



CREZ VIDEO CAPTURE AND TAGGING GUIDE for v4.0

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Terminology. For consistency, CREZ Guides use the following terms.

- event: typical game occurrence e.g. attempted shot, foul, play call, etc.
- stats or statistics: calculations using events e.g. a player successfully making 40% of their 3pt attempts
- box score event: standard events found in a typical box score
- play call: customized event e.g. tracking particular offenses, tipped passes, screens, etc.
- game log: list of sequential events for one game (i.e. the play-by-play)

Note: play calls and box scores combined represent all possible events in a game.

1.0 CAMERA TYPES

There are three basic types of camcorder cameras on the market today: Mini-DV, DVD, and HDD (hard disk drive).

- Mini-DV stores the video in DV (digital video/AVI) format, uses a tape for storage and is capable of streaming video directly into a computer.
- DVD stores video on a DVD (8 cm) disk in DVD format and is not known to be capable of streaming live video to a computer.
- HDD (hard disk drive) stores all data in MPEG format (compressed) on the camera's internal hard drive and is not capable of streaming live video to a computer. High definition video cameras use HDD storage since these systems require more physical space.

2.0 VIDEO SOURCES

There are three different methods of inputting the video into CREZ: streaming, copying, and using a DVD.

2.1 Streaming

Streaming requires a Mini-DV camera. This transfers the video directly from the camera to a computer using a cable as the game is being recorded. This is the most efficient method of storing the video on your computer. The quality of the video is dependent on the speed of the computer. Here are the steps for collecting streaming video.

- 1) Connect the camera to computer using either USB or Firewire (preferably Firewire also known as IEEE 1392) and set the camera to Webcam mode. A Firewire connection is recognized to be better able to capture higher quality video; however, not all computers have a Firewire port. Refer to camera's user manual for details. When the camera is connected you will be informed by computer operating system a new device has been added to your system.



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- 2) Open CREZ and select **Games** to open the *Game Manager*. Then select **New GameStats**
- 3) If you are only collecting video, select **Save and Start Game** and *GameStats* will open.
- 4) From the menu, select **Video**→**Capture** to open *Video Capture*, which has a number of tab options.
- 5) Select **Sources**, fill in the name, and under 'Video' select the USB option if using the USB. Under 'Audio', select the default.
- 6) Select **Output** and select the directory to store the output file.
- 7) Select **Compression** tab and select the size and frame speed. Hint: select the video dropdown menu and use the DVD quality settings for better resolution. The 640x480 at a bit rate of about 1000 kbps will deliver good resolution. If there is choppiness in the video, then change the sizes to best fit your needs. You could reduce your resolution to 480x360 to reduce choppiness. The choppiness is a result of the speed of your computer is linked to the power of your system.
- 8) To start the recording select **Start Encoding** at the bottom.
- 9) To stop recording, select **Stop Encoding**.

Note: It is recommended that you experiment with the settings in order to find the desired balance between quality, size of file and quality of video.

- If you pause the video camera and then start again, the recording will store to the same file.

We recommend that you do NOT pause the video since you will then not be able to easily InstaTag your video to game events.

- If you stop the video camera and then start again, the recording will store to a new file. This is recommended if you do not want to record in between periods. In this case, you will then have to InstaTag each file separately. You can also record the whole game without stopping. The

key point is that you do not want to pause the video. Video that has not been paused is referred to as “**continuous**” video.

2.2 Copying

Video can be copied to a computer directly from a camera or some other storage device (USB key or DVD disc) after a game has been filmed. This is used when you have a camera that does not stream video (such as an HDD). It could also be filmed by a third party.

If the video is in WMV (Windows Media), MPEG2, or MPEG4 format, then you are ready to go and can use all CREZ features. If the video any other format, then you can probably still use this video with CREZ, however, a Windows limitation will probably prevent you from extracting video clips.

You can “re-encode” (i.e., change the format) your video by using a program called Prism. Go here <http://www.nchsoftware.com/prism/> and download/install. Only install Prism – do not install the other programs, unless you feel you need them – they are not required for CREZ. This used to be a free program, but recently this has been converted to an inexpensive fee program.

2.3 Using DVDs

DVDs may be made available to you from third party sources if you want to break down another team’s games. Some leagues only provide a DVD of game tape or it may be used to record games from other medias like television.

Direct Use. If the DVD video is stored in one file (look for the file with a ‘vob’ extension) or multiple files based on halves/quarters, then you can copy the VOB file to your hard drive and rename it with an ‘mpg’ extension. The file will be in MPEG format and you should be able to use this directly inside the CREZ program. All done!

Multiple Files Not Broken Into Quarters or Halves. If the DVD has files that start/stop partway through, then we recommend ripping the



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DVD into a single file as per the directions immediately below. Then, if you already have the stats for the game, you will either have to QuikTag (Section 3.3) the whole game or InstaTag (Section 3.1) at each paused location in the video, in order of the pauses from the beginning to the end of the video.

Ripping. If the game is stored in DVD format you can also “rip” the video into a single file in WMV format using third party software such as Xilisoft DVD Ripper or iSofter. Both of these are inexpensive and can be downloaded via the Internet. See <http://www.xilisoft.com/dvd-ripper-platinum.html> (\$45) or <http://www.isofter.com/dvd-to-wmv.htm> (\$30).

2.4 Backups

You can store your video to any convenient location on your computer’s hard drive. We recommend that you buy an external hard drive (~\$100) to backup your video in case of compute hard drive failure. The external hard drive also makes it quite easy to transfer video from one computer to another.

3.0 TAGGING VIDEO

Once video is stored on the CREZ computer, the next step is to “tag” the events to video. “Tag” involves identifying at what point in the video each event occurs. There are four ways to tag events to your video: InstaTag, AutoTag, Manual Tag, and Traditional Tag. In addition, you can Clip Tag which allows inserting tags that represent video clips (i.e. not box score nor play call events).

- **InstaTag** involves letting the scorer capture the game events while separately capturing the video in the stands. Once the video and the stats are on one computer, InstaTag tags all events to the game video.
- **AutoTag** involves capturing events and video on the same computer live at a game. Events are automatically tagged to the video.

- **QuikTag** involves tagging events that were captured using a third party scoring program. Manual Tag allows tagging of play calls at the same time.
- **Manual Tag** involves watching a game video while capturing and tagging events at the same time. Often a coach is given just the game video without any other information and the Manual Tag is used in this case.
- **Clip Tag** allows watching a game video and tagging and/or extracting labeled or unlabelled video clips. This technique can be used to breakdown game video when events are not available. So, if you obtain a game video for an opposition team playing some other team and you want to analyze it quickly, use Clip Tag.

3.1 InstaTag

InstaTag instantly tags game events captured live to the video. The video is captured using one computer and the events are captured using a separate computer. This is useful if your scorer is capturing events at the scorer’s table and your video is being captured up in the stands, away from the scorer’s table.

- 1) Score a game as usual (see CREZ Scorer’s Guide for details).
- 2) Capture or obtain a continuous video i.e. a video that does not have pauses for timeouts, etc. You can stop the video recording at half time and create a second video file for the second half. Using this method, you will have to InstaTag to the video for each half.
- 3) Place the game and video on the same computer. To export a game, see Exporting towards the end of this guide. To transfer the video, use a USB key or external hard drive to store the video and then transfer to the required computer.
- 4) From the *Main Menu*, open **Games**, find the required game in the *Game Manager*, and open that game.
- 5) In the menu, select **Video**→**Manager** to open *Video Manager*. Select **Add Video** to add the video files. Assign videos as required to the proper periods. Select **OK** when done.



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- 6) In the menu, select **Video**→**Playback** to open *Video Playback*. Select **Pop In** to conveniently place the video window.
- 7) Prime the video to tip-off and pause.
- 8) Select and highlight the “Start of” event in the **Game Log**.
- 9) Select **InstaTag** (bottom right button) and **Confirm**.
- 10) Now, all events from the “Start of” to the end of the video coverage will be tagged to the video.

Hint: When instatagging games that were originally StatCrew XMLs or produced by CREZmonitor XMLs, you must use the first valid game event found in the **Game Log**. The ‘Start of Period’ marker in this case probably does not have an accurate video time.

Hint: Once you have learned how to InstaTag, there really is no need to pause the video to perform the InstaTag (as in step 7 above). Just play the video back and select **InstaTag** when the highlighted event occurs.

Hint: There is no absolute need to tag to a “Start of” event. You can InstaTag to any event. The tagging is then applied to events from that point to events that occur by the end of the defined video coverage.

3.2 AutoTag

AutoTag automatically tags events to video at a live game. Both the video and the events are captured using the same computer. Follow these steps to AutoTag.

- 1) Stream the video into the computer. Follow the directions under Video Sources (Section 2.0) in this document.
- 2) While streaming, capture game events in the usual manner. See the “CREZ Scorer’s Guide” for details on how to create a game and capture events. You can also capture play calls – see the “CREZ Coach’s Guide” for details on creating and using play calls.
- 3) As the events are entered, they are automatically tagged to the video. So, at any point, you can search and play back video clips.

3.3 QuikTag

QuikTag allows for tagging one event at a time while playing back the video. This is required when (i) the video you were provided as been paused so you can not InstaTag or (ii) the events were captured using a third party product that does not capture timing information (e.g., StatCrew). Follow these steps to QuikTag.

- 1) Import the third party game into CREZ (see Importing in Section 8.3 of the CREZ Coach’s Guide).
- 2) From the *Main Menu*, open **Games**, and from the *Game Manager* select and open the required game.
- 3) In the menu, select **Video>Manager** to open *Video Manager*. Select **Add Video** to add the video files. Assign videos as required to the proper periods. Select **OK** when done. Note that the labels associated with
- 4) In the menu, select **Video**→**Playback** to open *Video Playback*. Select **Pop In** to insert the video window. Then pause the video.
- 5) In the menu, select **Video**→**QuikTag Mode**. A popup message appears – click OK. Note the green **Quik Tag** button at the bottom.
- 6) Select the first event in the **Game Log** for tagging.
- 7) Start video playback.
- 8) When you view the highlighted event occurring in the video, select the **QuikTag** button. This causes that event to be tagged to that time of the video.
- 9) Automatically, the next event will be highlighted in the Game Log. Again, select **QuikTag** when the currently highlighted event is viewed. Repeat as necessary until whole Game Log is tagged.
- 10) You will note that events that occur at the same time are all tagged together e.g., substitutions at the same dead ball.

Important: you can also capture play calls as you are QuikTagging. Third party scoring systems do not have mechanisms for capturing play calls. Capturing play calls while QuikTagging is a very efficient method to break



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down the video. See Coach's Guide for details on how to create and collect play calls.

Hint: you can also use this method to retag events that may have not been accurately tagged by InstaTag or AutoTag.

3.4 Manual Tag

Manual post-game tagging involves watching the video and collecting events at the same time. This is the mechanism that most other video editing software uses and is helpful for a game video that does not have any existing digital stats with it.

- 1) Open a new or existing game as usual (see CREZ Scorer's Guide).
- 2) If there is no video associated with this game then select **Video→Manager** to open *Video Manager*. Select **Add Video** to add the video files. Assign videos as required to the proper periods. Select **OK** when done.
- 3) In the menu, select **Video→Playback** to open *Video Playback*, if video does not currently appear.
- 4) **Capture Box Score and Play Call Events. Pop Out** and move the *Video Playback* to another part of the screen. The *Video Playback* must be separate from the scoring window so that scoring and video viewing can occur simultaneously. PCs and monitors are typically large enough to show the *GameStats* window and *Video Playback* window without overlapping. If using a Tablet or a small monitor, we suggest using a second monitor to play back the video. Score a game as usual (see CREZ Scorer's Guide for details).
Capture Only Play Call Events. Just **Pop In** the *Video Analysis* window, open the Play Call list(s), and track play calls as usual. See the Coach's Guide for details on how to create and collect play calls and sub play calls.
- 5) As events are entered, they are tagged to the current time in the video.

- 6) You can pause, stop, fast forward, or rewind the video as required as you are capturing events.

3.5 Clip Tag

Clip Tag tags strategic information without using box score or play call events. Clip Tag allows for entering labels "on the fly" and either tagging or extracting the clips. Clip Tag is a very useful and direct way to break down the game video which can be used on its own or while using QuikTag or Manual Tag.

- 1) Open a new or existing game as usual (see CREZ Scorer's Guide).
- 2) If there is no video associated with this game then select **Video→Manager** to open *Video Manager*. Select **Add Video** to add the video files. Assign videos as required to the proper periods. Select **OK** when done.
- 3) In the menu, select **Video→Playback** to open *Video Playback*, if video does not currently appear.
- 4) Select **Pop In** to embed the video window.
- 5) On the right hand side of *Video Analysis*, there are buttons that enable Clip Tag. If you just viewed something in the video and want to go back and tag it, then click **Loop**. If it is the start of a play and you want to record it as a clip, then click **Begin**. Here is how they work:
 - a. **Loop** loops back into the video by the number of seconds indicated beside the Loop button and plays over and over.
 - b. **Begin Clip** starts a clip at that video time.
 - c. **Cancel** ends either **Loop** or **Begin Clip**.
 - d. After **Loop** or **Begin Clip** has started, then the cursor moves to the **Label** so that a text description can be optionally typed in.
 - e. Once a loop or clip has been started, **Extract** (save to a file) or **Tag** (tag the loop in the Game Log) or both **Extract + Tag**.
 - f. The clip ends whenever **Extract**, **Tag**, or **Extract+Tag** are selected.



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All of these buttons can be activated using the keyboard so that the mouse is not required for clip tagging. This offers the easiest method to use Clip Tags. Follow these keys:

Ctrl-L	– Loop
Ctrl-B	– Begin Clip
ESC	– Cancel
Ctrl-E	– Extract
Ctrl-T	– Tag
Ctrl-+	– Extract+Tag

4.0 MERGING GAMES AND TAGGING TO VIDEO

A powerful feature in CREZ is the ability to merge two games. Namely, the events that appear in the Game Logs are merged and placed in the proper order. This is useful to merge game events captured live by the scorer (on one computer) with play calls captured live by a coach (on a separate computer). Not only does this provide a single game file to search for video clips, it also provides the ability to create statistics based on play call outcomes. For example, what percentage of the time did we make a 3pt shot when running our motion offense?

Merging is dependent on the software used at the scorer's table to capture events. If CREZ or Cybersports (v5.0 or later) is used at the scorer's table, follow Section 4.1 (these systems create the timing information). If StatCrew or DakStats are used at the scorer's table (these systems do not provide timing information), follow Section 4.2.

4.1 Merging Two Game Logs With Video Timing

Scenario: scorer table captures game events using CREZ and coach captures play calls using CREZ from the bench (or in the stands).

- 1) The scorer captures game events in the usual manner. See the CREZ Scorer's Guide for details. The scorer can also capture game events using StatCrew with CREZmonitor or Cybersports (v5.0 and later).

- 2) The coach captures play calls in NoClock mode. See the CREZ Coach's Guide for details. Advice:
 - a. The 'Start of Period' must be captured exactly.
 - b. Record play calls during live balls or just before the ball becomes live. That is, do not capture play calls during dead balls. Doing so will generate video tags that are not accurately synched to the events.
- 3) At the end of the game, one game is exported (see Exporting in this guide), transferred to the other computer, and then imported (see Importing in this guide).
- 4) From the *Main Menu*, select **Games** and, from the *Game Manager*, select **Merge**.
- 5) In *Merge Games*, **Browse** to find the two games. Select Video Time merging.
- 6) Select the **Merge** button. This creates a brand new game that combines the events in sequential order from the two games. The game time is assigned to the events captured by the coach in NoClock mode.
- 7) Return to the *Game Manager* and open the new game. Now InstaTag this game to the game video using the directions provided in the CREZ Coach's Guide.

4.2 Merging Two Game Logs Using Game Clock

Scenario: scorer table captures game events using a third party scoring package and coach separately captures play calls using CREZ.

- 1) The scorer captures game events using StatCrew, DakStats, or Cybersports (version 4.x or earlier). (Note: If using StatCrew, it is recommended that the scorer also use CREZmonitor. This approach is convenient since it allows the coach to not have to keep track of the game clock and the steps in Section 4.1 can be followed.)
- 2) The coach captures play calls in the usual manner. See Coach's Guide for details on creating and capturing play calls. Further:



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- a. Monitor the game clock carefully so that events will be properly merged with the scorer's events. Do not use NoClock mode.
 - b. Record play calls during live balls or just before the ball becomes live. That is, do not capture play calls during dead balls. Doing so will generate video tags that are not accurately synched to the events.
 - c. To make InstaTag work effectively either (i) capture all offensive and defensive play calls for one team or (ii) capture all offensive play calls for both teams. That is, if you just capture offensive play calls for one team, not all events will line-up properly with the video after InstaTag.
- 3) At the end of the game, use the third party software to create an XML version of the game. Transfer the XML file to the coach's CREZ computer. Import the XML into the CREZ system (see Coach's Guide for details on importing third party XML files).
 - 4) Once both games are on one CREZ system, then from the *Main Menu* select **Games** and from the *Game Manager* select **Merge**.
 - 5) In *Merge Games*, **Browse** to the CREZ version of the game (coach's play calls) and select as Game 1. **Browse** and select the scorer's version of the game as Game 2. Select Game Time merging.
 - 6) Select the **Merge** button. This creates a brand new game that combines the events from both games using the order provided by the game time.
 - 7) Return to the *Game Manager* and open the new game. Now InstaTag this game to the game video using the directions provided in the CREZ Coach's Guide.
- 2) Install the current Microsoft Patch for Windows Media Encoder (WME) since it is best to use the most current version of this software that is used within CREZ.
 - i) Install the patch found here: <http://support.microsoft.com/kb/929182>.
 - ii) Reboot your computer.
 - iii) Try using CREZ again and see if your problem persists. If the problem persists, go to Step 3. Typically, Step 3 solves most video capture/playback problems.
 - 3) Follow these directions to disable DEP. The DEP in Windows Vista can close programs when the WME is used to Extract or Play clips.
 - i) Left click on the Start button. Go to All Programs→Accessories→Command Prompt. Right-click the Command Prompt and select "Run as Administrator". The prompt in the command window should read as `C:/Windows/system32>`
 - ii) Enter "bcdedit.exe /set {current} nx AlwaysOff" exactly. No quotes and the brackets around the word 'current' are 'curly' brackets and note the spaces. You should receive a confirmation of success.
 - iii) Reboot the computer.
 - iv) Try using CREZ again and see if your problem persists.
 - 4) If you are having problems playing video in the Team's Video Analysis area, but you are able to Extract, this is an additional Windows bug. This has been fixed directly within CREZ as part of v3.0. If you have an older version of CREZ then only upgrading to v3.0 will solve this problem.

5.0 VIDEO AND VISTA – MICROSOFT BUGS

A key Microsoft software library that works with Windows XP does not work with Windows Vista. If you must use Vista and you are noticing problems with either Video Capture or a Team's Video Analysis, then follow these directions.

- 1) As with any Windows installation, first close all windows and programs.



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APPENDIX – IMPORTING VIDEO USING A SONY HDD

How Do I Import Video Using a Sony HDD?

- 1) Connect your Handicam Station to power and connect the USB cable between the Station and your computer.
- 2) Turn your camera on and the menu will go directly to the computer section.
- 3) Select the computer option and at that point your computer will recognize the connection of a new USB device.
- 4) You will see a message on your camera that says “Connecting...” Don’t unplug”. Ignore camera until ready to disconnect.
- 5) Be patient. Once the connection is made, your computer will treat it as an external storage device and usually will ask you how you want to treat the device. Select “Open Folder”.
- 6) You will see a directory on the camera called MP_ROOT. Double click to open the directory. If there is another directory, open it as well. Your files are accessible for usage.

If you want to copy the files to your computer without conversion to WMV:

- 1) Drag and drop the file to your selected directory.
- 2) The file is stored in MPEG format. These files can be instantly tagged and used within the CREZ environment.
- 3) If the video is stored in something other than MPEG or WMV format, you should still be able to use the video, but you will probably not be able to Extract video clips. This is useful, if you just want to do an initial review of video on court events for it saves the time required to convert the video. For full use within CREZ, the files must be converted to WMV or MPEG format.

If you want to convert the files to WMV format:

- 1) You do not have to copy the file(s) to your computer prior converting.

- 2) You can use CREZ to import the file directly from your camera by going into the GameStats window and selecting **Video**→**Capture** from the menu. This will opens the *Video Capture* window.
- 3) There are seven (7) tabs at the top of this module of which the first three (3) are important – **Source**, **Output** and **Compression**.
- 4) **Source** defines where to get the file. Click **Source**, click the **File** radio button. A **Browse** box appears to let you point to the file you wish to import from your camera.
- 5) Click **Output** to indicate where to store the converted file. Select **Browse** to indicate the name and directory of the converted file.
- 6) Click **Compression** to define the level of quality and size of the video format. Select **Video** to select the ‘DVD Quality Video’ option. This setting is the best if you plan on making a DVD at some point in the future.
- 7) Click **Start Encoding** at the bottom to start the file conversion. The conversion time is dependent on the speed of your computer and will take a minimum of 1 hour of file equals 1 hour 15 minutes of conversion time.
- 8) Once finished converting, end the video capture module and proceed to tagging the video.

When finished importing:

- 1) Select the “END” menu item on your camera.
- 2) Unplug USB cable from your computer
- 3) Select “Yes” option to Disconnect the computer...
- 4) Resume normal use of Camera.