Quintic Software

Tutorial 5b

Live Video (50-60fps) Capture

(Video Capture via USB2.0 or Firewire)

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Ever wondered how you compare with leading sportsmen and women?

Now you can analyse your own or a friend's sporting technique using the **'Capture'** function on the Quintic software. Once you have filmed an activity using a digital video camera, follow these instructions to capture the images onto your computer and you'll then be able to perform the same analysis as you have done on the international sports performers.

Work through this tutorial and follow the instructions as you go.

For this tutorial, you will need:

- A digital video camera
- A digital video cassette
- A Firewire lead/USB 2.0 lead
- A Computer with Quintic software installed on it.

There is no question sheet for tutorial 5.

Ask a friend to perform a sports skill 6 times for you to record.

The skill must be discreet (a skill which has a definite start and end point often referred to as a closed skill), you should leave the video camera recording in between the performances. This will mean you'll end up with a video recording of: skill, 20 seconds gap, skill, 20 seconds gap, skill, etc…

In order to record the images onto your computer, you need to connect the video camera to the computer using a firewire lead or USB 2.0 lead.

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1. Set-up

Quintic v21 allows the user to import video via USB 2.0, firewire (4pin port shown) or memory card.

Digital video camera with firewire connected

(4-pin firewire)

Firewire

- Laptop to camera (4-pin to 4-pin)

- Desktop to camera (4-pin to 6-pin)

USB 2.0 - Mini A to B Shown (most common cable supplied with digital camcorders)
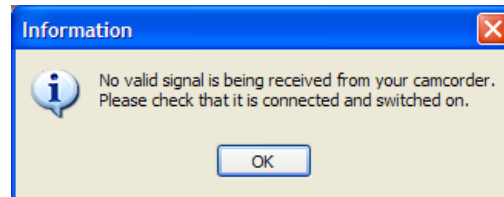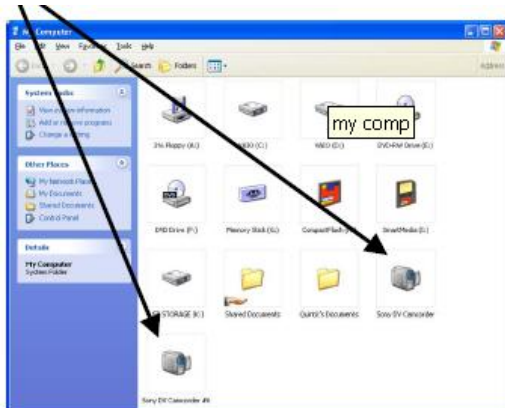

Firewire connection into the computer (6-pin)

PCMCIA Firewire Card - allows two cameras to be connected to a laptop.

Connect the camera(s) via fire wire or USB 2.0 leads to your computer, if you are using a laptop you will need a PCMCIA Firewire/USB Card (see section 2 Set up). Switch the video camera on, take the tapes out of all the cameras, and set them to CAMERA/LIVE mode.

Before opening the camera window confirm that computer has recognised all of the camera signals. When the cameras are connected to the computer and turned on, camera icons should appear on the windows taskbar (if two cameras are initially attached and turned on 2 camera icons will appear). XP only if using Vista these camera icons will not appear.

Clicking on my computer can also check the camera status. If signals are being received camera icons will appear on the My Computer screen (XP Only). If using Vista open the multi capture window and the software will illustrate how many cameras are recognised.
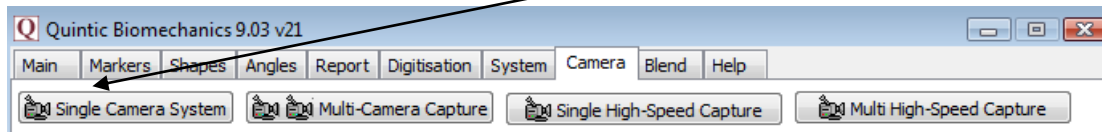

If this message appears at any stage check:

- That your tape is in the camera.

- That your camera is connected to your computer.

- That your camera is turned on.

- That your camcorder is on the correct setting for playback.

If signals are not being received from any of the cameras check all of the connections and then turn the cameras off and then back on individually.

Tutorial 5b - Live Video (50-60fps) Capture

2. Single Camera (50-60 fps) Capture

Click on the **'Camera'** tab in the main window and then **'Single Camera System'**.
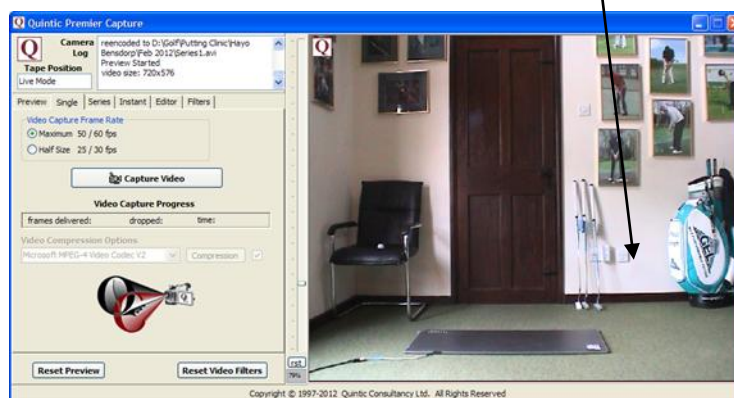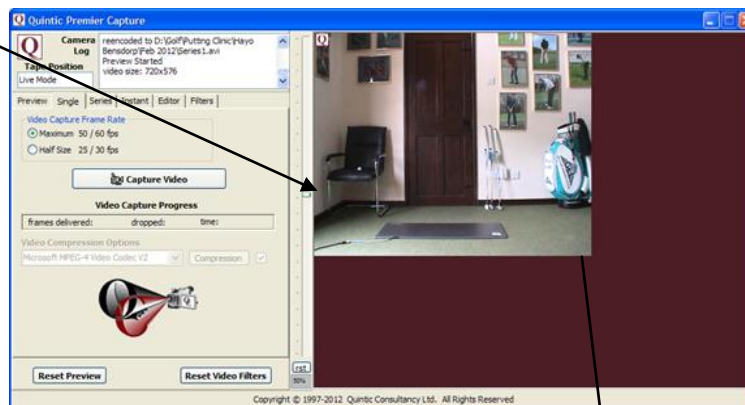

a. Preview Mode

The preview mode allows you to view the image displayed on the video camera and control the video camera using the computer. If your video camera is connected properly it will show the image from the camera on screen.

If the image window displays a blank screen you may need to press the **'Reset Preview'** button that is in the bottom left hand corner
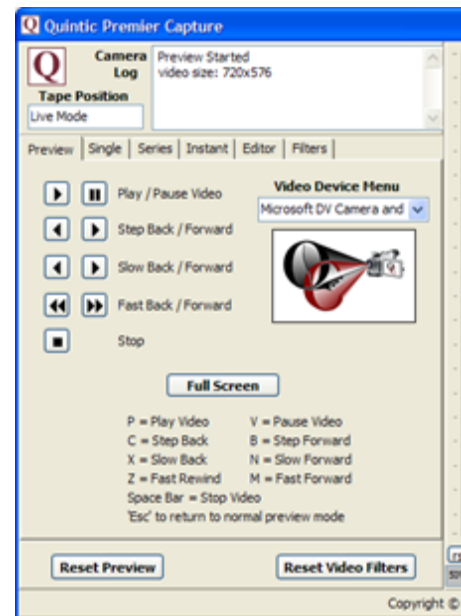
The scroll bar in the middle of the preview window allows the user to alter the size of the video preview. The preview window will return to the default size during the capture process.

Control the video using the buttons on the left hand side of the preview window. Experiment with all these buttons by navigating your way around the footage you recorded of the 6 skill performances as follows:

(i) Rewind to the start of the tape.

(ii) Play **'Slow forward'** through the first recording of the skill.

(iii) Fast forward to the start of the sixth recording of the skill.

(iv) Pause at the beginning of this clip.

(v) Use the **'Step Back'** and **'Step Forward'** buttons to find a key point in the action (e.g. Ball impact, water entry, catch point, etc…).

You can also preview the video in the **'Full Screen'** mode by using the following keys to control the video.

P = Play

V = Pause
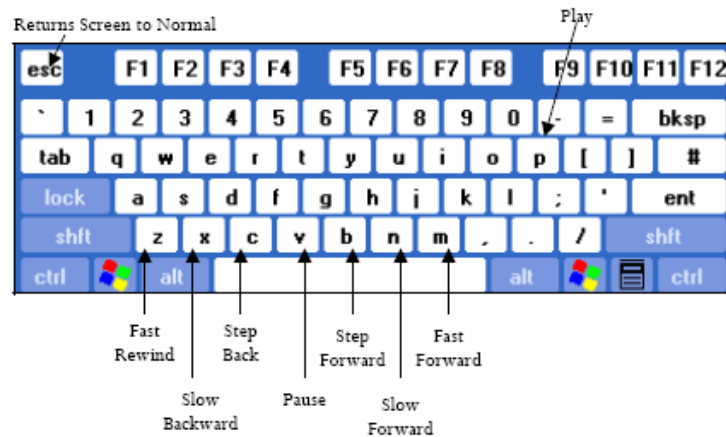
B = Step Forward

C = Step Backward

N = Slow Forward

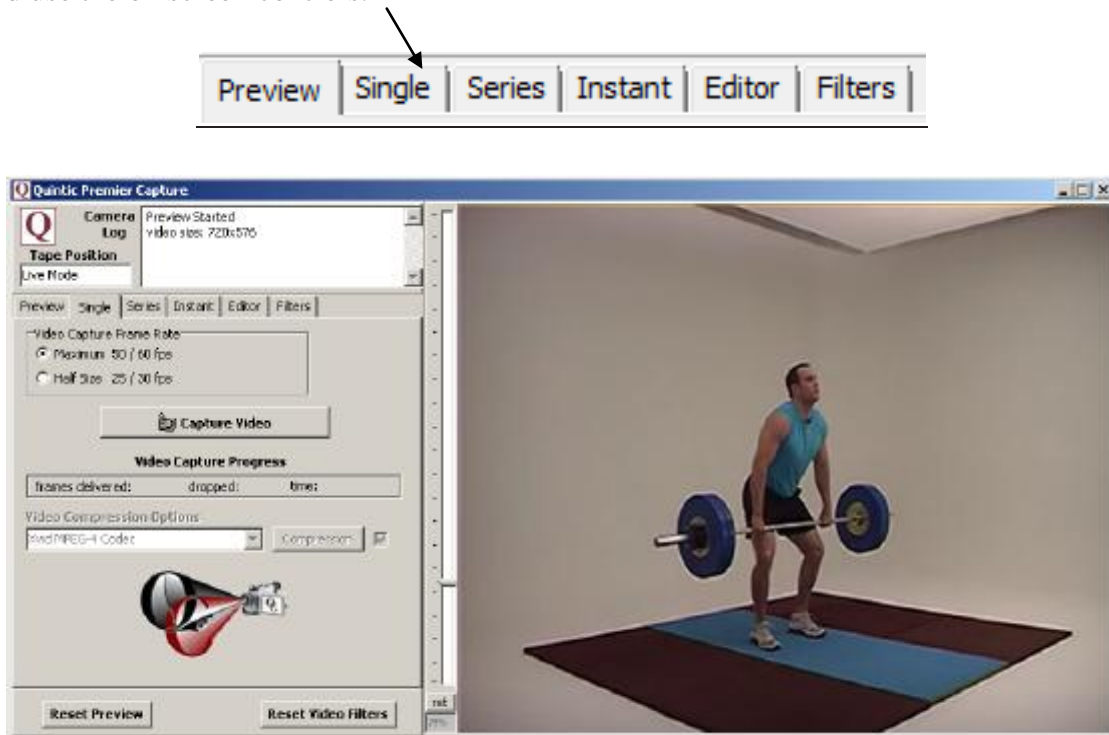X = Slow Rewind

M = Fast Forward

Z = Fast Rewind

ESC = Returns Screen to Normal

Tutorial 5b - Live Video (50-60fps) Capture

b. Single Capture

Click on the **'Single'** tab on the Capture System window. This will set the software to capture one single video clip. If the tape is not in the correct position you can use the camera controls to fast forward or rewind the tape, or navigate back to the preview mode and use the on screen controls.

When using single capture you can choose to capture videos at either maximum or half size:

Maximum allows the user to capture videos for up to 300 seconds at 50/60 frames per second (fps) and a resolution of 720x576.

Half Size allows the user to capture videos for up to 60 minutes at 25/30 frames per second (fps) and a resolution of 360x288 (half the size of the maximum capture).
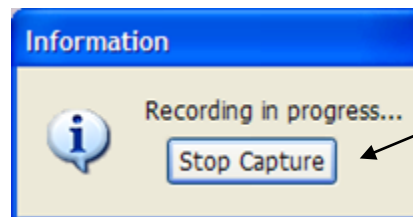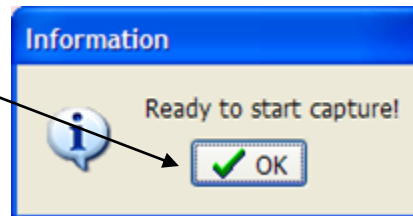
Quintic recommends that you capture in **'Maximum'** as it provides you with twice as much information about your sporting technique (50fps) and a larger video resolution to ease analysis.

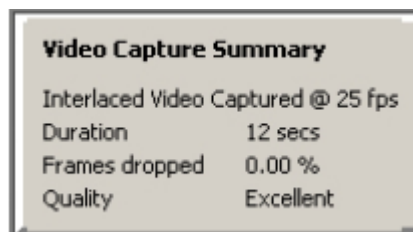Now click **'Capture Video'**. This will reduce the size of the display image.

📹 Capture Video

Once you have done this you will be prompted to **'Start the Capture'**. When you press the **'OK'** button the video file of the image you see in the preview is being captured. The computer is capturing everything you can now see in the capture window or on the screen of your video camera. Press **'Stop Capture'** when you have completed capturing the first performance of the skill.

Using the **'OK'** button starts the capture process.

Information

Ready to start capture!

✔ OK

Information

Recording in progress...

Stop Capture

Using the **'Stop Capture'** button stops the capture process

Once the Stop Capture button has been pressed or the maximum capture time has been reached a video capture summary window will appear.

Video Capture Summary

Interlaced Video Captured @ 25 fps
Duration   12 secs
Frames dropped   0.00 %
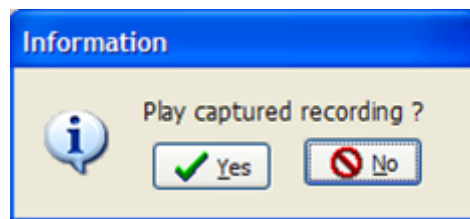Quality   Excellent

This video capture summary shows the user important information about the captured video:

- The frame rate of the captured video 25fps (will be deinterlaced/split into 50fps during the compression).

- The duration of the captured video

- How many frames were dropped during the capture process

- The overall quality of the captured video

If the capture summary window starts showing that frames have been dropped or if the video quality drops from excellent please read appendix B or contact Quintic for more tips.
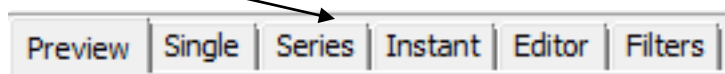
If the video was captured at full size a pop-up window will also load asking you if you want to play the captured recording. Click **'Yes'** so you can watch the captured video in the editor window.
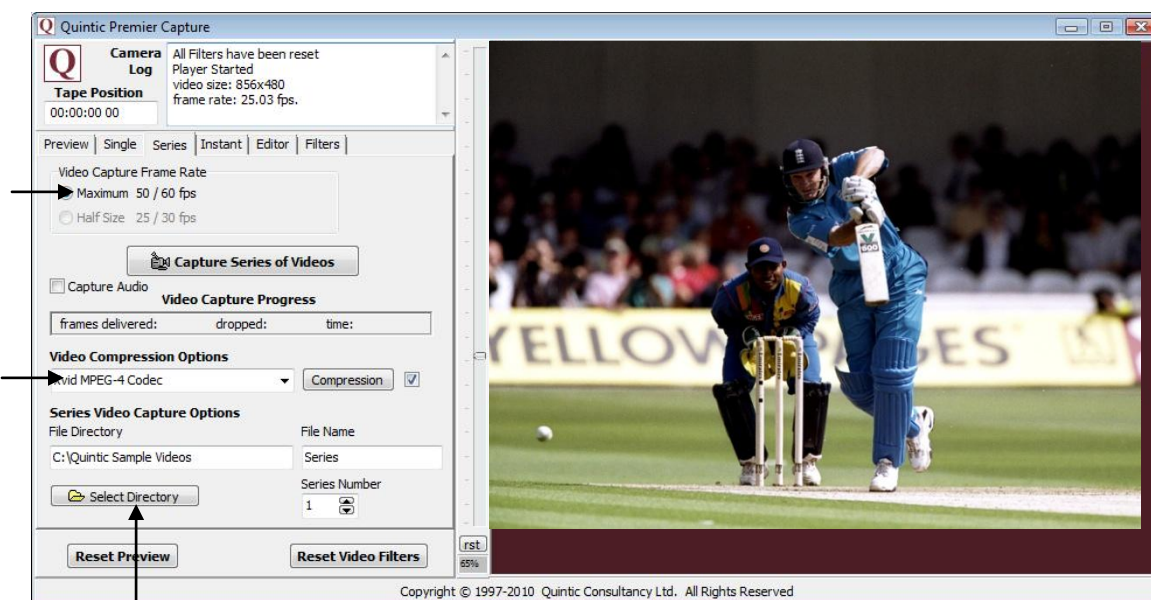
c. Series Capture

Series video capture allows the user to capture, save and compress a sequence of up to 12 subsequent skills/movements of up to 30 seconds each. This function can either be done live during the execution of the sporting technique or off the recorded tape.

Now click on the **'Series'** tab.

Select the video rate and codec that you want to use to capture the video with, as with Single capture. Quintic recommends capturing at maximum and with the Xvid Codec for the best results. (For more information see the single capture section)

Series capture automatically saves the captured videos into a designated folder after the capture process is complete. To select where the videos are going to be saved and then click on the **'Select Directory'** button and navigate to the desired folder on your hard drive and select **'OK'**. The selected folder will now be shown in the file directory box. In the example above D:\Quintic Sample Videos\ has been selected.
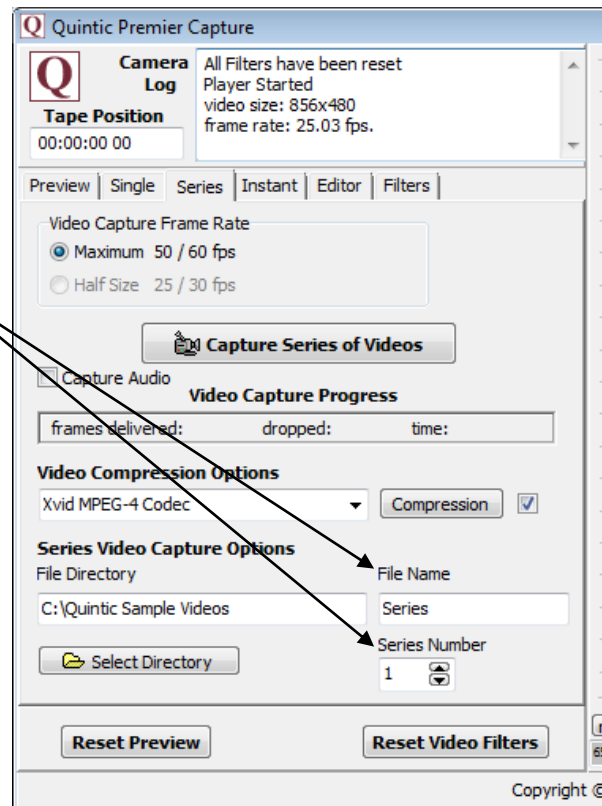
Before starting series capture a file name has to be allocated to the videos that are going to be captured. Select the default name for the video files you are going to capture by right clicking and writing the name in the text box. Each video that is captured will be given the default name and a numerical number. Use the arrows to select the starting sequence number. In this case captured videos would be called:
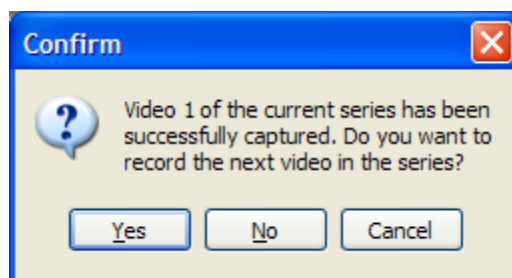
Series 1,

Series 2,

Series 3,

etc.

Click **'Capture Series of Videos'**. This will reduce the size of the preview image.
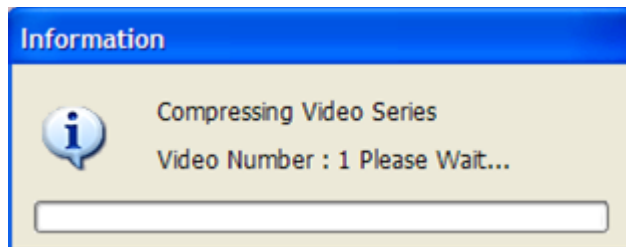
Once you have done this you will be prompted to **'Start the Capture'**. When you press this button the video file of the image you see in the preview is being created. The computer is capturing everything you now watch in the capture window or on the screen of your video camera. Press **'Stop Capture'** when you have captured the first performance of the skill. The computer has now captured the first video file, and will ask you if you want to start recording the next sequence.

If you wish to capture another video sequence click on the **'Yes'** button this will shrink the preview screen again and you will be prompted to **'Start the Capture'**. The computer will then begin to capture the 2nd sequence until the **'Stop Capture'** button is pressed, this sequence can be repeated up to ten times. Once you have captured all of the video footage you require click on the **'No'** button.

Clicking on the **'Cancel'** button will delete all of the videos captured in the sequential capture mode.

The computer will now automatically start to compress and save the captured files. The more files you have captured the longer this process will take.

When the computer has finished compressing and saving the video files the pop up box below will appear telling you, you can now watch the saved video files in the Quintic program.

d. Instant Capture

Quintic Instant video capture is ideal for providing instant visual feedback of the performance. It allows the user to capture for a designated period of time (5-60 seconds) with the advantage of instant or delayed (0-30 seconds) automatic playback at full, half or quarter speed. All footage captured using the instant function is captured at half size 360x258 and at 25 fps.

 The videos are played back in full screen mode and automatically saved into the **'Instant Capture Videos'** folder located in the **'Quintic Sample Videos'** folder.

N.B. To use this function cameras must be on LIVE mode and must be able to stream live video while connected to the computer, hard drive cameras currently do not have this function.

Open the Instant capture function by clicking on the **'Instant'** tab.

1. Select the length of time that you wish to capture for.

2. Select the time delay for end of capture to start of playback.

3. Select the playback speed of the video.

Once you have adjusted the capture settings to what you require you are ready to use the Instant Capture function! To start capturing click **'Instant Video Capture'**.

You will then be prompted to start the Instant capture. While capturing in the Instant function a preview window is not shown.

The computer will now capture for the selected period of time before playing the video back after the desired delay time in full screen mode. As soon as the video has been captured the video is automatically saved within the **'Instant Capture'** folder located within the **'Quintic Sample Videos folder'**. The first video captured using Instant Capture will be saved as Video 1, after that each video will be allocated the next number in series, so the second instant video captured will be saved as Video 2, etc.

For the settings shown above a 10 second video will be captured, there will then be a delay of 5 seconds before playing the footage back at full screen size at half speed.

During playback in full screen mode the following keys can be used to control the video.

> **P = Play**
>
> **V = Pause**
>
> **B = Step Forward**
>
> **C = Step Backward**
>
> **N = Slow Forward**
>
> **X = Slow Rewind**
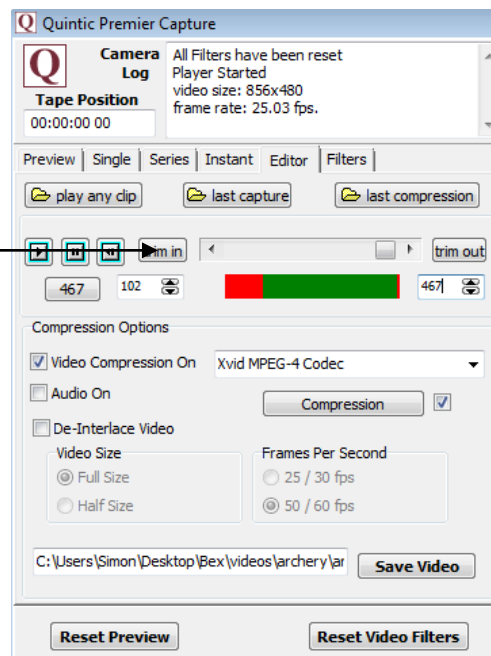>
> **M = Fast Forward**
>
> **Z = Fast Rewind**

N.B. All instant video captures are saved in the Instant Capture folder within the Quintic Sample Videos Folder.

3. Quintic Editor Window

Once you have captured the required clip, you can **'Trim in'** and **'Trim out'** to remove any unwanted footage from the video. .i.e. if a golf swing has been filmed the video can be trimmed so the video starts at the address position and finishes at the top of follow through so there is no excess footage before or after the technique starts/finishes. Please note that this function can only be used if you capture the video in **'Full'** mode.
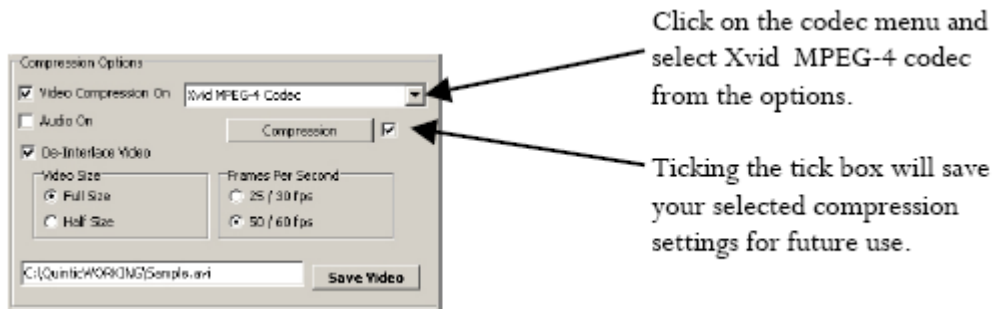
To use the trimming function play the video and then pause it at the start of the technique or to the frame at which you want to **'Trim in'** (you can use the scroll bar to move forward and rewind the video frame-by-frame (in the example, it's frame 102). Click on **'Trim in'**. Everything before frame 102 will now not be saved, this portion of the scrollbar will now turn red. Now scroll to the last frame you want to include in the saved version normally the end of the technique (in the example below, it's frame 467). Click on **'Trim out'**. Everything after frame 467 will now not be saved! This portion of the scroll bar will now turn red.

Scroll to the start of the technique and click **'Trim in'** to remove any excess footage from the start of the clip.

Scroll to the end of the technique and click **'Trim out'** to remove any excess footage from the end of the clip.

Before saving a video, a codec must be selected so that the video can be compressed and saved while maintaining video quality and minimising file size. Quintic suggests using the Xvid MPEG-4 Codec with v17 to compress your footage.

Click on the codec menu and select Xvid MPEG-4 codec from the options.

Ticking the tick box will save your selected compression settings for future use.
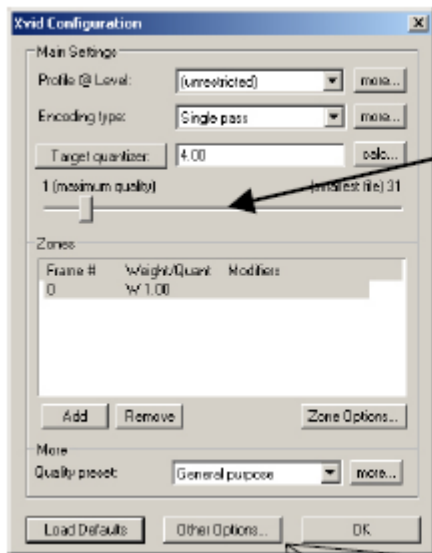
Quintic recommends using the default settings as these provide a good quality video while still keeping the video size reasonably small, if you wish to improve the video quality click on the compression button and slide the scroll bar towards maximum quality.
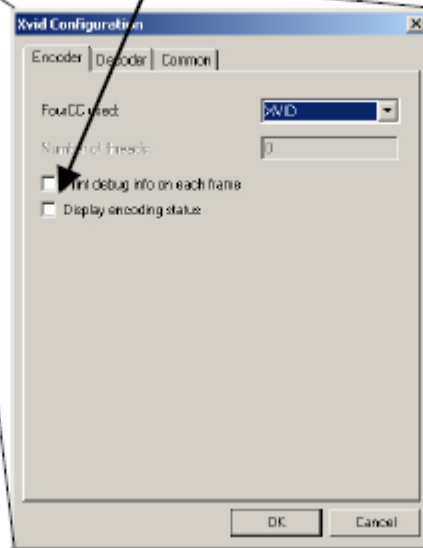
 N.B. This will increase the overall file size!!

Quintic do recommend turning the **'display encoding status'** off, this option is found within the other options window. This will hide a screen which appears when the videos are compressing.

Ticking the box next to the compression button will save all your codec/compression settings for future use.
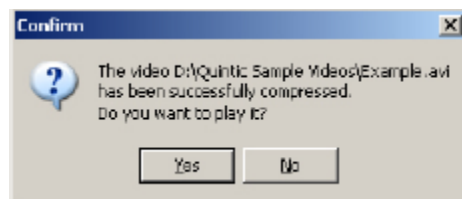
Move the scroll bar towards the '1' to increase the quality of the video or towards '31' to decrease the saved file size. Quintic recommends a setting of '4' for good compromise of size and quality.

Un-ticking the 'Display encoding status' option will hide the 'working' screens during video compression and saving.

Now click on the **'Save Video'** button at the bottom of the editor screen to save your video. Navigate to the file where you wish to save the video give it a name and select save.
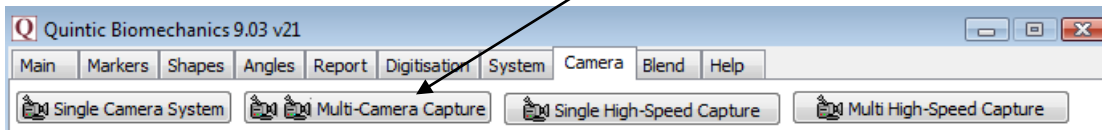
The video will now be compressed, deinterlaced (split from 25fps into 50fps) and saved. Once this have been done click on the yes button to play the saved video in the preview window, alternatively click **'No'** and either capture a new video or play your saved videos in the main software window.
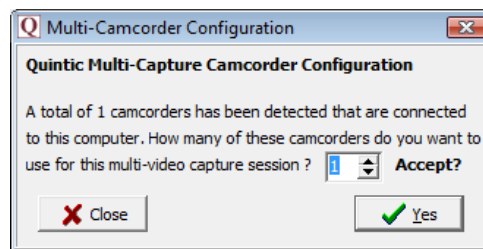
4. Multi Camera (50-60 fps) Capture

N.B: Quintic recommends that for optimum Multi Camera Capture results, cameras of the same make are used. This Program is not available in Quintic Sports.

Once all of the cameras are connected and have been recognised by the computer Click on the **'Camera'** in the main window and then open **'Multi Camera Capture'**.

The Quintic Capture software will automatically recognise how many cameras are attached to the computer. The configuration window also allows the user to select how many of the attached cameras to capture from.
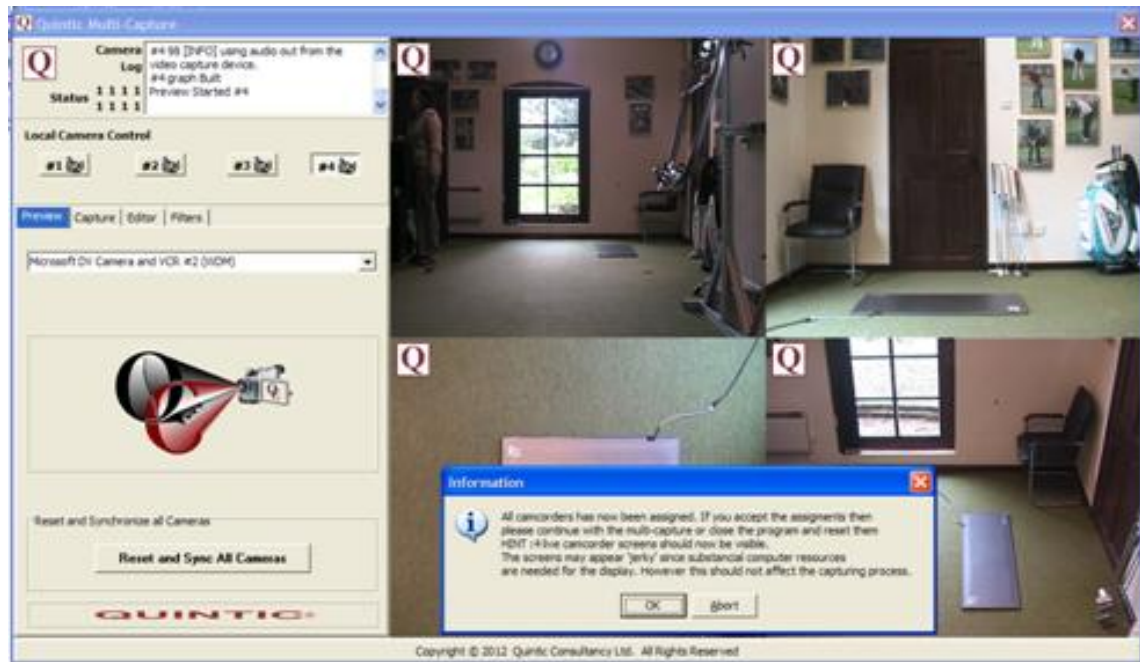

Once the number of cameras has been confirmed, each camera has to be assigned within the capture window. This is achieved by selecting the required camera from the drop down menu.

(Biomechanics Screenshot)

Once a camera has been assigned a live preview should appear on the right hand side of the screen. Select the cameras from the drop down menu until all the cameras have been assigned, a confirmation window will load once all the cameras have been successfully assigned.

To continue with the multi-camera capture click on **'OK'** if you wish to cancel the capture click on the **'Abort'** button.

Once all of the preview screens have loaded click on 　　　　**Reset and Sync All Cameras**

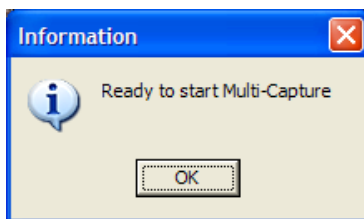This button refreshes all of the previews and automatically synchronises all of the video feeds.

To start capturing the footage click on the **'Capture'** tab.

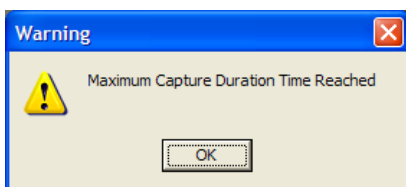**N.B.** Quintic Coaching will only enable 2 cameras to record.

Once the capture tab has opened click on the start capture button to begin capturing.

Once you have done this you will be prompted to **'Start the Capture'**. Click on the **'OK'** button and the computer will begin to capture everything in the capture window or on the screen of your video camera. Multi Camera Capture will capture video footage for up to 60 seconds, if you wish to stop the capture process before then click on the **'Stop Capture'** button.

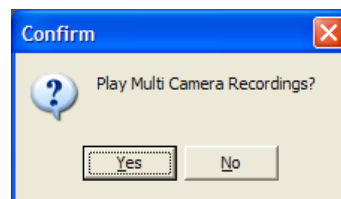Clicking on the **'OK'** button starts the capture process.

Once the 60-second limit is reached. Capture automatically stops and the Main and Best videos can be played in the preview screen.
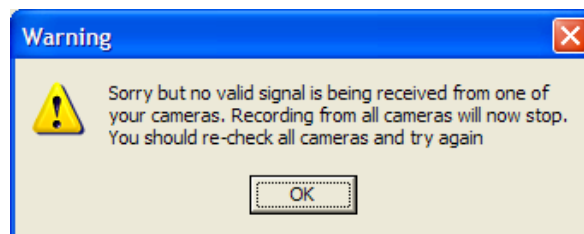
To stop the capture before the 60-second limit click on the **'Stop Capture'** button.

After the video capture has been completed a popup window will load asking if you would like to play the main and best videos.

Click on the **'Yes'** button to play both videos in the preview window.

If any of the camera signals are lost during capture the pop up windows below will appear asking you to close the camera window, and reset the connection of your cameras. To reset your cameras, turn all of them cameras off and then on again and wait for the computer to recognise both signals.

N.B. To reset cameras turn the cameras off wait 5 seconds and then turn the cameras back on and wait for your computer to recognise the camera signals.

Trim in
& out

Compression
Settings

Save
Videos

Use the buttons on the left hand side of the screen to play and review the captured videos. You can also use these buttons to trim the captured videos before saving. All of the videos captured in multi camera capture are automatically synchronised therefore they will all be trimmed in and out to the same frame.

After the videos have been trimmed click on the **'Compression Settings'** button to change the compression and video quality settings (See Tutorial 5 for more details).

N.B. Once the compression settings have been set the software will remember the last values used during the video capture process.

Filters can also be added to both of the captured videos please see Tutorial 5c for more details.

Once you have changed the compression settings, trimmed your video and added any filters you can save the captured videos by clicking on the **'Save Videos'** button. Type in an appropriate file name, as both video files will be saved under the same name (e.g. Golf Swing_#1.avi, Golf Swing_#2.avi, Golf Swing_#3.avi, Golf Swing_#4.avi.).