Using Metadata with the FS-5 and Final Cut Pro
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Metadata is becoming an important part of modern video production. With the advent of tapeless acquisition devices such as the FS-5, which are capable of producing many different files, proper labeling of video content has become even more important for locating content within NLE systems, as well as easily retrieving content in asset management or archive solutions.

While many standards of metadata types and labels have been developed, they may be difficult for some users to implement. The easiest and most recognizable method for implementing metadata for most will be simple descriptions about the content (e.g. what is the scene, what is the production name, take #, good shot, etc.). This is basically the same type of descriptive tags that are added to content when using the log and capture or log and transfer windows.

Up until now, it would be nearly impossible to add descriptive metadata about content at the time it is being shot. Using the Focus FS-5, it is now possible to easily create a metadata template (with predefined and customizable metadata tags) prior to the shoot using a simple web interface (logged into the FS-5's built-in webserver). The metadata tags can be based on any of the standard types of metadata (such as shot, take, angle, description, etc.) or based on complete unique descriptors.

For instance, you may be shooting a film and want to utilize the content of the script to outline a template or you may have a shot list from a director which will form the basis of the fields in the template. The nice thing is that in most instances, you will know something about the shoot before you begin. It is also possible to predefine values for easy logging later. For instance, if you were shooting a football game and you defined a metadata field as "Play", you could predefine the values for this field as "offense" or "defense". That way when logging while shooting, you only have to select the predefined value rather than manually entering it.

Before the shoot begins, the template is loaded and the predetermined metadata fields and values are available for marking content that is being shot. Then when recording commences, you can easily add both entire clip and timecode specific metadata while you shoot using the loaded template. All metadata is saved to a simple database on the FS-5.

When shooting is complete and the FS-5 is mounted to a computer for editing, all the metadata that was logged while shooting is exported from the FS-5 database as an NLE compatible metadata file (for the entire template as well as individual clip metadata files). For Apple Final Cut Pro Users, this is in the Apple XML Interchange Format.

Below is a description on how to setup a meatdata template, log metadata during a shoot and then utilize that metadata within Apple Final Cut Pro.

Note: This document assumes that your FS-5 has already been setup for peer-to-peer networking with an Apple laptop and Apple iPod Touch or iPhone as outlined in the previous sections.

Creating a Template with the FS-5

In the example below, we will use the example of a news crew that is shooting a football story. We will create a Football template and when shooting the Football story, the Football template would be used. Likewise, when shooting a Weather story, the Weather template would be used.

1. Once you have established that the network is operating, open a web browser and enter the IP address of the FS-5. Select the ADMIN tab and then select TEMPLATE. This page allows for simple template creation or modification of existing templates.

FS-5 IP Address

Web Interface function tabs
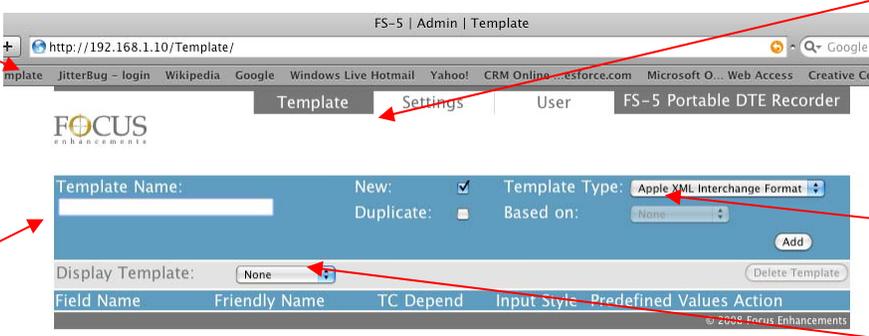
FS-5 | Admin | Template

http://192.168.1.10/Template/

mplate   JitterBug – login   Wikipedia   Google   Windows Live Hotmail   Yahoo!   CRM Online....esforce.com   Microsoft O... Web Access   Creative Cow

Template   Settings   User   FS-5 Portable DTE Recorder

New Template Name Entry

Template Name: New: ☑   Template Type: Apple XML Interchange Format ⬍
                                   Duplicate: ☐   Based on: None ⬍
                                                                  Add

Display Template: None ⬍   Delete Template
Field Name   Friendly Name   TC Depend   Input Style Predefined Values Action

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Template Type

Template Selection

2. To create a new template, enter the name in the **TEMPLATE NAME** box and then click add. Make sure the New checkbox is selected and that the Template type is set to Apple XML Interchange Format.

Template   Settings

Template Name: New: ☑
Football   Duplicate: ☐

Display Template: None ⬍
Field Name   Friendly Name   TC Depend

3. Once added, the available metadata fields for an Apple XML Interchange format will appear at the base of the web page.
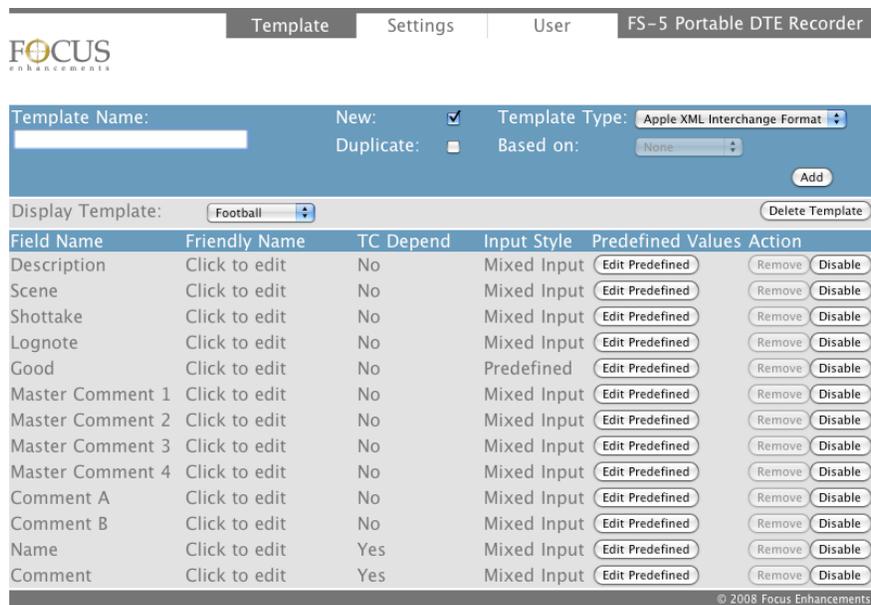
These metadata fields will be familiar to Final Cut Pro users as most are the same values that are used in the Log and Capture or Log and Capture window within Final Cut Pro (with some added extras).

When logging metadata in the field, it may be difficult to log more than a few metadata fields for a given shot (although it is possible to log as many as you need with the FS-5). Therefore, it is possible to turn some of the fields off so they do not distract when logging in the field. To turn off a field, press the

DISABLE button to the right of the web interface and that particular field will be grayed out (ENABLE will now appear on the button you just pressed). To re-enable the field, simply press ENABLE.

Some field names may not have the most recognizable name in the field for logging. For instance, "Master Comment 1" may not mean too much to someone logging a football play. Therefore, it is possible to create a "Friendly" name for the field. For instance, for the football example, we can change Master Comment 1 and 2 to appear as "Play" and "Result" by just clicking on the Friendly Name in the field and typing in the desired name followed by pressing the Return Key.

Metadata values can either be timecode (TC) dependent or not. With TC dependent fields, it is possible to select TC IN and OUT points and log metadata for that particular range. For non TC dependent fields, any metadata logged is for the entire clip – not just for a specific TC range.

NOTE: If you wish to log TC specific metadata, make sure you have a TC dependent field enabled. Same for clip based metadata.

When in the field, it may be difficult to quickly log field values – even if you have a standard keyboard. It is therefore possible to predefine some of the values before the shoot for those fields that have a Mixed Input Style. For instance, using our Football example, the PLAY (MASTER COMMENT 1) field may have predefined values of Offense, Defense and Special Teams. These are added by clicking on the EDIT PREDEFINED button. You can add as many predefined values as needed. By creating these values, it will be possible to simply and quickly select the desired value while shooting. Some fields do not allow you to predetermine values and set predefined.

For this example, we added the following values to the Football template:

Field Name:	Friendly Name	Predefined Values
Master Comment 1	Play	Offense Defense Special Teams
Master Comment 2	Result	Complete Incomplete Fumble

It is possible to create as many templates as needed, each with their own set of fields and predefined values. To create blank templates, make sure the NEW checkbox is selected. To create a new template with the same fields and values, select the DUPLICATE checkbox. To display the different templates available, select template you wish to view using the pull-down menu on DISPLAY TEMPLATE.

Once all templates, fields and predefined values have been defined, they are automatically saved to the FS-5 database. When values were input to the FS-5 database, the screen would "gray-out" at the completion of each step. This is when the value was being saved to the FS-5 database.

FS-5 Live Metadata Input – "Tag Your Media On the Fly"

Using an iPod Touch, iPhone, or a web browser on a WiFi capable device, make sure you can access the FS-5's webserver (review the previous sections, if you do not have a connection). If you are using an iPhone/iPod Touch, the browser should default to the FS-5 ENTRY screen.

1. Press the SETTINGS tab at the top of the web interface.
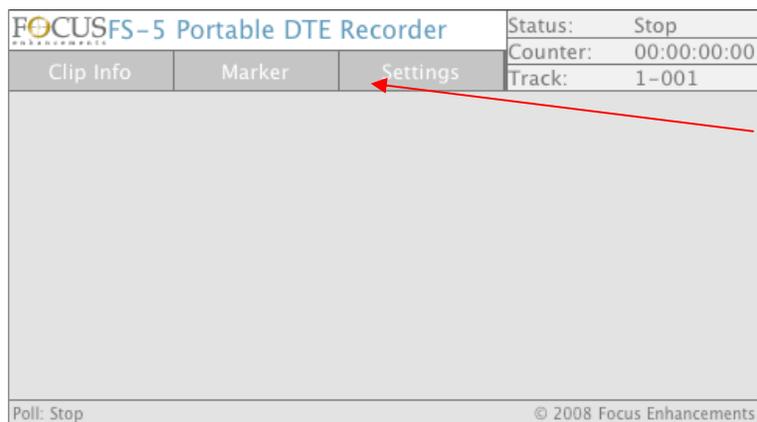
Settings Tab

2. Select the DEFAULT TEMPLATE pull-down menu and select the template you wish to use during your shoot (any recordings will utilize the metadata fields and predefined values of this template unit it is changed). For this example, we will choose Football.
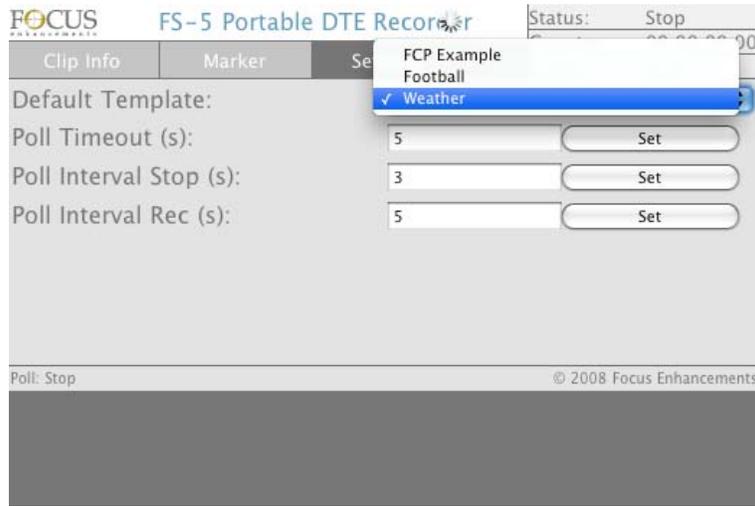
3. Make sure the FS-5 is connected to a camera, and set to the QUICKTIME DTE format (can be DV or HDV format). Also, ensure that AUTO ORG (in the SETUP menu) is set to ENABLED. Begin recording on the FS-5 and Select the CLIP INFO tab on the entry screen of the web browser. You should notice that the web browser indicates that the camera is recording and also displays the TC COUNTER value as well as the track number.
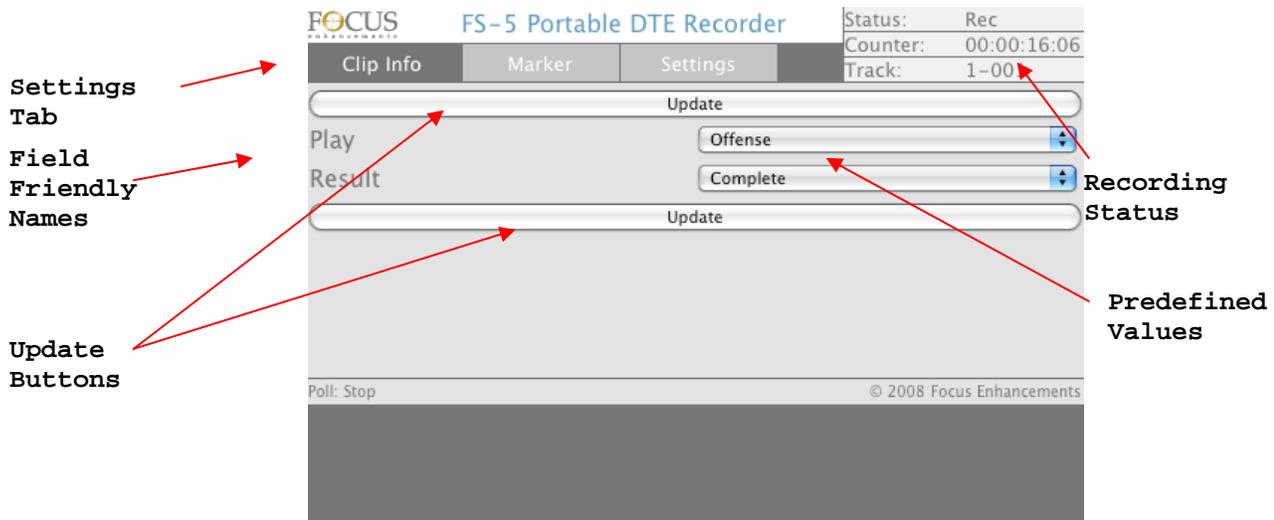
4. You will also notice that the Fields you selected (with their associated Friendly name) are displayed in the Clip Info screen on the web browser. This is where non TC Dependent metadata is logged for a clip (clip-based metadata.

5. By selecting any of the pull-down menus for the fields, the pre-defined values will display. You can quickly tag media using these predefined values while shooting. It you wish to dynamically enter metadata, simply select OTHER and type the value directly into the dialog box that appears. When finished logging metadata for the clip, select UPDATE. This metadata will now be saved for the particular clip.

6. Once logged, stop the recording. If you wish, you can also log clip-based metadata to a clip after the recording is complete (stop mode), but before recording the next clip. It is also possible to log metadata when in playback mode.

NOTE: Once your metadata selections have been made, you <u>must</u> press UPDATE for your metadata to be saved to the FS-5 database.

7. Sometimes, it is desirable to log metadata in the middle of a clip for a specific TC value. For instance, using our football example, a player may have been injured on the field and you may wish to mark just this portion of the clip as well as add a dynamic metadata value. To mark TC specific values, it is important to make sure that a TC dependent field has been selected (when the template was being created).

8. Begin another recording and select the MARKER tab on the FS-5 web interface. At the particular time point, press the SET button to the right of MARK IN. This will set a TC marker in point for a particular recording. After a period of time, set an out point by pressing the SET button to the right of MARK OUT. Next, add a Name and Comment for this particular marker (you will need to make sure you enabled these fields in the template to do so). For the football example, you could enter

"Quarterback Injury" for the name and perhaps there could have been some bad language when the player was injured, so you may want to warn the editor with a "Language" comment.

NOTE: You can mark both clip and TC based metadata for any particular clip.

You can add as metadata to as many clips as you wish. You may also like to make multiple templates and mark metadata to clips using different templates. Clips will be categorized to the particular template for post-production.

Importing FS-5 Clips with Metadata into Final Cut Pro

Once your recording is complete, mount the FS-5 to a Mac running Final Cut Pro using the supplied USB A-A cable. Make sure that AUTO ORG (in the SETUP menu on FS-5) is enabled. Press the F3 key on the front panel to enter HDD mode (this can also be done in the OPERATION menu). The FS-5 will mount to the computer desktop. Locate it and on the desktop and open the volume. Locate the template XML files (which will be the same name as the templates you created) as well as the folders that have the same name as the template. All the metadata logged when a particular clip was shot will be inside this <TEMPLATE NAME>.XML file as will be a link to the location of the clip on the FS-5 drive (all clips shot using the particular template are located in the folder with the TEMPLATE NAME.
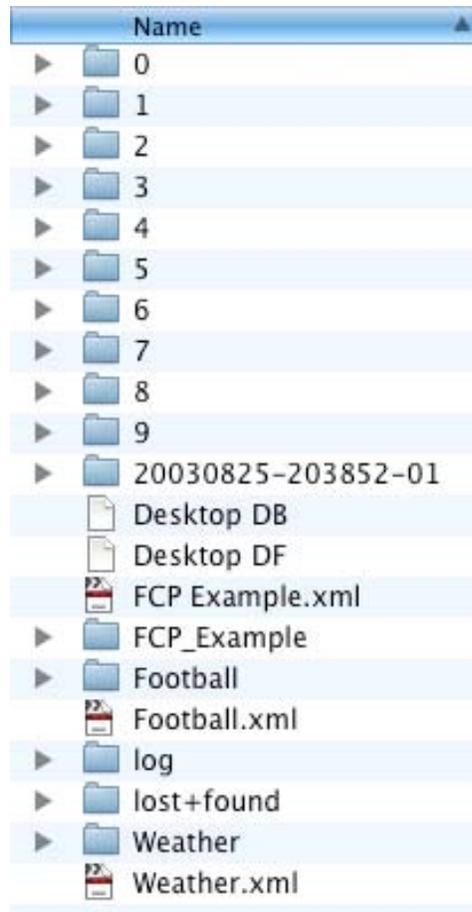
1. Launch Final Cut Pro and create a project with the same stream type (e.g. HDV 1080i60) as the content you shot. From the file menu, select FILE -> IMPORT -> XML.
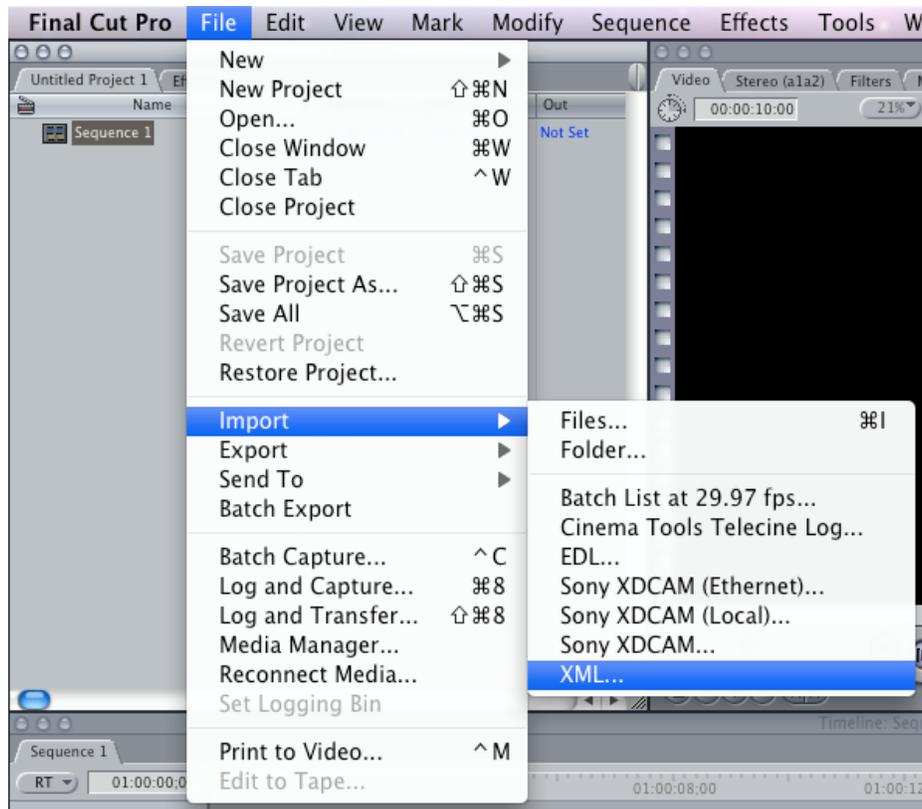
2. Locate the <TEMPLATE NAME>.XML file. For our example, this would be FOOTBALL.XML. Highlight it and Select CHOOSE.
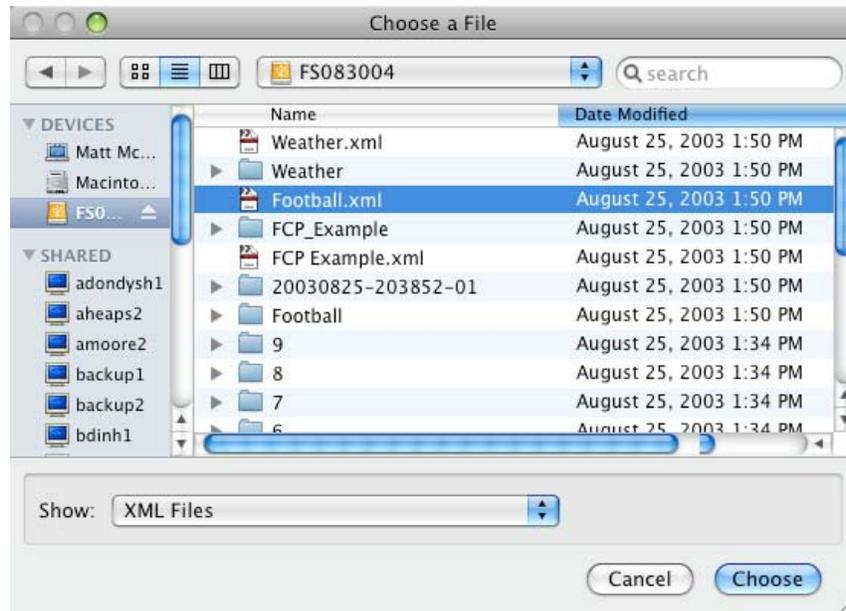
3. The IMPORT XML dialog will appear. Make sure that "Reconnect to Media Files" and Include Markers is selected and then select OK.

4. Final Cut will import all clips that were shot using this particular template and place them in a folder in the browser window. Not only have you logged metadata about the clips you were shooting, but you have also managed all your clips based on the templates you created. Using our example of the news crew that is shooting multiple stories, they could have set up a template for every story being shot for a particular day. When back at the station for editing, the editor does not have to find any of the clips for the story they are editing; they simply need to know the template name and all clips will automatically be brought in.
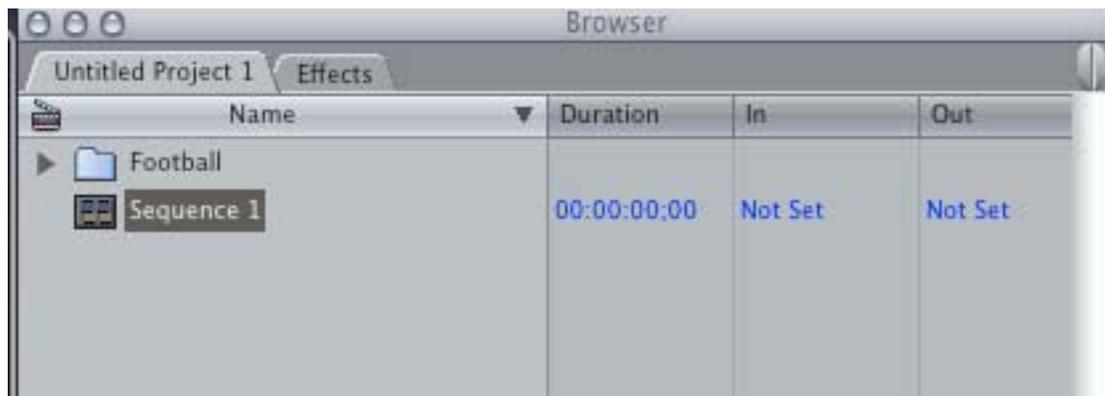
5. Open the folder with the TEMPLATE NAME and all the clips shot while using the template will be inside.
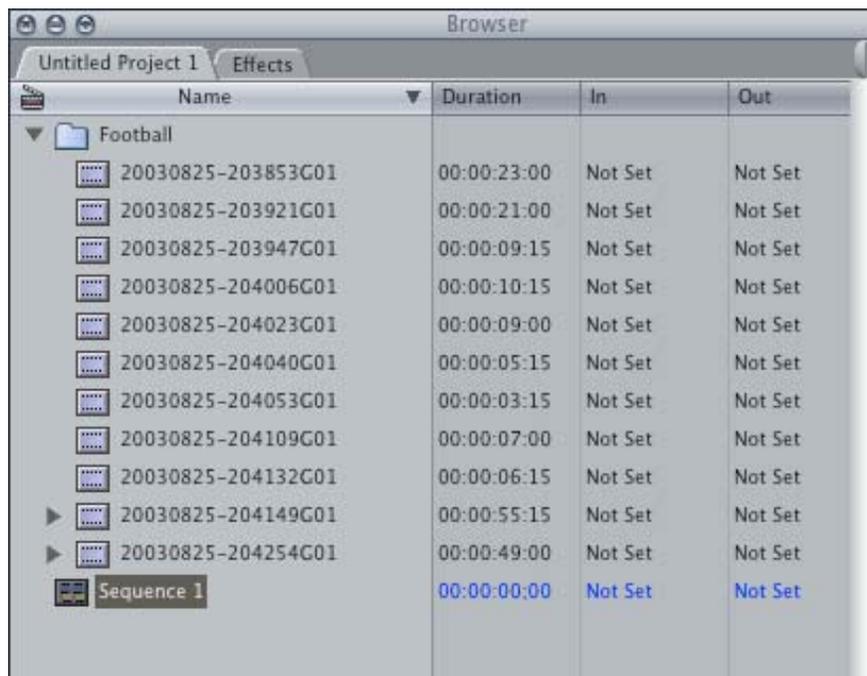
6. Using the scroll bar at the base of the Browser window in Final Cut, scroll along to find the original name of the Field (you may have substituted the actual field name for a friendly name). All the values that were logged for that particular field will appear in the browser window.
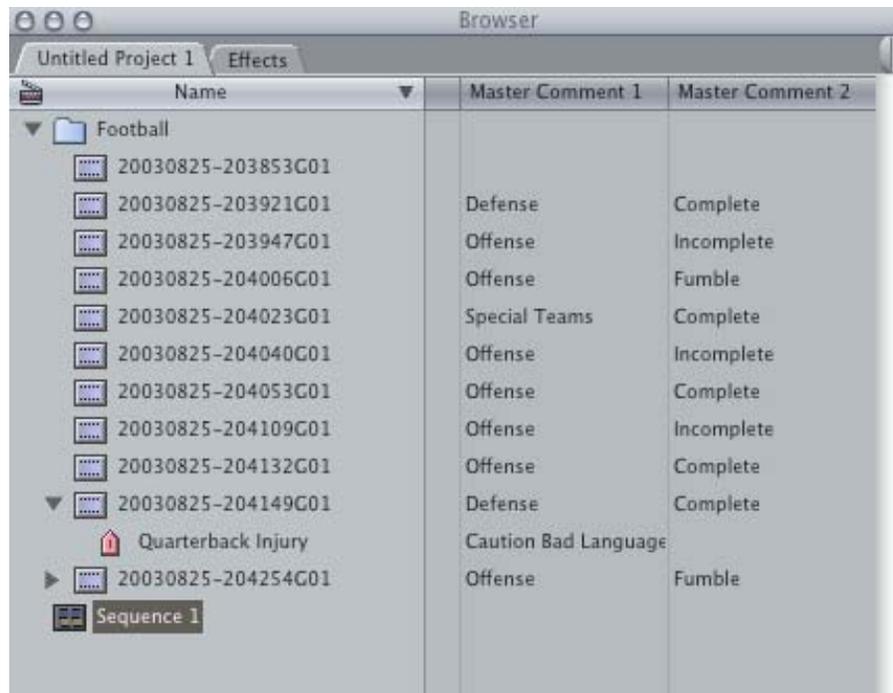
7. By selecting the field name at the top of the browser, it is possible to sort all your clips by that value. For instance, you may only want to edit defense clips. By selecting this, all the defense clips will be in order. This is a huge time saver, especially if you have many clips.

8. Any clips that were logged using TC dependent metadata will have an arrow to the left of the clip in the browser window. By opening the arrow, you will reveal the marker that was set (with the name if it was entered). If the entire clip is dragged into the viewer or timeline, you will see the marker portion (with IN and OUT points) in the player. If the play marker is within the marker period, the marker name and comment will be superimposed over the video.
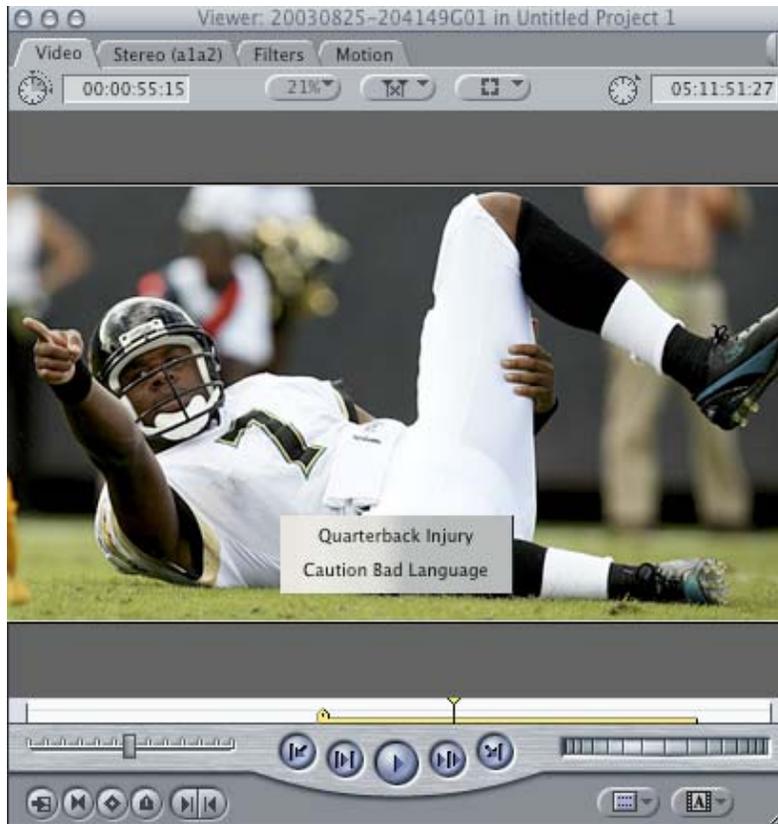
NOTE: If you drag just the pink marker from the browser window to the viewer or timeline, just that portion of the clip will appear.

9. Finally, using the FS-5's ability to record in native QuickTime HDV format using Direct To Edit® technology, when the clip is dragged to the Final Cut Pro timeline, there will be no render bar and the clip is ready to edit.