

Sony HDV Workflows

in Sony Vegas Pro 8

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1 - Introduction

This document explains how to work with HDV (MPEG2, Long GOP) based media utilizing Vegas Pro 8 software. Three acquisition formats will be covered:

- CompactFlash® media (via the Sony HVR-MRC1K Memory Recording Unit)
- Sony HVR-DR60 Hard Disk Recording Unit
- Videotape

The Sony HVR-MRC1K Memory Recording Unit is an optional product for Sony's professional HDV or DVCAM™ camcorders. It comes standard with the HVR-Z7U and HVR-S270U camcorders. The HVR-MRC1K utilizes the widely-available standard CompactFlash card for HDV, DVCAM, and DV file recording.

The HVR-DR60 is an optional hard disk recording unit for Sony's professional HDV and DVCAM camcorders. Via an i.LINK®* cable connection, the HVR-DR60 can record HDV, DVCAM, or DV streams from the camcorder and store them as video files. The internal hard disk drive (HDD) offers a capacity of 60 GB, which translates into a recording time of approximately 4.5 hours (270 minutes) for HDV, DVCAM, and DV formats.

These non-tape recording products offer "Hybrid recording" which records video on both tape and non-tape media simultaneously. This Hybrid recording operation allows users to have tape for archiving and files for NLE work at one time.

For HDV recordings, both the HVR-MRC1K and the HVR-DR60 record MPEG-2 files with the extension ".M2T". The file conforms to the HDV1080i specification in which MPEG-2 MP@H-14 is used for its video codec and either MPEG-1 Audio Layer2 (for 2 ch) or MPEG-2 Audio Layer2 (for 4 ch) is used for the audio codec.

The HVR-MRC1K and HVR-DR60 both use FAT32 for their file system, which allows a Windows or Macintosh computer to recognize the recording media as an external drive without the need for additional driver software. As FAT32 has a maximum file size of 4 GB (approximately 20 minutes), recordings that exceed this capacity are automatically recorded as separate new files.

In the HVR-MRC1K Memory Recording Unit, all files are stored in a single folder. Each file is named according to the format: **xx_nnnn_YYYY-MM-DD_HHMMSS.extension**, as follows:

xx

A two-digit number (00 - 99) useful for numbering CompactFlash cards when more than 1 is used. This number can be changed via the menu of the HVR-MRC1K.

nnnn

A sequential clip number, incremented by one as each new recording begins.

*i.LINK is a trademark of Sony used only to designate that a product contains IEEE 1394 connector. All products with an i.LINK connector may not communicate with each other. Please refer to the documentation that comes with any device having an i.LINK connector for information on compatibility, operating conditions and proper connection.

YYYY_MM_DD_HHMMSS

The date and time of the recording (which are derived from the date and time data settings of the camcorder). Recordings separated due to FAT32 limitations will have new time data, but retain the same clip number.

The HVR-DR60 folder structure differs from CompactFlash media in that the HVR-MRC1K creates a new folder with an associated movie file **each** time a recording begins. For long clips that exceed the FAT32 file size specification, subsequent files are stored in the same folder.

For ingest into Vegas, the **Sony Recording Unit Utility** software (available as a free download from the Sony Website) provides streamlined transfer of files from a CompactFlash card or HVR-DR60. The software will reconnect M2T files that were divided by FAT32, and will also rename HVR-DR60 files in the same style as those from a CompactFlash card during the transfer.

Please note that the workflows outlined here represent just a few examples of how to work with the HDV format, and that workflows can vary based on the project and/or installation.

For more detailed information on any of the software or hardware mentioned in this document, please refer to the manufacturer-supplied Operations Guide for the associated product.

2 – Workflow Overview

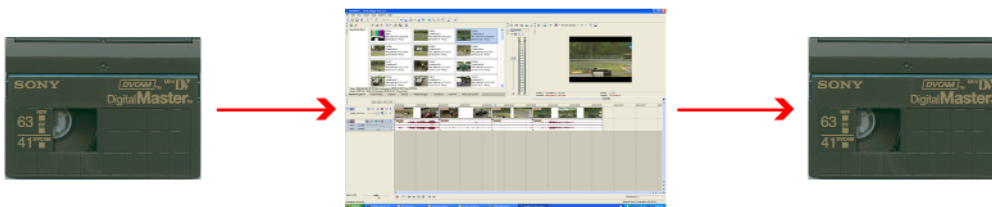
CompactFlash Media & HVR-DR60

- 1- Import MPEG2 (or DV) files from CompactFlash media, or HVR-DR60 Hard Disk Recording Unit into Vegas software over **i.LINK cable** or **USB 2.0**.
- 2- Edit
- 3- Export to HDV videotape over **i.LINK cable**.



HDV Videotape

- 4- Capture HDV videotape-based media into Vegas software over **i.LINK cable**.
- 5- Edit
- 6- Export to HDV videotape over **i.LINK cable**.



Note: It is also possible to import DV data from the CompactFlash card, HVR-DR60, or videotape with the same workflow.

Key Workflow Features and Restrictions

- Support for 1080 50/60i, 24/25/30p and 24pn
- Streamlined import of media from HVR-DR60

System Requirements

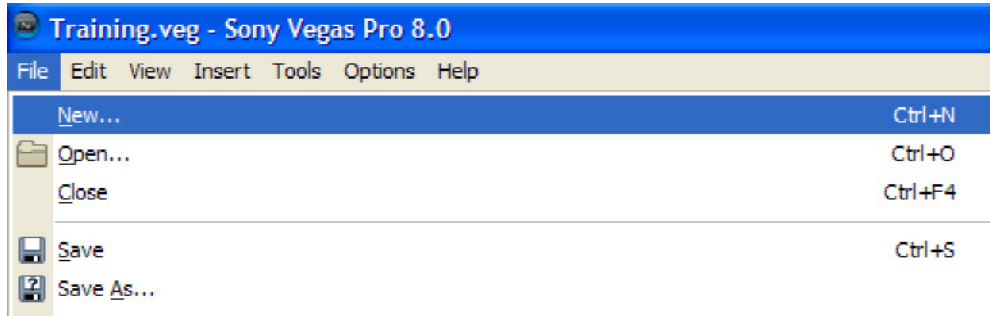
- Windows XP® SP 2
- Sony Vegas Pro® 8.0c+
- Sony Recording Unit Utility software
- CompactFlash card reader or Memory Recording Unit from the camera, mounted in an i.LINK Cradle (such as the Sony HVR-MRC1K/HVRA-CR1)
- Sony HVR-DR60 Hard Disk Recording Unit
- Sony HVR-M35U or equivalent HDV recorder

Connections

- When using CompactFlash media, connect the CompactFlash reader via a USB 2.0 cable or connect the memory recording unit cradle via an i.LINK (Firewire) cable.
- When using the Sony HVR-DR60, connect via an i.LINK (Firewire) cable.
- When using HDV videotape, connect the camcorder or deck via an i.LINK (Firewire) cable.

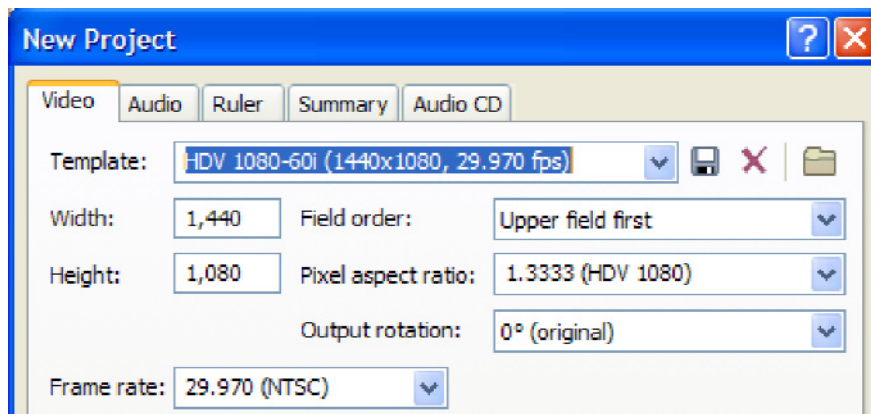
3 - Creating a Vegas Software Project

- 1- Launch Vegas software.
- 2- To create a new project, select **File > New** (or press **CTRL + N**).

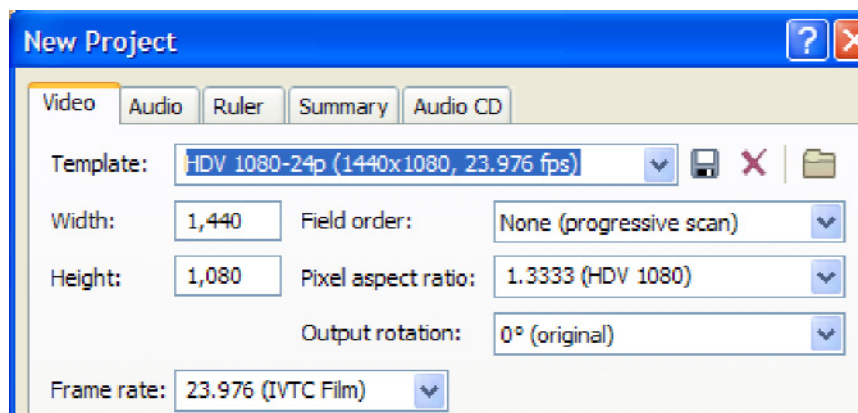


- 3- In the **New Project** window, choose a template that closely matches the majority of your material. Below are some examples:

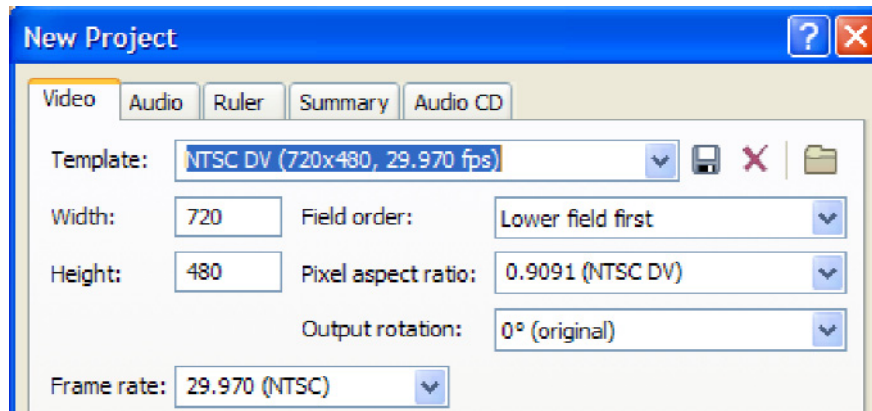
For HDV 1080i60 footage



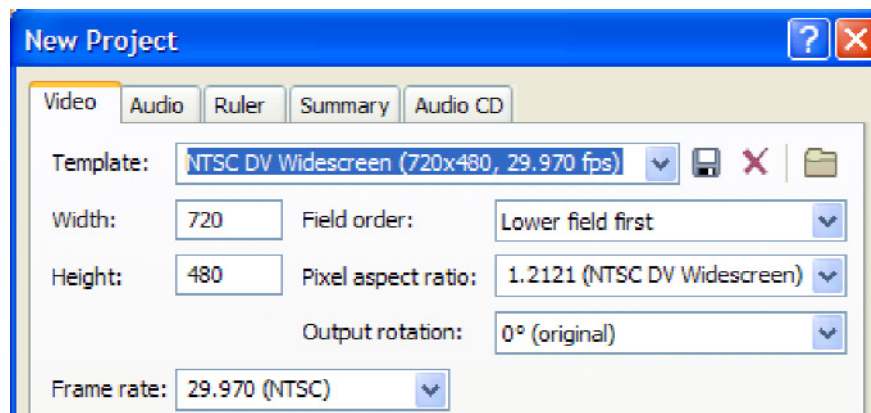
For HDV 1080p/24A footage



For 60i DV footage



For 60i DV anamorphic footage



Note: HDV native progressive format is not supported by the current version of Vegas software.

- 4- Select **OK**.
- 5- Select **File > Save** (or **CTRL + S**) to name the project and save it to the computer hard drive.

4 – Transferring Media to Local Hard Drive(s)

Although Vegas software supports Direct Edit from CompactFlash and HVR-DR60, the recommended ingest workflow is to first transfer the media to local hard drive(s) using the **Sony Recording Unit Utility** (optional for the HVR-DR60, as explained below).

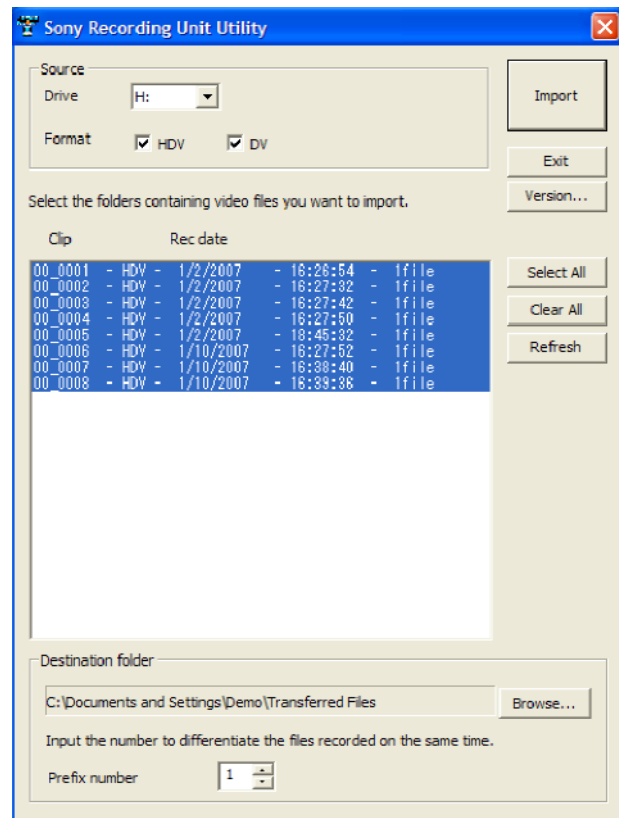
In the case of the HVR-DR60, a folder (e.g., "100HDVF") is created when recording begins, and the recorded video is stored in that folder as a movie file (e.g., "HDV10001.M2T"). When a new recording is made, a new folder (e.g., "101HDVF") is created and a new file (e.g., "10101.M2T") is stored within it. The **Sony Recording Unit Utility** transfers all of these decentralized files to one specified folder on the HDD of the PC, eliminating the need to open each folder to import the movie files to the NLE project.

Also, for HVR-DR60 files, the utility automatically changes the name of the transferred file, according to the following format: "xx_nnnn_YYYY-MM-DD_HHMMSS", as described in the Introduction to this document.

Finally, the utility also connects divided .M2T files during transfer so they can be edited precisely in the NLE as a single file without any pauses (in the case of DV files, no join is necessary).

To transfer files, do the following:

- 1– Launch the Recording Unit Utility.
- 2– Select the connected CompactFlash card drive or HVR-DR60.
- 3– Select the file types (HDV and/or DV) to be transferred.
- 4– Select the folders containing the files to be transferred.
- 5– Specify a destination folder.
- 6– Set the prefix number of the file name. (This number is useful when importing files from several HVR-DR60 units).
- 7– Select the **Import** button to begin the file transfer. Any files divided by the FAT32 specification will be merged automatically during the transfer.



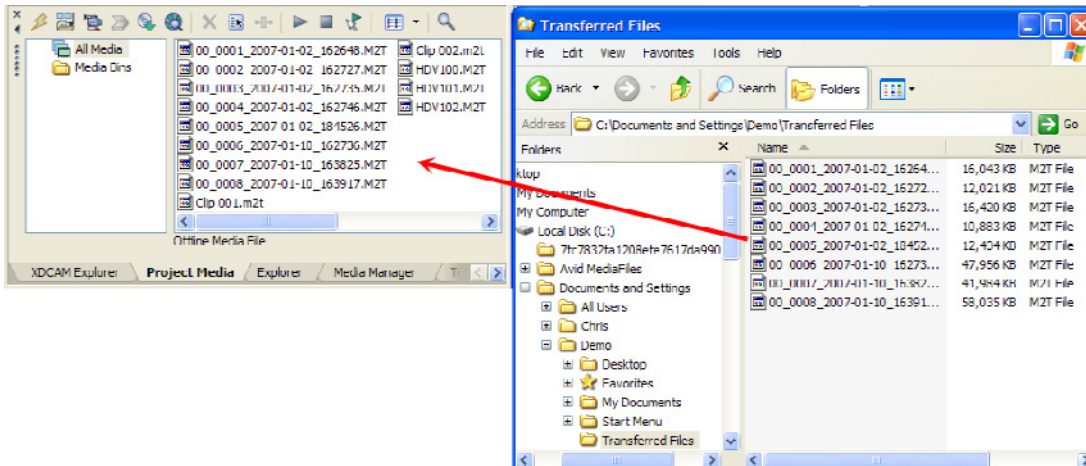
5 – Importing Media Files

Use of the Sony Recording Unit Utility

Utilize the **Sony Recording Unit Utility** to transfer the media to the local hard drive(s) before importing the files into Vegas software. Then import them in one of the following ways:

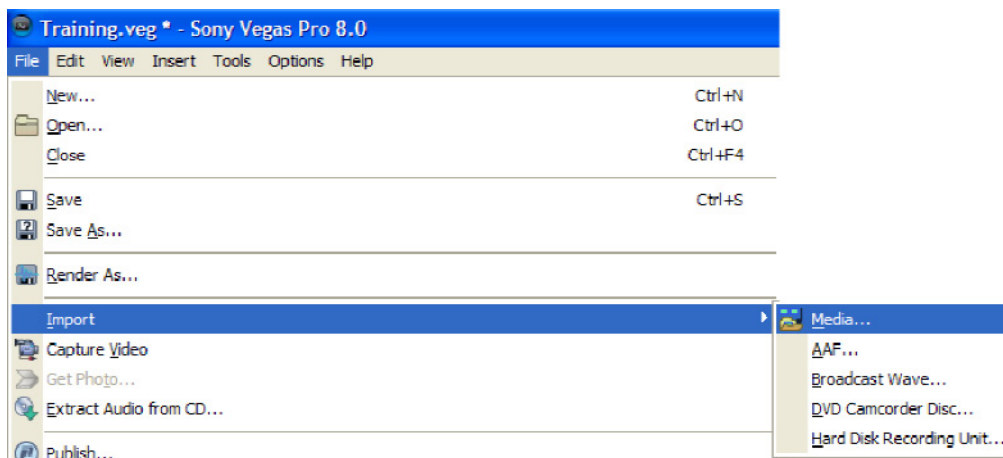
Method 1: Dragging to Vegas Software Bin

- 1- Use Windows Explorer® to navigate to the folder where the transferred files are stored.
- 2- Select the file(s) to import to the Vegas software project
- 3- Drag the files to a Vegas software Bin



Method 2: Using Vegas Software Import Media

- 1- Select **File > Import > Media**



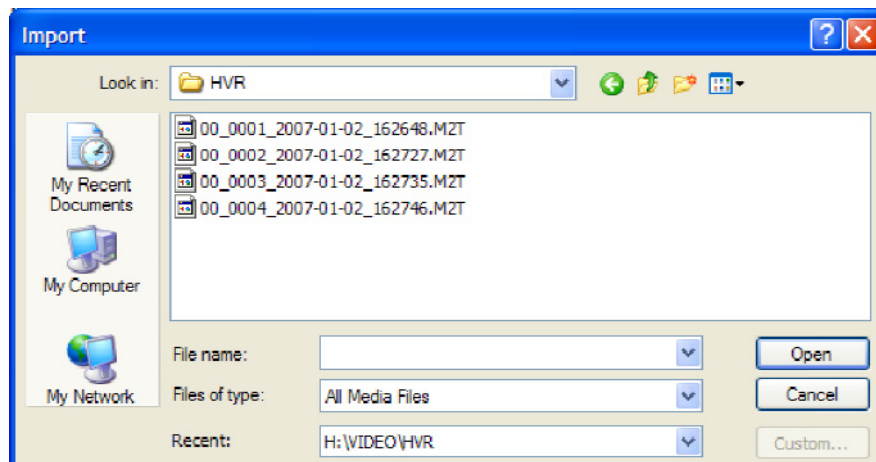
2- Navigate to the folder where the transferred files are stored.

Note: Vegas software automatically filters-out the metadata files from the list of clips.

3- Do one of the following:

- To import all clips, select all of the **M2T** files.
- Selectively import files by highlighting specific clips.

4- Select **Open** (or press **Enter**).



Note: Thumbnail View is not supported for M2T files.

Method 3: Using Vegas Software Special Import Module

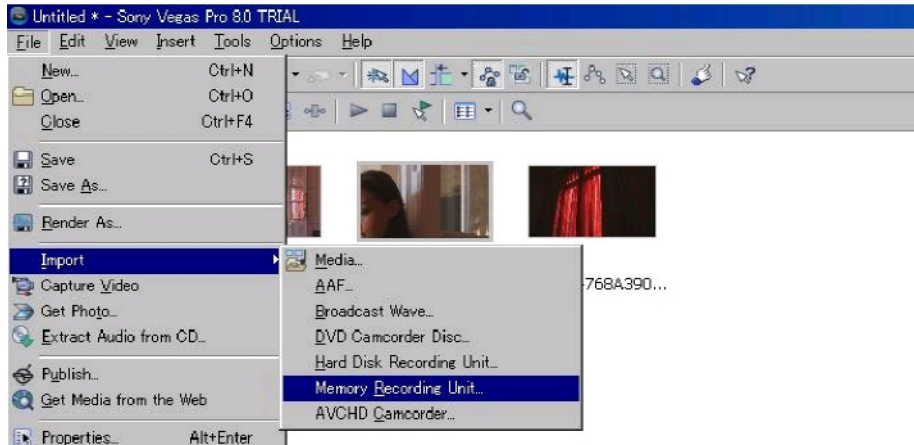
Vegas software employs a special import module expressly for ingest from the HVR-DR60 or a CompactFlash card from the HVR-MRC1K without using the **Sony Recording Unit Utility**.

Note: The following workflow imports all of the clips from the HVR-DR60/CompactFlash media. To transfer/import individual files, use the Sony Recording Unit Utility to transfer the files to local drive(s), followed by the Vegas “Import > Media” workflow (as shown in the previous section).

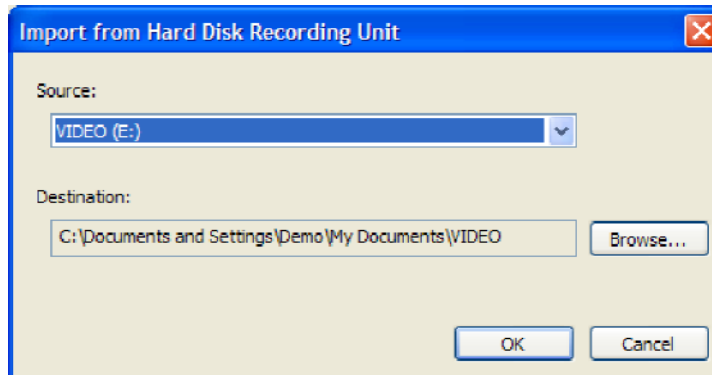
To import from the HVR-DR60/CompactFlash media, do the following:

1- Select a Bin.

2- Select **File > Import > Hard Disk Recording Unit** or **Memory Recording Unit**



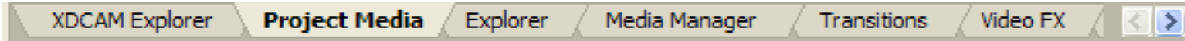
3- Vegas software will automatically locate the recording units. Alternatively, you may browse to another location, such as a local disc where HVR-DR60/CompactFlash media may have been archived to.




4- Select **OK** (or press **Enter**) to import the clips into the Vegas software Bin.

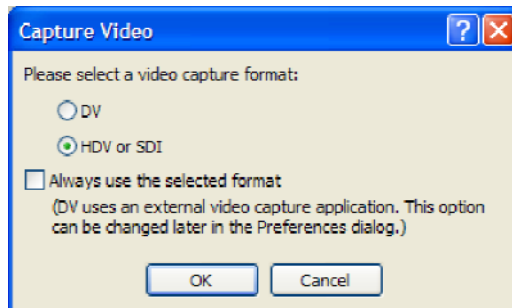
6 - Capturing HDV Video from Tape

1- Select the **Project Media** tab.

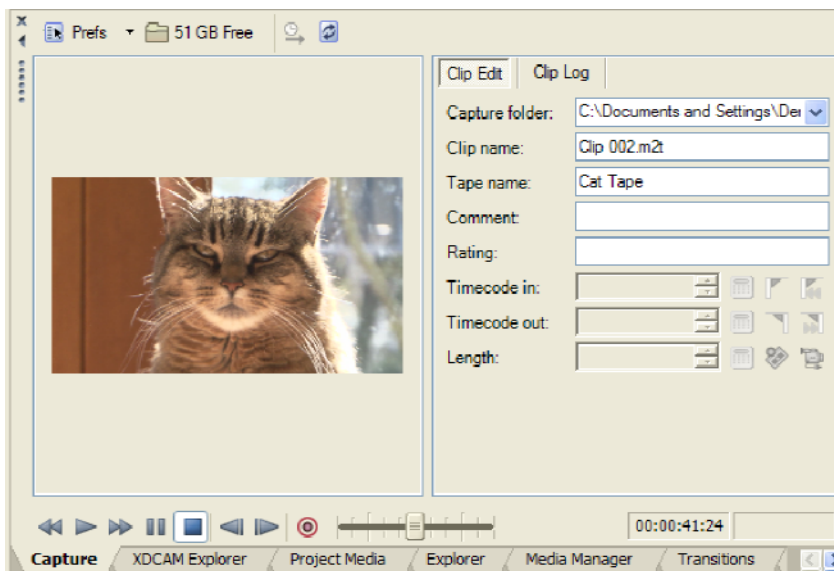



2- Select the **Capture Video** icon , located along the top of the Project Media pane (or select **File > Capture Video**).

3- Select **HDV or SDI** for the Capture Format.



4- In the Capture pane, cue the tape to the desired location and enter pertinent logging data.



5- Click the Record icon  to begin capturing.

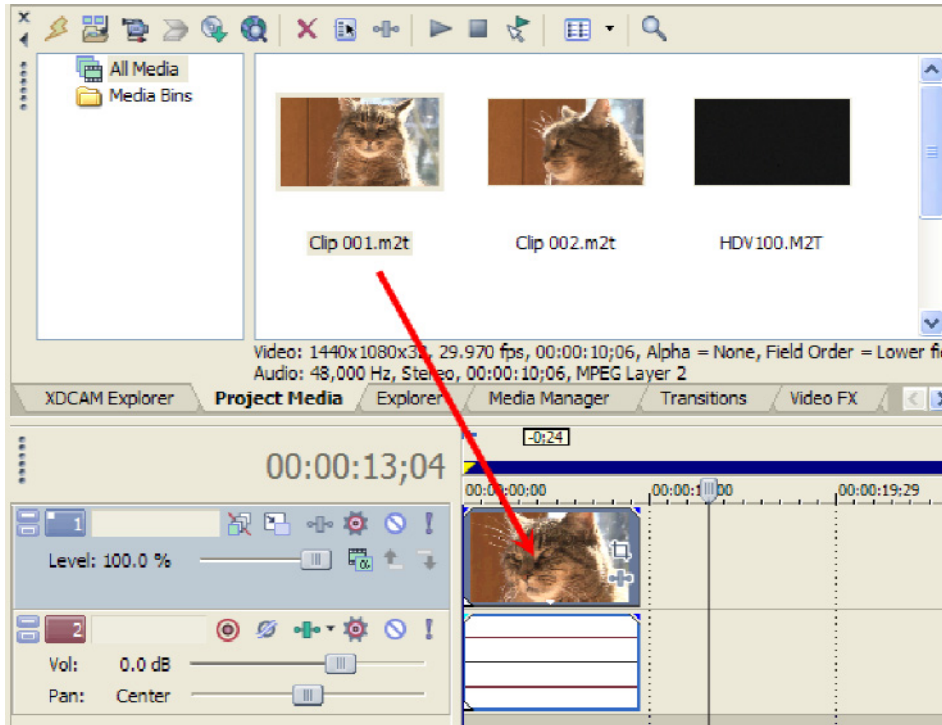
6- Click the Play icon  to start tape playback.

7- Click the Record icon again to stop capturing.

For more detailed information, please consult the Vegas Software User Manual.

7 – Adding Clips to the Timeline

There are a variety of methods for placing clips in the timeline, the easiest of which is to simply drag the clip from the **Project Media** tab to the Timeline, as shown below:

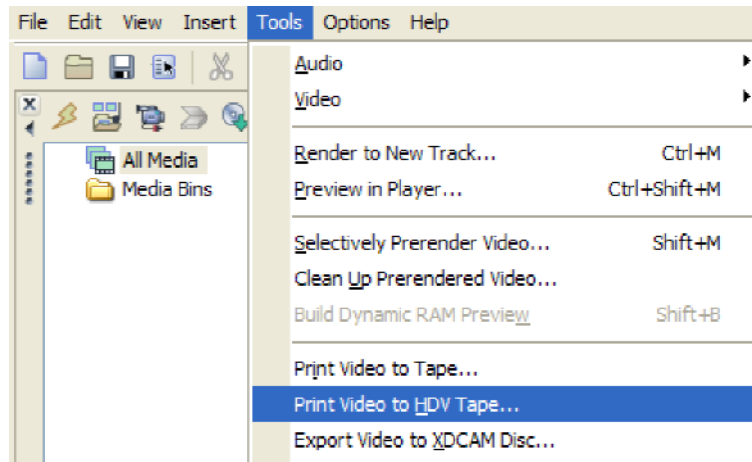


Tips: It is possible to record HDV on tape and DV on CompactFlash media / HVR-DR60 simultaneously by using the built-in downconverter of a camcorder. The DV file has uncompressed L-PCM audio data unlike HDV using compressed audio. This means that you can use the DV file as high quality audio material if needed.

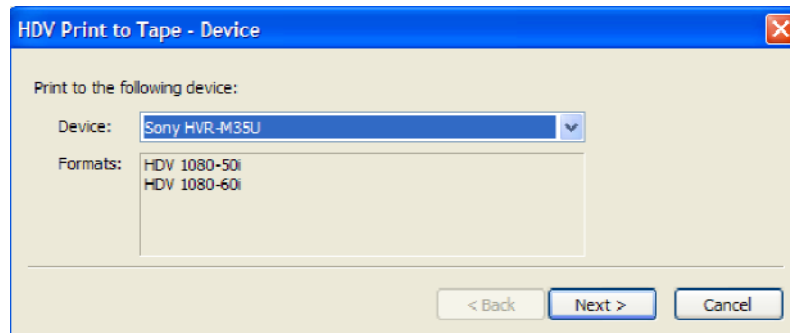
For more detailed information, please consult the Vegas Software User Manual.

8 – Output to HDV Tape

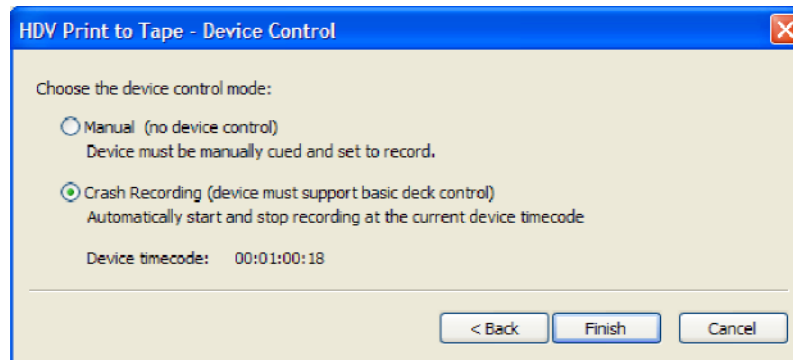
- 1– In the Timeline, set In and Out points for the range to export.
- 2– Cue the HDV tape to a location suitable for recording.
- 3– Select Tools > **Print Video to HDV Tape**.



- 4– Select the HDV device. (If there is only one connected device, the selection will be made automatically).



- 5– Select **Next** (or press **Enter**).

6– Choose a Device Control Mode.**7– Select Finish (or press Enter).**

If Crash Recording was selected, the Sequence will be rendered and output to tape automatically.

9 – Notes

- When archiving files from CompactFlash media or the HVR-DR60, maintain the original folder structure.
- Perform a software “Eject” of the HVR-DR60 media prior to powering-down or disconnecting the i.LINK cable.
- Perform a software “Eject” of the CompactFlash card prior to removing the card from the reader.