Quintic Software Quick User Guide

Quintic®

#1 for Sports Analysis

www.quintic.com

Quintic Biomechanics Software provides ACCURATE & FAST analysis which is why we're the preferred supplier of Biomechanical Performance Analysis Software to the English Institute of Sport.

Quintic Quick Guide

Welcome to the Quintic Software Quick User Guide.

This guide is designed to support the full Quintic Tutorials package and provide quick instructions on the software functionality.

A copy of the tutorials, questions, answers and videos can be found within your Quintic Tutorial Pack or can be downloaded from the Quintic website [Quintic Tutorials v29](#)

We trust you will enjoy using your Quintic software, if we can be of any further assistance please do not hesitate to contact us.

Kind Regards,

Dr Paul Hurrion (BA Hons, PhD)

Managing Director

Quintic Consultancy Ltd

Contents

Playing a Video

1. Playing a Video File
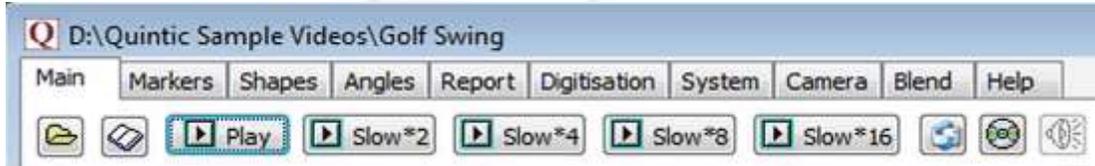
- ➤ Click on the yellow folder button ⊡ to access video files
- ➤ Left double click on the chosen file to open in Quintic
- ➤ The video will play at high speed by default

2. Streaming an Internet Video

Used to play an internet video clip.

- ➤ Click on the ⊘ button to stream an internet video file
- ➤ Type the URL address of the video in the address bar or select a video from the database
- ➤ Play the selected video by clicking on the **'Play'** button
- ➤ Quintic will test the address and video, if it is valid it will play in the main window

Video Playback Controls

1. Playback Controls:

Used to vary the playback speed of the video.

Click on the following buttons to alter video playing speeds.

Play video at full speed

Play video at 1/4 speed

Play video at 1/16 speed

Play video at 1/2 speed

Play video at 1/8 speed
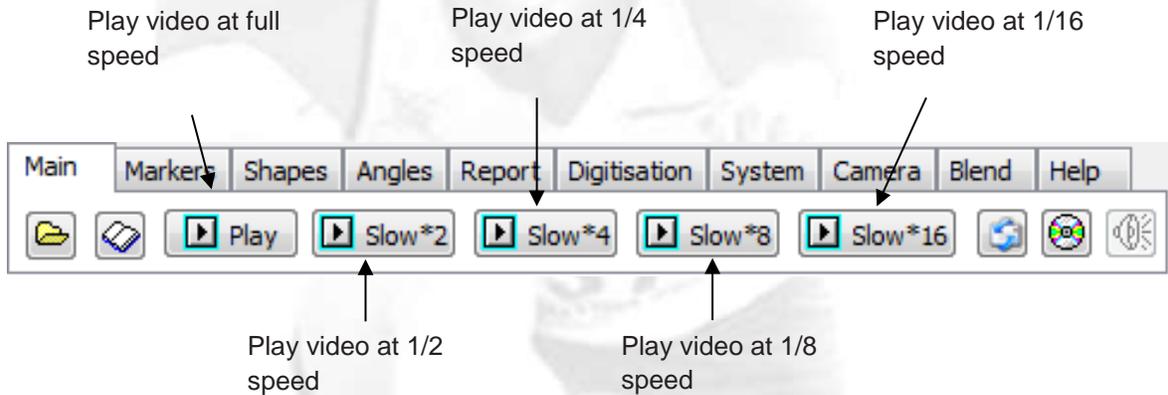
2. Toolbar Functions:

The diagram below shows the different video functions available for video playback when using the toolbar.

Play

Reset to Frame Zero

Zoom In / Zoom Out

Take an Image

Loop Video

Pause / Continue

Video Scroll Bar

Frame Number

Memo Pad

Open Best Window
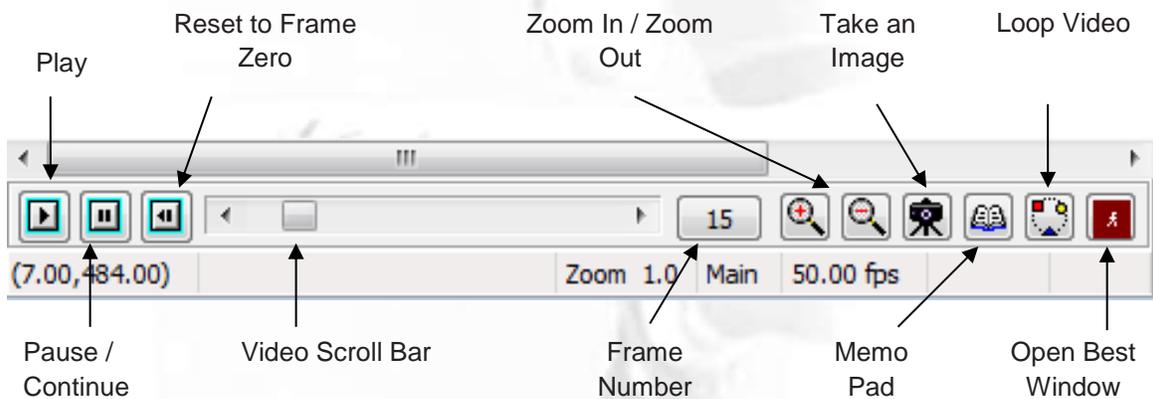
Memo Pad

Used to record audio and/or written feedback on a video for future reference.

Additions can be made to the memo pad at any time.

1. Text Memo:

➢ Click on the ▨ button to open the memo pad

➢ Add the desired text

➢ Save the text to the video by selecting **'File'** and **'Save Memo'**

2. Audio Memo:

➢ Click on the ▣ button to start memo recording

➢ The below diagram shows the various functions of the audio memo

Rewind to the start of the audio memo

Stop recording

Delete audio memo

Play

Audio Memo ▶ ‖ ■ ▶| |◀ ● 🖊 Clear

Pause

Forward to the end of the audio memo

Start recording
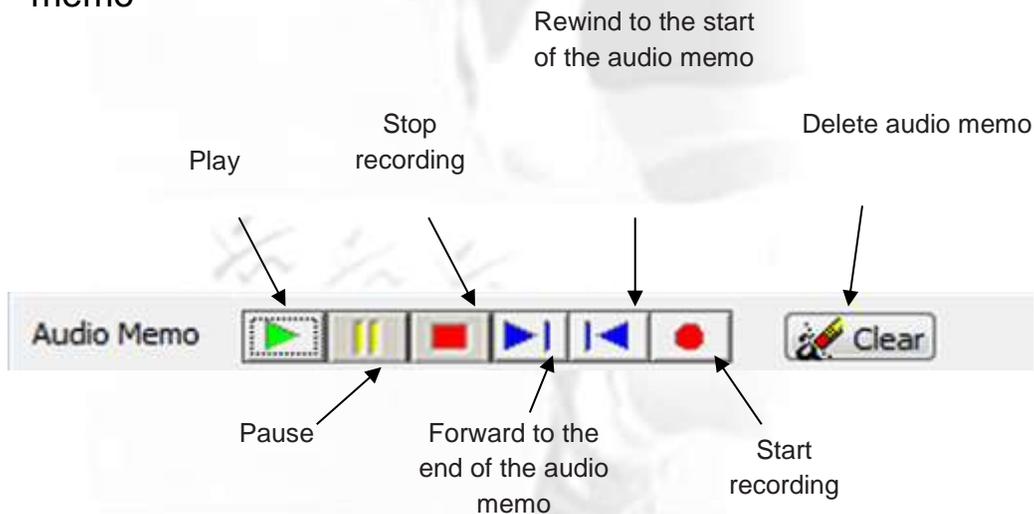
➢ To save the memo select **'File'** and **'Save Memo'** buttons

Markers & Stopwatch

1. Markers:

The marker function allows key frames of a video to be saved and recalled easily.

> ➢ To save a marker scroll to the desired frame and left click on the marker frame number (below frame 44 has been saved as marker 1)

> ➢ Click on the 📠 button to save the markers

2. Stopwatch:

Used to calculate the elapsed time between chosen marked frames.

> ➢ Click on the marker you wish to start timing from
> ➢ Click on the stopwatch button 🕹
> ➢ Click on the maker you wish to time to
> ➢ The stopwatch will show the real time between points

N.B. If using high-speed video please check the recording speed via the digitisation menu is correct.

Shapes & Text

1. Shapes:

Used to highlight key coaching points on a video.

> ➢ Shapes can be added to videos by selecting one of the above buttons
>
> ➢ Once selected left click on the area of the screen where the shape is required and it will appear
>
> ➢ Click on the ▣ button to delete all the drawn shapes
>
> ➢ Use the ➘ button to delete one shape at a time, highlight the shape with the cursor and then double left click on the highlighted shape to delete

2. Text:

Used to add text directly onto the video file.

> ➢ Click on the **T** button to add text to the video
>
> ➢ Write the required text
>
> ➢ To change the font click the **'T'** button inside the text editing window and change if required
>
> ➢ Click **'OK'** anywhere on the video screen to add the text to the video

Angles

Used to illustrate and calculate angles directly on the video. Three angles can be measured, the angle between (a) 2 straight lines (b) a specified line and an exact vertical line (c) a specified line and an exact horizontal line.

➤ Click on the **'Angles'** tab and then select which angle is best suited for your measurement

⯈ The angle between two straight lines e.g. elbow angle

⯈ The angle between a specified line and an exact vertical line e.g. angle of the leg to the vertical

⯈ The angle between a specified line and an exact horizontal line e.g. bat angle

➤ Click the ▦ button to display the acute and obtuse angular data
➤ Click on the 🖻 button to delete all the drawn angles
➤ Use the ◥ button to delete one angle at a time. Highlight the angle with the cursor then double click to delete

Take a Picture & Photo Sequence

1. Take a Picture:

Used to save an image and export it to Microsoft Word, PowerPoint etc.

- ➤ The button allows screenshots of the video to be taken and is located between the zoom and memo pad buttons

- ➤ To save the image click on the to take an image and then select **'File'** and **'Save as Jpeg'**

- ➤ To export the image click on the to take an image, select **'File'** and **'Copy to Clipboard'**. Open Word, PowerPoint etc. and select **'Paste'** to insert the captured image

2. Photo Sequence:

Used to capture a sequence of images in order to breakdown/analyse a technique.

- ➤ Photo image sequences of 4, 6, 9, 12 or 18 can be created by using the **'Photo Sequence'** function located in the **'Report'** tab

- ➤ Click the **'Photo Sequence'** button to select the number of still images and orientation required (P = Portrait, L = landscape)

Main	Markers	Shapes	Angles	Report	Digitisation	System	Camera	Blend	Help

🎥 Photo Sequence   📑 Start Export Analysis   ⊘ Stop Export   🔍 Cancel Export
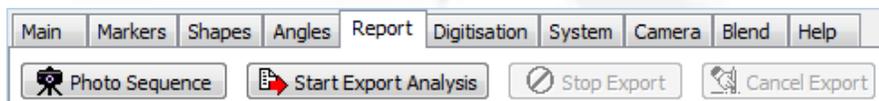
- ➤ Scroll to the frame you wish to capture
- ➤ Click the button to capture each image, up to the number selected
- ➤ Click on **'File'** and select **'Print'**, **'Copy'** or **'Save'** once finished

✓ Image Capture x 1
Image Capture x 4 (P)
Image Capture x 4 (L)
Image Capture x 6 (P)
Image Capture x 6 (L)
Image Capture x 9 (P)
Image Capture x 12 (P)
Image Capture x 12 (L)
Image Capture x 18 (L)
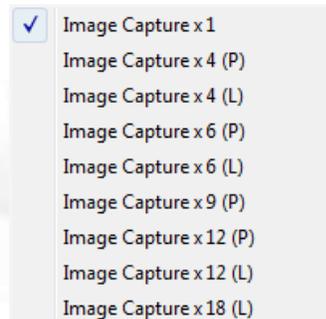
Export Analysis

Used to create a new video with overlayed animation, shapes, text etc.

The new video along with any shapes, animation, text etc. will play in the Quintic Player.

- ➢ Load the video
- ➢ Click on the **'Report'** tab and click the **'Start Export Analysis'** button
- ➢ Add shapes text, lines, angles, digitisation traces to the video on the desired frames
- ➢ When the video advances a frame the previous frame is saved automatically
- ➢ Click on the **'Stop Export'** button to stop the export analysis [N.B. The process will automatically stop once the video has reached the final frame]
- ➢ Click on **'Yes'** to save the video, select a file name and select **'Save'**


- ➢ The above window will then appear with your video
- ➢ Once the video has been saved the new video and animation can be viewing in Quintic Software and the Quintic Player

Viewing Modes

Used to change the shape and size of the window in which the video is displayed.

The following functions are found under the '**System'** tab:
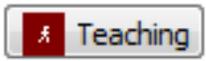
Teaching - Sets the screen in the Teaching mode which fills the computer screen so you can see the whole image.

Vertical - Sets the screen in the Vertical mode which suits images that are longer than they are wide.

Horizontal - Sets the screen in the Horizontal mode which suits images that are wider than they are long.

Dual - Opens a second window alongside the main window. This window is known as the best window.

Three - Opens a total of 3 windows (Coaching & Biomechanics).

Four - Opens a total of 4 windows (Coaching & Biomechanics).

Six - Opens a total of 6 windows (Biomechanics only).

Flip - This will show a mirror image of the action in an adjacent window (e.g. a right-handed action from a left-handers point of view).

Synchronisation

Used to synchronise 2 videos from a selected point (e.g. take off) within the Dual Display function in order to analyse technique either between 2 individuals or the same individual on 2 different occasions.

- ➢ Click on the yellow folder button 📂 in the main windows to access video files
- ➢ Double left click on the chosen file to open in Quintic
- ➢ Now repeat these steps in the best window
- ➢ Use the **'Play'** and **'Pause'** buttons along the video scroll bar to forward both clips to the specific point (i.e. the synchronisation point)
- ➢ When reached press the 🏃 button which is located in the bottom right hand corner of the best window (i.e. the right window)
- ➢ To turn off synchronisation press the 🏃 button again
- ➢ Videos can then be overlayed and played as one

<div align="center">

Main Window   Best Window

</div>
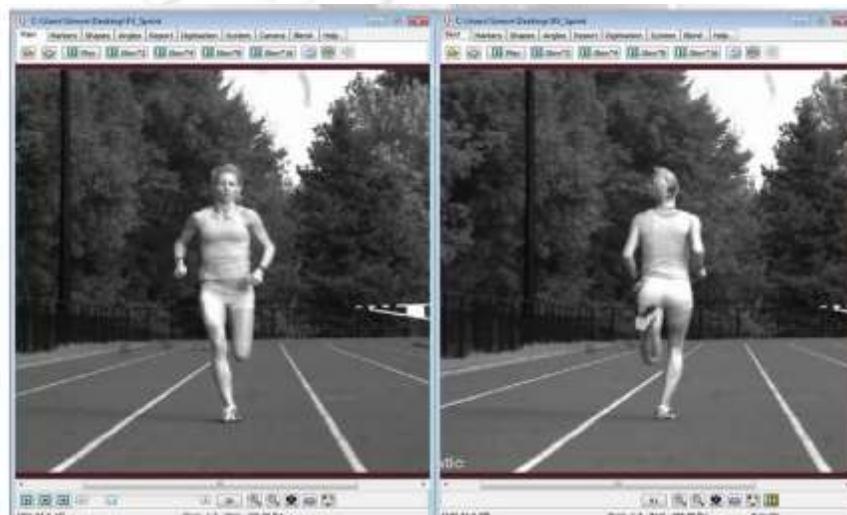
Video Blend

The Blend function allows you to take a number of still Jpeg images and save them to the video. These images can be faintly seen on screen as the video plays through.

➢ Load a video into the main Quintic window and click the **'Blend'** tab
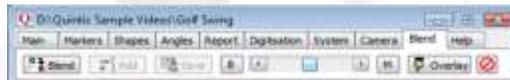
➢ The following Drop Down Menu will appear, click on **'Create New Background'**
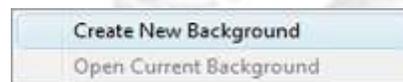
➢ Scroll to the first frame you wish to save as a background and click on the **'Add'** button

➢ Once this has been added scroll to the next frame required as a background image and click **'Add'**

➢ Repeat this until all the required background images have been added then select **'Save'**

➢ Once the background images are saved the scroll bar can be used to make the images more or less dominant

Scroll towards 'B' to show more of the Background images
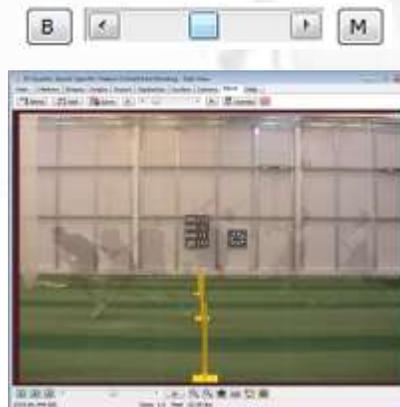
Scroll towards 'M' to show more of the Current Video

Video Overlay

The Overlay function allows you to compare performances of either 2 different individuals or the same individual on 2 different occasions.

- ➢ To use this function open 2 videos. One in the main window and the other in the best window
- ➢ Scroll to a point in both videos when the movements match e.g. directly after ball impact with the bat
- ➢ Select the **'Sync on'** button
- ➢ When synchronised click on the **'Blend'** tab and select the
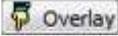
  Overlay button
- ➢ The best window disappears and both videos will be overlaid on top of each other and will play in synchronisation
- ➢ The scroll bar can be used to change the dominance of the video from the best window (B) or the main window (M)

  B ◄ □ ► M
- ➢ Scroll towards **'B'** to change the video dominance to the best window video, or scroll towards the **'M'** to change the dominance to the main Video
- ➢ If the scroll bar is positioned as above both videos can be seen with equal prominence
- ➢ To exit the Overlay function select the **'Reset'** button 🚫

The Quintic Editor

The Editor tab can be used to edit and save a captured video, a saved video or a none Quintic video clip so that it plays in the Quintic Player.

1. Editing and Saving a Captured Video:

1. Use the trimming functions to edit the captured video and delete any unwanted footage

2.Click on the **'Filters'** tab to add a filter to the video before saving

3.Change the codec used for compressing the video

4. To render the video tick the appropriate boxes, this will activate the video size and fps options

5. After the desired settings have been selected save the video by clicking the **'Save Video'** button

2. Editing a Saved / Non Quintic Clip:

- ➢ Click on the **'Play any Clip'** button
- ➢ Load the video file you wish to edit
- ➢ Use the **'Trim In/Out'** buttons to edit the video
- ➢ Click on the **'Filters'** tab to add any filters
- ➢ Choose the desired codec (recommend 'Xvid' or 'Mpeg4v2')
- ➢ Click on the **'Save'** button to save the video (this will convert the original video in to an .avi file)

Single Camera Capture

Used to capture/import a single video into the Quintic System.

- ➢ Click the **'Camera'** tab and select **'Single Camera System'**
- ➢ Click on the **'Single'** tab
- ➢ If the camera is on live a live preview will be shown
- ➢ If the camera is on tape the recorded footage will be shown

- ➢ Select **'Video Capture Frame Rate'**

    Maximum 50/60 fps (Full Size, up to 600 seconds)

    Half Size 25/30 fps (Half Size, unlimited capture time)

- ➢ To begin click **'Capture video'**
- ➢ To stop capture click on the **'Stop Capture'** button
- ➢ To play the captured video click **'Yes'**
- ➢ This will also forward you to the editor screen where the video can be edited and saved

Multi Camera Capture

This allows up to 4 viewpoints to be captured and replayed simultaneously.

> ➤ Make sure all the cameras are on live mode
> ➤ Connect all the cameras to the computer by firewire or USB2
> ➤ Check cameras have been recognised by reviewing the **'My Computer'** Screen
> ➤ Click on the **'Camera'** tab and select **'Multi-Camera Capture'**
> ➤ Select the number of cameras you wish to use and click **'Yes'**
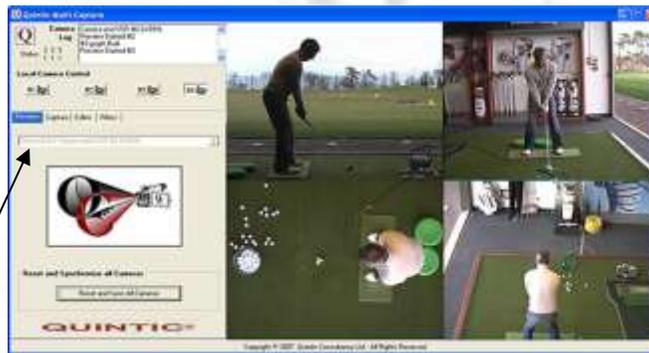
> ➤ Assign the cameras by selecting them from the drop down menu
> ➤ Once a camera has been assigned a live preview from that camera   will load
> ➤ Reset and sychronise cameras by clicking on the **'Reset and Sync All Cameras'** button
> ➤ To capture video click the **'Capture'** tab and select **'Start Capture'**
> ➤ To stop capture click on the **'Stop Capture'** button, alternatively capture will automatically end after 60 seconds
> ➤ Once captured save and edit the videos by clicking on the **'Editor'** tab

Single High-Speed Camera Capture

Used to capture high speed video from the Quintic cameras. To use this software all drivers and devices must be installed prior to use.

1. Using the Camera:

> Click **'Camera'** tab, select **'Single High Speed Capture'**
> To start live preview select the [icon] button
> To start capture click the [icon] button
> The **'Record Dialog'** box will then appear
> Click on the **'Create'** button and select a file name for your video and then click on the **'Save'** button
> Click on the **'Record'** button to start and stop capture

If selected, used can set the number of frames after which recording stops

Indicates number of frames received, dropped or saved

Quintic - Record Dialog

AVI Recording

File   D:\Ash - Phd\tutorial.avi

☐ Max. Frames   1   Received   0

Maximal [MB]   1998   Dropped   0

Current [MB]   0.00   Saved   0

☑ Calc. Framerate   0

JPEG Quality   1   100   75

Close   Record   Exit

Sets the JPEG compression level, Quintic recommends a setting of 75

Closes/resets the capture or recording settings

Record/stop, start/stops the video capture

Exit will close the recording window

16

Single High-Speed Camera Parameters

Used to set the camera settings you require

- ➢ Click on the button to open camera parameters
- ➢ Select the **'Camera'** tab to change frame rate and exposure time
- ➢ Select the **'Image'** tab and click the **'gain boost'** option, this will automatically increased the brightness and contrast of the image
- ➢ Select the **'Size'** tab to control the area of interest and video size

1. Controlling the Size of the Image and Preview Screen:

Icon	Description
✗	Disables the preview screen
⊞	Enables a full screen preview, click on the **'Esc'** button to exit this mode
⊞	Scales the preview display to window size

2. The Preview Windows Dictate the Size the Image is Displayed:

Icon	Description
1:1	Displays the video preview at original size
1:2	Displays the video preview at half size
1:4	Displays the video preview at quarter size
2:1	Displays the video preview at double size

# Multi High-Speed Camera Capture

Used to capture high speed video from up to six Quintic cameras. To use this software all drivers and devices must be installed prior to use.

1. Using the Camera:

 ➤ Click the **'Camera'** tab, select **'Multi High Speed Capture'**

Pause and continue, or stop recording

Change the Camera exposure time using the slider bar
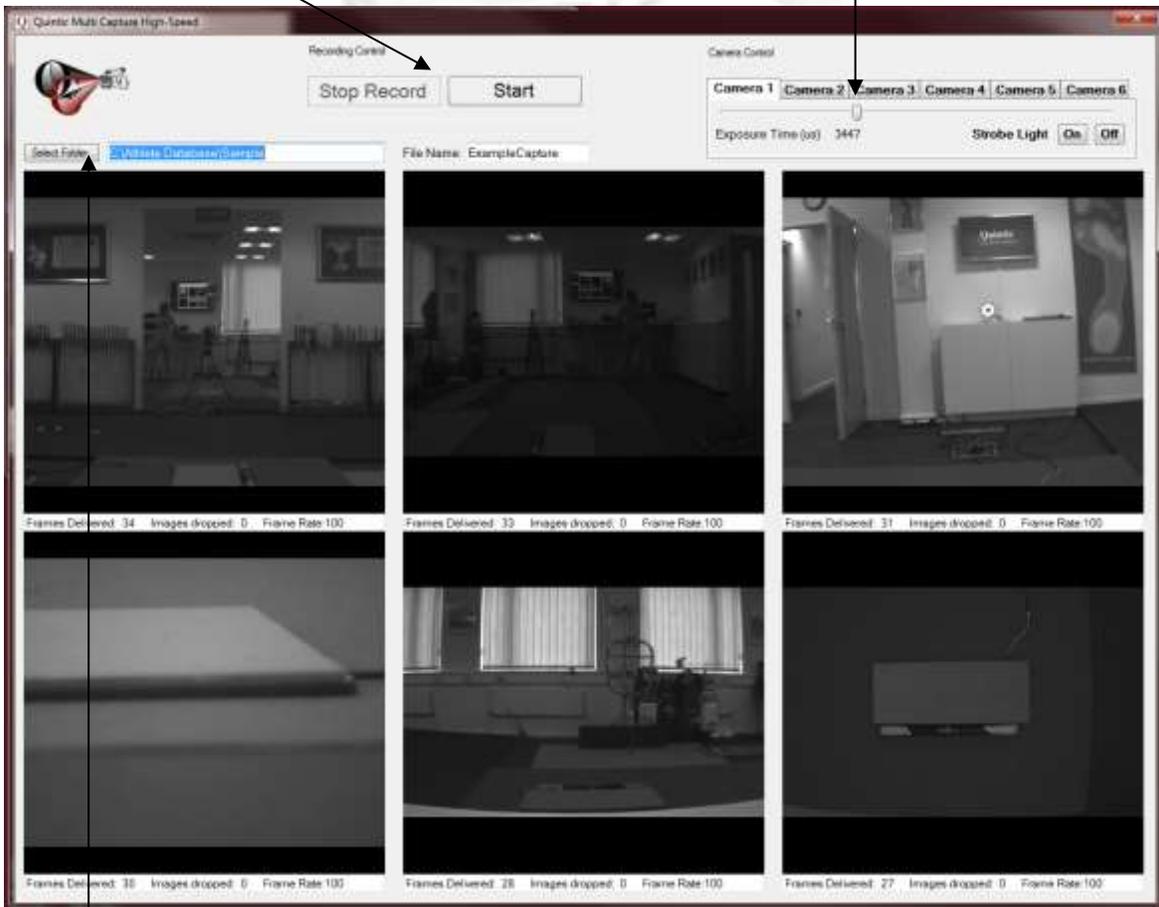
Select the destination folder you wish to save the video files, enter a file name, and start recording

N.B. The maximum recording time for one file is 5 minutes

Digitisation Set-up

Digitisation allows you to track the location of different body parts (or pieces of equipment) for the duration of a video clip and allows Linear and Angular Distances, Velocities and Accelerations to be calculated.

- ➢ Click on the **'Digitisation'** tab and select the **'Digitisation'** menu
- ➢ Work down the **'Digitisation'** menu to produce a frame template, calibrate and digitise your video
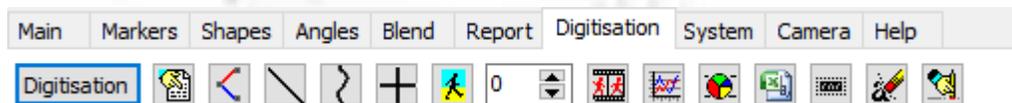
1. Frame Templates:

Quintic have provided a selection of frame templates for your convenience. These can be found in the Quintic Sample Videos/Templates folder on your computer.

2. Calibration:

Used to identify a known length on the video to allow linear measurements to be calculated.

- ➢ Calibrate the video by selecting **'Video Calibration'** and selecting one of the calibration options
- ➢ If the same calibration is being used as an existing file click on **'Load an external calibration file'**
- ➢ Allocate a video recording speed from the drop down menu
- ➢ Now select if you wish to use manual or automatic digitisation

Manual Digitisation

Manual Digitisation is used when automatic tracking markers have not been used.

> ➤ Complete the calibration steps and then select **'Manual Digitisation'** from the **'Digitisation Menu'**
> ➤ Locate and load up the frame template you wish to use
> ➤ The system is now ready for digitising, scroll to the first frame you want to digitise
> ➤ The Frame Template identifies which point to digitise, use the zoom window to scroll to that area and left click on the point
> ➤ The template will recognise the selection and move to the next point
> ➤ Once all the digitisation points have been selected for the current frame, the video will automatically advance to the next frame
> ➤ Repeat these steps until digitisation is complete
> ➤ If you make a mistake, click the **'Undo last point'** button
> ➤ To save the digitisation trace click on the **'Save Trace'** button
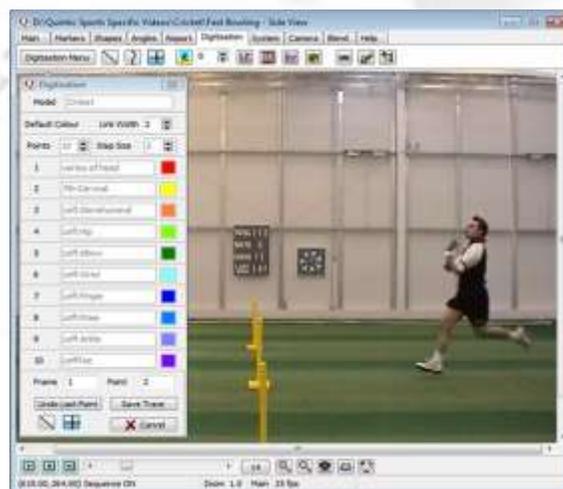
Automatic Digitisation

1 point Automatic Digitisation is available in Quintic Coaching, 21 point Automatic Digitisation is available in Quintic Biomechanics.

Automatic Digitisation is used when digitisation markers have been used allowing more accurate and efficient digitisation.

> ➢ Select the **'Digitisation'** Tab
> ➢ Click on the **'Digitisation'** menu
> ➢ Select **'Automatic digitisation of a new trace'**
> ➢ Select the [Set Markers] function when the below window appears
> ➢ Insert your first and last frame for digitisation
> ➢ Drag cursor around the screen to select the markers for digitisation
> ➢ Once all markers have been located select the [Start Tracking] button. This initiates the tracking process
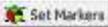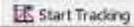
This scrollbar controls the speed of digitisation
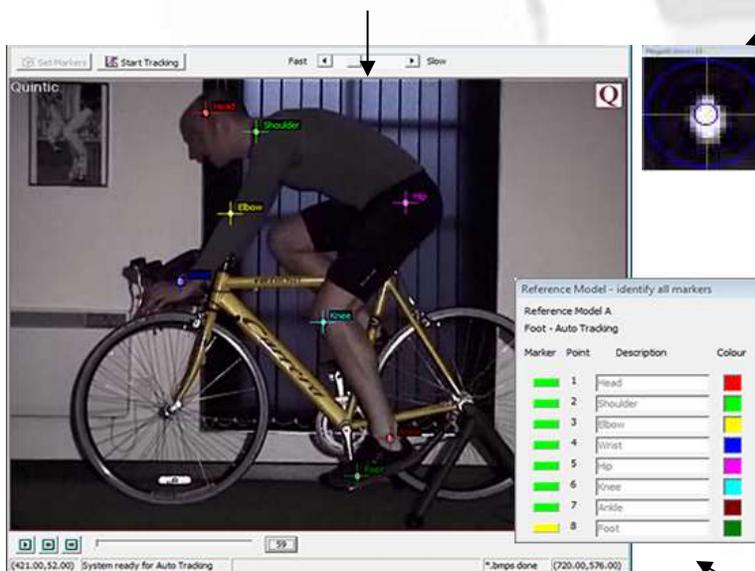
When selecting markers a magnification window with a cross hair will appear. Markers must be bigger than the inner circle but smaller than the outer circle of the cross hair

The tracking table shows each point that is being tracked and if a marker has been lost

Intelligent Digitisation

Intelligent Digitisation is available in Quintic Biomechanics for use with up to a 3 point model and specific templates for human gait, equine gait, cycling and putting.

Models of up to 2 points are available in Quintic Coaching for use with Intelligent Digitisation.

> ➢ Select the **'Digitisation'** Tab
>
> ➢ Click on the **'Digitisation'** menu
>
> ➢ Select **'Intelligent Digitisation of a new trace'**
>
> ➢ Select the relevant reference template from the **'Intelligent templates'** folder
>
> ➢ Select your first and last frame for digitisation, or select **'Full video'**
>
> ➢ Add blockers, an initial search area and edit the marker pixel radius and brightness settings

Rectangle Blocker

Circle Blocker

Initial Search area
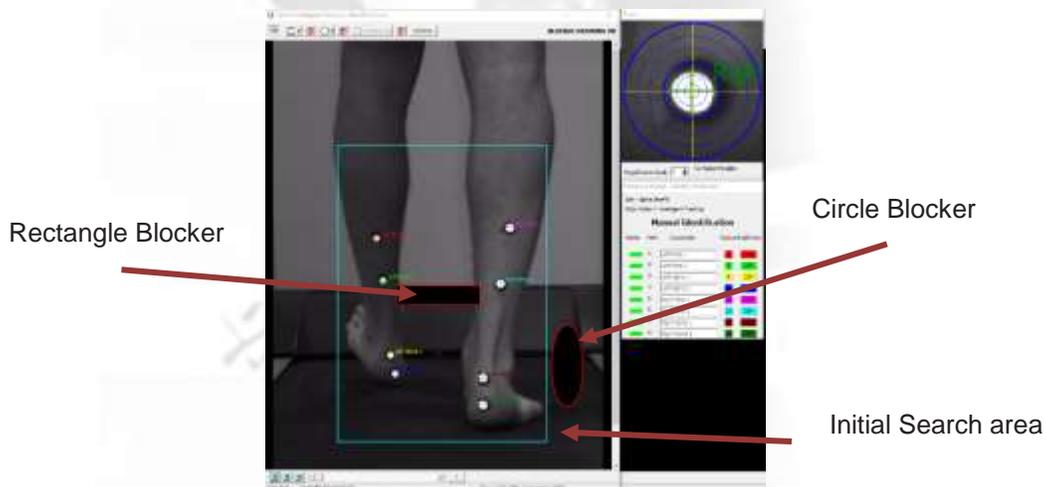
> ➢ Select **'Auto Detect Markers'** or manually select markers if not possible
>
> ➢ Tracking will start and continue until the chosen end point of digitisation

Data Filtering

Data filtering 'smooths out' data that has been produced via automatic or manual digitisation by removing any errors that may have occurred during the digitisation process. Data filtering can be used with automatically or manually digitised videos, as well as videos analysed in earlier versions of Quintic software.

- ➢ Click on the [Filters] button to open the filters screen, a pop up window will prompt you to filter your data
- ➢ Click on the **'Yes'** button to begin the data filtering procedure
- ➢ The optimal Butterworth Filter values that have been placed on the data will now be illustrated
- ➢ Click on the [Next >] button to consider the Butterworth Filter values for both the X and Y co-ordinates of each marker
- ➢ These filter values can now be saved, by clicking on the [Save filter values] button
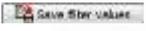
1. Smoothing a Previous Digitisation:

- ➢ Load the digitised video in the main window and click on the **'Digitisation'** tab
- ➢ Open the **'Digitisation Menu'** and select the **'Data Smoothing of current trace'** option
- ➢ Now check the optimal filter values and alter them if required
- ➢ These filter values can now be saved by clicking on the [Save filter values] button
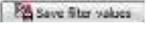
<u>Digitisation Trace Review</u>

Used to review the digitisation trace on the selected video.

➢ Five viewing options are available, select 1 or more of the trace options available from the main toolbar menu:

   Shows the traces from individual frames

   Shows the crosses created during the digitisation for every frame

   The trace will develop as the clip is played
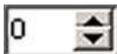
   Snail Trail: Allows the user to see the last selected number of frames

   View Individual Frames: The trace is displayed frame-by-frame

➢ Once you have made your selections, review your trace by selecting the **'Play/Pause'** buttons at the bottom of the window

<u>Single Video Linear Analysis</u>

Used to view, export and save data calculated during the digitisation process. All of the data is represented via an interactive graph.

1. Linear Analysis (Distance, Velocity and Acceleration):

➤ Select the 🖼 button to open the Single Video Linear Analysis window
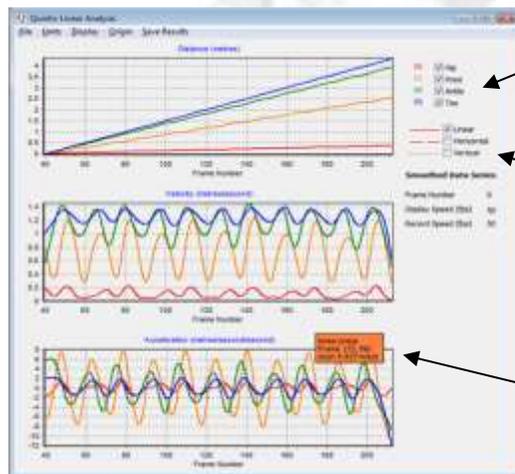
Select which markers you wish to display on the graph

Select Linear, Horizontal and/or Vertical values to be displayed on the graph

Scroll the cursor over the graph to see the data for each frame displayed on the graph

2. Saving Linear Analysis:

➤ To save the data in numerical format click on **'Save Results'** and select excel or data file

➤ Saving the linear data will save all the calculated data for every tracked point

➤ The data file is saved in the same folder as the digitised video

➤ To export your data in graphical format click on **'File'** then select the graph you wish to export from the drop down menu. Once selected choose either, **'Print'**, **'Print Preview'**, **'Save as a JPEG'** or **'Copy to Clipboard'**

Single Video Angular Analysis

1. Angular Analysis (Displacement, Velocity and Acceleration):

➢ Select the 🎨 button to open the Single Video Angular Analysis window
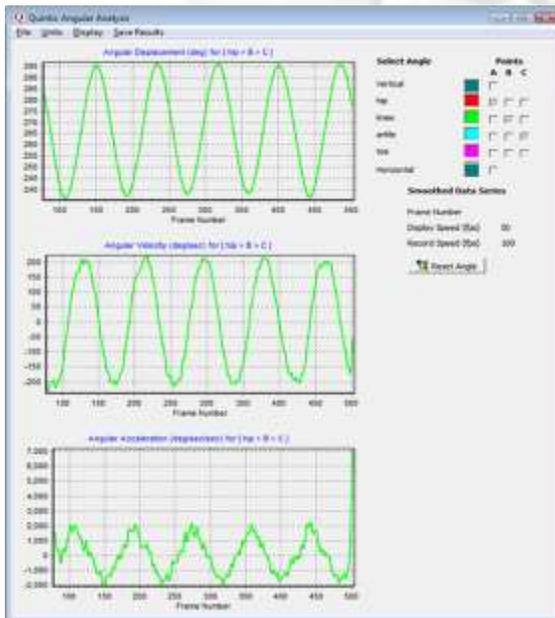
To select an angle for analysis first click on the 🔄 Reset Angle button. This refreshes the selection grid and allows a new angle to be selected

For example to select the knee angle you would tick the following boxes:
Column A tick the hip box
Column B tick the knee box
Column C tick the ankle box

2. Saving Angular Analysis:

➢ To save the data in numerical format click on the **'Save Results'** and select excel or data file

➢ Only the displayed angular data will be saved

➢ Choose the folder you wish to save the data in to and give the saved data file a name

➢ To export your data in graphical format click on **'File'** then select the graph you wish to export from the drop down menu, and select, **'Print'**, **'Print Preview'**, **'Save as a JPEG'** or **'Copy to Clipboard'**

Multi Video Linear Analysis

> ➤ Select the 🖼 button to open the Multi Video Linear Analysis window
> ➤ Click on **'Select Folder'** from the top menu and open the required folder
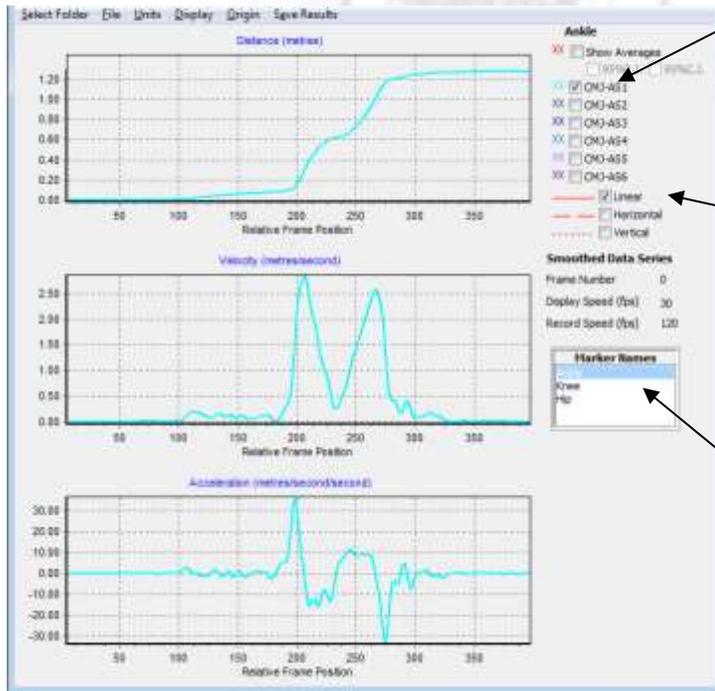
1. Select which videos to display on the graphs by ticking these boxes

2. Select whether to display linear, horizontal or vertical values by ticking these boxes

3. Select which marker to display from the menu

1. Displaying Averages:

> ➤ Select the **'Show Averages'** box to display the average on the graph
> ➤ The averages will be calculated from only the videos selected
> ➤ The average is shown in red and the individual video data is now displayed in black
> ➤ The Prediction Intervals and Confidence Intervals (red dotted line) can also be shown by ticking the relevant boxes
> ➤ Data can be exported in graphical format in the same way as for the single video analysis

NB: Multi video data can only be saved in a excel file format.

Multi Video Angular Analysis

- ➢ Select the 🖼 button to open the Multi Video Angular Analysis window
- ➢ Click on **'Select Folder'** from the top menu and open the required folder
- ➢ Select videos and averages as previously explained for the Multiple Video Linear Analysis
- ➢ To change the selected angle click on the **'Select New Angle'** icon
- ➢ E.g. To select the knee angle tick the following boxes...
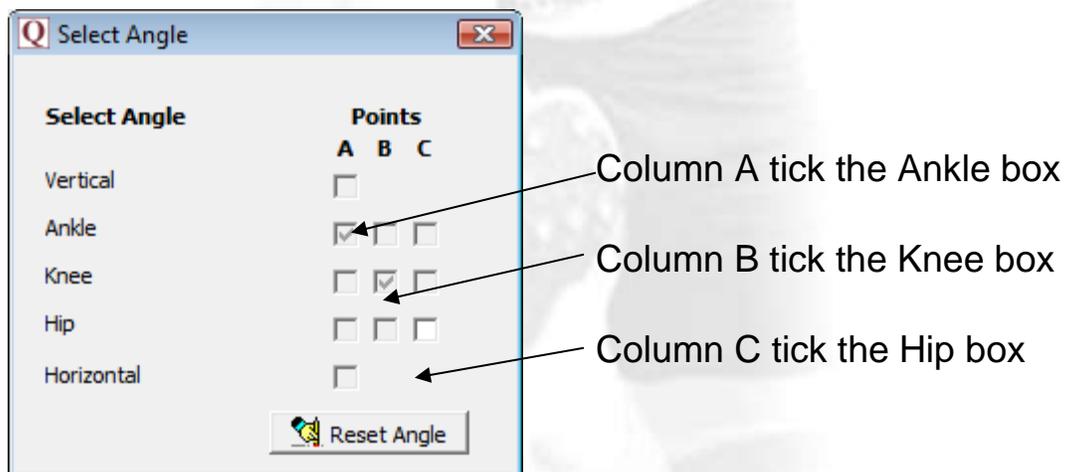
Column A tick the Ankle box

Column B tick the Knee box

Column C tick the Hip box

- ➢ Data can be exported in graphical format in the same way as for the single video analysis

NB: Multi video data can only be saved in a excel file format.

Multi-Trial Analysis

➢ Ensure that all relevant files for all trials (up to 21) are in the same folder as at least one of the video files (ie. QDF (Digitisation trace data), QBC (Butterworth filter parameters, optional), CAL (calibration) and MRK (markers, optional)

➢ Open the video in the folder, within Quintic Biomechanics v29

➢ Select the **'Digitisation'** Tab

➢ Select **'Multi Video Linear Analysis'** or **'Multi Video Angular Analysis'**

➢ Display trials relative to the start of digitisation or a common frame marker representing a common time event in all the videos (**'Display'** tab > **'Horizontal Axes'**). Both options have the choice to display the horizontal axes as relative to time or frames

➢ Display two averages at once (**'Display'** > **'Allow Second Average'** then select the trials for each average from the list on the right hand side.)

Frame Marker position

List of trials displayed on the graph. Untick the boxes to remove

Display averages, confidence intervals and prediction intervals.

The current marker (Linear) displayed on the graph.
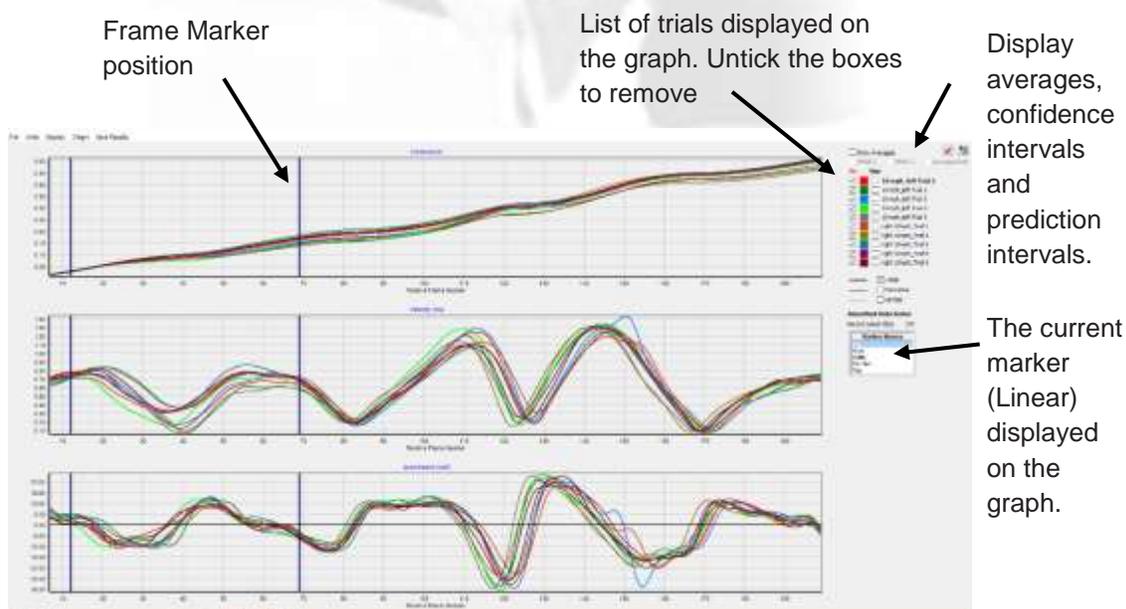
COM Model

- Calibrate and digitise the required video using the relevant male or female 18 point COM template

- Smooth the trace and then, from the **'Digitisation'** menu click **'Convert to a COM model'**

- Now open the new .avi file named with the suffix 'COM'. This can be found in the newly produced COM folder, within the folder that the original video is saved in

- Load the trace and re-smooth the data.

- Now click the **'Digitisation'** tab and **'Edit Current Frame Display – Point Trajectory'**

- A 19th point has been added at the bottom of the list, labelled COM

- This will automatically be selected, whilst the other points are deselected. This will then show only the COM trace on the video

- Individual points can be selected as normal

Q Edit Display - Trajectory

Model	**COM**

Default Colour   Link Width 1

Points 19   Step Size 1

| 1	☐	Top of Head	🟥
2	☐	Neck	🟩
3	☐	Left Shoulder	🟨
4	☐	Left Hip	🟦
5	☐	Right Hip	🟪
6	☐	Right Shoulder	🟦
7	☐	Left Elbow	🟥
8	☐	Left Wrist	🟩
9	☐	Left Hand	🟨
10	☐	Right Elbow	🟦
11	☐	Right Wrist	🟩
12	☐	Right Hand	⬜
13	☐	Left Knee	⬜
14	☐	Left Ankle	🟥
15	☐	Left Toe	🟪
16	☐	Right Knee	🟦
17	☐	Right Ankle	🟦
18	☐	Right Toe	🟩
19	☑	COM	🟥

Intersection Model

- Calibrate the video then create and save a frame template using the guidelines below
  - Points must be ordered in an appropriate way for the intersections you wish to calculate
  - Depending upon the number of intersections required one of the following needs to be added at the end of the template name

Number of Intersections	Addition
1	*4
2	*6
3	*8
4	*10

- Now digitise the desired points, smooth and save the filter values
- Click the **'Digitisation'** button and **'Convert to an Intersection Model'**
- Open the new file that has been created in the subfolder **'STAR'**. This will be found within the same folder as the original video clip. The file name will have the suffix 'STAR'
- Load the trace and the smooth the data
- By clicking on **'Edit Current Frame Display – Point Trajectory'**, you can select which points/intersections to display


31
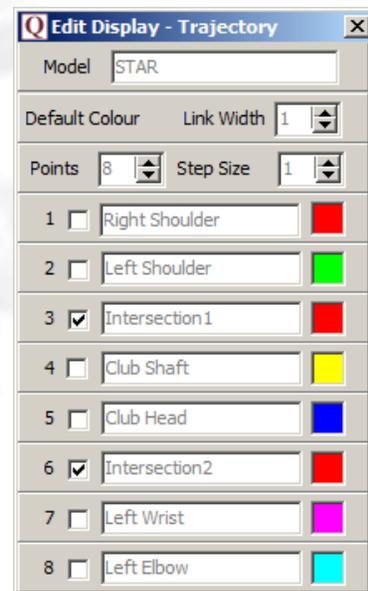
CSV Synchronisation

It is possible to synchronise CSV data with a video in Quintic Biomechanics v29. Data can be synchronised from any of the following pieces of equipment providing a CSV file can be exported.

- Force plate
- Pressure plate
- EMG systems

- Pressure insoles
- Cycling power cranks
- And more…

- ➢ Ensure that the CSV file is in the correct format and in the same folder with the same name as its corresponding video file
- ➢ Open the video file in Quintic Biomechanics v29
- ➢ Select the **'Digitisation'** Tab
- ➢ Click on the **'CSV Synchronisation'** function
- ➢ Select the method you wish to use to synchronise the CSV trace with the video.

Sync to start of video

Sync to current frame number

Manual Sync
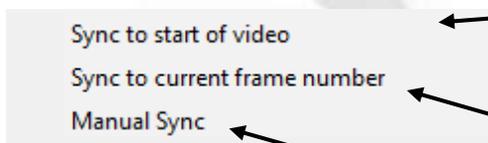
Synchronises the start of the CSV trace (time=0) with frame 1 of the video

Synchronises the start of the CSV trace (time=0) with the current frame displayed in the Quintic main window

Allows you to manually synchronise the video with a frame of your choice

Point at which you wish to begin synchronisation with the current frame of the video

Current frame of the video as displayed in the main window of Quintic after synchronisation

Synchronisation scrollbar

Synchronisation button