar
/rev.cgi?Cmd=nav&action=value

Input Parameter
value = 20

Privilege
None

Return Value

Offset	Length	Description
0	1B	Length of the packet
1	1B	NOT IN USE
2	1B	Direction of rotation of left wheel since last read (bit 2)
3	2B	Number of left wheel encoder ticks since last read
5	1B	Direction of rotation of right wheel since last read (bit 2)
6	2B	Number of right wheel encoder ticks since last read
8	1B	Direction of rotation of rear wheel since last read (bit 2)
9	2B	Number of rear wheel encoder ticks since last read
11	1B	NOT IN USE
12	1B	Head position
13	1B	0x7F: Battery Full (0x7F or higher for new battery) 0x??: Orange light in Rovio head. (to be define) 0x6A: Very low battery (Hungry, danger, very low battery level) libNS need take control to go home and charging 0x64: Shutdown level (MCU will cut off power for protecting the battery)

14	1B	bit 0 : Light LED (head) status, 0: OFF, 1: ON
		bit 1 : IR-Radar power status. 0: OFF, 1: ON
		bit 2 : IR-Radar detector status: 0: fine, 1: barrier detected.
		bit 3-5: Charger staus
		0x00 : nothing happen
		0x01 : charging completed.
		0x02 : in charging
		0x04 : something wrong, error occur.
		bit 6,7: undefined, do not use.

Movement Control – ClearAllPaths()

Description
Deletes all paths in FLASH memory

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 21

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")

Movement Control – GetStatus()

Description
Reports navigation state

Grammar
/rev.cgi?Cmd=nav&action=_value_

Input Parameter
value = 22

Privilege
None

Return Value
response (Please refer to "Response Code Commands Table")
state = 0 (idle)
       1 (driving home)
       2 (docking)
       3 (executing path)

4 (recording path)

Movement Control – SaveParameter(long index, long value)

Description
Stores parameter in the robot's Flash

Grammar
/rev.cgi?Cmd=nav&action=value**&index=**index_value**&value=**value_value

Input Parameter
value = 23
index_value = 0 – 19
value_value = 32bit signed integer

Privilege
None

Return Value
Response = 17 or 22. (Please refer to "Response Code Commands Table")

Movement Control – ReadParameter(long index)

Description
Stores parameter in the robot's Flash

Grammar
/rev.cgi?Cmd=nav&action=value**&index=**index_value

Input Parameter
value = 24
index_value = 0 – 19

Privilege
None

Return Value
Response = 17 or 22. (Please refer to "Response Code Commands Table")
Value

Movement Control – GetLibNSVersion()

Description
Returns string version of libNS and NS sensor

Grammar
/rev.cgi?Cmd=nav&action=value

Input Parameter

value = 25

Privilege

None

Return Value

Response (Please refer to "Response Code Commands Table")
libNS version

Movement Control – EmailImage(string email)

Description

Emails current image or if in path recording mode sets an action

Grammar

/rev.cgi?Cmd=nav&action=*value***&email=***e_value*

Input Parameter

value = 26
e_value = (email address)

Privilege

None

Return Value

Response (Please refer to "Response Code Commands Table")

Movement Control – ResetHomeLocation()

Description

Clears home location in FLASH.

Grammar

/rev.cgi?Cmd=nav&action=*value*

Input Parameter

value = 27

Privilege

None

Return Value

Response (Please refer to "Response Code Commands Table")

Camera Control – GetData.cgi

Description

The basic command for acquiring MJPEG

Grammar

/ChangeResolution.cgi?ResType=*value*[**&RedirectUrl=***sUrl*]

Input Parameter

None

Privilege

None

Return Value

An instance captured motion image.

Camera Control – GetImage

Description

The basic command for acquiring Image

Grammar

/Jpeg/CamImg[*value***]**.jpg

Input Parameter

value = 4 digits random number

Privilege

None

Return Value

An instance captured image.

Camera Control – Video Streaming

Description

The basic command for acquiring Image

Grammar

Rtsp://xxx.xxx.xxx.xxx/webcam **(under IE with WebSee.cab ActiveX only)**

Input Parameter

None

Privilege

None

Return Value

Streaming Video

Example

```
<html>
<object id="oCamCtl" width="640" height="480" classid="clsid:3FB37917-B6B9-4FBB-920D-
254BFBB8D520" codebase="http://www.wowweesupport.com/download/rovio/WebSee.cab" />
<param name="RtspURL" value="rtsp://192.168.36.139/webcam"/>
```

```
<param name="URL" value="http://192.168.10.18" />
<param name="AutoStart" value="1" />
</object>
</html>
```

Camera Control – ChangeResolution.cgi

Description

Change the resolution setting of camera's images.

Grammar

/ChangeResolution.cgi?ResType=*value*[**&RedirectUrl=***sUrl*]

Input Parameter

Camera supports 4 types of resolution:
0 - {176, 144}
1 - {352, 288}
2 - {320, 240} (Default)
3 - {640, 480}

Privilege

Administrator

Return Value

None

Camera Control – ChangeCompressRatio.cgi

Description

Change the quality setting of camera's images. (only available with MPEG4)

Grammar

/ChangeCompressRatio.cgi?Ratio=*value*[**&RedirectUrl=***sUrl*]

Input Parameter

Ratio:
0 – 2 (representing low, medium and high quality respectively)

Default Value: 1 (medium)

Privilege

Administrator

Return Value

None

Camera Control – ChangeFramerate.cgi

Description

Change the frame rate setting of camera's images.

Grammar
/ChangeFramerate.cgi?Framerate=*value*[**&RedirectUrl=***sUrl*]

Input Parameter
Framerate:
2 – 32 frame per seconds respectively

Default Value: 30

Privilege
Administrator

Return Value
None

Camera Control – ChangeBrightness.cgi

Description
Change the brightness setting of camera's images.

Grammar
/ChangeBrightness.cgi?Brightness=*value*[**&RedirectUrl=***sUrl*]

Input Parameter
Brightness:
0 - 6 (The lower the value is, the dimmer the image is)

Default Value: 6

Privilege
Administrator

Return Value
None

Camera Control – ChangeSpeakerVolume.cgi

Description
Change the Speaker Volume setting of IP_Cam.

Grammar
/ChangeSpeakerVolume.cgi?SpeakerVolume=*value*[**&RedirectUrl=***sUrl*]

Input Parameter
Speaker Volume:
0 - 31 (The lower the value is, the lower the speaker volume is)

Default Value: 15

Privilege
Administrator

Return Value

None

Camera Control – ChangeMicVolume.cgi

Description

Change the Mic Volume setting of IP_Cam.

Grammar

/ChangeMicVolume.cgi?MicVolume=*value*[**&RedirectUrl=***sUrl*]

Input Parameter

Mic Volume:

0 - 31 (The lower the value is, the lower the mic volume is)

Default Value: 15

Privilege

Administrator

Return Value

None

Camera Control – SetCamera.cgi

Description

Change camera sensor's settings

Grammar

/SetCamera.cgi?Frequency=*value*[**&RedirectUrl=***sUrl*]

Input Parameter

Frequency:

50 – 50Hz

60 – 60Hz

0 – Auto detect

Privilege

None

Return Value

None

Camera Control – GetCamera.cgi

Description

Get the camera sensor's settings

Grammar

/GetCamera.cgi?[**&JsVar=***variable*[**&OnJs=***function*]]

Input Parameter

None

Privilege

None

Return Value

Each line represents an item, and every item is in the format as **Name = Value**.
(Refer to SetCamera.cgi)

User Management – GetMyself.cgi

Description

Get the username who sent this HTTP request.

Grammar

/GetMyself.cgi?ShowPrivilege=<*true|false*>[**&JsVar=***variable*[**&OnJs=***function*]]

Input Parameter

Value:
True / False

Privilege

None

Return Value

Privilege = 0 (for common user)
Privilege = 1 (for super user)
(Always returns 0 if it is in Non-authorization mode under SetUserCheck.cgi)

User Management – SetUser.cgi

Description

Add a user or change the password for existed user.

Grammar

/SetUser.cgi?User=*sUserName***&Pass=***sPassword* <!--[**&Privilege=***iPrivilege*]-->
[**&RedirectUrl=***sUrl*]

Input Parameter

Username & Password

Privilege

Administrator

User Management – DelUser.cgi

Description
Delete a user account.

Grammar
/DelUser.cgi?User=_sUserName_[**&RedirectUrl=**_sUrl_]

Input Parameter
Username

Privilege
Administrator

User Management – GetUser.cgi

Description
Get the users list of IP Camera.

Grammar
/GetUser.cgi[**?ShowPrivilege=**<_true|false_>][**&JsVar=**_variable_[**&OnJs=**_function_]]

Input Parameter
True / False

Privilege
Administrator

Return Value
If "ShowPrivilege" = true
   Each line represents a username
   Each line represents a privilege (after all the username)

If "ShowPrivilege" = false
  No privilege will be shown.

User Management – SetUserCheck.cgi

Description
Enable or disable user authorization check.

Grammar
/SetUserCheck.cgi?Check=<_true|false_>[**&RedirectUrl=**_sUrl_]

Input Parameter
True / False

Privilege
Administrator

Return Value
None

Time – SetTime.cgi

Description
Set server time zone and time.

Grammar
/SetTime.cgi?[**&Sec1970=***value1*][**&TimeZone=***value2*][**&RedirectUrl=***sUrl*]

Input Parameter
Sec1970 - seconds since "00:00:00 1/1/1970".
TimeZone – Time zone in minutes. (e.g. Beijing is GMT+08:00, TimeZone = -480)

(Visit GetTime.cgi for time information on IP Camera)

Privilege
Administrator

Return Value
None

Time – GetTime.cgi

Description
Get current IP Camera's time zone and time.

Grammar
/GetTime.cgi[**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter
None

Privilege
None

Return Value
Each line represents an item, and every item is in the format as **Name = Value**.

(Visit SetTime.cgi for details)

Time – SetLogo.cgi

Description
Set a logo string on the image.

Grammar
/SetLogo.cgi?[**&showstring=***value1*][**&pos=***value2*][**&RedirectUrl=***sUrl*]

Input Parameter

showstring
time - time
date - date
ver - version

pos
0 – top left
1 – top right
2 – bottom left
3 – bottom right

(visit GetLogo.cgi to get the time information on IP Camera)

Privilege

Administrator

Return Value

None

Time – GetLogo.cgi

Description

Get a logo string on the image.

Grammar

/GetLogo.cgi[**?JsVar=**_variable_[**&OnJs=**_function_]]

Input Parameter

None

Privilege

None

Return Value

Each line represents an item, and every item is in the format as **Name = Value**.

(visit SetLogo.cgi for details)

Network – SetIP.cgi

Description

Tell IP Camera how to set an initial IP.

Grammar

/SetIP.cgi?[**Interface=**_<eth1|wlan0>_][**&Enable=**_<true|false>_][&IPWay=_<manually|dhcp>_][**&CameraNa me=**_sName_][**&IP=**_sIP_][**&Netmask=**_sNetmask_][**&Gateway=**_sGateway_][**&DNS0=**_sDNS0_][**&DNS1=**_sDN S1_][**&DNS2=**_sDNS2_][**&RedirectUrl=**_sUrl_]

Input Parameter

If IPWay=manually, IP, Netmask, Gateway, DNS0 (DNS1, DNS2) should also be specified.

(visit GetIP.cgi for the current setting)

Privilege

Administrator

Return Value

None

Network – GetIP.cgi

Description

Get IP settings.

Grammar

/GetIP.cgi[Interface=<*eth1|wlan0*>&][**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter

Interface
- eth1
- wlan0

Privilege

None

Return Value

CameraName, DNS0, DNS1, DNS2, Enable, IPWay, IP, Netmask and Gateway

Each line represents an item, and every item is in the format as **Name = Value**.

(visit SetIP.cgi for details)

Network – SetWlan.cgi

Description

Tell IP Camera how to set an initial WiFi.

Grammar

/SetWlan.cgi?[**Mode=**<*Managed|Ad-Hoc*>][**&Channel=**s*Channel*]
[**&ESSID=***sEssid*][**&WepSet=**<*Disable|K64|K128|ASC*>][**&WepAsc=***sWepAsc*][**&Wep64type=**<*Wep6 4HEX|Wep64ASC*>][**&Wep64=***sWep64*][**&Wep128type=**<*Wep128HEX|Wep128ASC*>][**&Wep128=***s Wep128*][**&RedirectUrl=***sUrl*]

Input Parameter

If IPWay=manually, IP, Netmask, Gateway, DNS0 (DNS1, DNS2) should also be specified.

(visit GetIP.cgi for the current setting)

Privilege

Administrator.

Return Value

None

Network – GetWlan.cgi

Description

Get WiFi settings.

Grammar

/GetWlan.cgi[?**JsVar=***variable*[**&OnJs=***function*]]

Input Parameter

None

Privilege

None

Return Value

ESSID, channel, Mode, WepSet, WepAsc, WepGroup, Wep64, Wep64type, Wep128 and Wep128type

Each line represents an item, and every item is in the format as **Name = Value**.

(visit SetIP.cgi for the current setting)

Network – SetDDNS.cgi

Description

Set dyndns.org service for IPCam

Grammar

/SetDDNS.cgi?[**Enable=***<true|false>*][**Service=***<dyndns|no-ip|dnsomatic>*][&**User**=s*Username*][**&Pass=***sPassword*][**&DomainName=***sDomainName*][**&IP=***sIPAddress*][**&Proxy=***sProxyServer*][**&ProxyPort=***iProxyServerPort*][**&ProxyUser=***sProxyUsername*][**&ProxyPass=***sProxyPassword*][**&RedirectUrl=***sUrl*]

Input Parameter

Service – DDNS service provider
User – username
Pass – password
IP – IP address (null for auto detect)
Proxy – name of the proxy
ProxyPort – port of the proxy
ProxyUser – username of the proxy
ProxyPass – password of the proxy

Privilege

Administrator

Return Value

None

Remark

Set the account for dyndns.org. To connect the dyndns server, if HTTP proxy is required, set the Proxy relative value, otherwise leave them blank. If sIPAddress is not set, IPCam will detect the IP address automatically.
Visit GetDDNS.cgi to get the current setting.

Network – GetDDNS.cgi

Description
Get DDNS settings

Grammar
/GetDDNS.cgi[**?JsVar=**_variable_[**&OnJs=**_function_]]

Input Parameter
None

Privilege
None

Return Value
Each line represents an item, and every item is in the format as **Name = Value**.
(Refer to SetDDNS.cgi)
Return information represent by "**Info**" should be one of the following values:
   Updated
   Updating Failed
   Updating
   IP Checked
   Not Update

Network – SetMac.cgi

Description
Set Mac address

Grammar
/SetMac.cgi?[MAC=_mac address_**]**

Input Parameter
MAC

Privilege
Administrator

Return Value
None

Network – GetMac.cgi

Description
Get Mac address

Grammar
/GetMac.cgi[**?JsVar=**_variable_[**&OnJs=**_function_]]

Input Parameter

None

Privilege

Administrator

Return Value

Mac Address

Http Server – SetHttp.cgi

Description

Set the parameters for HTTP server (Currently only TCP port).

Grammar

/SetHttp.cgi?Port=_iPort_[**&RedirectUrl=**_sUrl_] (for modifying one port)
/SetHttp.cgi?Port0=_iPort0_**&Port1=**_iPort1_[**&RedirectUrl=**_sUrl_] (for modifying more than one port)

Input Parameter

Port, Port0, Port1 (Port Name)
Port value

e.g
SetHttp.cgi?Port=8080
SetHttp.cgi?Port0=8080&Port1=8230

(visit GetHttp.cgi for the current setting)

Privilege

Administrator

Return Value

None

Http Server – GetHttp.cgi

Description

Get HTTP server's settings.

Grammar

/GetHttp.cgi[**?JsVar=**_variable_[**&OnJs=**_function_]]

Input Parameter

None

Privilege

None

Return Value

Port0
Port1

Each line represents an item, and every item is in the format as **Name = Value**.

(visit SetHttp.cgi for the current setting)

Mail – SetMail.cgi

Description
Configure email for sending IPCam images.

Grammar
/SetMail.cgi?Enable=<*true|false*>[**&MailServer=***sServer*][**&Sender=***sSenderName*][**&Receiver=***sReceiverAddress*][**&Subject=***sSubject*][**&User=***sUserName*][**&PassWord=***sPassword*][**&CheckFlag=CHECK**][**&Interval=***iMilliSeconds*][**&RedirectUrl=***sUrl*]

Input Parameter
Enable – Ignored
MailServer   - mail server address
Sender - sender's email address
Receiver   - receiver's email address, multi-receivers separated by ';'
Subject   - subject of email
User   - user name for logging into the MailServer
PassWord   - password for logging into the MailServer
CheckFlag   - whether the MailServer needs to check password
Interval- Ignored

Privilege
Administrator

Return Value
None

Mail – GetMail.cgi

Description
Get email settings.

Grammar
/GetMail.cgi[**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter
None

Privilege
Administrator

Return Value
MailServer, Port, Sender, Receiver, Subject, Body, User, PassWord, CheckFlag and Enable

Each line represents an item, and every item is in the format as **Name = Value**.

(visit SetMail.cgi for the current setting)

Mail – SendMail.cgi

Description
Send an email with IPCam images.

Grammar
/SendMail.cgi[**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter
None

Privilege
Administrator

Return Value
None

(visit SetHttp.cgi for the current setting)

Other – SetName.cgi

Description
Set camera's name.

Grammar
/SetName.cgi?CameraName=<*sName*[**&RedirectUrl=***sUrl*]

Input Parameter
CameraName
(SetIP.cgi can set the camera name too)
(visit GetName.cgi for the current setting)

Privilege
Administrator

Return Value
None

Other – GetName.cgi

Description
Get camera's name.

Grammar
/GetName.cgi[**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter
None

Privilege
None

Return Value

CameraName

(visit SetName.cgi for the current setting)

Other – GetStatus.cgi

Description
Get run-time status of Rovio.

Grammar
/GetStatuscgi[**?JsVar=**_variable_[**&OnJs=**_function_]]

Input Parameter
None

Privilege
None

Return Value
Text with length of 95

Byte	Description	Value
0, 1	Camera State	00 - off 01 – on
2, 3	Modem State	00 - off 01 - on line(common mode) 02 - connecting(common mode)
4, 5	PPPoE State	same as Modem state
6, 7, 8	x-direction	Reserved
9, 10, 11	y-direction	Reserved
12, 13, 14	Focus	Reserved
15, 16, 17	Bright	0 – 255
18, 19, 20	contrast	0 – 255
21	resolution	00 - {176, 144} 01 - {320, 240} 02 - {352, 288} 03 - {640, 480}
22	compression ratio	Reserved
23	privilege	0 - super user(administrator) 1 - common user
24, 25, .., 29	picture index	(999999 - invalid picture)
30	email state	0 - do not send motion-detected pictures 1 - send motion-detected pictures, success 2 - send motion-detected pictures, fail (wrong IP, user or password?)

31	user check	0 - do not check user, any user can connect and act as a super user 1 - username and password required, only username is "administrator" has the super privilege.
32, 34, .., 39	image file length	length in bytes
40, 42, .., 55	monitor rect	4 - left(0-9999) 4 - top(0-9999) 4 - right(0-9999) 4 - bottom(0-9999)
56	ftp state	0 - disable ftp upload 1 - enable ftp upload, and upload success 2 - enable ftp upload, but fail(wrong IP, user or password?)
57, 58, 59	saturation	0 - 255
60, 61, ..., 65	motion detected index	(999999 - init value)
66, 67, 68	Hue	0 - 255
69, 70, 71	sharpness	0 - 255
72	motion detect way	0 - no motion detect non-zero - motion detect
73	sensor's frequency	0 - outdoor 1 - 50Hz 2 - 60Hz
74	channel mode	0 - fixed mode 1 - round robin mode
75, 76	channel value	In fixed mode, the value may be from 0 to 3 In round robin mode, the value may be from 1 to 15
77, 78, 79	audio volume	
80	dynamic DNS state	0 - no update 1 - updating 2 - update successfully 3 - update failed
81	audio state	0 - audio disabled 1 - audio enabled
82, 83, 84	frame rate	
85, 86, 87	Speaker volume	
88, 89, 90	Mic volume	
91	Show Time	0 - do not show time in image 1 – show time in image
92	WiFi Strength	0-15, 0 is Max.
93, 94	BatteryLevel	0-0xFF, 255 is Max.

Other – GetLog.cgi

Description
Get Rovio's system logs information.

Grammar
/GetLog.cgi[**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter
None

Privilege
None (different privilege right may result in different content)

Return Value
Time – operation time since power on (in second)
Log –
byte 0, 1 - reason for recording this log, refer to table below. eg: 27 is shown that new client connect to IP Camera.
byte 2 ~ 5 - reserved.
byte 6 ~ 13 - operator's IP. eg: 0A820B57 is 10.130.11.87.
byte 14 ~ 25 - operator's MAC. eg: 0000E8E26A88 is 00:00:E8:E2:6A:88.
byte 26 ~ 35 - time of this log.

For byte 0, 1

0	Information
1	Error
11	Set user
12	Del user
13	Set user check
14	Open camera
15	Close camera
16	Change resolution
17	Change quality
18	Change brightness
19	Change contrast
20	Change saturation
21	Change hue
22	Change Sharpness
23	Set email
24	Set ftp server
25	Dial (pppoe)
26	Dial (modem)
27	New client
28	Set Motion Detect
29	Set Monite Area
30	Set Server Time
31	Set Server IP
32	Set Http Port

Example

```
c"Set Motion Detect", 28,
"Set Monite Area", 29,
"Set Server Time", 30,
"Set Server IP", 31,
"Set Http Port", 32,
""];

function Hex2IP(s)
{
 var sRt = "";
 var sSuc = false;
 var iDec;
 for (var i = 0; i < 4; i++)
 {
  if (i > 0) sRt += ".";
  iDec = parseInt(s.substr(i * 2, 2), 16);
  if (iDec != 0) sSuc = true;
  sRt += iDec;
 }
 return (sSuc?sRt:"");
}

function Hex2MAC(s)
{
 var sRt = "";
 var sSuc = false;
 var iDec;
 for (var i = 0; i < 6; i++)
 {
  if (i > 0) sRt += ":";
  iDec = parseInt(s.substr(i * 2, 2), 16);
  if (iDec != 0) sSuc = true;
  sRt += s.substr(i * 2, 2);
 }
 return (sSuc?sRt:"");
}

function ShowLog(s)
{
 var sLine, sRes, iType, iTime;
 var iTimeAdjust = parseInt(s.substr(0, 10), 10);
 var dTimeAdjust = new Date();

 sRes = "";
 dTime = new Date(dTimeAdjust - 1000 * iTimeAdjust);
 sRes += "<tr><td colspan=4>System Boot</td><td>"
  + (dTime.getMonth()+1)
  + "/" + dTime.getDate()
  + "/" + dTime.getYear()
  + " " + dTime.getHours()
  + ":" + dTime.getMinutes()
  + "</td></tr>";
 delete dTime;

 for (var i = 10; i < s.length; i += 36)
 {
  sLine = s.substr(i, 36);
  iType = parseInt(sLine.substr(0, 2), 10);
  for (var j = 0; j < sLogConst.length - 1; j += 2)
  {
```

```
    if (iType == sLogConst[j + 1])
    {
     sRes += "<tr><td>" + sLogConst[j];
     break;
    }
   }
   if (j >= sLogConst.length - 1)
    sRes += "<tr><td colspan=4>Unknown log info (" + iType + ")\n";

   sRes += "</td><td>" + sLine.substr(2, 4);
   sRes += "</td><td>" + Hex2IP(sLine.substr(6, 8));
   sRes += "</td><td>" + Hex2MAC(sLine.substr(14, 12))
   iTime = parseInt(sLine.substr(26, 10), 10);

   dTime = new Date(dTimeAdjust - 1000 * (iTimeAdjust - iTime));
   sRes += "</td><td>"
    + (dTime.getMonth()+1)
    + "/" + dTime.getDate()
    + "/" + dTime.getYear()
    + " " + dTime.getHours()
    + ":" + dTime.getMinutes()
    + "</td></tr>";
   delete dTime;
  }
  sRes += "</table>"

  document.write(sRes);
}

</script>

<script src="/GetLog.cgi?JsVar=sLog">
</script>

</head>

<body>

<table border=1>
 <tr>
  <td>Main Info</td>
  <td>Append Info</td>
  <td>Operator IP</td>
  <td>Operator MAC</td>
  <td>Time</td>
 </tr>
 <script>ShowLog(sLog);</script>
</table>

</body>
</html>
```

Other – GetVer.cgi

Description
Get Rovio's base firmware version, Rovio also has a UI version and a NS2 version this function only get the base OS version.

Grammar
/GetVer.cgi[**?JsVar=***variable*[**&OnJs=***function*]]

Input Parameter
None

Privilege
None

Return Value
Version – Date and Time of the firmware
$Id (Subversion) – filename, version number, date, time and author

Other – SetFactoryDefault.cgi

Description
Change all settings to factory-default.

Grammar
/SetFactoryDefault.cgi

Input Parameter
None

Privilege
Administrator

Return Value
None

Other – Reboot.cgi

Description
Reboot Rovio.

Grammar
/Reboot.cgi

Input Parameter
None

Privilege
Administrator

Return Value
None

Other – GetData.cgi

Description
Get images/status with "multipart/x-mixed-replace" mime-type.

Grammar

/GetData.cgi[**?Status=**<*true|false*>]

Input Parameter

True / false

Privilege

None

Return Value

GetData.cgi is designed for "server-push". "Server-push" means that user need not always detect camera's state, and the camera server transfers the camera data on its own.

GetData.cgi[?Status=false] returns:

```
Content-Type: image/jpeg
<content of jpeg file>

Content-Type: image/jpeg
<content of jpeg file>

...
```

GetData.cgi?Status=true returns:

```
Content-Type: image/jpeg
<content of jpeg file>

Content-Type: text/plain
<same as what's returned by GetStatus.cgi>

Content-Type: image/jpeg
<content of jpeg file>

Content-Type: text/plain
<same as what's returned by GetStatus.cgi>


...
```

Example

```
<!--
In mozilla, you can view active image through tag "<img>".
-->
<img src=/GetData.cgi >
```

Other – GetAudio.cgi

Description

Send audio to server and playback at server side

Grammar

/GetAudio.cgi

Input Parameter

None

Privilege
None

Remark
The data flow is from client to IPCam, which is different from GetData.cgi.
The audio data must be send with HTTP POST method.
Audio format: 16bit PCM, 8000Hz

Other – SetMediaFormat.cgi

Description
Set the media format

Grammar
/GetMediaFormat.cgi?[Audio=<*sAudioName*>][&**Video=**<*sVideoName*>][&**RedirectUrl=***sUrl*]

Input Parameter
sAudioName = 0 – 4
sVideoName = 0 – 1

Privilege
Administrator

Return Value
None

Other – GetMediaFormat.cgi

Description
Get the media format

Grammar
/GetMediaFormat.cgi

Input Parameter
None

Privilege
None

Remark
Audio
0 – AMR
1 – PCM
2 – IMAADPCM
3 – ULAW
4 – ALAW

Video
1 – H263
2 – MPEG4

Other – Upload.cgi

Description
Upload new firmware image

Grammar
/Upload.cgi

Input Parameter
Posted file [**name** = SourceFile]

Privilege
Administrator

Remark

Other – Cmd.cgi

Description
Use this command to combine several commands to a single http request, that is, user can call two or more commands through Cmd.cgi.

Grammar
/Cmd.cgi?Cmd=sCommandName1 [&*ParamName1=sParamValue1*]
[&*ParamName2=sParamValue2*][...] [**Cmd=**sCommandName2 [&*ParamName1=sParamValue1*]
[&*ParamName2=sParamValue2*][...]] [**Cmd=**sCommandName3...] [**JsVar=**variable[**&OnJs=**function]]
[**&RedirectUrl=**sUrl]

Input
List of commands that can be combined with Cmd.cgi:
ChangeResolution.cgi
ChangeCompressRatio.cgi
ChangeFramerate.cgi
GetMyself.cgi
SetUser.cgi
DelUser.cgi
GetUser.cgi
SetUserCheck.cgi
SetTime.cgi
GetTime.cgi
SetIP.cgi
GetIP.cgi
SetWlan.cgi
GetWlan.cgi
SetHttp.cgi
GetHttp.cgi
SetName.cgi
GetName.cgi
GetLog.cgi
GetVer.cgi
Reboot.cgi

Some commands may use the same parameter's name, so the parameter's position should be in correct order. If you place parameters of *sCommandName1* after *sCommandName2*, the behaviors of IP Camera is unexpected.
If there are sub-commands that get information from Rovio, (such as GetUser.cgi, PPPoE.cgi?Action=GetInfo), "RedirectUrl" should not be specified, otherwise the browser will be

redirected to the address specified by "RedirectUrl", and certainly not what you want.

Privilege

None

Example

1. Add user abc(password 123), and delete user cba:
/Cmd.cgi?Cmd=SetUser.cgi&User=abc&Pass=123&Cmd=DelUser.cgi&User=cba

```
<html>
<form action=/Cmd.cgi>
<input type=hidden name=Cmd value=SetUser.cgi>
<input name=User value=abc><br>
<input name=Pass value=123><br>
<br>
<input type=hidden name=Cmd value=DelUser.cgi><br>
<input name=User value=cba>
<input type=submit value=OK>
</form>
</html>
```

2. Get the settings of IP and WiFi:
/Cmd.cgi?Cmd=GetIP.cgi&Cmd=GetWlan.cgi

```
<html>
<script>
function ShowResult(o)
{
 alert(s);
}
</script>
<script src="/Cmd.cgi?Cmd=GetIP.cgi&Cmd=GetWlan.cgi?JsVar=s&OnJs=ShowResult"></script>
</html>
```