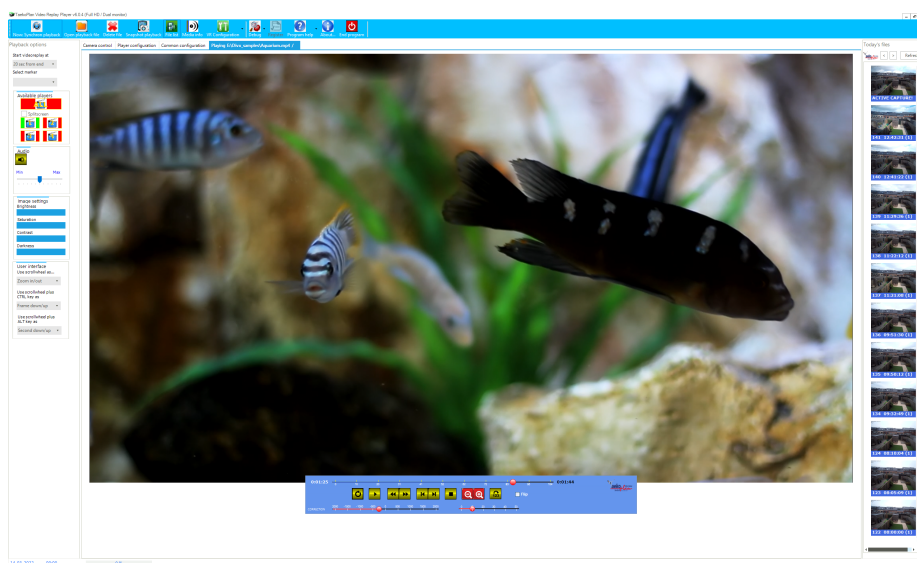




# Taekoplan Video Replay

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# Title page 1

## Introduction

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*by SenSoft Automation - The Netherlands*

*TaekoPlan Video replay system is a tool to handle newly introduced video replay during taekwondo competitions. In effect it can be used for other sports like Karate, Kickboxing, Judo etc.*

# Taekoplan Video Replay

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*All the testers for their hard work and the European Taekwondo Union for allowing me to use a European Championship as first major event!*

### **Publisher**

*Ronald Sens*

### **Managing Editor**

*Ronald Sens*

### **Technical Editors**

*Ronald Sens*

### **Cover Designer**

### **Team Coordinator**

### **Production**

*SenSoft Automation*

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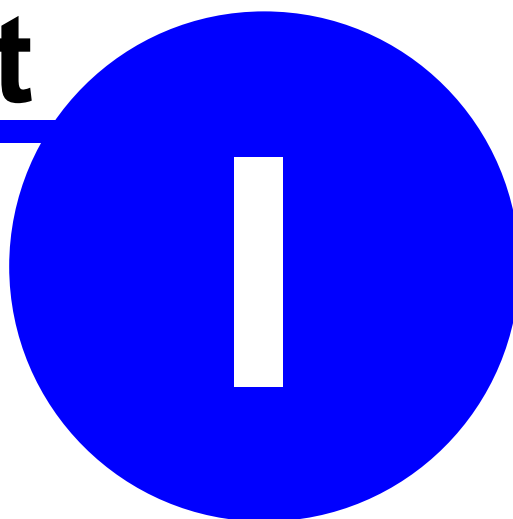


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**Part**



# 1 Introduction

# ***TaekoVRHD v6 SD/HD/Full HD Dual Monitor***



TaekoVRHD.NET is a tool for capturing and playback of video for the video replay during taekwondo events.



***SD/HD/Full HD/IP -  
Dual Monitor - 4 Cams  
synchron***



***Capture***

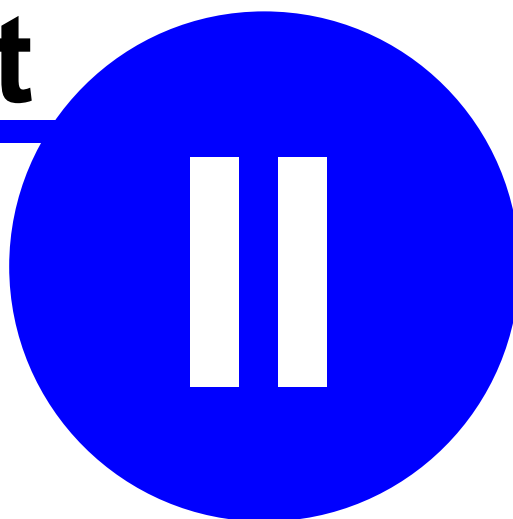
***TaekoPlan Video Replay for .NET  
2022 v6.2.0***

***(c) 2018-2022 SenSoft Automation - Netherlands***

It can be used with standard or high definition consumer camera's. See appendix for specifications!  
It also support IP camera's with different resolutions.

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# Part



## 2 Main modules



This section contains basic information about the main modules of the video replay software. The software is split into two separate programs, one for the capture and one for the videoreplay.

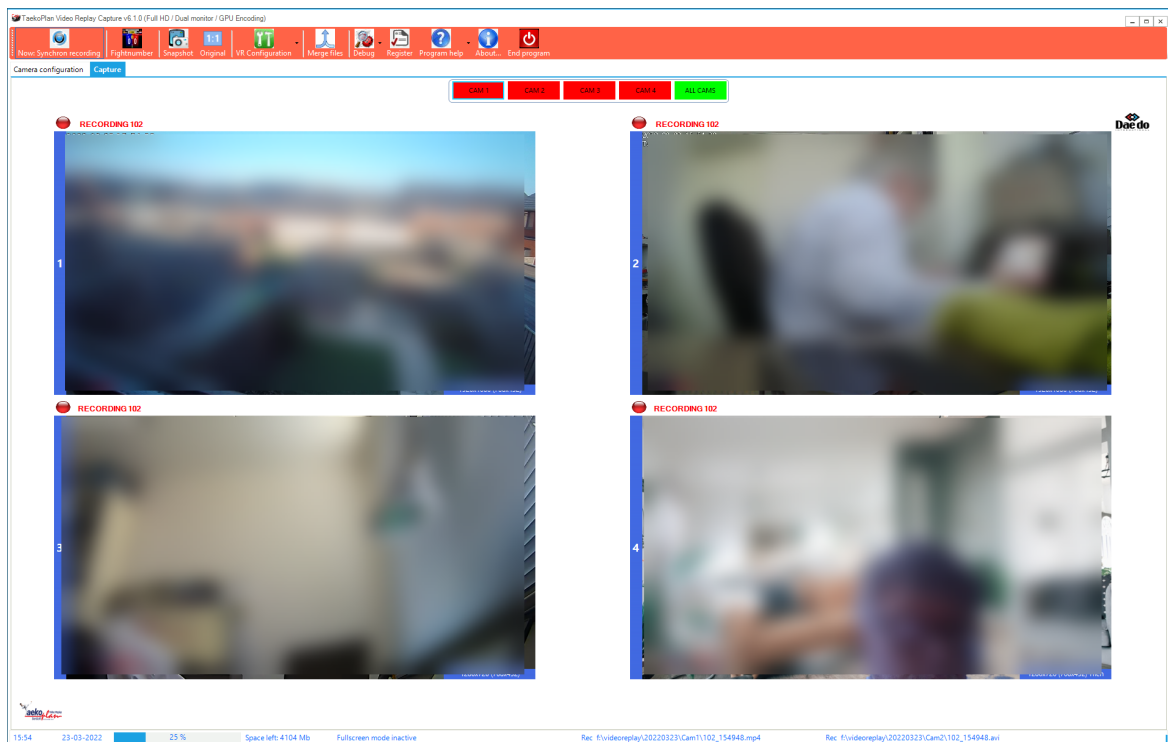
## 2.1 Capture

The capture is the central part of the video replay software. Up to two cams can be attached at the same time.

Each camera needs to be [configured](#) <sup>15</sup> before it can be used.

There are two views with preview/capture options. The first view only shows the two preview/capture screens (one for each cam).

The second one shows a combination of preview and playback.



The previews are fitted into the available space on the screen. Aspect ratio is also maintained for the previews.

On top you see the cam navigation bar:




You can select each of the maximum 4 cams to be shown as single cam on the screen or all cams together in a matrix.


The active option is colored green/

Each capture preview has a button bar available which appears when hovering over the preview screen with your mouse.



Start the preview for the selected camera. After clicking this button, the button will switch to  to disable it.

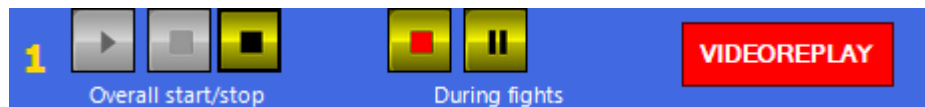


Prepare the camera for capturing fights. If separate capture is chosen, the actual capture will NOT start yet. It will switch to  to make it inactive. So you can not click it twice.




Stop the current recording if active, if only preview is active, it will stop the preview and will remove the preview image.

When you have started the initial capture, the bar is extended with more options:




The overall start/stop buttons only have the STOP button active, and the three buttons for During fights are activated.



Start the capture of a fight. You have to provide a fightnumber. When connected to Daedo, the fight will start automatically. You then do not have to press this button. It will switch to  to make it inactive. So you can not click it twice.



Pause the current capture. After clicking, it will switch to  to resume recording



Stop the current capture if active. It will set the camera back to the ready mode, which means that any new capture can start instantly. The button is not visible when you have not started a capture yet (as shown in the picture).

Capture can be done either for any standalone camera's or for both camera's synchronized.



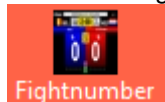
If you want to use synchronized recording, use the menu option on top to activate this by clicking the **Synchron (asynchron) recording (2 cams)**.



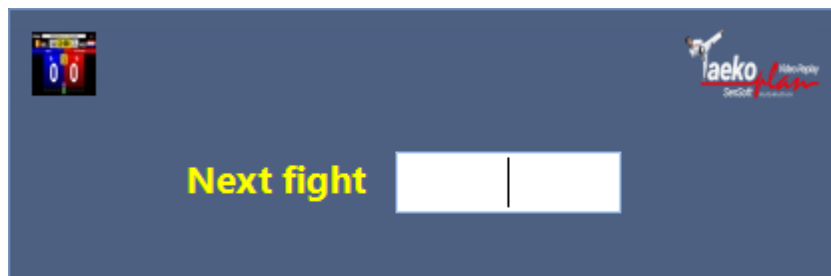
Synchronized recording means that both cams will be started shortly after each other. To avoid that they stay out-of-sync, a mechanism is built in to keep them on track towards each other. If one cam falls behind for whatever reason, the other one will just 'wait' and resume. So we can guarantee that both recordings have the same timeline. This is important during playback when you can switch between the two cams.

Before you can start recording, you need to enter a fightno. This fightno. is part of the filename of the recording(s). The fightno. can only consist of digits and a point if applicable.

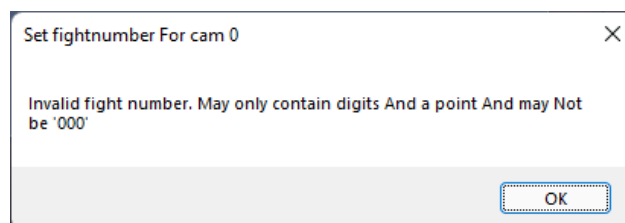
When starting a capture, the fightnumber entry will come automatically. At any time you can click



to get the entry form.



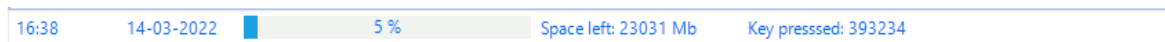
if you don't enter a fightnumber. you will get a notification:



**Note:** if you have enabled audio recording, then the audio output of your system is set to 0, so no output. This has to do with the fact that the microphone and speakers of your system will interfere and produce a very high sound, which might also cause problems with your system.

If you have configured **Separate capture** in the common config, the recording will not stop, but just save the previous one and continue with a new fightnumber recording.

On the bottom of the mainscreen you see the statusbar:



You can see the date/time as well as the CPU Usage (5%) of the application.  
The space left shows you the number in Mb's on the storage drive.  
The message next to this shows you the latest recorded info message from the system.

### 2.1.1 Capture Configuration

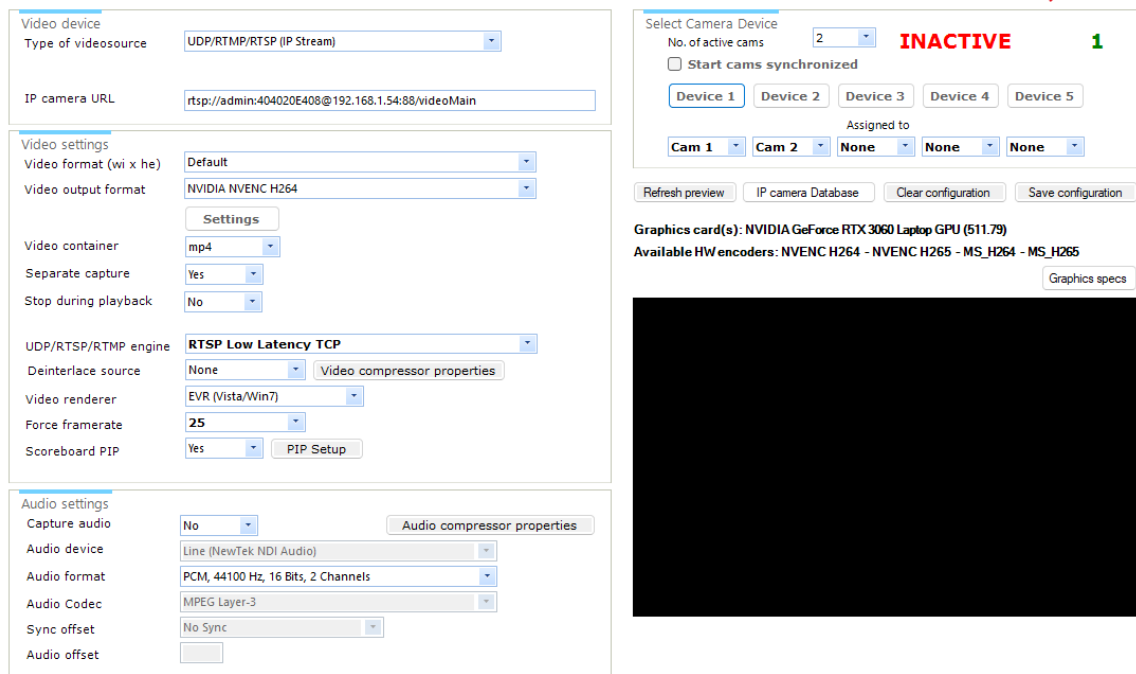
Enter topic text here.

### 2.1.1.1 Camera config

The camera config enables you to provide configuration for up to 5 devices.

#### Configuration

Setup of your camera configuration



The screenshot displays the 'Configuration' window for setting up camera configuration. It is divided into two main sections: 'Video settings' and 'Audio settings'.

**Video settings:**

- Video device:** Type of videosource is set to 'UDP/RTMP/RTSP (IP Stream)'. IP camera URL is 'rtsp://admin:404020E408@192.168.1.54:88/videoMain'.
- Video format (wi x he):** Default.
- Video output format:** NVIDIA NVENC H264.
- Video container:** mp4.
- Separate capture:** Yes.
- Stop during playback:** No.
- UDP/RTSP/RTMP engine:** RTSP Low Latency TCP.
- Deinterlace source:** None. (Video compressor properties button is visible).
- Video renderer:** EVR (Vista/Win7).
- Force framerate:** 25.
- Scoreboard PIP:** Yes. (PIP Setup button is visible).

**Audio settings:**

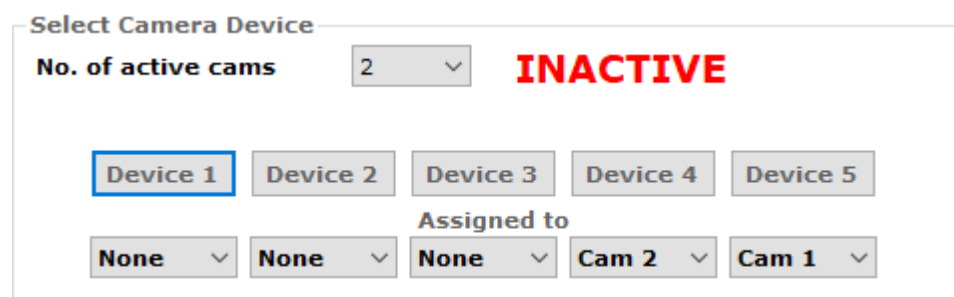
- Capture audio:** No. (Audio compressor properties button is visible).
- Audio device:** Line (NewTek NDI Audio).
- Audio format:** PCM, 44100 Hz, 16 Bits, 2 Channels.
- Audio Codec:** MPEG Layer-3.
- Sync offset:** No Sync.
- Audio offset:** (empty field).

**Right Panel:**

- Select Camera Device:** No. of active cams is 2. Status is **INACTIVE** with a green '1' icon.
- Start cams synchronized:** (checkbox is unchecked).
- Device buttons:** Device 1, Device 2, Device 3, Device 4, Device 5.
- Assigned to:** Cam 1, Cam 2, None, None, None.
- Buttons:** Refresh preview, IP camera Database, Clear configuration, Save configuration.
- Graphics card(s):** NVIDIA GeForce RTX 3060 Laptop GPU (511.79).
- Available HW encoders:** NVENC H264 - NVENC H265 - MS\_H264 - MS\_H265.
- Graphics specs:** (button).
- Preview:** A large black rectangular area for video preview.

See the child chapters for detailed info how to configure.

#### 2.1.1.1.1 Select camera device




The screenshot shows the 'Select Camera Device' window. It features a dropdown for 'No. of active cams' set to 2, and a large red **INACTIVE** status indicator.

Below these are five buttons labeled 'Device 1' through 'Device 5'. 'Device 1' is highlighted with a blue border.

Underneath the device buttons is the 'Assigned to' section, which contains five dropdown menus. The first three are set to 'None', the fourth is set to 'Cam 2', and the fifth is set to 'Cam 1'.

First of all, select the no. of cams to be used (synchronously or asynchronously).

No. of active cams 2 

Up to 4 active cameras can be selected.

**Start cams synchronized**

Check this box if you want to start multiple cams at the same time for preview and capture.

**Refresh preview**

Refresh the preview as shown in the black area

**IP Camera database**

This will point you to the ISpyconnect.com website.

**Clear configuration**

This will clear the whole configuration for the selected device so you re-enter information

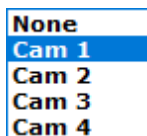
**Save configuration**

Saves the current configuration for the selected device

Next step is to select the device for which you want to do the setup:

You can setup upto 5 devices and assign them individually to a camera in the program.

To assign them, open the pulldown to select the camera.



If a camera is not available at startup, the **ACTIVE** caption will change to **INACTIVE**. You can create 5 configurations and select the Cam number to give them the correct order.

Upto 4 cams can be shown simultaneously.

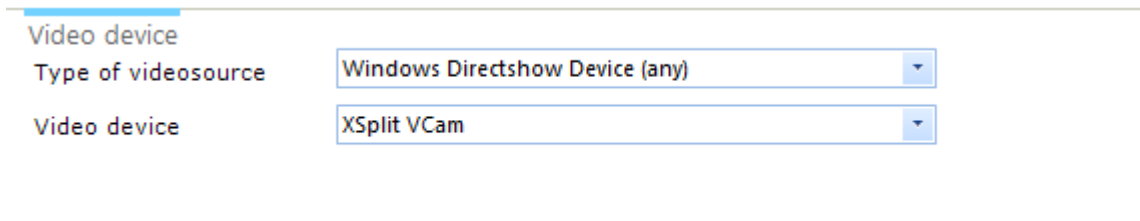
**Graphics card(s):** NVIDIA GeForce RTX 3060 Laptop GPU (472.56)

**Available HW encoders:** NVENC H264 - NVENC H265 - MS\_H264 - MS\_H265

[Graphics specs](#)

This is an overview of the capabilities of the graphics card

## 2.1.1.1.2 Video device

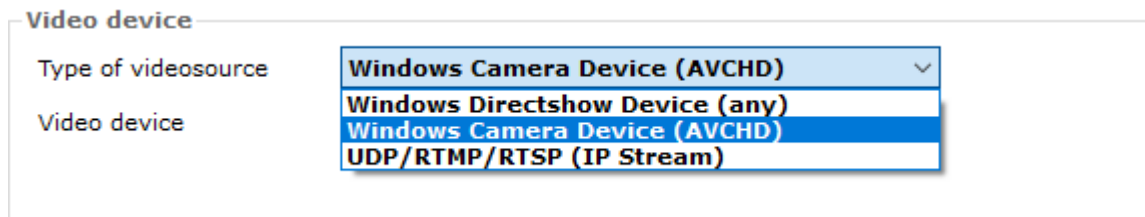


Video device

Type of videosource Windows Directshow Device (any)

Video device XSplit VCam

For the type of videosource there are three options:



Video device

Type of videosource Windows Camera Device (AVCHD)

Video device Windows Directshow Device (any)

Windows Camera Device (AVCHD)

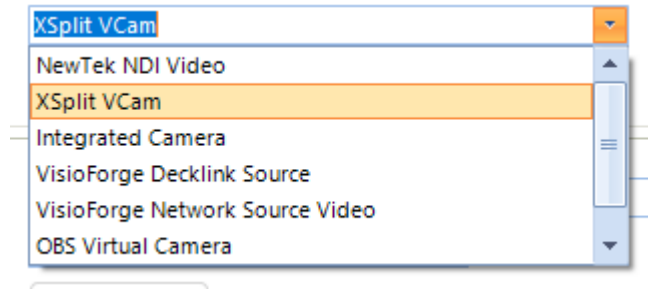
UDP/RTMP/RTSP (IP Stream)

**Windows Directshow Device**

Any camera that is recognized by Windows OS as a valid camera. It should appear in the Device Manager.

It can be any camera connected to USB2/3 or Thunderbolt port.

For example an external webcam, Camlink HDMI, Magewell HDMI etc.



XSplit VCam

NewTek NDI Video

XSplit VCam

Integrated Camera

VisioForge Decklink Source

VisioForge Network Source Video

OBS Virtual Camera

This is just an example list. Your devices might be different.

**Windows camera device (AVCHD)**

This is a cam like Sony, Panasonic or JVC handycam which is connected through Firewire,

AVCHD is standard format which provides compressed HD video.

**UDP / RTMP / RTSP (IP Stream)**

This is an IP camera connected over a network which can be reached with a specific IP address.

As each camera has it's own connection string, we can not give a full list of camera's and how to connect them.

For example for a Foscam it would look like this:

IP camera URL

**rtsp://admin:404020E408@192.168.1.41:4000/videoMain**

And for a Reolink 820a: **rtsp://admin:xxxx@192.168.1.xx/h264Preview\_01\_sub**

There are several websites that can provide you with the correct URL to enter here.

For example: [Connecting to IP Cameras \(ispyconnect.com\)](http://www.ispyconnect.com)

option isn't working.

The settings for Foscam cameras are automatically setup your Foscam can connections as well.

Start typing in the "Make" box to find add camera wizard. If you need to m and URL in the video source dialog (

When "IP camera with wizard" to m cameras may support ONVIF

est List" in settings or when on the can modify the connection type

### Foscam compatible s

[Download Foscam compatible software](#)

Tip: Click a model to gene

**Foscam Video URL Generator**

**JPEG**

IP: 192.168.1.20

Username: admin

Password: admin

Note: Use your camera credentials, not your ispyconnect login.

Channel: 0

Close [Generate](#)

Models	Format	Protocol	URL
12558a-r2, 8000, C1 ISODOS, C1 ISODOS W, c1 isodos_P, C1 LIGHT, C1 Lite, C1 V3, C1_setup, C1B, C1Esimer, C1-Lite, C1LITE2, C1X, C2 V3, C-320, CM2, D47, EH8135, EH8135 v3, F10105, F10005W, F10205W, F10005, F10005W,	JPEG	http://	cgi-bin/CGIProxy.fcgi?cmd=snapPicture2&usr=[USERNAME]&pwd=[PASSWORD]&

## 2.1.1.1.3 Video settings

**Video settings**

Video format (wi x he) Default

Video output format NVIDIA NVENC H264 Settings

UDP/RTSP/RTMP Preview and capture engine RTSP Low Latency TCP

Deinterlace source None Video compressor properties

Video renderer EVR (Vista/Win7)

Force framerate 25

Scoreboard PIP No PIP Setup

**Video format (wi x he)**

This is the video format which is provided by the camera device.

**Default** means that the format is given by the interface and should be used.

For example an IP camera has 1280x720 or 1280x960 and an AVCHD camera has 1440x1080.

A webcam can have a lot of format ranging from 320x240 upto 1920x1080.

Select the one you want to use.

**Video output format**

You should select the format that you want to use.

Microsoft H264 (CPU)

Microsoft H264/AAC (GPU)

Intel QuickSync H264

**NVIDIA NVENC H264**

AMD Radeon H264

Microsoft H265 (GPU)

Intel QuickSync H265

NVIDIA NVENC H265

AMD Radeon H265

DirectCapture from IP camera (MKV) (no PIP!)

DirectCapture from IP camera (AVI) (no PIP!)

The list is a mix of CPU and GPU encoders.

Select the one that suits best and is available on your specific graphics card.

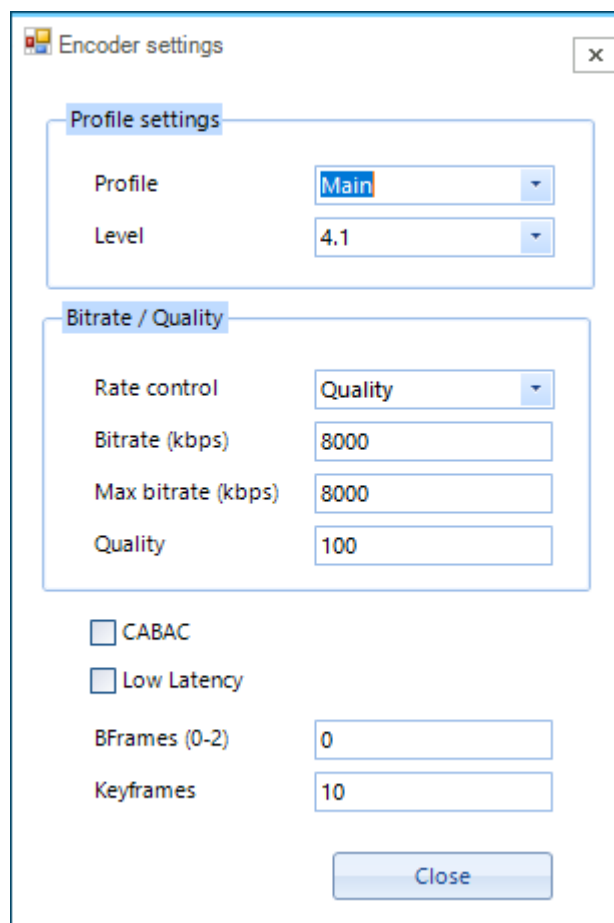
The non-available ones are greyed out and can not be selected.

All above encoders, except for the directcapture, support picture-in-picture (scoreboard for example).

The directcapture is a 1:1 copy of the camera stream to disk. You can not do anything with it, not adding logo's or PIP.

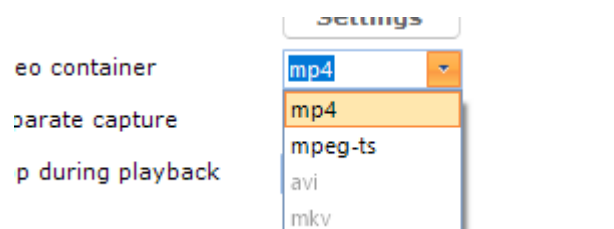
If you want to be sure that you have the full stream without interruption, use this option.

For any encoder you can select different settings to improve picture quality.



### Video container

Here you select the type of container for the video file. If you are not known with these, please leave it at mp4.



Directcapture uses avi or mkv.



### Separate capture

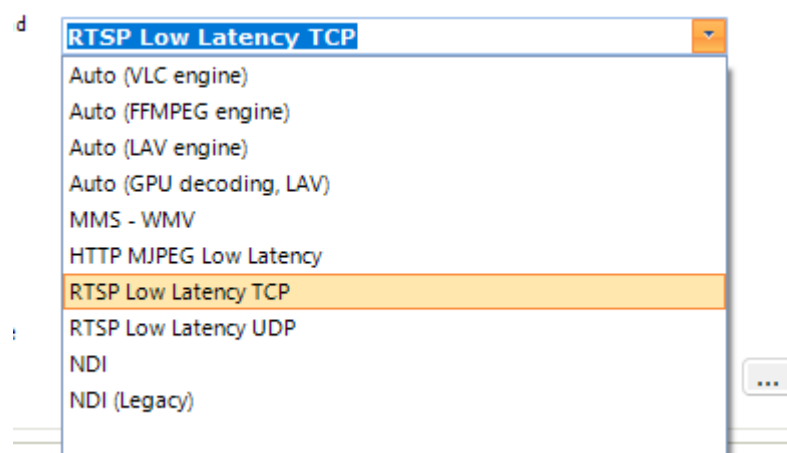
Set this mode by default to yes as it extends the capture options and makes it faster.

### Stop during playback

If you so not want to capture during a break between fights, set this to Yes, otherwise leave it to No. Capture will by default not run between fights.

### UDP/RTSP/RTMP engine

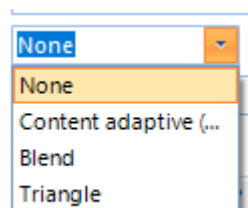
This is the engine used to decode the stream from an IP device. You have following options.



The most common one used for IP stream is RTSP low latency TCP. Also Auto LAV engine will work. So if you are not sure what to use, use any of these two.

### Deinterlace source

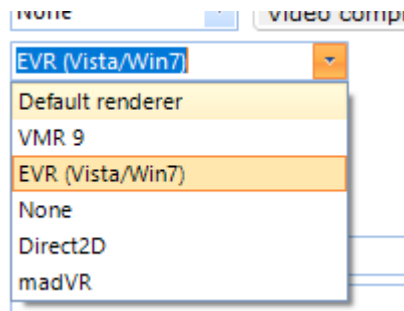
If you have an interlaced video input, you need to de-interlace it to avoid stripes in the picture. The following options are available:



Select the one to be used. It is out of scope for this manual to get into details for each option.

### Video renderer

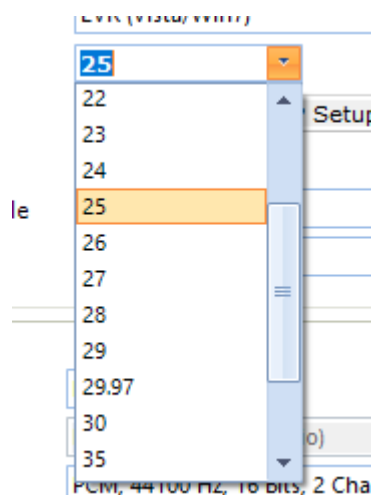
The video renderer is the engine which creates the picture on your screen.  
The following renderers are available:



Each has its own specifications. Choose the one which provides you the best picture.  
This highly depends on graphics card used.

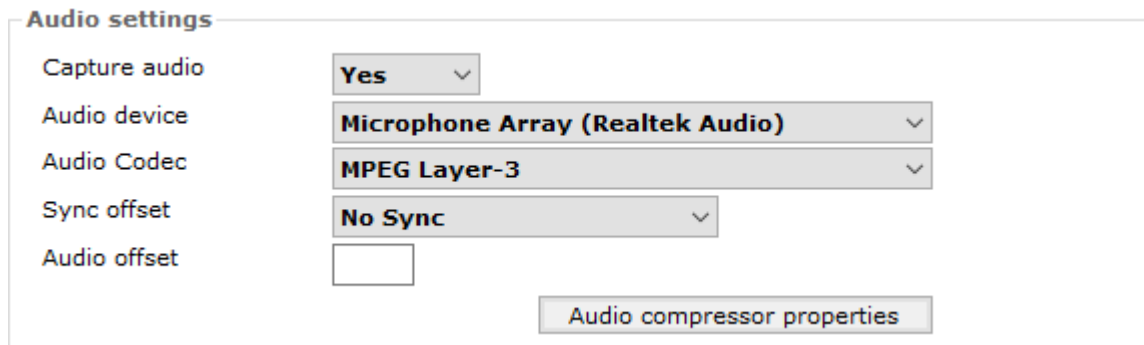
### Force framerate

The framerate is the number of frames per seconds provided by the camera device.  
Most common are 25, 29.97 and 30 fps.  
Select the default or one of the possible framerates.



Only select the framerate if you notice that the capture has a lower framerate as expected.  
Otherwise select the first option **Default**.

## 2.1.1.1.4 Audio settings



**Audio settings**

Capture audio	Yes ▾
Audio device	Microphone Array (Realtek Audio) ▾
Audio Codec	MPEG Layer-3 ▾
Sync offset	No Sync ▾
Audio offset	<input type="text"/>

Audio compressor properties

**Capture Audio**

Select Yes to capture audio or No to not capture

**Audio device**

Select a device to be used from your system. The available ones are listed in the box.

**Audio codec**

This is the type of encoding for the audio.

If you want to use audio for playback also, select a codec which compresses your audio to get a small footprint. MPEG-3 Layer-3 is a well known codec to achieve this.

**Sync Offset**

If you notice delay between audio and video output, you can adjust the sync offset to to synchronize them.

**Audio offset**

Set the time in ms to correct the audio stream to get both streams synchronized

## 2.1.1.1.5 Sample configs

Below are two configs shown for a directshow device and for an IP camera:

**Directshow device:**

Video device	
Type of videosource	Windows Directshow Device (any) ▼
Video device	Integrated Camera ▼

---

Video settings	
Video format (wi x he)	Default ▼
Video output format	NVIDIA NVENC H264 ▼
	<a href="#">Settings</a>
Deinterlace source	None ▼ <a href="#">Video compressor properties</a>
Video renderer	EVR (Vista/Win7) ▼

**IP Camera**

<b>Video device</b>	
Type of videosource	UDP/RTMP/RTSP (IP Stream)
IP camera URL	
rtsp://admin:404020E408@192.168.1.54:88/videoMain	
<b>Video settings</b>	
Video format (w i x h e)	Default
Video output format	NVIDIA NVENC H264
<b>Settings</b>	
UDP/RTSP/RTMP Preview and capture engine	RTSP Low Latency TCP
Deinterlace source	None
Video renderer	EVR (Vista/Win7)
Force framerate	25

For IP camera's it is important to use TCP as protocol, not UDP. UDP is not reliable for transmission purposes.

### 2.1.1.2 Common config

The common configuration contains settings that define specific user requirements.

#### Common configuration

Common configuration settings



<b>Visual settings</b>		<b>Recording type</b>	
Show marker panel	No	Timeshift	No
Show captions in menubar	Yes	Use separatecapture	Yes
Show debug messages	Yes	<b>Recording settings</b>	
Show detailed SDK info	Yes	Folder for recordings	e:\videoreplay\
Beep on any keypress	No	Folder for snapshots	e:\videoreplay\
<b>FFMPEG/playback settings</b>		Lower limit of free space in Mb	500
Folder for FFMPEG 32bits	E:\Codecs\redist\FFMPEG\win32\	Stop recording during videoreplay	No
Folder for FFMPEG 64 bits	E:\Codecs\redist\FFMPEG\win64\	Heartbeat check every ... sec	90
Folder for CloseConsole App	E:\Codecs\redist\FFMPEG\cc\	Second (full)screen during preview	Yes
Folder for all Codecs	E:\Codecs\Redist\	<b>Application info</b>	
Folder for TaekoVRHD Player	E:\TaekoVRHD_VF.NET2_player\bin\x64\Debug\	Application running as Windows	64bits
Create thumbnails for player	No	<b>Scoreboard Capture server</b>	
Register codecs on start	No	Start the server at startup	No
<b>Security</b>		<b>Save configuration</b>	
Password for access to config			

## 2.1.1.2.1 Visual settings

Visual settings are as follows:

Visual settings	
Show marker panel	<input type="button" value="No"/>
Show captions in menubar	<input type="button" value="Yes"/>
Show debug messages	<input type="button" value="Yes"/>
Show detailed SDK info	<input type="button" value="Yes"/>
Beep on any keypress	<input type="button" value="No"/>

**Show marker panel**

This will show or not show the [marker panel](#)  on the capture screen.

**Show captions in menubar**

Set this to Yes to display the text captions in the menubar of the program.  
Setting No will only show the icons

**Show debug messages**

Set this to Yes to show all messages, including errors.

**Show detailed SDK info**

Set this to Yes to show detailed info messages from the used SDK

**Beep on any keypress**

Set this to Yes to hear a system beep when a key is pressed. This might be useful if you are in doubt whether a keypress reaches the program

## 2.1.1.2.2 FFMpeg/Playback settings

FFMPEG/playback settings	
Folder for FFMPEG 32bits	<input type="text" value="E:\Codecs\redist\FFMPEG\win32\"/> ...
Folder for FFMPEG 64 bits	<input type="text" value="E:\Codecs\redist\FFMPEG\win64\"/> ...
Folder for CloseConsole App	<input type="text" value="E:\Codecs\redist\FFMPEG\cc\"/> ...
Folder for all Codecs	<input type="text" value="E:\Codecs\Redist\"/> ...
Folder for TaekoVRHD Player	<input type="text" value="E:\TaekoVRHD_VF.NET2_player\bin\x64\Debug\"/> ...
Create thumbnails for player	<input type="button" value="No"/> ▼
Register codecs on start	<input type="button" value="No"/> ▼

**Folder for FFMPEG 32bits**

This is the path to the folder where FFMPEG32.EXE (32bits version) is located. By default it is in the Redist folder.

The FFMPEG.EXE is important for many parts of the video-replay system, so check for the correct path!

**Folder for FFMPEG 64bits**

This is the path to the folder where FFMPEG32.EXE (64bits version) is located. By default it is in the Redist folder.

**Folder for CloseConsole App**

This is the path to the folder where CloseConsole.EXE is located. By default it is in the Redist folder. Please note that those three settings are going to be obsolete in one of the next versions of the software.

**Folder for all Codecs**

This is the path to the folder with all the required codecs for the program. By default it is the 'Codecs/redist' folder in the installation.

**Folder for TaekoVRHD Player**

This is the path to the folder where the player is installed. By default this is the application folder.

**Create thumbnails for player**

Set this to Yes to create thumbnails each second of the image stream from the device. When these are available you can select them to be shown in the player.

**Register codecs on start**

Set this to Yes to register all codecs in the default codecs folder to be registered.

## 2.1.1.2.3 Recording type

Recording type	
Timeshift	<input type="text" value="No"/>
Use separatecapture	<input type="text" value="Yes"/>

**Timeshift**

This is a new feature which will be implemented. It will give you the chance to go back in the file you are currently recording without having to go to video replay mode.

**Use separatecapture**

Set this to Yes to enable the recording to be non-stop. You can change fightnumbers without stopping the recording

## 2.1.1.2.4 Recording settings

Recording settings	
Folder for recordings	<input type="text" value="f:\videoreplay\"/> ...
Folder for snapshots	<input type="text" value="f:\videoreplay\"/> ...
Lower limit of free space in Mb	<input type="text" value="500"/>
Heartbeat check every ... sec	<input type="text" value="20"/>
Second (full)screen during preview	<input type="text" value="Yes"/>

**Folder for recordings**

This is the folder where the recordings will be stored.  
In the folder a date stamp is applied by the software to distinguish between the days.

**Forder for snapshots**

This is the folder where the snapshots will be stored.

**Lower limit of free space in Mb**

This is the limit under which a marker will be shown during recording which shows the remaining disk space.

**Heartbeat check every ....sec**



Set a value in seconds to enable the heartbeat check. If set, the system will check for a recording to be saved to disk. If there is no change in the disksize, most of the time this points to an error in the configuration.

If the heartbeat is reached without any change in disksize, the capture will stop.

### Second (full)screen during preview

Set this to Yes to allow a fullscreen to show when double clicking on the video area.

#### 2.1.1.3 Connection config

The connection configuration provides the options for connecting to specific software.

##### Connections

Setup of connections for scoreboard, TaekoPlan and streaming



<b>BudoScore connection</b> BudoScore scoreboard connection: <input type="text" value="No"/>	<b>Daedo 2018 connection</b> Daedo TK-Strike connection: <input type="text" value="Yes"/> <input type="text" value="v3.x"/> Webserver port: <input type="text" value="8088"/> Start recording based on: <input type="text" value="New fight configured"/>
<b>TaekoPlan connection</b> Use TaekoPlan connection: <input type="text" value="No"/> TaekoPlan server IP address: <input type="text" value="192.168.1.1"/> Port: <input type="text" value="1100"/>	<b>Remote connection Daedo or KP&amp;P</b> Network IP Address of this computer to use: <input type="text" value="192.168.1.5"/>
<b>Streaming camera preview</b> Activate network streaming: <input type="text" value="No streaming"/> URL for streaming: <input type="text"/> Key for streaming: <input type="text"/> Optional: Login: <input type="text"/> Password: <input type="text"/>	<b>Connection assistance Daedo</b> TkStrike External Event Listeners New TkStrike External Event Listener URL: <input type="text" value="http://192.168.1.5:"/> <input type="button" value="Test Connection"/> <input type="button" value="Ok"/> Use these settings in the Daedo Scoreboard Configuration. 'Test connection' should give Ok as reply in TKStrike. These settings are required to use the 'new look' scoreboard PIP.

You can connect several programs to the video replay system to make it work fully automated or to provide streaming.

see the child chapters for more info on the specific topics.

## 2.1.1.3.1 Streaming camera preview

Streaming camera preview	
Activate network streaming	No streaming
URL for streaming	
Key for streaming	
Optional:	
Login	
Password	

You can directly stream the picture of the first camera device to a streaming service on the internet.

At the moment we support any service, Youtube is named as such, but by using the appropriate URL and key/login combination you might be able to stream to any service.

If you need assistance on this or a small change in the program to achieve it, please call our support team.

For Youtube streaming you need to have an account with Youtube. This can be a free account at any time.

Streaming camera preview	
Activate network streaming	Youtube
URL for streaming	rtmp://a.rtmp.youtube.com/live2
Key for streaming	

Select Youtube from the list and provide your key, linked to the channel you want to use. You can create more than 1 channel on Youtube.

The RTMP URL is the default one for Youtube; they also have a backup URL. The streaming is tested and working on a free Youtube account.

## 2.1.1.3.2 Daedo 2018 connection

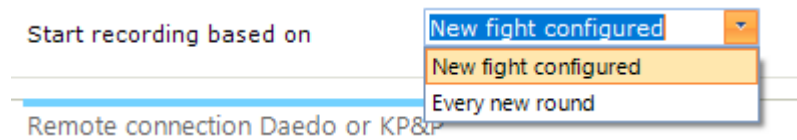
Daedo 2018 connection	
Daedo TK-Strike connection	Yes
Webserver port	8088
Start recording based on	New fight configured

To have Daedo TK Strike start/stop your video replay, set the Daedo TK-Strike connection to Yes.

Also select the correct version to be used. This can be a version below 3.x or the newer range above 3.x.

Also select the webserver port to be used. By default it is 8088, but you can select any port as long as it is not blocked by the firewall.

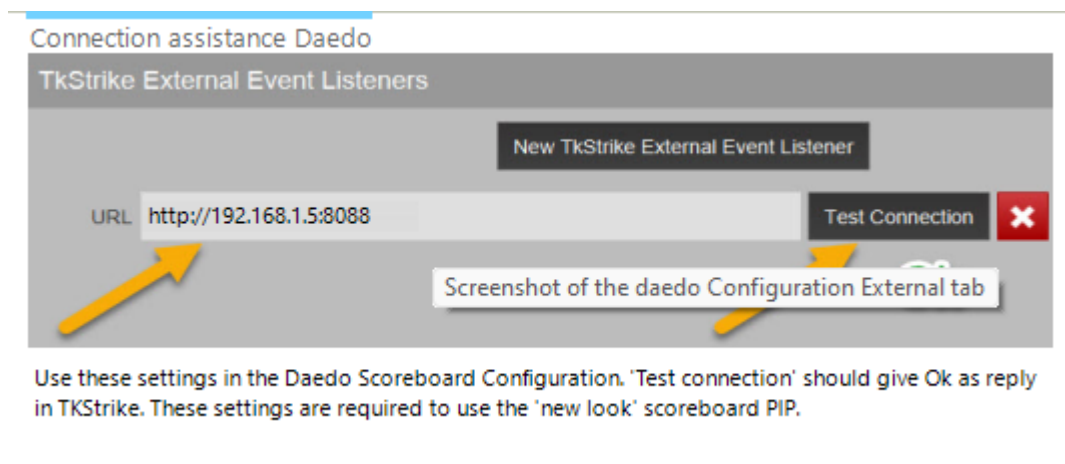
You can start recording as:



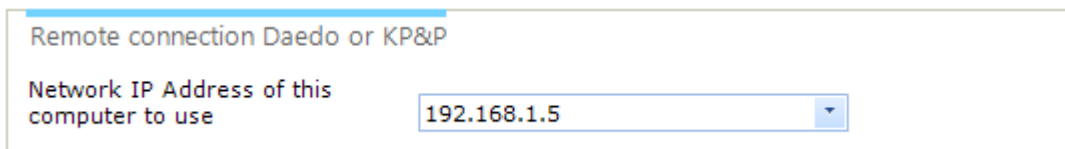
The first option starts the recording as soon as match is loaded in TK-Strike.

The second option starts/stops a recording at every round.

To be able to communicate with Daedo, you need to configure TK-Strike to provide the data:



If you don't know the IP address of your system, check the box:



If you have more than one connection to a network, you need to select the correct one, to be entered in TK-Strike.

Test the connection in TK-Strike by clicking the TEST Connection button.

You should receive **Ok** as status.

If not, please check the IP address and port to be correct.



If you see the Daedo Logo on the mainscreen, it means that you have a connection to the TK-Strike system.

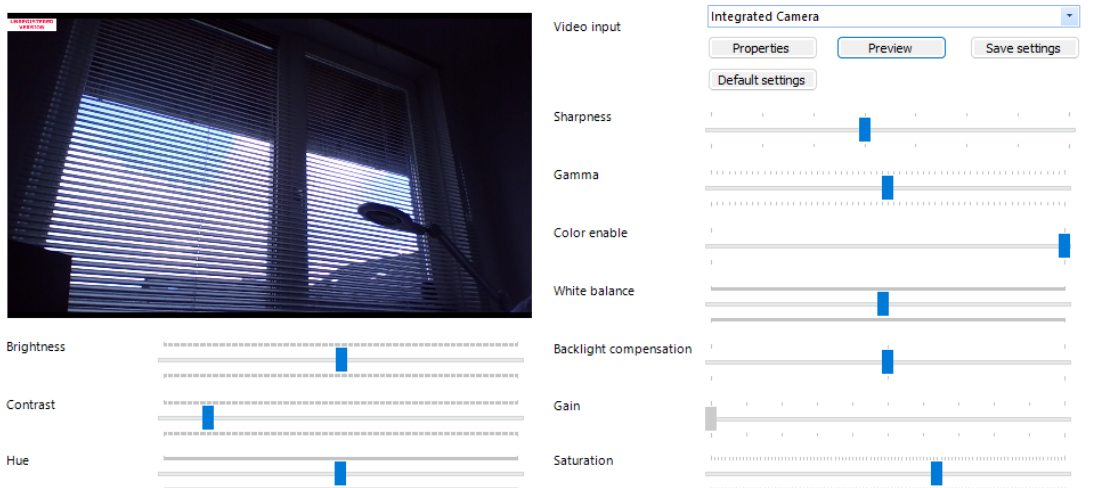
the Daedo Logo on the mainscreen, it means that you

## 2.1.2 Camera controls

Some camera's (especially webcams) allow for configuration of hue, colour, saturation, contrast etc.

### Camera Control

Setup your camera controls for optimized preview/capture quality

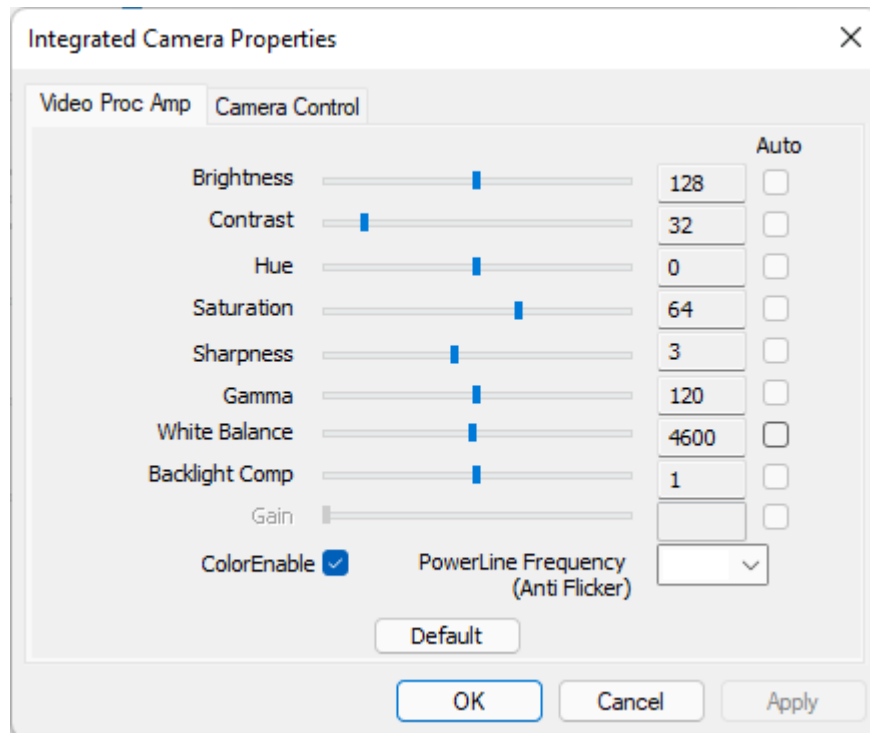


In this module you can adjust several settings for an integrated webcam. Select the device from the video input pulldown box and click on preview.

In the small black box the preview will be shown. Change your settings and click on **Save settings**. The changes will be reflected in the window immediately.

When capturing with a device that enables camera controls, the device will be configured at the start of the preview according to the settings of the controls.

**Properties** will show the Windows device properties page.

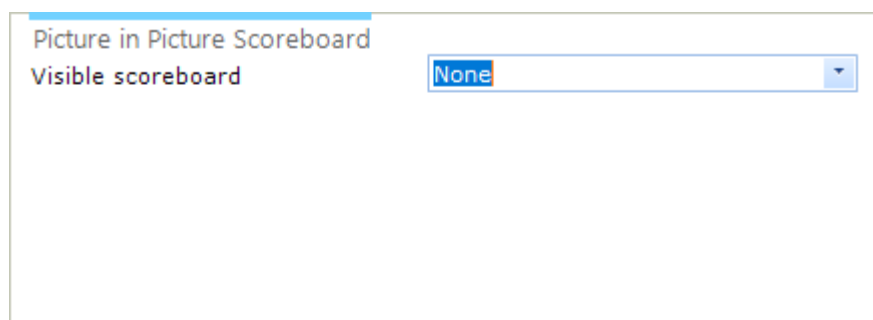


**Default settings** will revert the settings to the factory ones

**Preview** will show the preview of the selected cam

The disabled options (settings) are not available for the selected device.

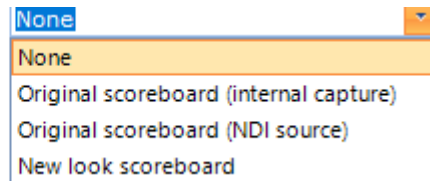
### 2.1.3 Picture-in-picture



You can position the scoreboard of TK-Strike or KP&P or any any picture in the video replay stream.

Select any of the options in **Visible scoreboard**.

Visible scoreboard



### Original scoreboard (internal capture)

To have this working you need to run the Capture Client on the Daedo laptop and the Capture server on the VR system.

The second screen of Daedo or KP&P will be captured and is visible in the Capture server.

You need to provide the IP address of this system and also select the path for the Capture Server to be found.

Change this only in case you get an error for the server not found.

The server will be recognized by the program and the scoreboard will be available.

### Original scoreboard (NDI source)

You can also stream the scoreboard from the Daedo laptop by using vMix tool to the VR laptop. Every NDI source has a unique name in the network and can be reached from everywhere. Select this option if you use NDI.

Picture in Picture Scoreboard

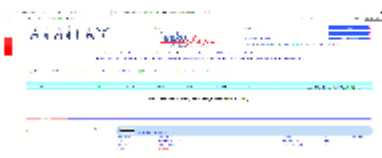
Visible scoreboard

Scoreboard position on screen

Width visual scoreboard  or %

Internal NDI Source

NDI Sources

 Search NDI

Click the **Search NDI** button to get a list of all NDI sources available.  
 Select one of the sources and you will see a preview.  
 You do not have to configure NDI any further.

If you want to monitor NDI sources, you can download NDI tools at <http://ndi.tv/tools>

vMix can be downloaded from <https://cdn.vmix.com/download/vMixDesktopCaptureNDI.zip>

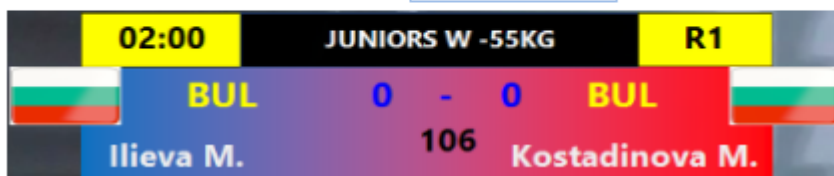
### New look scoreboard

You can also use the internal scoreboard, which does not show the original scoreboard but an image based on data coming from the TK-Strike application.

Picture in Picture Scoreboard

Visible scoreboard

Scoreboard position on screen

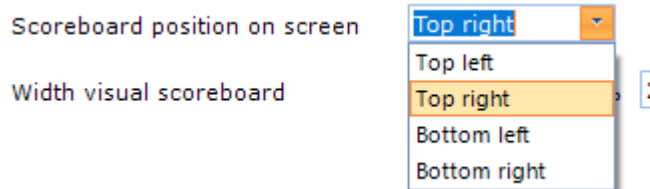


For this scoreboard you need to have the connection to Daedo TKStrike or KP&P working.

### Some additional options to position the scoreboard types

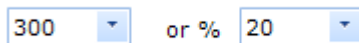
#### Scoreboard position on screen

You can position the PIP in any of the four corners of the picture.



#### Width visual scoreboard

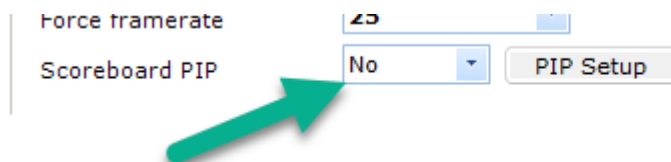
You can select either a width or a percentage of the screen to be filled.



For the internal scoreboard through the Capture client/server you need to set the port. By default it is 2000.

The **Assigned Windows handle** shows the ID for the server window. If it is not available, you do not have the server running or it can't be assigned.

To be able to use the PIP feature, you have to set the following parameters in the camera configuration:



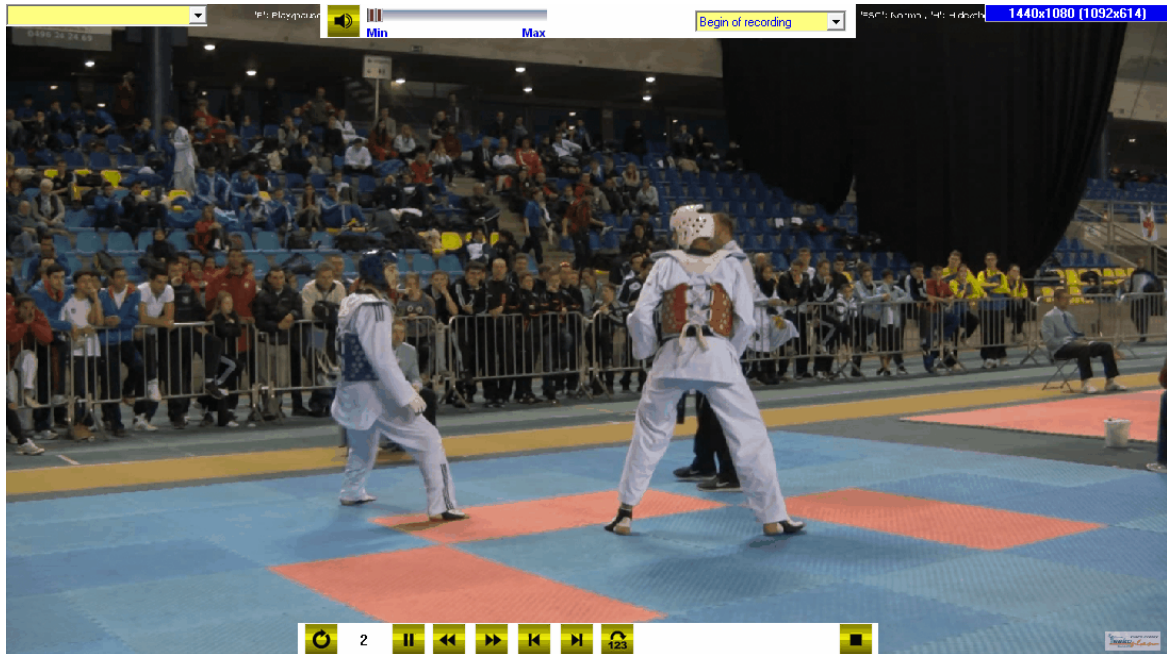
Set it to Yes to have PIP in your camera picture.

You can set PIP for every camera used, but please note that it might be CPU intensive, so check the CPU load when using it.



## 2.2 Player

This is the playback facility to be used during video replay.



Playback is initiated by either clicking on the [Video Replay](#)<sup>67</sup> button, to start immediate playback of the current recording, or by selecting a file from the menu bar option [Open Playback file](#)<sup>62</sup>.

When playback is running, you see the caption as shown below:

**Playback selected recording (length 14:05, position 02:20, frame 3509)**

It shows the length of the playback file, the current position within the file and the current frame no.

Each playback has it's own timeline, showing the total time of the file. It will size itself to the available space on the screen.



You can move to any part of the playback by clicking on the timeline, or by holding the mouse button down and moving your mouse.

The screen will be updated immediately.

When you hover over the playback screen, two button bars will show up. respectively on top and bottom.

Below all functions will be explained in depth:





Restarts the playback from the beginning of the file



Pauses the current playback. It will change to



so you can resume playback.



Clicking this one will move the playback one second reverse.



Clicking this one will move the playback one second forward



Clicking this will move the playback one frame forward



Clicking this will move the playback one frame backwards



Clicking this will stop the playback. To resume playback you have to reselect a file or select Video Replay.



Activate slow motion mode. A bar will appear next to the button which you can move to slow down or speed up playback.

When you click the first time, the slow motion will go to 0.3 of the standard speed.

The button will change to



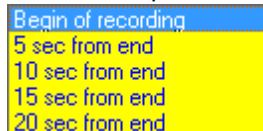
The button in this state shows that audio is enabled (if recorded). You can select the audio level with the slider bar next to the button.



No audio is enabled.

#### Start

Click on the pull down box to select a time setting for the video replay to start.



default setting is 10 sec from end. When clicking Video Replay, the playback will be ready 10 sec. before the end of the last recording. That should approximately be the moment of the action that caused video replay to happen.

#### Zoom in/out:

You also have the option to zoom in and out on the playback

**Zoom**

You can zoom in by using the mousewheel (up or down is zoom in or out). You can also use the + and - keys or the scrollbar on the right of the playback screen.

During zoom you can scroll the picture to all directions by clicking the left mouse button, holding it down and moving it.

The selected zoom will be maintained even when playing the file normally.



To show the playback screen full, just double click on the current screen.

**To return to normal mode, double click the fullscreen playback.**

For all screens it is important to know that the screen aspect ratio is always maintained. So the available size decides the width and height for the playback.

**Synchronized recording/playback**

When you have used synchronized recording with two cams, you can switch between the two cams by clicking the blue Cam buttons on top of the playback screen.

The active cam will become red during playback. The cams resume where the other one was switched.

### 2.2.1 Player Configuration

Enter topic text here.

### 2.2.1.1 Player config

The player configuration defines settings for the playback option.

## Player Configuration


Setup for the playback configuration



#### Player settings

Video Output Renderer	EVR (Vista/Win7) ▼
Video decoding through	GPU ▼
GPU Decoding	DXVA2Native ▼
Deinterlace method	None ▼

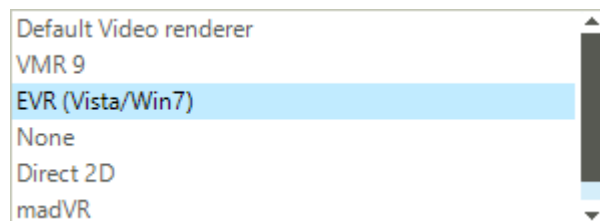
#### Audio settings

Audio output device	Default DirectSound Device ▼
Default volume level	Min  Max
Default audio status	Balanced ▼
With memory playback, use audio	No ▼

Save configuration

### Video output renderer

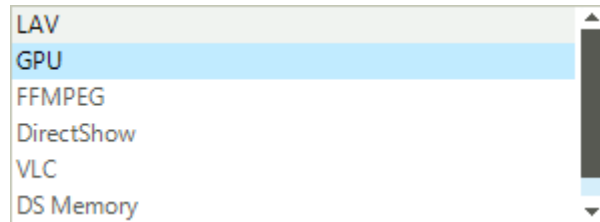
The renderer used by Windows to show the picture. Select the one that is giving the best output for your system.



EVR/Vista is the best renderer (quality), VMR9 the fastest.  
MadVR is a third party, experimental renderer.

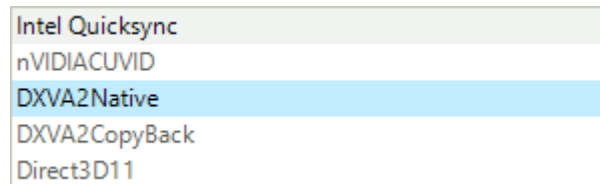
### Video decoding through

If you need to use a specific codec to play the file, you can force the program to use this one. provide the name as registered in Windows.



The most common decoder to use is LAV. That uses CPU load. If you have a modern graphics card you may also use GPU as option.

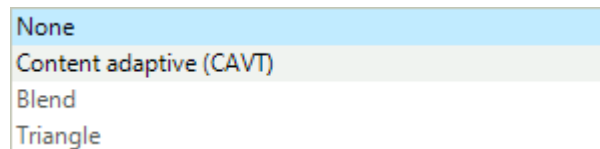
If so you have the following options:



AMD processors do not support Intel Quicksync, so you need to go for any of the other options.

### Deinterlace method

If your MP4 movie is interlaced, you need to de-interlace it. You can that by using any of the three options:

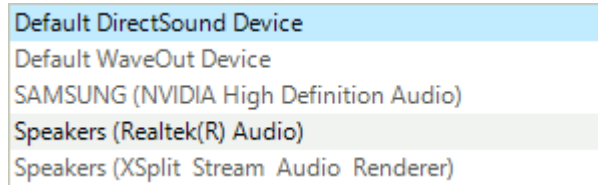


### Audio settings

The following audio settings are available. Most of the time the MP4 movie might be without sound, but if captured with sound, you can set the audio parameters

### Audio output device

Select the output device from your system to be used for the audio of your playback file



These are examples from a system; your setup might be different. **Default Directsound Device** is a standard Windows output device for audio and is available on any Windows system.

#### **Default volume level**

Select the default volume level for the output of the audio. Use the slider to select a level from 0 (no sound) to 100 (full sound)

#### **Default audio status**

This selects either sound or no sound (mute) as default setting

#### **With memory playback, use audio**

When you have selected memory playback (load the whole movie in memory before starting the playback), you may choose to use audio or not.

Use the **Save configuration** button to save your changes.

### 2.2.1.2 Common config

The common configuration contains settings that define specific user requirements.

#### Common configuration

Common configuration settings



<b>Players</b> No. of active players: 2	<b>Dual monitor</b> Use dual monitor mode for: Video Replay
<b>Settings</b> Show captions in menubar: Yes Show debug messages: Yes Show detailed SDK info: No Show filelist on start: No Beep on any keypress: No Ask confirmation to start Videoreplay: No Toolbar always visible: No Autoshow second screen: No Folder for all Codecs: E:\TaekoVRHD_VF.NET2_Player\bin\x64\Release\ Folder for FFmpeg 32bits: E:\TaekoVRHD_VF.NET2_Player\bin\x64\Release\ Folder for FFmpeg 64 bits: E:\TaekoVRHD_VF.NET2_Player\bin\x64\Release\	<b>Recording</b> Folder for recordings: f:\Videoreplay\ Folder for snapshots: f:\videoreplay\ Open full playbackscreen when starting Video Replay: Yes Default start for Video Replay: 20 sec from end Use thumbnails for player if created during capture: No Minimize player on stop: Yes Max no. of files in filelist: 20
<b>Zoom</b> Activate zoom: Yes Zoom unit: 3 Zoom maximum: 45 Type of zoom: Software	<b>Misc</b> Fullscreen mode: Borderless Password for access to config: Shuttle Contour Devicetype: Shuttle Pro V2 Windows process: 64bits
<input type="button" value="Save configuration"/>	

<b>Players</b> No. of active players: 4
--

Select the number of active players here. You can choose from 1 upto 4.

The common configuration has four sections:

#### Common settings

Create single file after stop recording	Yes
Show marker panel	Yes
Show captions in menubar	No




**Create single file after stop recording**

This will compress all separate recordings from the same fight into one complete file. The markers are also merged into one file, timestamps within the separate recordings are being updated in the final output file, so the markers will go to the correct point in the output file.

**Show marker panel**

This will show or not show the [marker panel](#)  on the capture screen.

**Show captions in menubar**

 [Set markers](#)  
This will switch the captions in the menubar. If you select **No** then no captions will be shown and the toolbar will be smaller. This will suit lower resolution screens.

**Recording settings**

Folder for recordings	D:\VideoReplay	...
Folder for snapshots	D:\VideoReplay	...
Minimum amount of free space before warning	500	Mb
No. of frames per second	25	▼
Stop recording during playback	Yes	▼
Restart recording after video replay	Yes	▼
Open full playbackscreen when starting Video Replay	Yes	▼
Scoreboard connection	Yes	▼
After stopping video replay	Show single preview	▼
Default start for video replay	Begin of recording	▼

**Folder for recordings**

This is the folder where the recordings will be stored. In the folder a timestamp is applied by the software to distinguish between the days.

**Folder for snapshots**

This is the folder where the snapshots will be stored.

**Minimum amount of free space before warning**

This is the limit under which a marker will be shown during recording which shows the remaining disk space.

**No. of frames per second**

Select the no. of frames per second for the capture. The more frames, the better the playback will be able to show actions.

**Stop recording during playback**

Shows only the preview while playing back the last scenes that were captured

**Restart recording after video replay**

After video replay is finished and the stop button is clicked, the preview will continue recording. The output will be stored in a new file on disk.

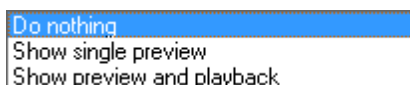
**Open full playbackscreen when starting Video Replay**

After clicking the Video Replay button, the playback will open fullscreen instead of embedded.

**Scoreboard connection**

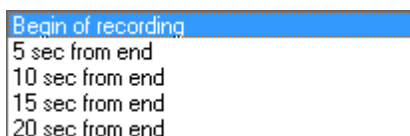
If yes, then data from the Budoscore scoreboard system (if connected) will be provided in the footage

After stopping Video Replay



Select one of the three options from this pulldown.

Default start for Video Replay



After selecting Video Replay, the footage will start at the selected point in time.

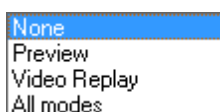
### Dual monitor

Use dual monitor mode

All modes

Use Dual monitor mode

You have the following choices here:



**None:** No dual monitor enabled

**Preview:** shows only the preview screen on a second monitor

**Video Replay:** show the Video Replay screen on a second monitor

**All modes:** shows all (preview/record and video replay) on the second screen

### Zoom settings

Zoom unit

50

Zoom maximum

10000

**Zoom unit**

Select the zoom steps for zoom in or out

**Zoom maximum**

The maximum range for zoom. Please note that the quality for zoom is highly depending on the quality of the recording.

High definition recording provides the best possible zoom range.

## 2.2.1.2.1 Settings

Settings	
Show captions in menubar	Yes ▼
Show debug messages	Yes ▼
Show detailed SDK info	No ▼
Show filelist on start	No ▼
Beep on any keypress	No ▼
Ask confirmation to start Videoreplay	No ▼
Toolbar always visible	No ▼
Autoshow second screen	No ▼
Folder for all Codecs	E:\TaekoVRHD_VF.NET2_Player\bin\x64\Release\ ...
Folder for FFMPEG 32bits	E:\TaekoVRHD_VF.NET2_Player\bin\x64\Release\ ...
Folder for FFMPEG 64 bits	E:\TaekoVRHD_VF.NET2_Player\bin\x64\Release\ ...

The following settings can be changed:

**Show captions in menubar**

Set this to Yes to display the text captions in the menubar of the program.  
Setting No will only show the icons

**Show debug messages**

Set this to Yes to show all messages, including errors.

**Show filelist on start**

Set this to Yes to show the list of files captured today and playable on the right side of the screen.

**Beep on any keypress**

Set this to Yes to hear a system beep when a key is pressed. This might be useful if you are in doubt whether a keypress reaches the program

**Ask confirmation to start videoreplay**

Set to Yes to confirm a choice of starting an available video replay file. If you say No the file will be played instantly

**Toolbar always visible**

Set to Yes to have the toolbar for the player (start, stop, zoom etc) always visible. If No it is will only show when you enter the videoview with the mouse

#### **Autoshow second screen**

Set to Yes to start the second screen instantly when starting the playback of the movie. If not you can show it manually.

#### **Folder for all codecs**

This is the folder where the codecs are stored. By default it is the Codecs/redist folder in the installation. You can change it to any folder.

You need to have valid and correctly installed codec and filters in that folder.

#### **Folder for FFMPEG 32bits**

This is the folder where the FFMPEG 32bits apps are stored. By default it is the Codecs/redist/FFMPEG/win32 folder in the installation. You can change it to any folder.

#### **Folder for FFMPEG 64bits**

This is the folder where the FFMPEG 64bits apps are stored. By default it is the Codecs/redist/FFMPEG/win64 folder in the installation. You can change it to any folder

#### 2.2.1.2.2 Zoom

Zoom	
Activate zoom	Yes ▼
Zoom unit	3 ▼
Zoom maximum	45
Type of zoom	Software ▼

During playback you can zoom in and zoom out on the movie.

#### **Activate zoom**

Set this to Yes to have the zoom available. This is the default setting

#### **Zoom unit**

This is the step for each zoom tick. The higher, the faster the zoom be. A smaller step increases the zoom ratio only a little each time, which will take longer to get to a full or required zoom state.

#### **Zoom maximum**

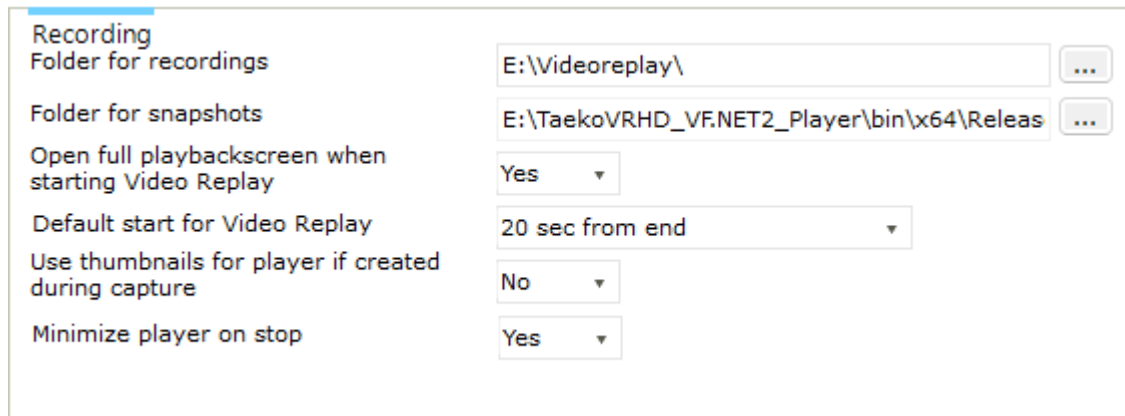
This is the limit for the zoom (based on the steps)

## Type of zoom

There are two possible zoom options available.

Software zoom is fully software and is the best regarding smoothness while zooming in or out. Hardware zoom uses the GPU but is not that smooth. It will sometimes show a black screen inbetween.

### 2.2.1.2.3 Recording



The screenshot shows a settings window titled "Recording". It contains the following options:

- Folder for recordings**: A text field with the value "E:\Videoreplay\" and a browse button (...).
- Folder for snapshots**: A text field with the value "E:\TaekoVRHD\_VF.NET2\_Player\bin\x64\Releas" and a browse button (...).
- Open full playbackscreen when starting Video Replay**: A dropdown menu with "Yes" selected.
- Default start for Video Replay**: A dropdown menu with "20 sec from end" selected.
- Use thumbnails for player if created during capture**: A dropdown menu with "No" selected.
- Minimize player on stop**: A dropdown menu with "Yes" selected.

## Folder for recordings

This is the folder where the movies for today are stored. This is the folder as set in the capture module.

## Folder for snapshots

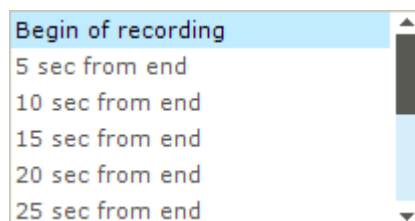
You can make a snapshots while playing and store the snapshots in a folder. Select here the folder where to store them

## Open full playbackscreen when starting video replay

Set to Yes to start the player in fullscreen mode. if No you will get the normal docking interface.

## Default start for video replay

This is the position where any video replay playback will start. You can select different options here.



The screenshot shows a dropdown menu with the following options:

- Begin of recording
- 5 sec from end
- 10 sec from end
- 15 sec from end
- 20 sec from end
- 25 sec from end

**Use thumbnails for player if created during capture**

If you have created thumbnails each second for the file, and you set this to Yes, then thumbnails will be visible when scrolling through the file.

**Minimize player on stop**

When set to Yes, the player will go to minimized window state as soon as you press the **Stop** button.

## 2.2.1.2.4 Misc

Here are some other options that can be set:

Dual monitor Use dual monitor mode for	Video Replay ▼
---	----------------

You can set this to either **None** or **Video Replay**

Misc Fullscreen mode	Borderless ▼
Password for access to config	<input type="text"/>

**Fullscreen mode**

You can select to have the fullscreen either borderless or with a standard windows border around it. The first one can't be moved, the second one can be resized.

**Password for access config**

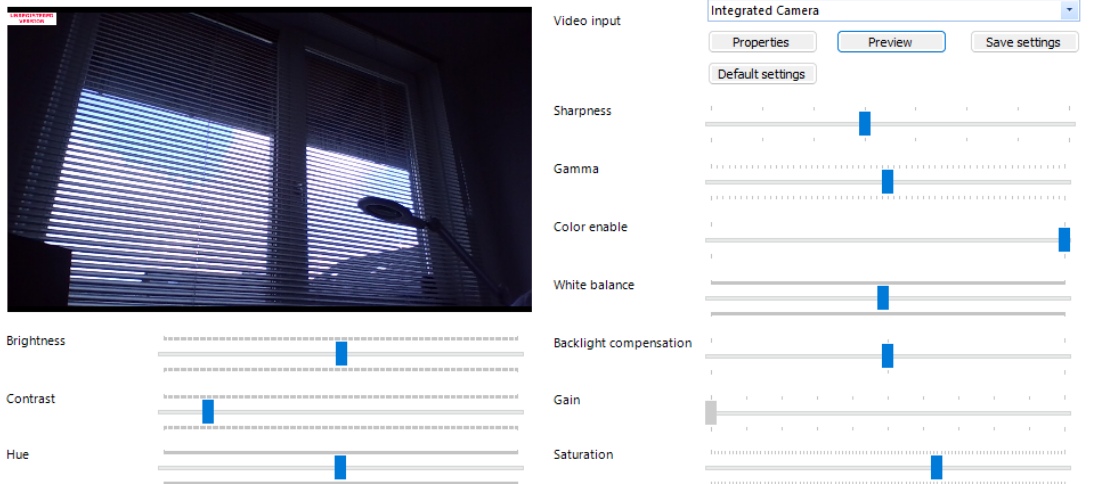
Set here a password to secure access to some modules, like player config, common config or camera controls.

### 2.2.1.3 Camera controls

Some camera's (especially webcams) allow for configuration of hue, colour, saturation, contrast etc.

#### Camera Control

Setup your camera controls for optimized preview/capture quality

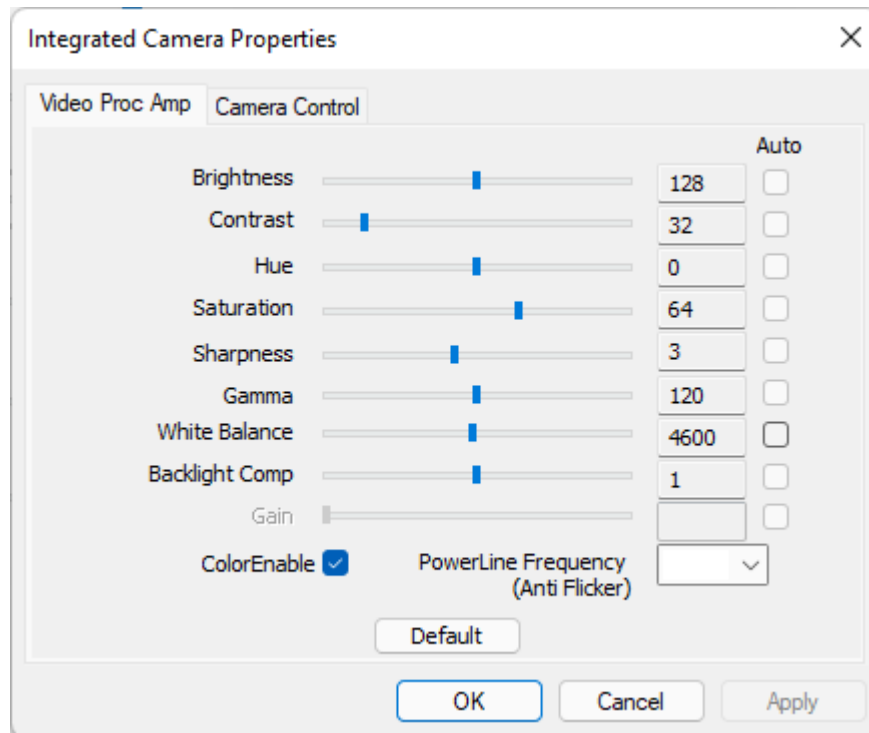


In this module you can adjust several settings for an integrated webcam. Select the device from the video input pulldown box and click on preview.

In the small black box the preview will be shown. Change your settings and click on **Save settings**. The changes will be reflected in the window immediately.

When capturing with a device that enables camera controls, the device will be configured at the start of the preview or capture according to the settings of the controls.

**Properties** will show the Windows device properties page.



**Default settings** will revert the settings to the factory ones

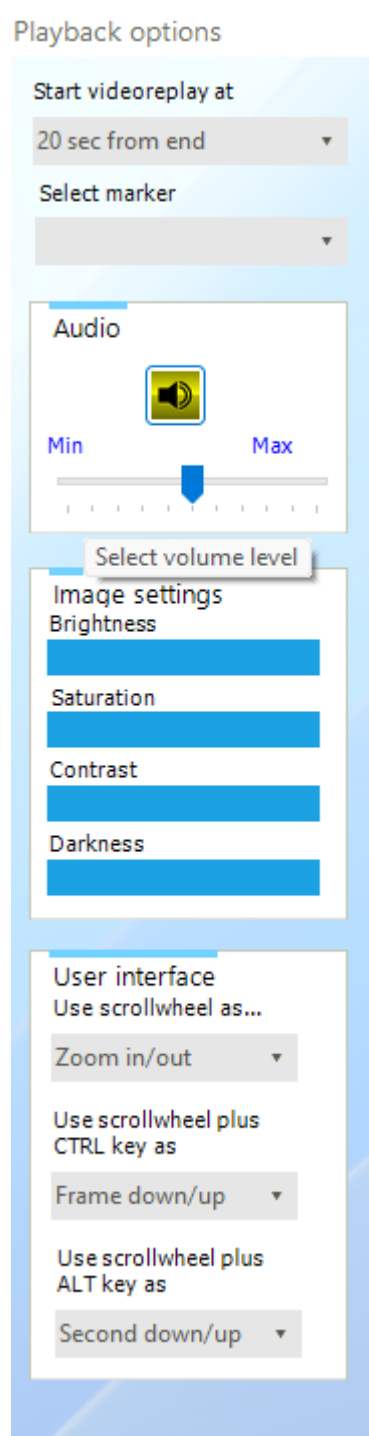
**Preview** will show the preview of the selected cam

The disabled options (settings) are not available for the selected device.



#### 2.2.1.4 Playback options

On the left side of the screen you can see a dock with playback options.



**Start videoreplay at**

This option can be set to a default in the common config, but here you can set it (and change it) on the fly.

### Select marker

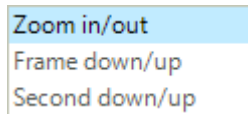
Obsolete option

### Image settings

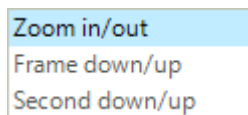
here you can change the brightness, saturation, contrast and darkness for the currently visible movie.

### User interface

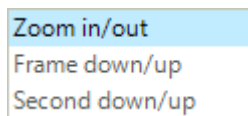
Use scrollwheel as...



Use scrollwheel plus CTRL-key as...

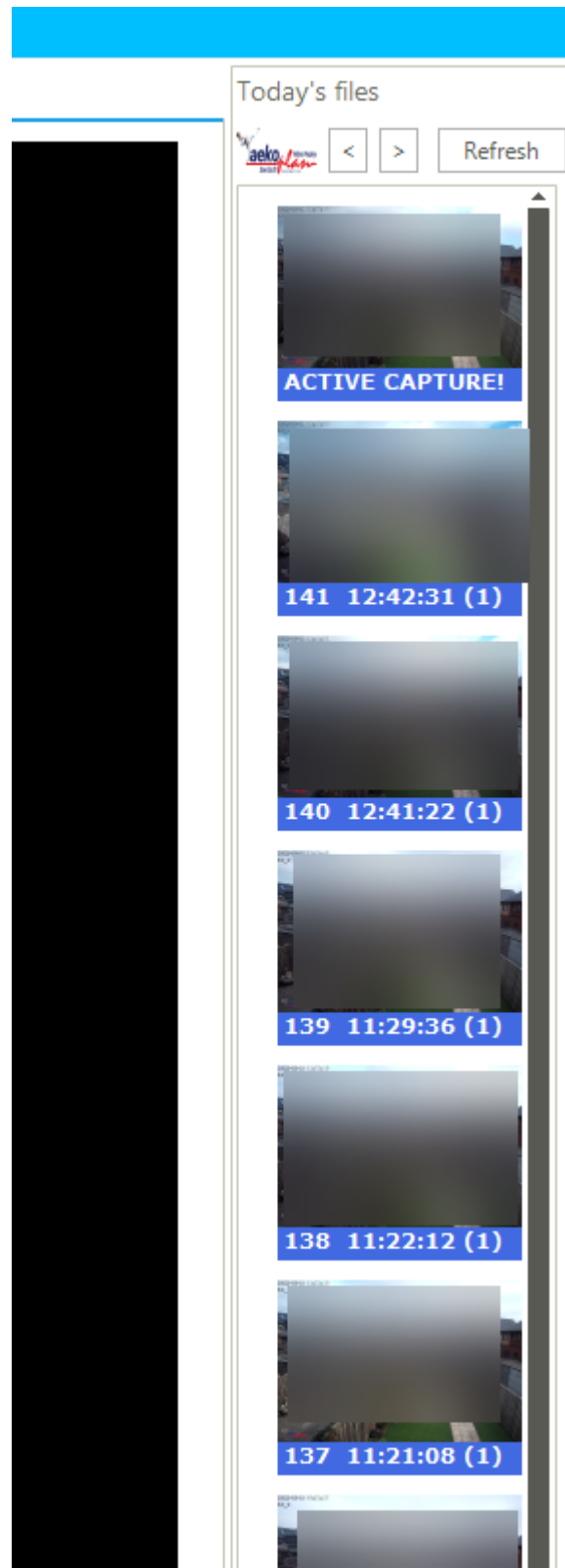


Use scrollwheel plus ALT-key as...



## 2.2.2 Filelist

In the menubar you can click on Filelist to show the filelist on the right side of the screen. You can also set the option in the common config.



The first movie in the list is always the active capture. You can not open this one.

The other ones are the finished ones. If you see a sample image, you can open the file by double click on it.

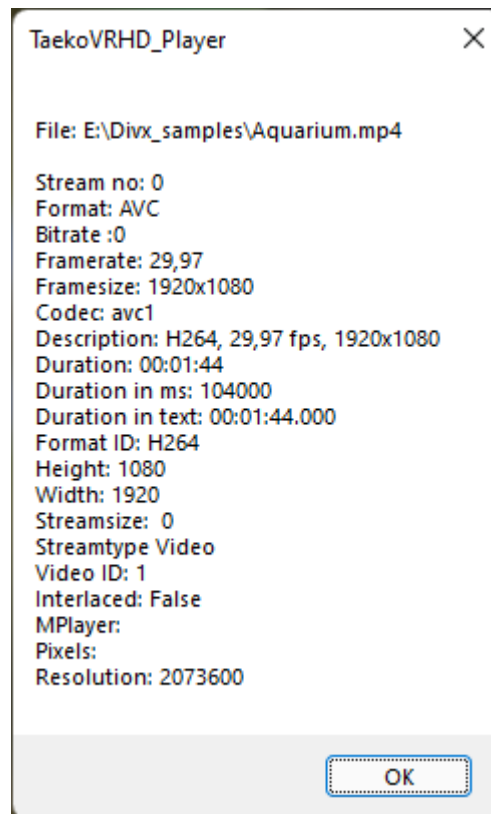
The fightnumber is shown as well as the time of cvapture start and between brackets, the camera number.

### 2.2.3 Fileinfo

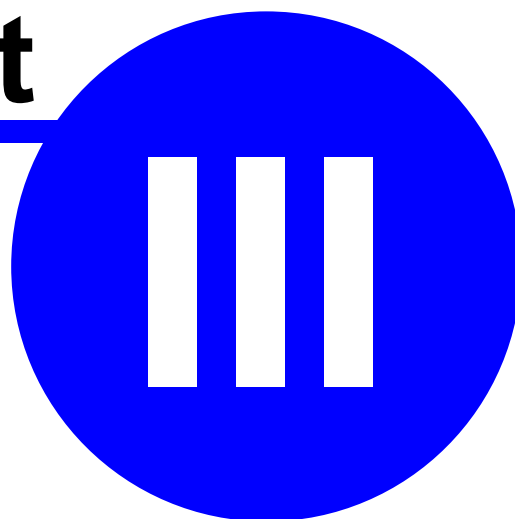
For each playback file you can check the file info.

This gives an overview of the length, used format, audio streams etc.

It is quite technical, but if you are interested you may look at it.



# Part



### 3 Appendix

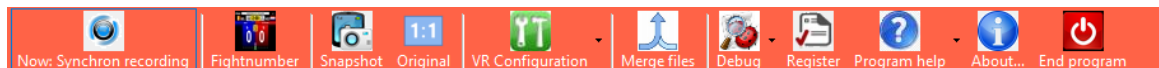


This section contains additional information about TaekoPlan Video replay

## 3.1 Menubar options

### 3.1.1 Capture

After the start of the program, a menubar shows up at the top of the screen. This will be adapted continuously depending on the selected item.



The buttons have the following meaning:

#### **Now: separate recording**

This shows the way of recording. Now: Separate recording means that all cams can be individually selected and navigated.

Now: synchron recording means that by starting for example a recording on cam 1, cam 2 and more if selected will also start recording

#### **Fightnumber**

Shows the fightnumber entry form to be able to enter a fightnumber for the next recording

#### **Snapshot**

Creates a snapshot of the active preview(s) in the folder as configured in the common configuration

#### **Original**

This shows the preview in original format, without resizing it

#### **VR Configuration**

This option has a submenu to start the different configuration screens.

#### **Merge files**

This option allows to merge more files of the same fightnumber together into one file.

#### **Debug**

Has a submenu with some additional options

#### **Register**

This shows the registration screen for the license

#### **Program help**

This shows the PDF helpfile as available for the program

#### **About...**

This shows the About... form

### **End program**

Ends the program, releases all resources.

## **3.1.2 Player**

After the start of the program, a menubar shows up at the top of the screen. This will be adapted continuously depending on the selected item.



### **Now: Synchron playback**

This shows the way of playback. Now: Separate playback means that all cams can be individually selected and navigated.

Now: synchron playback means that by starting for example a playback of cam 1, cam 2 and more if selected will also start playback.

### **Open playback file**

Select the file for playback. You can actually play any file or any format.

### **Delete file**

Delete the currently selected file from the library. It will also be removed from disk

### **Snapshot playback**



---

Creates a snapshot of the active preview(s) in the folder as configured in the common configuration

**File list**

This will show the file list on the right side of the main screen. You can select any file by double clicking on it.

**Media info**

This will show a form with technical details about the file currently playing

**VR Configuration**

This option has a submenu to start the different configuration screens.

**Merge files**

This option allows to merge more files of the same fightnumber together into one file.

**Debug**

Has a submenu with some additional options

**Register**

This shows the registration screen for the license

**Program help**

This shows the PDF helpfile as available for the program

**About...**

This shows the About... form








**End program**

Ends the program, releases all resources.



## 3.2 Playback files

The recordings are being stored in the path set in the common config.

The directory structure created looks as following:

Name	^	Date modified	Type	Size
 Cam1		16-3-2018 8:32	File folder	
 Cam2		16-3-2018 8:32	File folder	
 Cam3		16-3-2018 7:07	File folder	
 Cam4		16-3-2018 7:07	File folder	
 Completed		16-3-2018 7:07	File folder	
 images		16-3-2018 8:32	File folder	
 Markers		16-3-2018 7:07	File folder	

In the folders Cam1, Cam2, Cam3 and Cam4 are the recordings saved.

Name	^	Date	Type	Size	Length
 202_070742.mp4		16-3-2018 7:07	MP4 File	2,669,422 KB	01:24:54
 203_083233.mp4		16-3-2018 8:32	MP4 File	3,803,905 KB	

All recordings have the same format for naming.

The first digits upto the first underscore are containing the **fight** no.

Next a **timestamp** is inserted showing hours, minutes and seconds.

When playback is started, the program automatically identifies that one or two cams are being used. The option to switch between them is enabled in the player.

### 3.3 Requirements

The following requirements apply to create a decent system for video replay.

#### Notebook:

- I7 CPU 4th Gen. (especially for HD and dualcam)
- At least 4 Gb memory
- HD/SSD with at least 320 Gb
- Videocard with at least 1366x768 (preferably higher) resolution (Nvidia or Radeon)
- At least 2 USB ports
- Firewire port to attach camera with **firewire** connection (DV-out)
- Express slot for extra firewire card
- USB port for connecting camera with **USB streaming** capabilities.
- HDMI port to connect camera equipped with HDMI (only for bi-directional HDMI)
- Network port to connect IP camera Peer-to-peer
- Network connection to access remote camera's

#### Camera:

- Standard definition camera with USB Streaming or firewire connection.
- High definition camera with USB Streaming, firewire or HDMI connection
- IP camera with wired or wireless connection

Older camera's might only have analog video and audio output. By using an adapter (to be purchased separately, for example Blackmagic), you might be able to connect these to your computer.

Each device that is recognized by Windows as camera device can be used and connected. The recognized devices will show up in the device list in the [camera config](#)<sup>15</sup>.

#### Storage:

Storage depends on the encoder being used during recording.

For instance using DV encoding will create files from ca. 2 upto 2.5 Gb for 10 minutes of recording. Using WM encoding, depending on the bitrate, will create files from approx. 200 Mb for 10 minutes of recording.

These are only benchmarks and might differ slightly.

### 3.4 Video transfer notes

Please note that the right [equipment](#)<sup>[63]</sup> is required to properly use the video replay system. Besides the equipment recommended, there are some important extra requirements that you need to take note of.

#### Cabling

Please don't think any cabling should work!

We can advise you to use high quality cable, especially if you are going to transfer over longer distances.



#### Firewire

If you are using firewire connection on both camera and computer, never use cabling consisting of firewire to USB and USB to firewire.

This will **not** work!

If you connect the device and Windows does not immediately show up with a message saying **Installing device....** then this connection is not working.



#### USB

If you are using USB connection on the camera and USB connection on the computer, please first check that the camera is capable of **USB streaming**.

When you connect your device and the computer is trying to install it as mass storage device or in terms like that, then the computer is only capable to use the storage on your camera.

Windows should start installing the device as **imaging** device.

If this is not working, then check whether the camera is capable of doing **USB streaming**.

You should find this information on the camera (on a label) or in the manual.

Camera without streaming capabilities can not be used for Video replay.



## HDMI

One of the newer types of transfer video signals for digital camera's is by using HDMI.

Newer camera's have HDMI ports which enable you to connect them to your computer through HDMI to USB2/3 interfaces.

You can NOT connect camera HDMI output to HDMI port on a laptop!

Some brands offer high quality cabling for transfer of video streams over longer distances.

One is these is **Datavideo**.

They deliver cabling, converters for firewire-4 to firewire-6 and PCI express cards in case you need extra firewire ports on your system.

### So to be short:

- Use a camera with firewire, USB streaming or HDMI capability or use an IP camera over cabled network
- Use HQ cabling for firewire, USB and HDMI
- Never use adapters from firewire to USB and vice versa.
- Check proper installation under Windows for the device.
- Only devices recognized and installed under Windows can be used for Video replay.

### 3.5 Marker panel

The marker panel can be used to set markers, which identify a specific action in the recording of the fight.

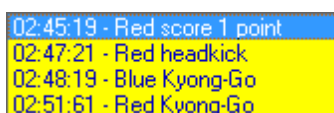


The buttons have the following meaning:

<b>1</b>	One point for blue or red (depending on the button colour)
<b>2</b>	Two points for blue or red
<b>H</b>	Headkick score by blue or red
<b>KO</b>	Knock-out by blue or red
<b>Ky</b>	Kyonggo (warning) for blue or red
<b>Ga</b>	Gam-Jeon (full point deduction) for blue or red

After clicking any of these buttons, the text set markers will temporarily change to **ACTION MARKED** to notify you that the marker has been processed.

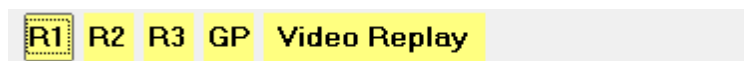
The pull down box will show the list of currently registered markers for this recording.



The action will be saved in the marker file (.MRK) in the default storage folder for recordings. During playback you can immediately go to the specific point in the playback.

## 3.6 Round panel

The round panel can be used to identify the start of each round in the recording and to start the video replay action.



The meaning of the buttons is as follows:

**R1** Start of round 1

**R2** Start of round 2

**R3** Start of round 3

**GP** Start of extra (Golden point) round

**Video Replay** Starts the video Replay sequence. You can also start the Video Replay by pressing the spacebar during recording.

Next to the video replay button a marker will appear showing the number of the round after having clicked one.

The action will be saved in the marker file (.MRK) in the default storage folder for recordings.

During playback you can immediately go to the specific point in the playback.

The playback will start 5 seconds before the marker.

## 3.7 Copyright

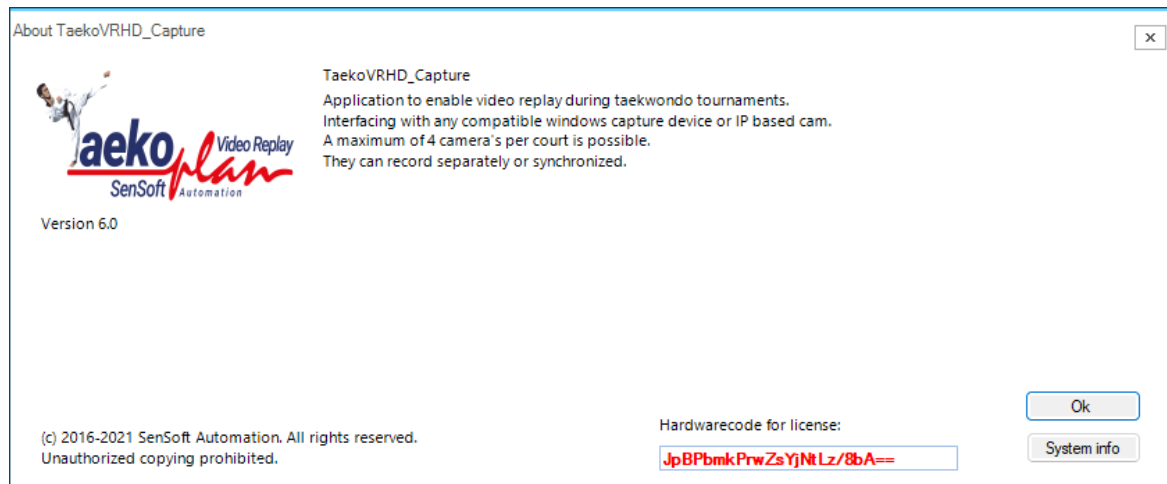
(c) Copyright 2018-2022 SenSoft Automation





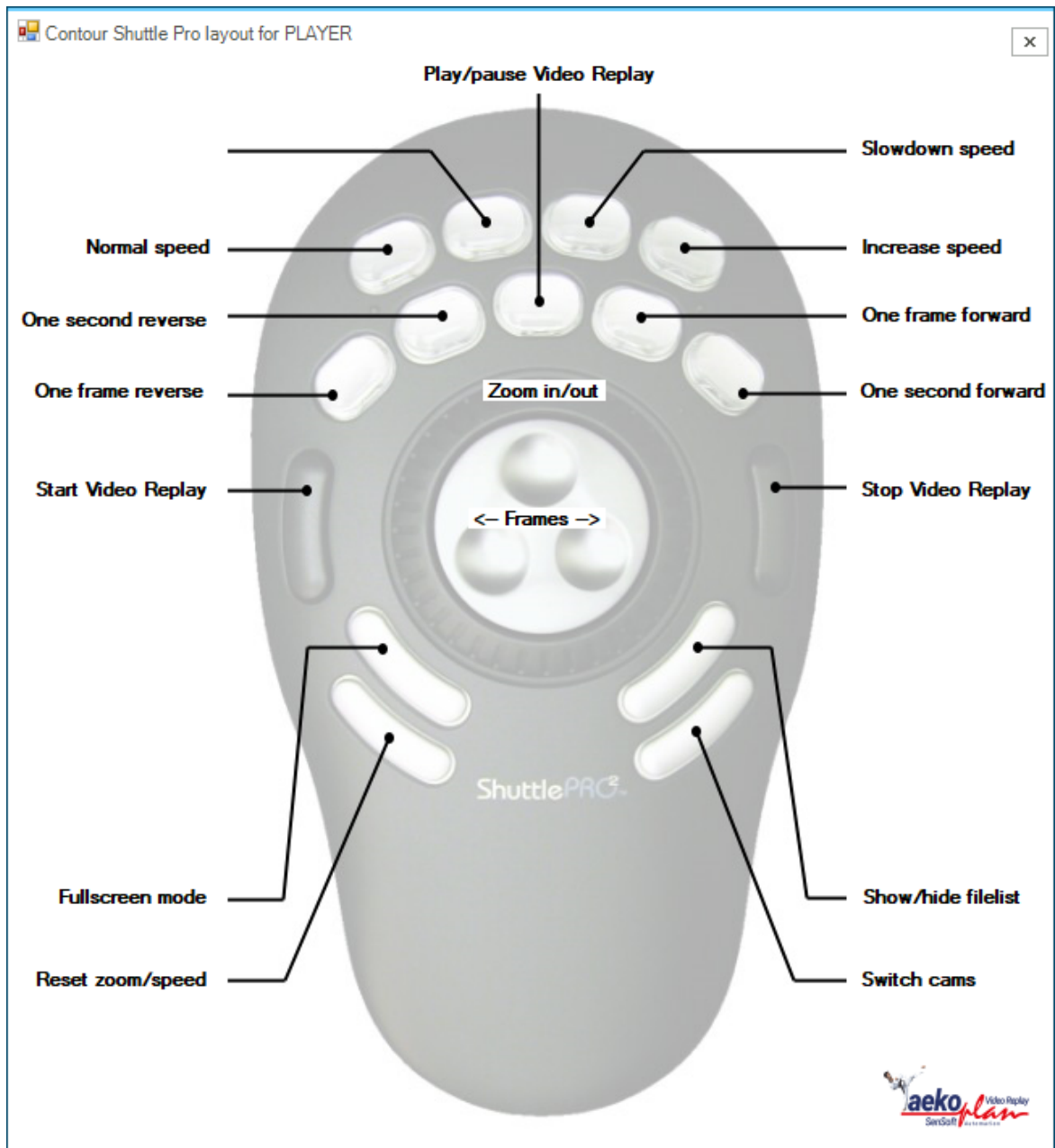
## 3.8 About

The about box shows program information.



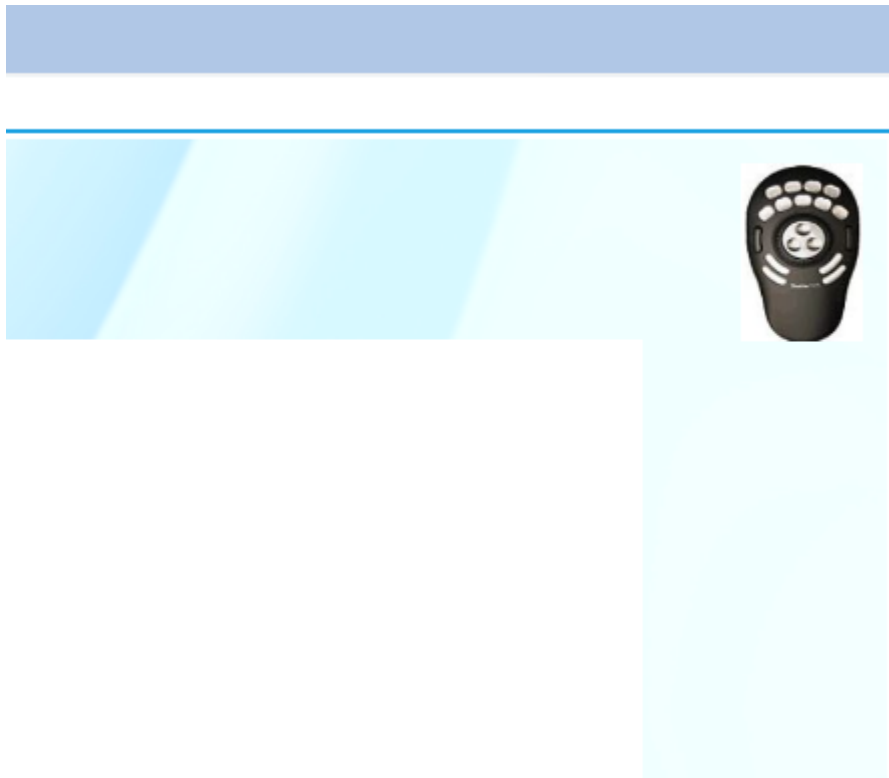
### 3.9 Contour Shuttle

You can use a Contour Shuttle to navigate your playback:

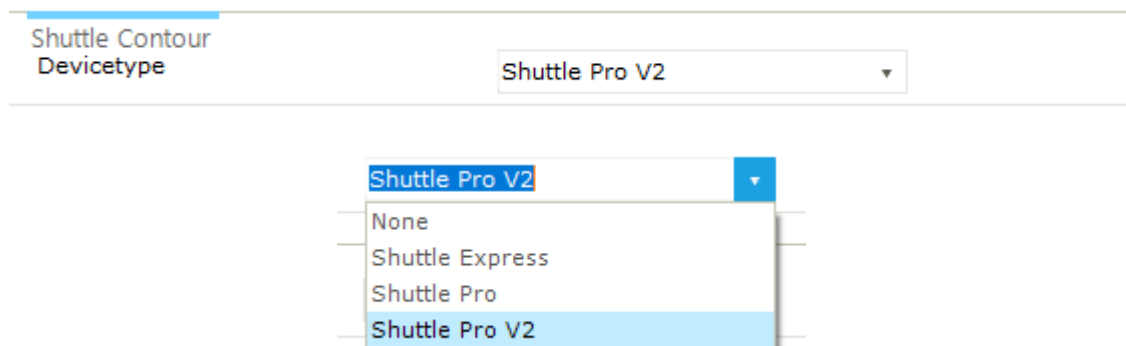


All basic functions are available.

When the shuttle is enabled in the software, you see the shuttle icon in the top right corner:



Select the Shuttle type you are using in the common configuration module:



You can use any of three types. The ProV2 has the most extensive set of functions available.

### 3.10 H264 Encoder bitrates

You might need to experiment with bitrates to get the best result for your capture.

Suggested bitrates for different video resolutions with H.264 Encoding

	Resolution	Suggested Bitrate
480P	720 x 480	1800 kbps
720P	1280 x 720	3500 kbps
1080P	1920 x 1080	8500 kbps

Suggested bitrate settings for mobile phones with different resolution

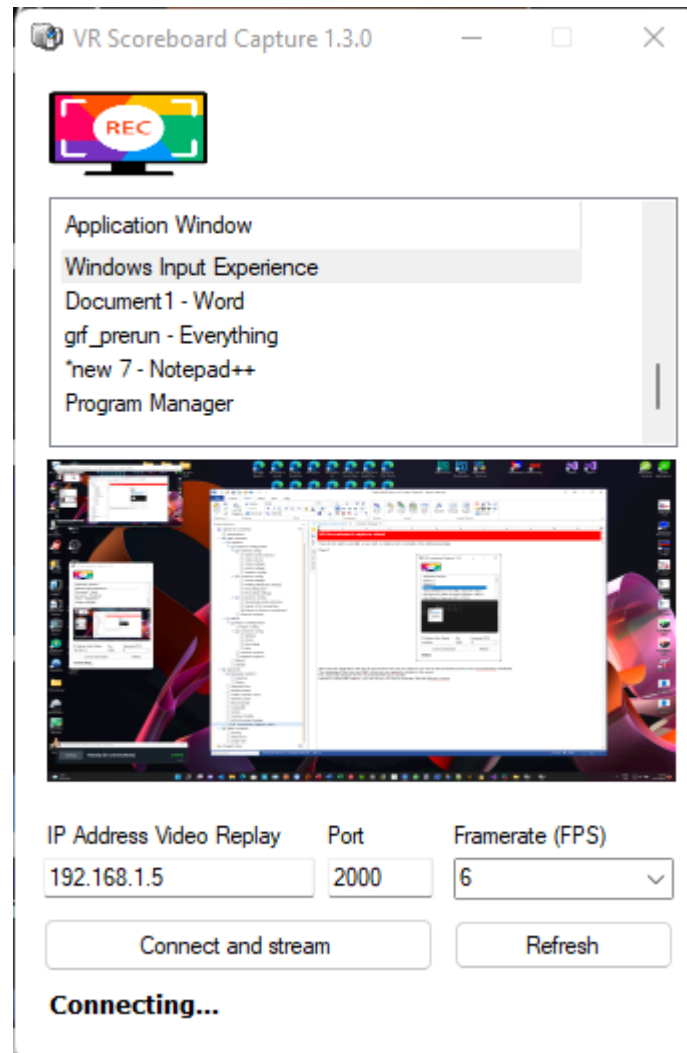
	192 x 144	320 x 240	480 x 360	640 x 480	1280 x 720	1920 x 1080
Ultra low bitrate	30 kbps	60 kbps	120 kbps	250 kbps	500 kbps	1 Mbps
Low bitrate	60 kbps	120 kbps	250 kbps	500 kbps	1 Mbps	2 Mbps
Medium bitrate	120 kbps	250 kbps	500 kbps	1 Mbps	2 Mbps	4 Mbps
High bitrate	250 kbps	500 kbps	1 Mbps	2 Mbps	4 Mbps	8 Mbps
Ultra high bitrate	500 kbps	1 Mbps	2 Mbps	4 Mbps	8 Mbps	16 Mbps

The higher the bitrate, the more load on the CPU/GPU.

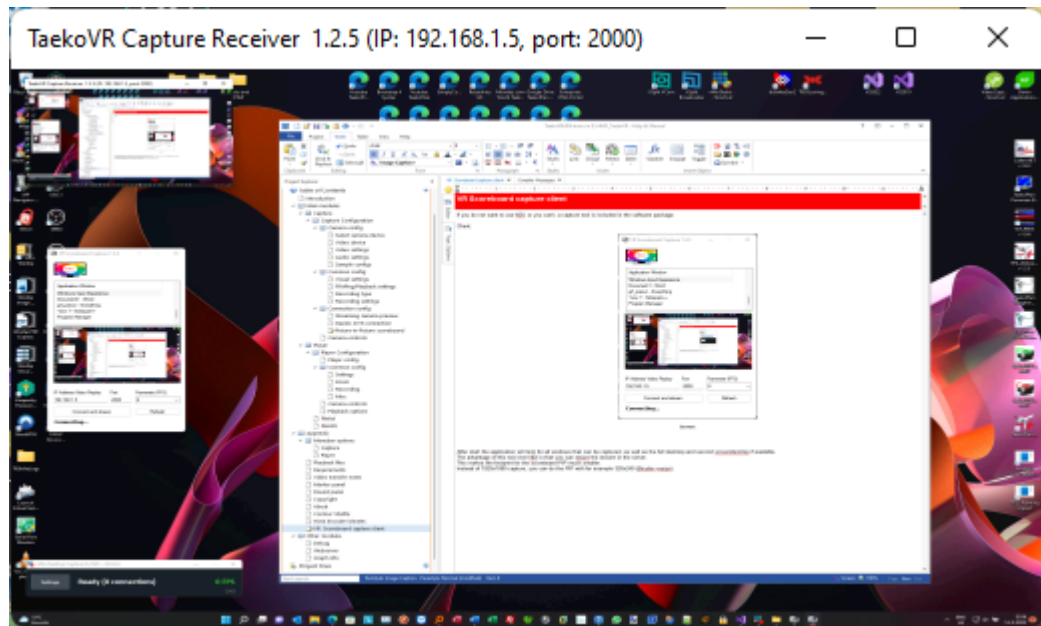
### 3.11 VR Scoreboard capture client/server

If you do not want to use NDI, or you can't, a capture tool is included in the software package.

**Client:**



**Server:**



After start the application will look for all windows that can be captured, as well as the full desktop and second screendesktop if available.

The advantage of this tool over NDI is that you can resize the stream in the server.

This makes the footprint for the scoreboard PIP much smaller.

Instead of 1920x1080 capture, you can do the PIP with for example 320x240 (Bicubic resize).

In the client you need to set the IP address where to stream to and the port. Default is port 2000.

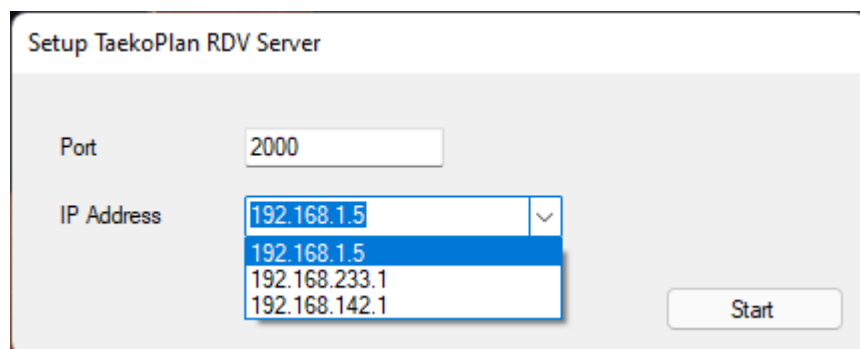
You can set the framerate to any value between 1 and 60.

If you have a stable slow moving capture, just select a low framerate.

With the **Refresh** button you can update the list of windows to be captured.

After selecting the window, click on **Connect and stream** to start the capture.

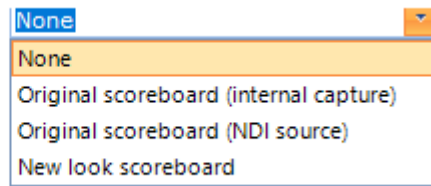
The server shows the IP address and port used for the stream.



Select the correct IP address if you have more than one network connection.

If you double-click on the server image, the windows will go borderless and ready to be picked up by the video replay system.

Visible scoreboard

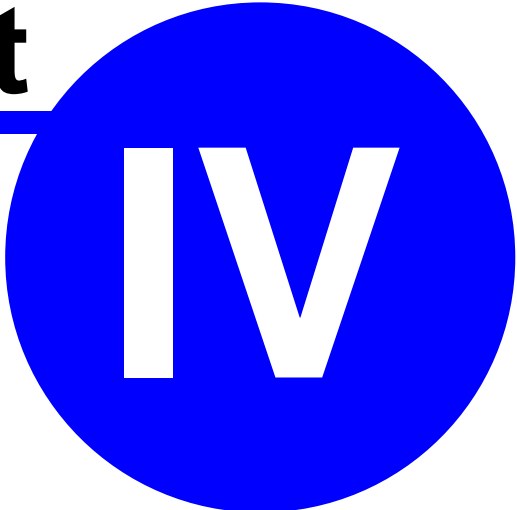


If you size the server to be the size you want it to have in the PIP, another resizing is not required anymore.

While resizing the server you will notice the size being shown in the bottom right corner:



# Part



IV



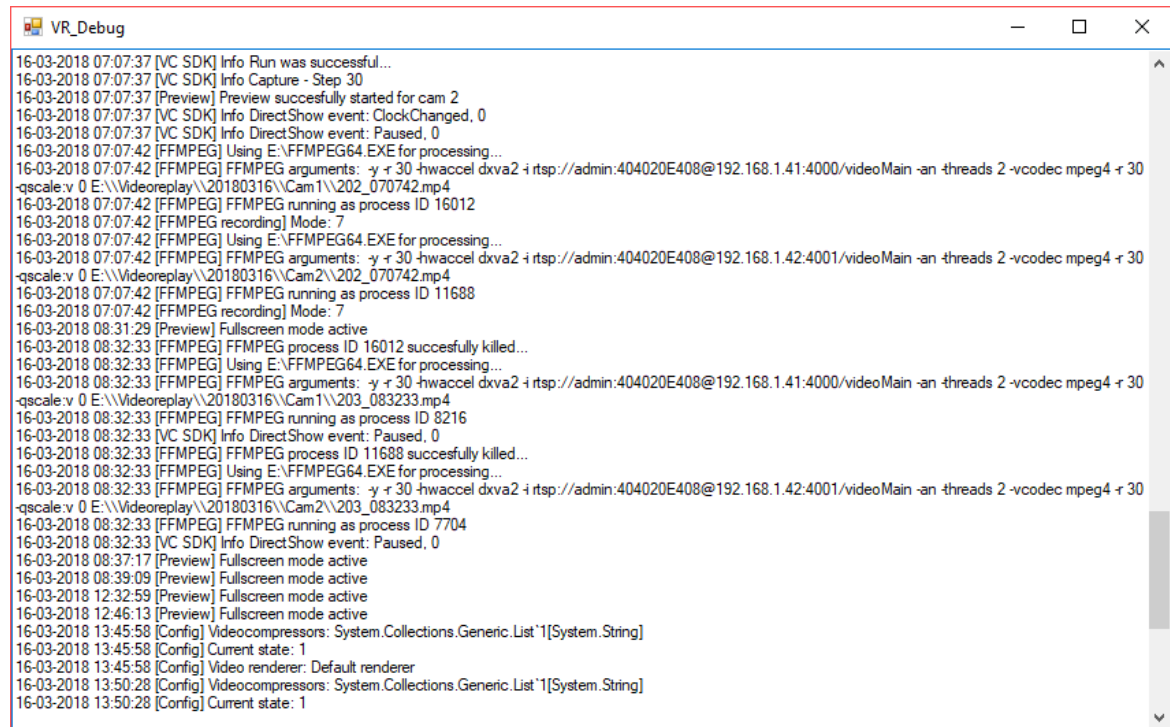
## 4 Other modules

Enter topic text here.

## 4.1 Debug

To be able to check for errors when a recording is not started, there is highly detailed debug option available.

It will provide info about the process of preview and recording.



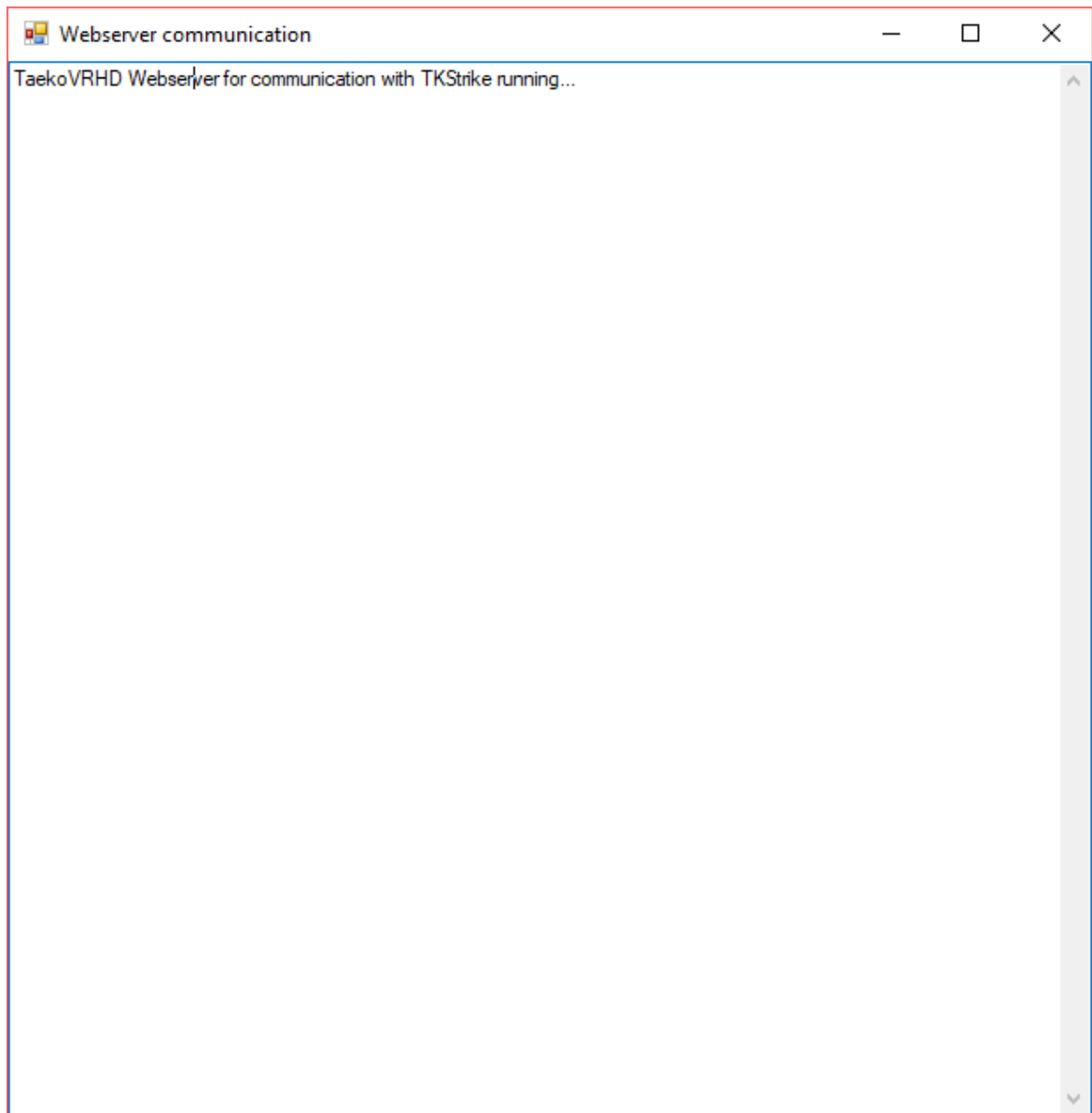
```

16-03-2018 07:07:37 [VC SDK] Info Run was successful...
16-03-2018 07:07:37 [VC SDK] Info Capture - Step 30
16-03-2018 07:07:37 [Preview] Preview successfully started for cam 2
16-03-2018 07:07:37 [VC SDK] Info DirectShow event: ClockChanged, 0
16-03-2018 07:07:37 [VC SDK] Info DirectShow event: Paused, 0
16-03-2018 07:07:42 [FFMPEG] Using E:\FFMPEG64.EXE for processing...
16-03-2018 07:07:42 [FFMPEG] FFMPEG arguments: -y -r 30 -hwaccel dxva2 -i rtsp://admin:404020E408@192.168.1.41:4000/videoMain -an -threads 2 -vcodec mpeg4 -r 30 -qscale:v 0 E:\Videoreplay\20180316\Cam1\202_070742.mp4
16-03-2018 07:07:42 [FFMPEG] FFMPEG running as process ID 16012
16-03-2018 07:07:42 [FFMPEG recording] Mode: 7
16-03-2018 07:07:42 [FFMPEG] Using E:\FFMPEG64.EXE for processing...
16-03-2018 07:07:42 [FFMPEG] FFMPEG arguments: -y -r 30 -hwaccel dxva2 -i rtsp://admin:404020E408@192.168.1.42:4001/videoMain -an -threads 2 -vcodec mpeg4 -r 30 -qscale:v 0 E:\Videoreplay\20180316\Cam2\202_070742.mp4
16-03-2018 07:07:42 [FFMPEG] FFMPEG running as process ID 11688
16-03-2018 07:07:42 [FFMPEG recording] Mode: 7
16-03-2018 08:31:29 [Preview] Fullscreen mode active
16-03-2018 08:32:33 [FFMPEG] FFMPEG process ID 16012 successfully killed...
16-03-2018 08:32:33 [FFMPEG] Using E:\FFMPEG64.EXE for processing...
16-03-2018 08:32:33 [FFMPEG] FFMPEG arguments: -y -r 30 -hwaccel dxva2 -i rtsp://admin:404020E408@192.168.1.41:4000/videoMain -an -threads 2 -vcodec mpeg4 -r 30 -qscale:v 0 E:\Videoreplay\20180316\Cam1\203_083233.mp4
16-03-2018 08:32:33 [FFMPEG] FFMPEG running as process ID 8216
16-03-2018 08:32:33 [VC SDK] Info DirectShow event: Paused, 0
16-03-2018 08:32:33 [FFMPEG] FFMPEG process ID 11688 successfully killed...
16-03-2018 08:32:33 [FFMPEG] Using E:\FFMPEG64.EXE for processing...
16-03-2018 08:32:33 [FFMPEG] FFMPEG arguments: -y -r 30 -hwaccel dxva2 -i rtsp://admin:404020E408@192.168.1.42:4001/videoMain -an -threads 2 -vcodec mpeg4 -r 30 -qscale:v 0 E:\Videoreplay\20180316\Cam2\203_083233.mp4
16-03-2018 08:32:33 [FFMPEG] FFMPEG running as process ID 7704
16-03-2018 08:32:33 [VC SDK] Info DirectShow event: Paused, 0
16-03-2018 08:37:17 [Preview] Fullscreen mode active
16-03-2018 08:39:09 [Preview] Fullscreen mode active
16-03-2018 12:32:59 [Preview] Fullscreen mode active
16-03-2018 12:46:13 [Preview] Fullscreen mode active
16-03-2018 13:45:58 [Config] Videocompressors: System.Collections.Generic.List`1[System.String]
16-03-2018 13:45:58 [Config] Current state: 1
16-03-2018 13:45:58 [Config] Video renderer: Default renderer
16-03-2018 13:50:28 [Config] Videocompressors: System.Collections.Generic.List`1[System.String]
16-03-2018 13:50:28 [Config] Current state: 1
  
```

You may need specific knowledge to be able to read the debug log, but you can, at any time send the log to us to help you determine the cause of a problem.

## 4.2 Webserver

There is a built-in webserver for the communication with the Daedo TKStrike scoreboard.

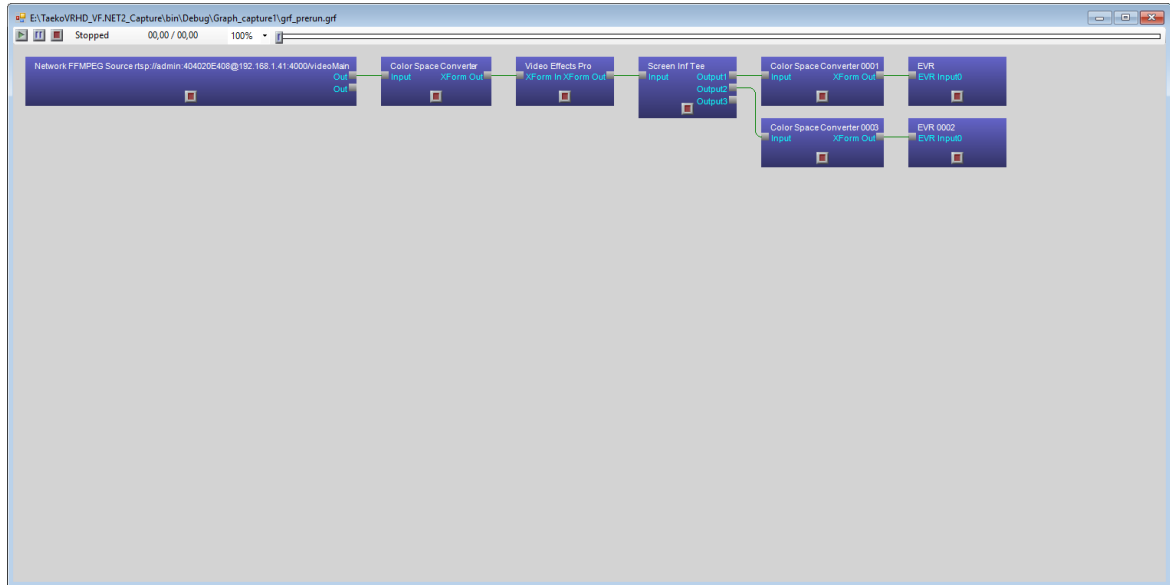


It will provide information and show the communication between the video replay system and Daedo.

## 4.3 Graph info

In case there is a problem with capturing, the program logs the latest graphs created by the engine.

An example looks like this:



This is typically a graph built for capturing an IP camera. Each capture or preview in Windows needs a graph to be built.

The software builds this graph based on the parameters set.

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