

Chapter

4

*Live capture & instant
replay during training*

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1 Live capture & instant replay during training

The InTheAction module is a combination of Dartfish capture, replay, comparison and analysis features brought together in a way that allows the delivery of video feedback during training sessions.



The aim here has been to make the technology easy to use without the presence of a computer being disruptive to training itself. Some of the key features which allow this to happen are:

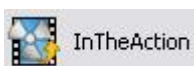
- Remote controlled - for complete ease of use, a single button on the remote control can control both capture and replay.
- Simplified video capture - in automatic mode only trigger capture at the start of the action. A fixed number of seconds is captured from this point.
- Automatic instant replay - replay happens automatically as soon as capture is complete. Pause and set replay speed by remote control.
- Comparison - compare captured clips side by side with a reference clip.
- Synchronization - synchronization of clips is based around the moment when you trigger capture making comparison of 2 clips both easy and quick.
- Drawing/annotation tools - illustrate coaching points using a range of drawing tools.

1.1 Preparing InTheAction for use

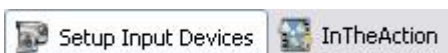
At the start of your coaching session using InTheAction you will spend a short time preparing InTheAction for use. Of course you'll need to connect the camera, perhaps more than one camera, also in this section you will learn to adapt the recording and play parameters according to your specific needs.

1.1.1 Selecting capture device

After connecting the camera, the next step is to launch the InTheAction module and select your camera as its video input. To launch the *InTheAction* module click on the *InTheAction* button on the toolbar:

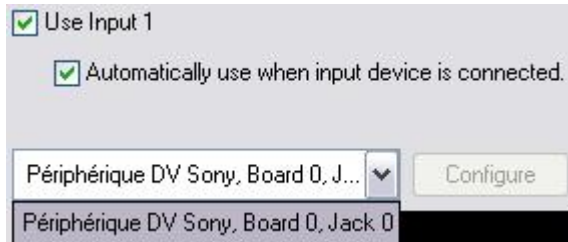


InTheAction module has two tabs at the top of the module:



- *Setup Input Devices* - to select the capture device(s); choose the appropriate device from the drop-down list. Once selected, you should see the images transferred from capture

device (camera).



! If your device is not listed, make sure that your equipment is correctly connected (see [Capturing from camera](#) in the *Video Library* chapter), switched on and has not automatically switched off - many cameras do this after a fixed interval. Taking the tape out of the camera prevents automatic power off every few minutes.

! Usually input device selection is only required the first time you connect your camera to your computer. It is necessary if there is more than one input device or if several different cameras are used.

- *InTheAction* - is where the capture and replay features are found. Click on this tab once you have selected the capture device.

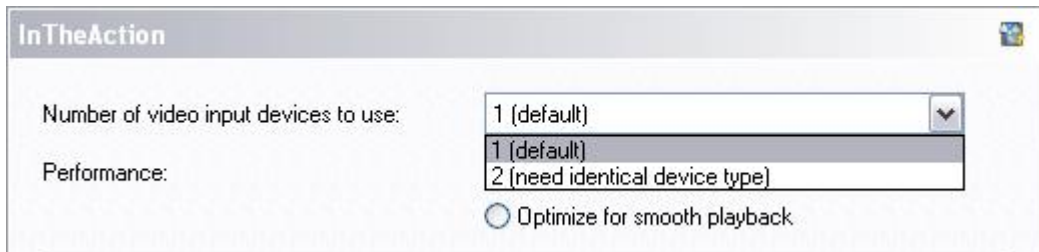
1.1.2 Using more than one camera

If your computer has two firewire inputs, a second camera can be connected, allowing *InTheAction* to capture two video clips simultaneously. For example, rear and side shots. *InTheAction* allows simultaneous replay of both clips.

Choosing multiple video inputs

Unless you choose to use multiple video inputs when you installed Dartfish you will first need to activate the option to use *two* cameras. To do this:

1. Open the Dartfish options, select *Tools>Options* from the *Menu bar* (F3).



2. Select the *InTheAction* topic
3. Click the *2 (need identical device type)* option

Setting up multiple video inputs

1. Launch the *InTheAction* module.
2. On the *Setup Input Devices* tab tick the option *Use Input 2*.
3. Select the second camera from the corresponding drop-down list

Catch Up video inputs

When two cameras are connected there may be a noticeable time difference between the action taking place in one video image compared with the other. To correct this click the *Catch Up* button below the video image with the delay. Doing so will delay the display of the faster video by one frame per click (0.02 seconds). Keep clicking until the images are synchronous.

1.1.3 Defining capture folder

The lower part of the InTheAction module allows you to set the *Capture Location*, i.e. the folder where the captured clips will be saved on your hard disk (see [Organizing your library](#) in the *Video Library* chapter for more info). To do this, use the *Change capture location* as illustrated below:

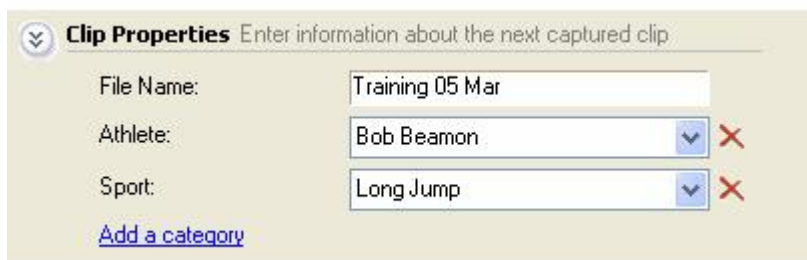


1.1.4 Defining clip properties

If you intend to keep the video clips in your library you should define the clip properties which will be assigned to the video files that are saved.

Use the *Clip Properties* to define:

- the *File Name* - enter the file name in the text box
- the categorization of captured video clips - use the *Add a category* link to add a category and/or value (see [Organizing your library](#) in the *Video Library* chapter for more info)



! Once defined, these properties will be assigned to all subsequently captured clips, until a new file name or category/values are specified.

1.1.5 Defining preroll & clip durations

InTheAction module lets you capture video clips in a single click. To do this, you have to specify the *Clip Duration* and *Preroll Duration* values.

What is *Clip Duration*?

Based on the type and duration of the action that you want to record, you need to define the approximate *Clip Duration* of the video you are going to capture. For instance, the duration of a golf swing is approximately 3 to 4 seconds from the address to the finish of the swing.

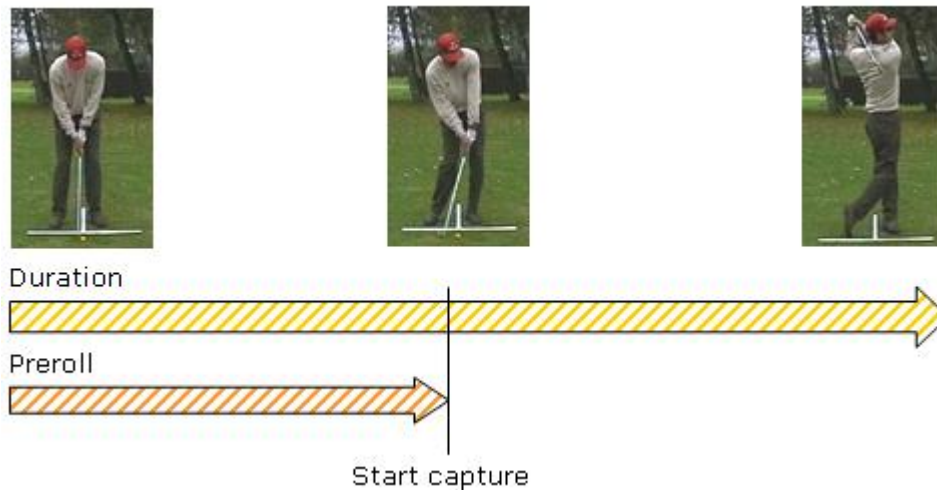
What is *Preroll Duration*?

If you wait until you see the golfer start to swing before starting capture, you may miss the first moments of the swing. To avoid this you should set a *Preroll Duration* value which corresponds to the second(s) of video footage that took place before you started capture.

Preroll forces the computer to continually remember the number of seconds you specify. When you trigger capture it includes these seconds at the beginning of the new clip. Usually just a few seconds of preroll are required but the maximum amount is limited by the amount of available memory (RAM).

When should you start capture?

The moment when you trigger capture also creates a Default *Synchronization point* on the captured video. Synchpoints are used to easily synchronize video clips for comparison (see [Synchronizing clips in InTheAction](#)). For this reason it makes sense to trigger capture at an obvious point for comparison e.g. when the club strikes the ball as shown in the following diagram.



To define the preroll and clip durations.

The current settings for preroll and clip durations are displayed at the bottom of the InTheAction module as shown below.



To change these settings:

1. Click the *Change Capture Options* link.
2. Enter a *Clip Duration* and *Preroll Duration* suitable for the action being observed. The largest preroll duration you can set is related to the amount of available RAM memory of your computer.

 If the duration is unknown you can still use InTheAction in it's *Manual Capture mode*. In this case, you will have to start AND stop the capture. You will not define any durations.

1.1.6 Defining a replay sequence

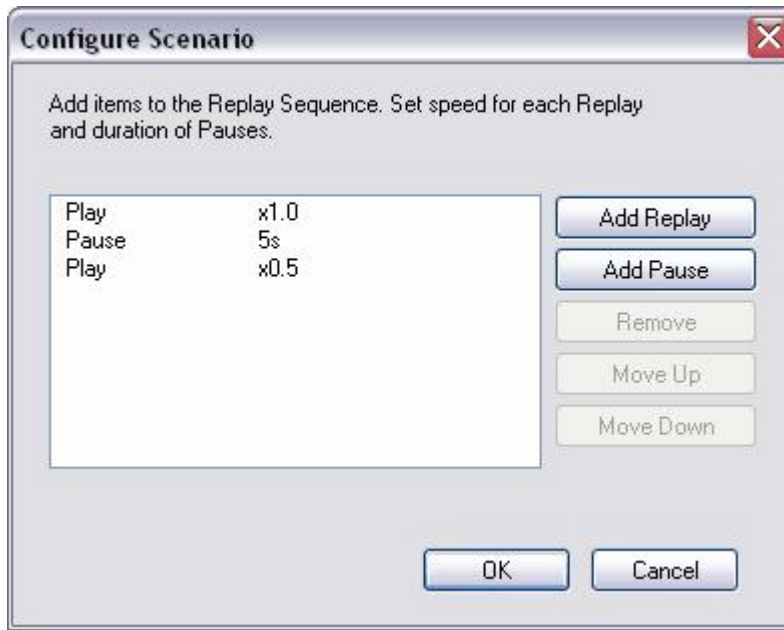
Once you have captured a video clip, the *InTheAction* module will replay it automatically based on the criteria defined in the *Replay Sequence*.

By default, no scenario is used for the replay sequence and replay speed is manually controlled by the user. Defining a scenario automates this.

Creating a replay sequence example

In the following example, a 5 second pause allows the athlete to join the coach at the computer screen, together they then view the clip once at full speed and then in slow motion. To create such a scenario:

1. Display the InTheAction options (*F3 > InTheAction*).
2. Activate the replay sequence function by clicking the *Use a Replay Sequence* check box.
3. Click the *Configure Replay Sequence* button
4. Click the *Add Pause* button and set the *Duration*.
5. Click the *Add Replay* button and set the *Speed* to *x0.5*. The Replay Sequence is ready to use and appears as shown in the following image.



When using a replay sequence it is still possible to control playback (pause, play etc.) by the other video playback controls and remote control.

1.2 Instant visual feedback during training

Once you have defined the InTheAction settings (see [Preparing InTheAction for use](#)), you can start using the *InTheAction* module. These are the steps:

1. If using the remote control (see [Remote controlling InTheAction](#)), use full-screen view (type *F17*). Recommended to give the largest possible video image.
2. Capture a video clip.
3. The clip automatically replays.
4. Repeat for the next action

1.2.1 Capturing and replaying

Trigger Capture

1. The camera should be in it's camera mode and the video image from the camera should be visible when using InTheAction's *Live* view. The choice of views is controlled by the buttons at the top left of the module; *Live*, *Simple Replay*, *Blank*, *Comparator*, and *Reference replay*.



Live view - shows the image from the camera



Simple Replay view - shows replay of the last captured clip or any clip opened from the *Tray*.



Blank view - blanks the screen (prevents it being a distraction!).



Comparison view - compares the replay clip with the reference clip.



Reference replay view - shows replay of a reference clip.



It is not necessary to be in *Live* view to capture but it gives guidance that the camera is pointing in the right direction.

- Click on the red *Capture* button or use the equivalent remote control button (see [Remote controlling InTheAction](#)).



The duration of the clip will depend on the *Clip Duration* property (see [Defining Preroll & Clip durations](#)).

Viewing:

Once you have captured a clip, the replay sequence will start automatically.

During replay it is possible use the replay controls or the remote control to pause, change playback speed, skip to next track etc. At any point you can capture again. It is not necessary to switch from *Replay* view to *Live* view to initiate capture.

1.2.2 Controlling the replay

Replay of the clip can be controlled by using the playback buttons like on a normal VCR, or by using the equivalent remote control buttons (see [Remote controlling InTheAction](#)). Read the *Getting familiar* chapter to learn the functionality of each button.



You are not restricted to replaying the last captured clip. Any of the previously captured clips will be found in the *Items List* of the *Library* and *Tray* and may be reopened by dragging them into the InTheAction video display window.

1.2.3 Remote controlling InTheAction

Because InTheAction is a tool for use during a training session you shouldn't be a slave to the computer! Now is the time to install the remote control (see [Remote controlling Dartfish](#) in the *Getting familiar* chapter) and learn to use its features.

As has been emphasized several times in this chapter already, all commands covered in this section can be executed by remote control:



! To use the remote control, its driver must be installed and the infra red receiver connected. How to do for the different types of remote control as well as guidance on using their features is covered in the *Getting familiar with Dartfish* chapter.

💡 The actual distance at which the remote can be used (max. 20 meters) is dependant on environmental factors and how fresh the batteries are. Batteries are quick to run down if you put the remote in a bag where the buttons get pressed by other contents. Add spare batteries to your Dartfish equipment inventory.

1.2.4 Using a sound trigger

Previous topics have indicated that capture using InTheAction can be triggered by clicking the *Capture* button and by remote control. There is a third method for triggering capture; a sound trigger that can be configured to react to, for example, a club or bat striking a ball, a starting klaxon or even a voice command.

! When using voice as a trigger, the sound trigger reacts to the volume, not the quality, of the sound. Therefore a voice command will only work if louder than other incidental noise.

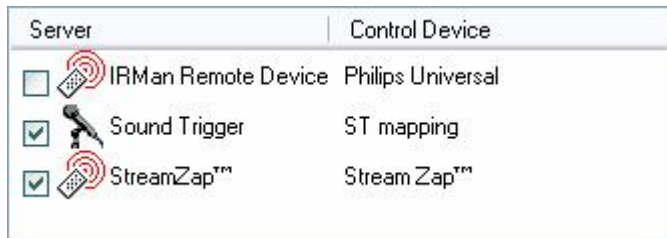
To use the sound trigger it must be activated and then configured to respond to the correct

volume of sound.

Activating the sound trigger

Before use, the sound trigger must be activated. To do this:

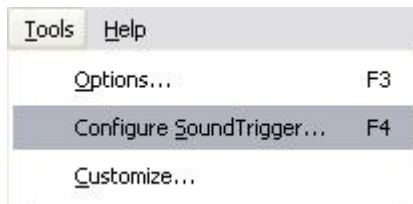
1. Select *Tools > Customize...* from the *Menu bar*.
2. Select the *Remote Control* tab.
3. Tick the box next to sound trigger to activate it.



4. Close the Customize window. It is not necessary to configure the trigger at this stage.

Configuring the SoundTrigger

1. From the menus select *Tools > Configure SoundTrigger...*



- Hardware configuration. The input device will generally be set to "Microphone". It is not possible to use the video camera as an input device for sound so your computer will need to be equipped with a built-in or external microphone.
 - Detection configuration. Select the profile that is a closest match to the type of sound used as a trigger then adjust the *Sensitivity* slider to an appropriate level; where incidental sounds do not trigger capture but the trigger sound does. Both the hit counter and the Sound Trigger Server Status will help you assess which sounds do and do not trigger.
2. Close the *Configure SoundTrigger Properties* window. The sound trigger is now active and can be used as a method of triggering InTheAction capture.

1.3 Comparing clips during training

It may be beneficial to compare the last captured clip to a reference clip when working during training. You have the choice to display both clips side by side, blended together or in a picture-in-picture mode.



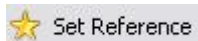
The steps to compare in InTheAction are to:

1. Define (set) a reference clip.
2. Activate the *Comparison* view and capture a clip. The captured clip is automatically compared to the reference clip
3. If needed, synchronize the last captured clip with the reference

1.3.1 Setting reference

To Set a reference clip, proceed as follows:

1. Load a clip from the *Tray* or from the *Library* items into the InTheAction module
2. Click the *Set Reference* button found below InTheAction playback controls.



You can use any other clip already saved on your hard drive as a reference clip.

Viewing the reference clip

The reference clip can be viewed at any time by clicking on the *Reference replay* button.



1.3.2 Working with comparison view

To work with comparison view, click on the *Comparison view* button on the left edge of the InTheAction module. Comparison view is



The screen display will be split in two, the reference clip on the right and on the left the last captured clip. Both clips will be replayed in function of the scenario that you defined (see [Defining a replay sequence](#)).

To work with the Compare mode:

1. Capture a video clip.
2. At the end of the capture, the clip is automatically displayed next to the reference clip.
3. Use the playback buttons to control the replay

To select the comparison layout:

Use the following buttons:



Split Screen - where the clips will be displayed side-by-side.



Basic Blend - both clips will be superimposed on top of each other.




Picture-in-Picture - the reference is displayed in the corner of the replay clip.

1.3.3 Synchronizing clips in InTheAction

In order to effectively compare two clips, obviously they must be showing comparable activities, for example, you can't compare two divers if one is at a different point in the routine.

Synchronizing clips is often unnecessary with InTheAction because a synchronization point is set when capture is triggered. Provided that you always trigger at an obvious moment each time you capture, clips will always be synchronized.

To change or set synchronization points

1. Activate the *Replay* view (see [Capturing and replaying](#)).
2. Find the moment on the clip that is to be the synchronization point. Use the *Play/Pause* and *Frame-by-Frame* buttons to do this.
3. Click  **Set the synch point at the current position**.
4. Repeat for the reference clip if necessary (use the *Reference replay* button to display the reference clip).

1.4 Using drawings in InTheAction

The right-hand side of the InTheAction module has a range of drawing tools which can be used to annotate video images, assist with analysis or coaching. The use of these tools is identical to the Analyzer module's drawing tools and is explained in that chapter.

1.4.1 Drawing Library

One unique feature of *InTheAction* drawing tools is that it is possible to store up to nine sets of drawings in the *Drawing Library*. This allows you to reuse drawings from one InTheAction analysis to another.

Displaying the Drawing Library


1. To use the drawing library it must first be activated. To do this:
2. Display the Dartfish options (F3 or *Tools > Options* menu).
3. Select the *Advanced* topics.
4. From the *ITA Settings*, select the *Use overlay drawing repository* option.
5. After applying the change, the Drawing library control will be displayed on the InTheAction module as shown below.



Using the Drawing Library

1. Select an overlay from the list (up to nine overlays are possible)
2. Add drawings to the video image
3. As each new video is captured, the drawings from the currently selected overlay will appear on the video image.

 Remember, at any time drawings can be hidden by clicking the *Show/Hide* drawing button.

 The Drawing library is one of the many features that Dartfish have added in response to requests from our users but at the current time, this feature continues to be developed. If the idea of a *Drawing Library* is valuable for the way you use Dartfish then you can look forward to further enhancements to this feature in future releases of Dartfish.

1.5 Self coaching with live delay

Live delay provides a completely hands-free way of reviewing video during training which makes it especially useful for self-coaching. It simply delays the display on the computer screen of the images that the camera continuously observes. It's like a mirror but one that waits a predefined number of seconds before showing your reflection. Enough time for the athlete to finish a routine, drill or exercise then assess how he or she performed.

For example, a coach might explain adjustments required using the range of InTheAction features explained earlier in this chapter and then leave the athlete to practice, using *Live Delay* to confirm the adjustment is being executed correctly.

1.5.1 Live delay settings

Before using live delay the camera should be connected and switched to it's camera mode. The InTheAction module is activated and video input set up as described previously (see [Preparing InTheAction for use](#)).

To use *Live Delay*, you must determine the duration of the movement that you will review and then add 1-2 seconds as a margin. For instance a Golf swing takes 3-4 seconds, you would then set a 5 second live delay.

Setting the amount of delay

1. From InTheAction's *Capture Options* click *Change Capture Options*.
2. Enter a *Live Delay* duration in seconds. The largest amount of seconds you can set is related to the amount of available RAM memory of your computer.
3. Click on the *Live Delay* button.



4. Press F11 on your keyboard to have a full screen view (press F11 again to come back to normal view).

That's it! No button presses, no saving, no comparison, no pause or replay. Just a simple tool to help with self coaching.

 Using live delay doesn't stop the use of other InTheAction features. As soon as the capture

button is pressed/clicked, capture begins according to the preroll and duration settings and replay commences straight away. However, to trigger the capture, always refer to the live action and not to what you seen on the screen.

1.6 Use InTheAction or DV Import?

If you have already read the chapter of building a video library (see [Organizing your library](#)) you will realize that Dartfish has two modules capable of capturing video onto your hard disk; DV import and InTheAction. Which one should you use?

DV Import

DV Import is a simple capture tool based on clicking a button to start and then stop capture at the beginning and end of a performance. It will typically be most useful when its simple features are all you need, usually when:

- Capturing from tape.
- You don't want instant replay of the last captured clip.

InTheAction

InTheAction may be more useful to you in the following cases:

- Automatic capture (see [Capturing and saving](#)). InTheAction can be set to capture a fixed number of seconds. When you know the approximate duration of the video clip that you wish to capture, for example a golf swing, basketball layup, weight lift, long jump, a single button press will capture the clip.
- *Preroll duration* (see [Defining Preroll & Clip durations](#)). Often, by the time you see the action you wish to capture it is too late to start capture - you will have already missed capturing the beginning. A preroll prevents you missing those vital few seconds before pressing the button.
- Instant replay. After capture you can instantly replay the images you just captured.

1.7 Next steps

InTheAction allows you to review and compare performance while training takes place but to review these performances at a later date you should learn how to load, synchronize and compare clips in the Analyzer module.

The Analyzer module will also allow you to publish your clips into a media book; a remote coaching tool complete with audio and text guidance (read the chapter on the *Analyzer*).

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