

# Editing **AVCHD** with sony **9** vegas pro

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# INTRODUCTION TO EDITING AVCHD WITH SONY VEGAS PRO 9



Sony Vegas Pro 9 lets you edit Native AVCHD files, meaning you can start editing as soon as you have finished shooting. It has a full compliment of editing tools designed to work flawlessly AVCHD footage. In addition, Sony Vegas Pro 9 makes creating a Blu-ray disc from your AVCHD footage very easy. This paper presents a typical AVCHD workflow for editing with Sony Vegas Pro 9 using Panasonic AVCCAM camcorders. In addition to editing the AVCHD footage, we will examine burning a Blu-ray disc and even creating a Standard DVD disc. We also look at alternative delivery such as iPod and You Tube. In addition, archiving options including copying your content onto a hard drive, Blu-ray or DVD discs are presented.

## MINIMUM SYSTEM REQUIREMENTS:

- Microsoft Windows XP 32-bit SP2 (SP3 recommended), Windows Vista 32-bit or 64 bit (Sp1 recommended)
- 1 GHz processor (multicore or multiprocessor CPU recommended for HD)
- 200 MB hard-disk space for program installation
- 1 GB RAM (@ GB recommended)
- OHCI compatible iLINK connector/IEEE-1394DV card (for DV and HDV capture and print to tape)
- USB 2.0 connection (for importing from AVCHD,XDCAM EX, or DVD camcorders)
- Microsoft Windows-compatible sound card
- DVD-ROM drive (for installation from a DVD only)
- Supported Blu-ray recordable drive (for Blu-ray Disc burning only)
- Microsoft.NET Framework 3.0 (included on application disc)
- Apple Quick Time 7.1.6 or later

(From the Sony Vegas Pro 9 website)

## TRANSFERRING AVCHD FOOTAGE TO YOUR COMPUTER.



Before you can begin editing with Sony Vegas Pro 9, you need to transfer your AVCHD footage from your camera to your computer. This is very easy. Simply remove your SDHC card from the camera.

### KEY POINT - COPY PROTECT YOUR SD CARD.

Your SDHC card has a small little slider on the left hand side of the card. Push this slider down to write protect the data on your card. This is a critical step to protect your footage before you insert the SDHC card into your computer.



Many PCs have an SD card slot, and if your PC SD card slot supports SDHC cards, you can insert the SDHC card directly into your computer. If your PC does not support SDHC or if it does not have a SD card slot, use a SDHC-to-USB reader/writer like this one.

Just insert your SD card into the reader and connect it to a USB port on your computer. It will appear as a removable storage device on your computer. You will now be ready to open Sony Vegas Pro 9 and begin editing AVCHD right from the SDHC card!

## COPYING AVCHD FOOTAGE TO A HARD DRIVE

Alternatively, you can copy the footage from you SDHC card to your computer, thus freeing up the SDHC card for additional shooting. I prefer this approach.

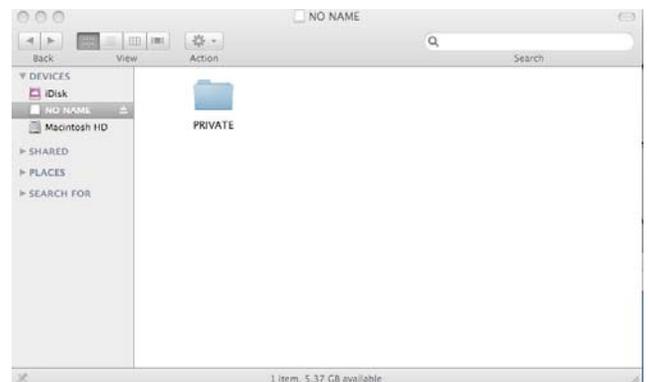
### STEP #1 – MOUNT THE SD CARD ON YOUR COMPUTER.

Even though you can edit directly from the SDHC card, many people prefer to copy their footage to a hard drive before editing. This frees up the SDHC card so that you can immediately use it again. Many PC's have SD Card slots that support SDHC. If so, just insert your SD card. If your PC does not have a SD card slot, or does not support SDHC cards, use the SDHC-to-USB reader. Once your SDHC card is mounted on your computer, it will appear as a removable hard drive under my computer (on a PC).



### STEP #2 – OPEN THE SDHC CARD FILES.

When you open No Name you will see a folder named Private. You will want to copy this folder to your hard drive. Do not try to copy from any other folder within the “private” folder, as the structure of folders inside is important. Create a destination folder that you have named with an easily recognizable identifier, such as the project and the date. It is highly recommended to verify the integrity of the copy before re-formatting your SDHC cards. Also, consider your backup strategy as you begin to accumulate larger numbers of folders and projects. The more planning up front, the easier your life will be when you decide to re-visit material for different sessions (re-purposing content).

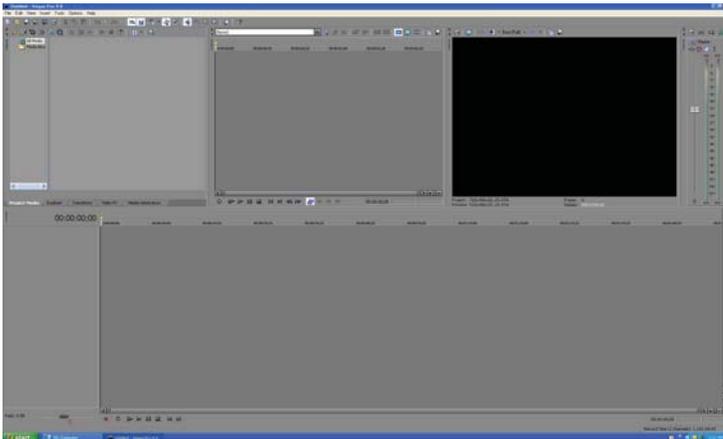


NOTE: Panasonic recommends 3<sup>rd</sup> party applications such as Shot Put Pro from Imagine Products for copy and verification. Shot Put Pro provides a safe backup to multiple simultaneous target locations (such as hard drives and/or Blu-ray burners) with validation of the copy. Please see [www.imagineproducts.com](http://www.imagineproducts.com) for more information.

# EDITING AVCHD FOOTAGE WITH SONY VEGAS PRO 9

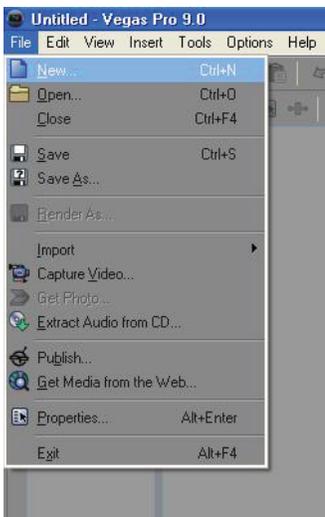
## STEP #1 – OPEN SONY VEGAS PRO 9 ON YOUR COMPUTER

Your work space will be empty.



## STEP #2 – CREATE A NEW PROJECT

Let's create a new project. **CLICK FILE >NEW.**



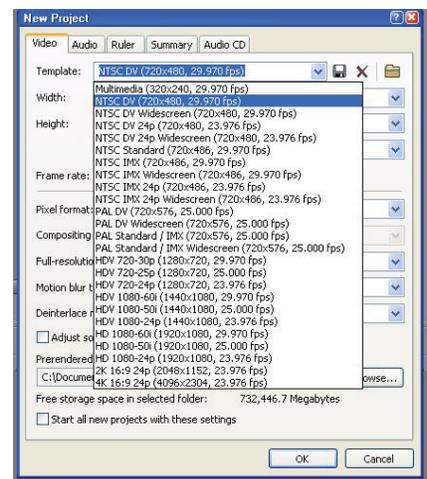
The New Project window opens.

It has five tabs across the top.

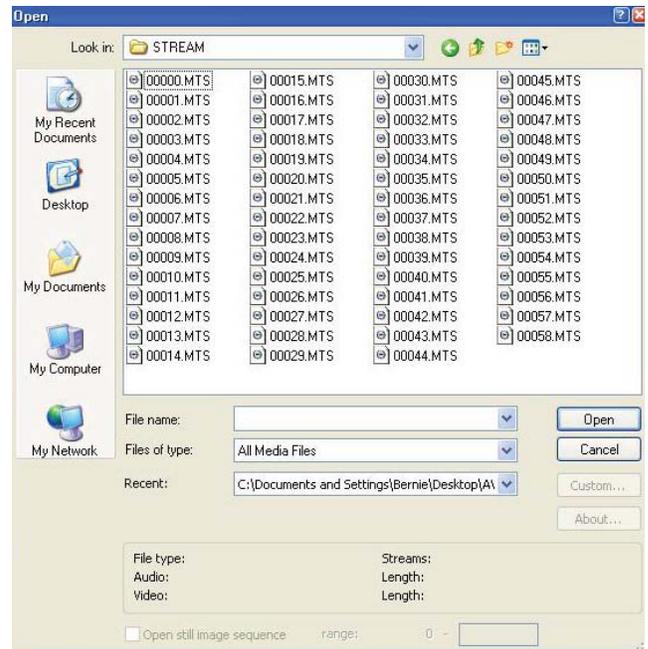
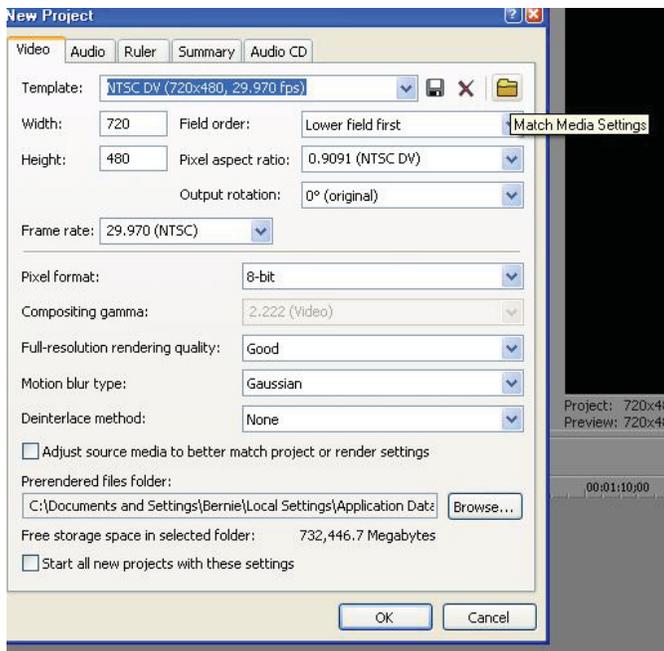
## STEP #3 – SET YOUR VIDEO TEMPLATE

First we must set the template we want to use to set the frame rate and resolution of the project. Click on the drop down menu.

Here you can pick your settings from any of the high definition settings, which are labeled HDV. If you have shot your footage at 1080/60i, then pick HDV 1080-60i (1920x1080) at 29.970fps. If you had shot at 720/24p, then you would pick HDV 720-24p (1280x720) at 23.976fps.



If you shot at 720p/60fps you won't see a template that matches your footage. In this case, just click on the folder on the right side of the New Project Window.

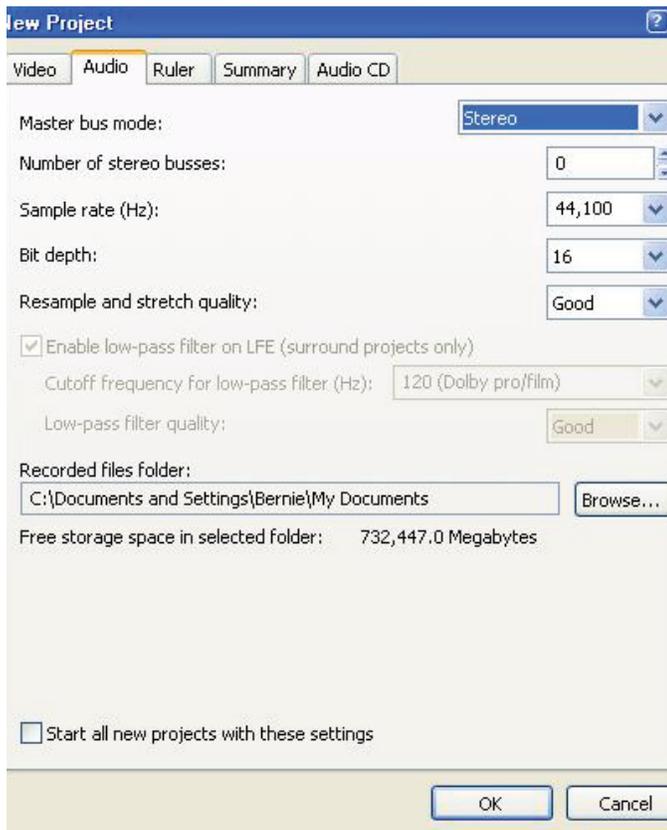


This will open a browser window where you can select a clip of your footage and match the settings to your footage. When you find the Private folder, click on AVCHD, then BDMV and finally on Stream.

Here you will see your individual AVCHD files (they are MTS files), click on the appropriate clip and your settings will match that file.

#### STEP #4 – SET AUDIO PARAMETERS

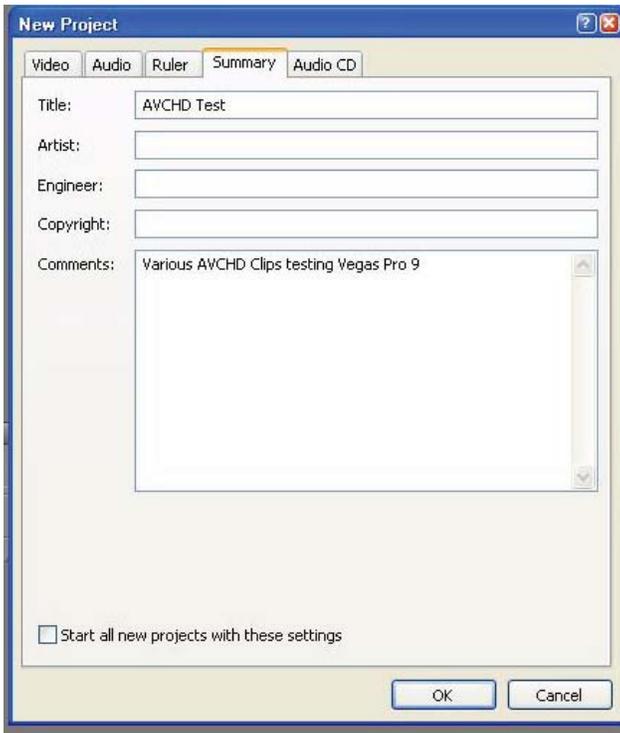
Using the Audio tab in the New Project Window, you can also set your audio parameters.



## STEP #5 – CREATE SUMMARY

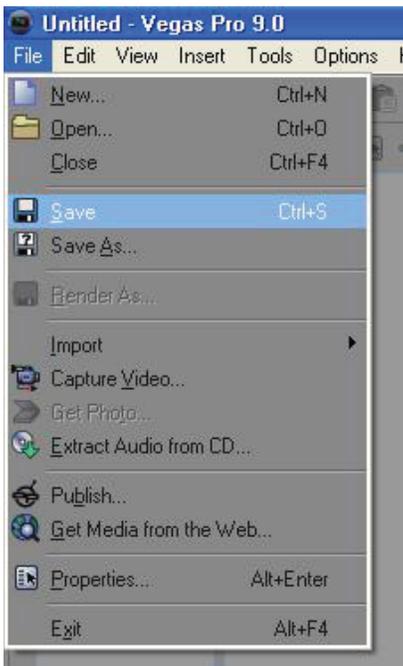
It is a good idea to open the Summary Tab.

Here you can give your project a name and add any comments you like.



## STEP #6 – SAVE YOUR NEW PROJECT

Go to File>Save and save your project and give it a name if you have not already done so.



## IMPORT YOUR AVCHD FOOTAGE

There are a number of ways to get AVCHD footage into Sony Vegas Pro 9. If you have a fast powerful PC, you can actually edit native AVCHD, although the performance will vary based on the performance of your computer.

## TRANSFERRING AVCHD FOOTAGE DIRECTLY FROM THE PANASONIC AVCCAM CAMCORDERS TO YOUR COMPUTER.

You can transfer your AVCHD footage directly from your camera. The next few steps will show you how to do this. Unfortunately, this ties up your camera and precludes you from shooting with it while you are transferring.

Note: AVCCAM cameras do not have a IEEE1394 Fire Wire output, only USB. Since the AVCHD format is file based (not streaming oriented), there is no requirement for a Fire Wire output.

### STEP #1 – CONNECT YOUR PANASONIC CAMERA VIA A USB CABLE TO YOUR COMPUTER.

Note: It is recommended to connect your camera to an AC power supply, as a low battery could damage your transferring footage. Also, write protect the card as instructed before.

### STEP #2 - TURN THE CAMERA TO THE PC ON POSITION



On the AG-HMC70 shoulder-mount camcorder, this is accomplished by moving the record button to PC. This puts the camera into USB device mode, making it appear as a SDHC card reader to the PC.



On the AG-HMC150 handheld camcorder, you must push the mode button on the back of the camera. The light will change from Cam to PB for playback, push again and the PC light will turn on. This puts the camera into USB device mode, making it appear as a SDHC card reader to the PC.



On the AG-HMC40 camcorder, when you connect your USB cable to your computer, the LCD display on the camera will prompt you to touch either the PC or Printer Device button. Touch PC. The Printer Option here is for the still picture functionality of the camera, and has nothing to do with this video file transfer.

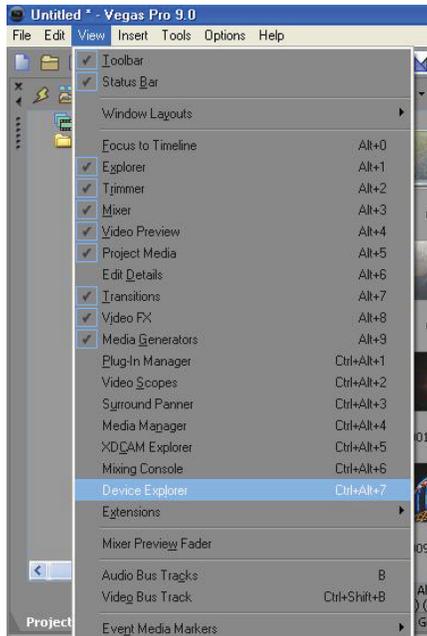
### STEP #3 – TRANSFER THE FILES.

The camera will appear as a device on your computer. Simply copy the contents of the Private Folder as described earlier, AND make sure you verify the copy.

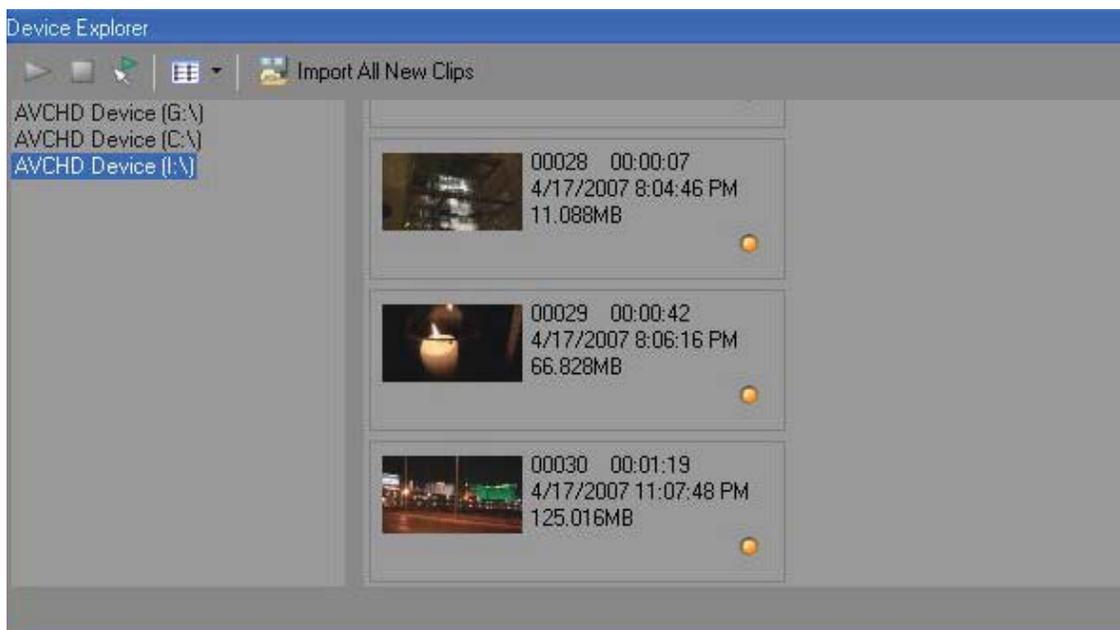
## TRANSFER USING DEVICE EXPLORER.

Alternatively, you can use Device Explorer to transfer your files from your camera.

### STEP #1 – CLICK ON VIEW>DEVICE EXPLORER.



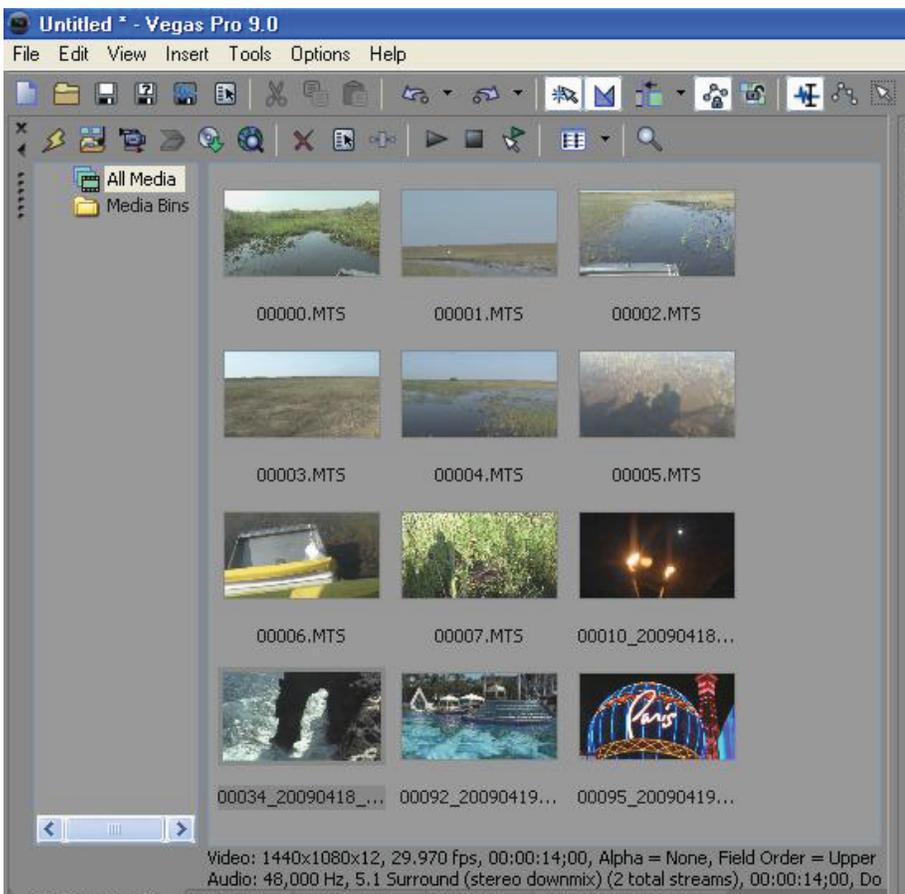
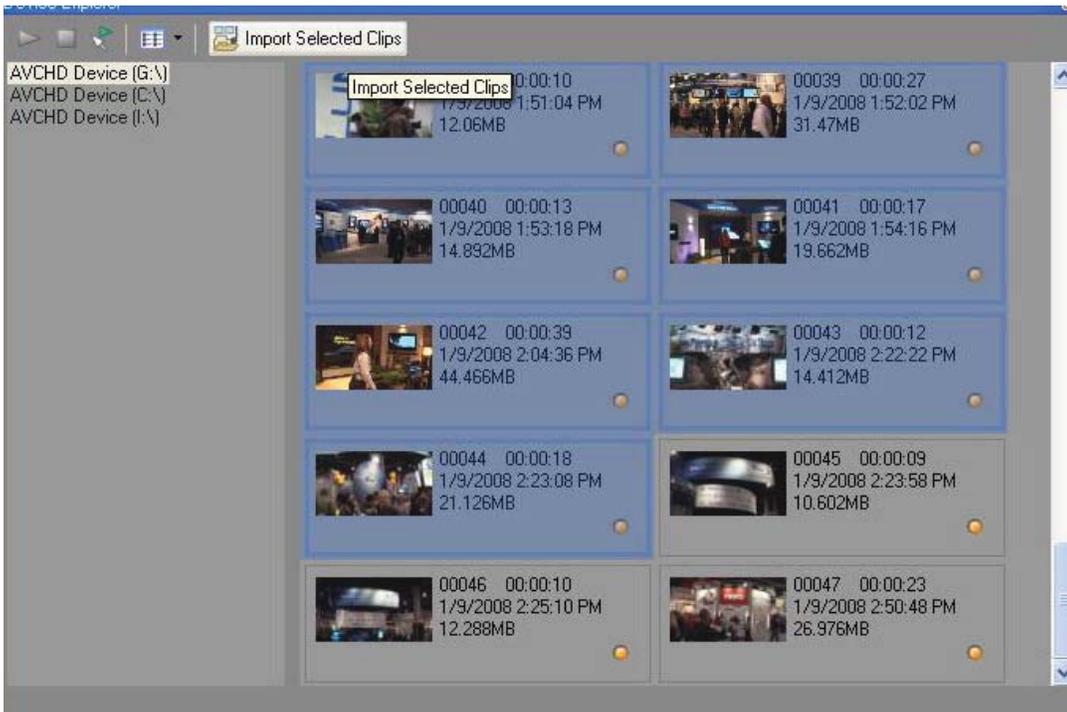
On the left hand side of the window, click on the device that is your camera, (in this example it is AVCHD Device (I:)).



## STEP #2 – SELECT AND IMPORT YOUR CLIPS

From here you can select the clips your wish to import.

Click on the import Selected Clips icon and the clips will be placed in the Project Media Window.



Once your clips are in the Project Media Window, you are now ready to begin editing.

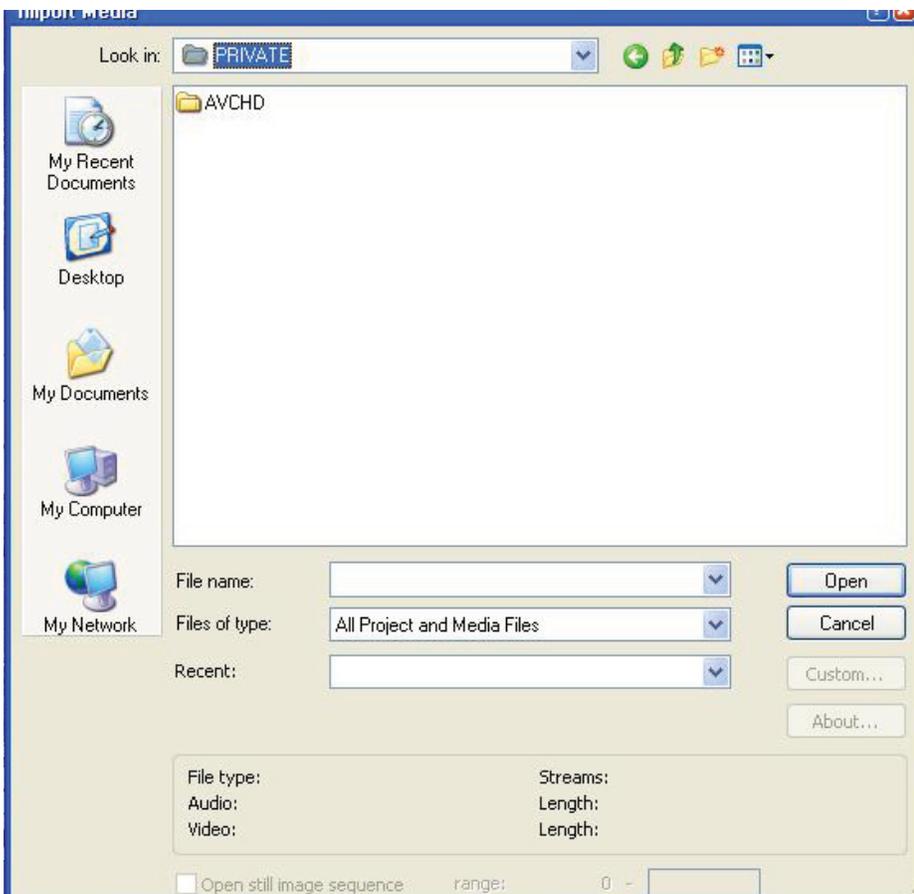
# TRANSFER USING IMPORT MEDIA ICON.

If you have already copied your footage to a hard drive, or if you have inserted your SDHC card into a card reader and attached it to your computer via USB, there are a couple of different methods for getting the AVCHD footage into Sony Vegas Pro 9.

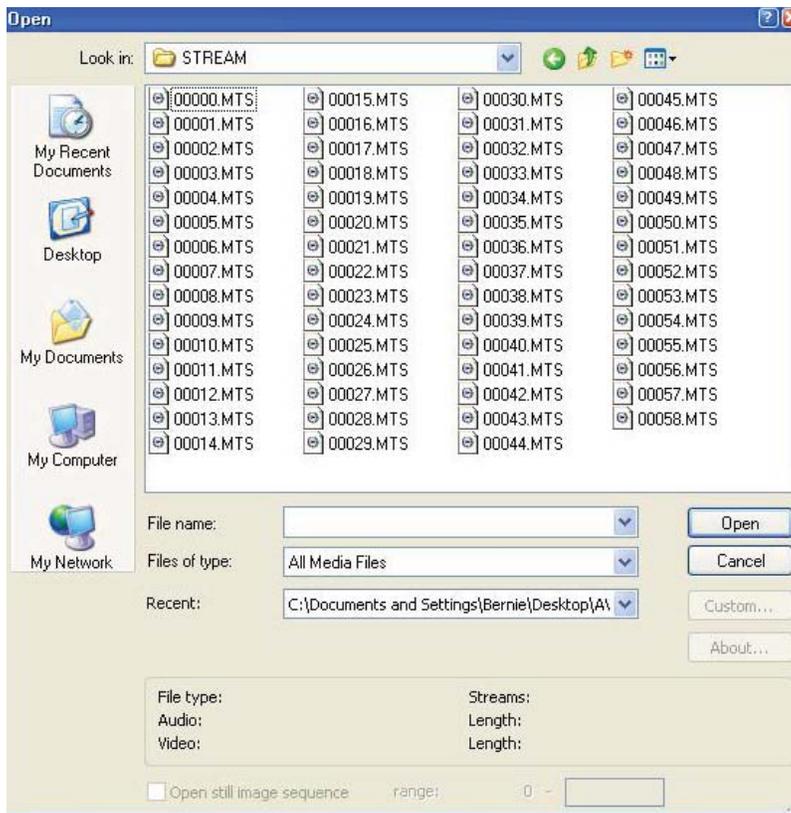
## STEP #1 – CLICK ON IMPORT MEDIA ICON AT TOP LEFT OF PROJECT MEDIA WINDOW.



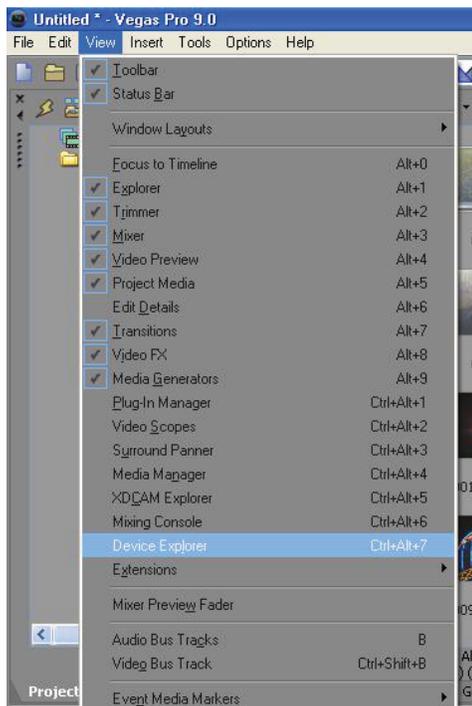
## STEP #2 – FIND THE AVCHD FOLDER CALLED PRIVATE



### STEP #3 – CLICK ON PRIVATE>AVCHD>BDMV>STREAM



This will show your AVCHD files. Click on the ones that you wish to import. Click Open. They will then be placed in your Project Media window.

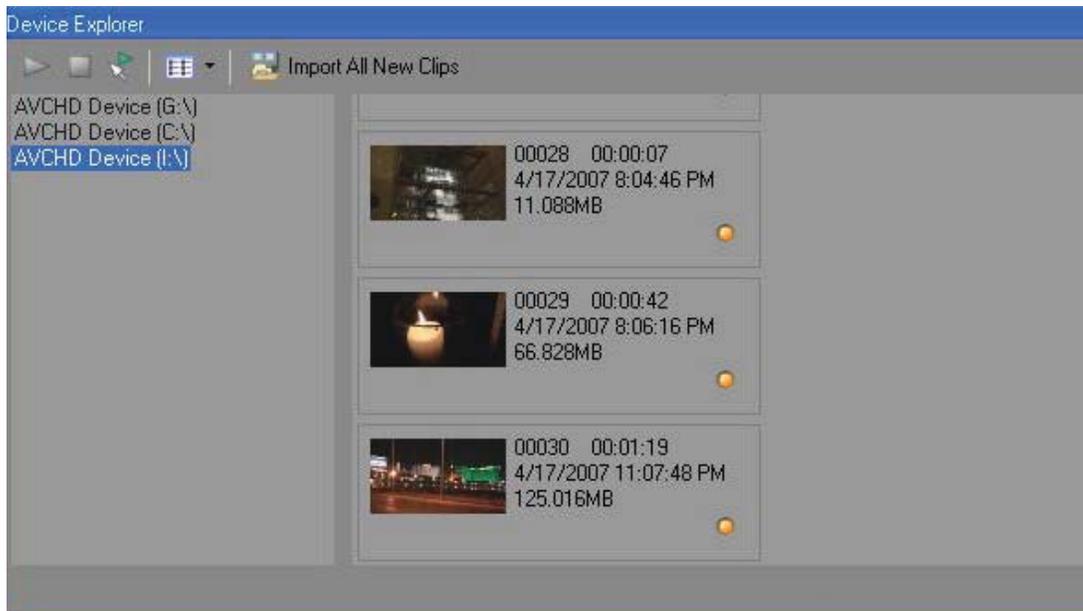


### TRANSFER USING DEVICE EXPLORER.

Another method for importing is to use the Device Explorer. I actually prefer this approach as it allows you to see your clips immediately before you import them.

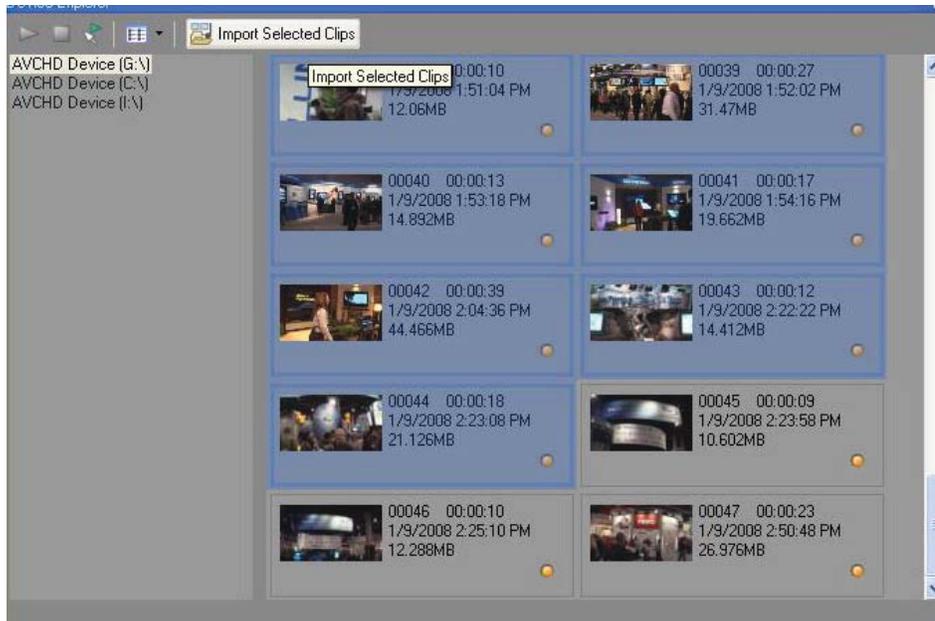
**STEP #1 – OPEN DEVICE EXPLORER.  
CLICK ON VIEW>DEVICE EXPLORER.**

On the left side, you will see the folders or devices where your AVCHD footage is stored.



In this case AVCHD Device (I:\) is actually an SDHC card that I have put in an SDHC card reader and attached to my PC via USB.

As you can see your clips are represented by thumbnails. Scroll to the clip you wish to import.



**STEP #2 – SELECT AND IMPORT YOUR CLIPS** Click on that clip, then click on the Import Selected Clips to import.

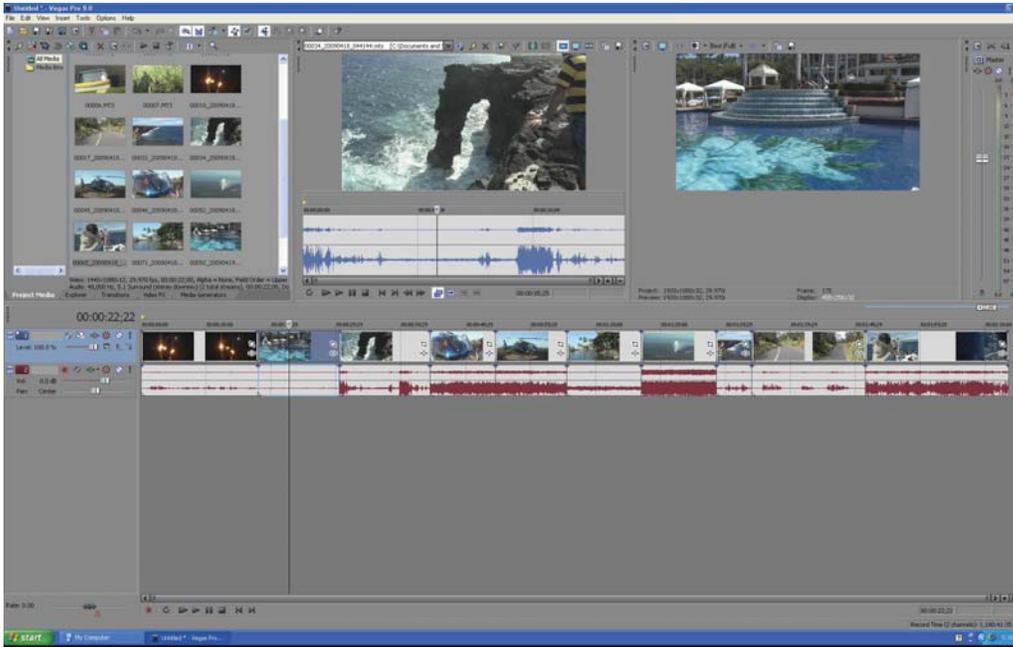
Shift click to select multiple clips. Then click on Import Select Clips. The import will start and your footage will appear in the Project Media Window.

Both of these methods will work from the camera or directly from the SDHC card

Once your footage is in the Project Media window you can drag it to the timeline and start editing.

## EDIT NORMALLY

No matter which way you import your footage, once it is in the Project Media window, you are editing just like you would any other project with Sony Vegas Pro 9. Naturally, you can add transitions, music, sound effects and titles.



For more info on editing with Sony Vegas Pro 9, please visit the Sony website for detailed tutorials at: <http://www.sonycreativesoftware.com/support/trainingvids-stroud.asp>

## OUTPUT OPTIONS

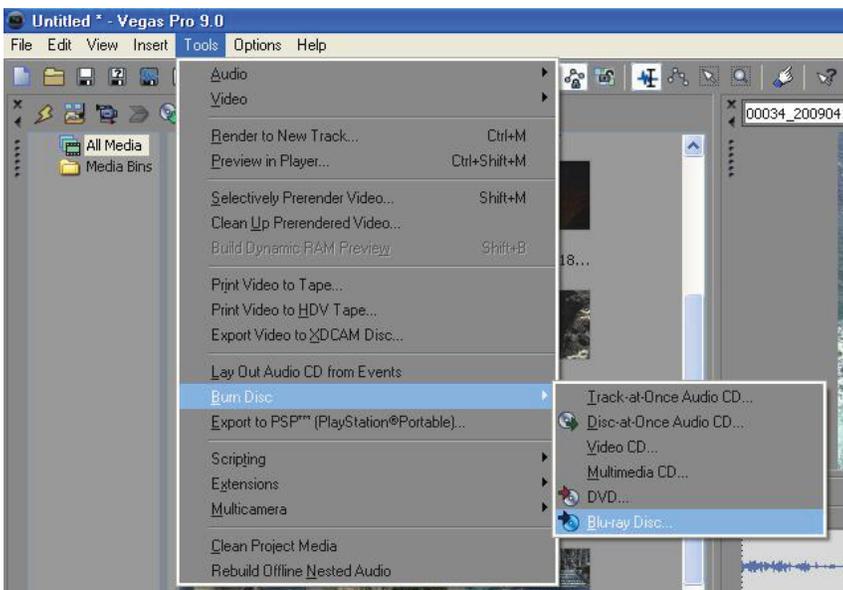
When your editing is finished Sony Vegas Pro 9 gives you a host of options to output your project to different media.

## OUTPUT TO A BLU-RAY DISC

It is very easy with Sony Vegas Pro 9 to output your finished project to a Blu-ray disc.

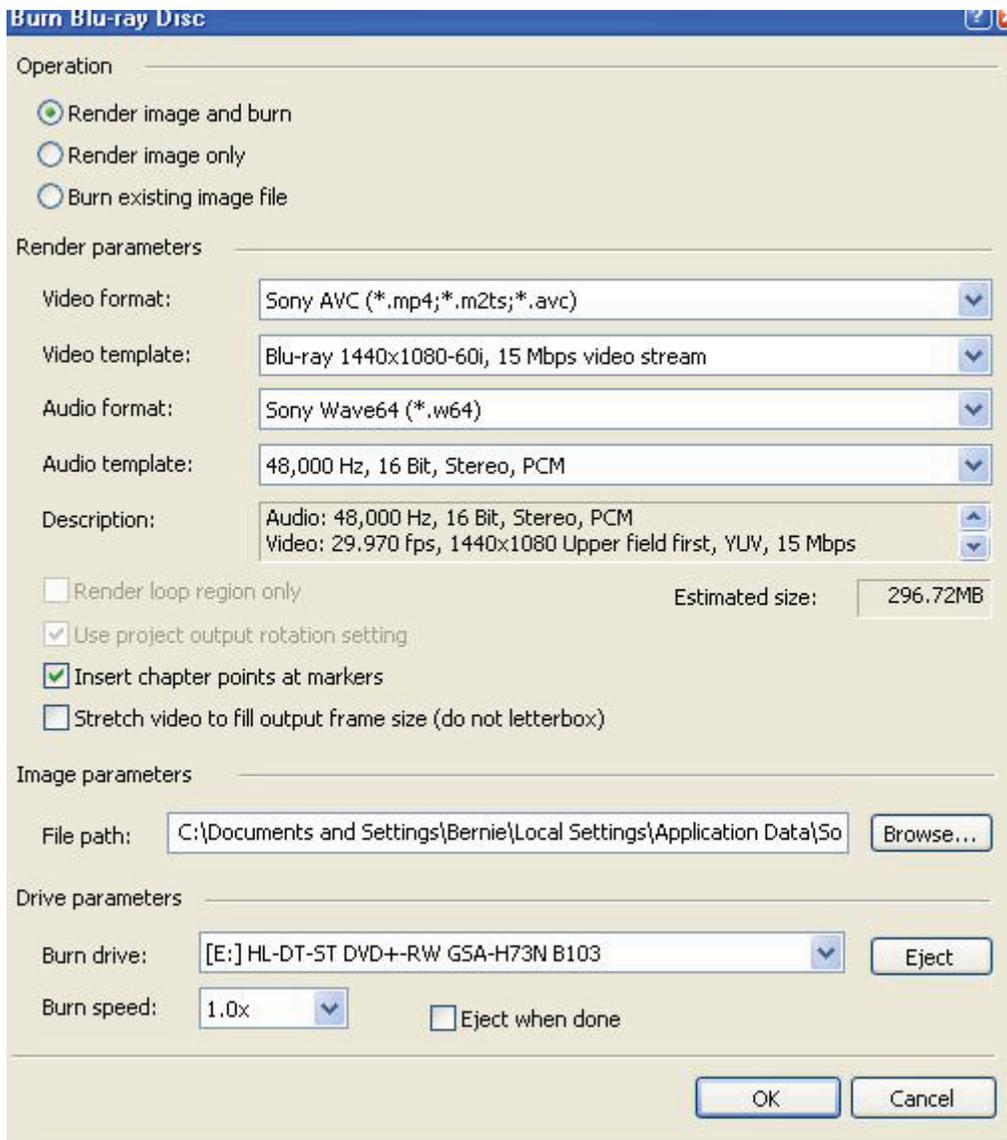
**NOTE: YOU WILL NEED A BLU-RAY BURNER AND BLU-RAY MEDIA.**

**STEP #1 – CLICK ON TOOLS>BURN DISC>BLU-RAY**



This will open the Burn Blu-ray Disc Window.

## STEP #2 – SET BLU-RAY BURN PARAMETERS



The screenshot shows the "Burn Blu-ray Disc" dialog box with the following settings:

- Operation:**  Render image and burn,  Render image only,  Burn existing image file
- Render parameters:**
  - Video format: Sony AVC (\*.mp4;\*.m2ts;\*.avc)
  - Video template: Blu-ray 1440x1080-60i, 15 Mbps video stream
  - Audio format: Sony Wave64 (\*.w64)
  - Audio template: 48,000 Hz, 16 Bit, Stereo, PCM
  - Description: Audio: 48,000 Hz, 16 Bit, Stereo, PCM; Video: 29.970 fps, 1440x1080 Upper field first, YUV, 15 Mbps
  - Render loop region only (Estimated size: 296.72MB)
  - Use project output rotation setting
  - Insert chapter points at markers
  - Stretch video to fill output frame size (do not letterbox)
- Image parameters:** File path: C:\Documents and Settings\Bernie\Local Settings\Application Data\So (Browse...)
- Drive parameters:** Burn drive: [E:] HL-DT-ST DVD+-RW GSA-H73N B103 (Eject), Burn speed: 1.0x (Eject when done)

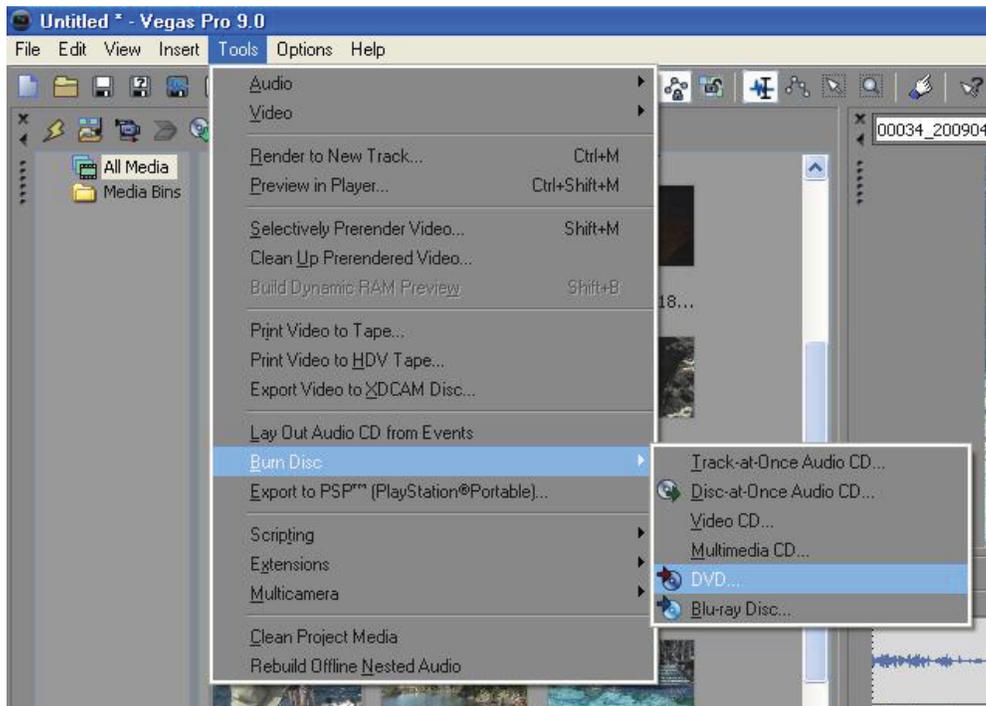
Buttons: OK, Cancel

Here you will need select the operation of Render Image and Burn. Next, check your selected Video and Audio formats. Choose the location of your Blu-ray drive, then pick the Burn speed and click on Eject when done. Finally, click on OK to start the Blu-ray burn, when finished your disc will automatically eject.

## OUTPUT TO STANDARD DEFINITION DVD

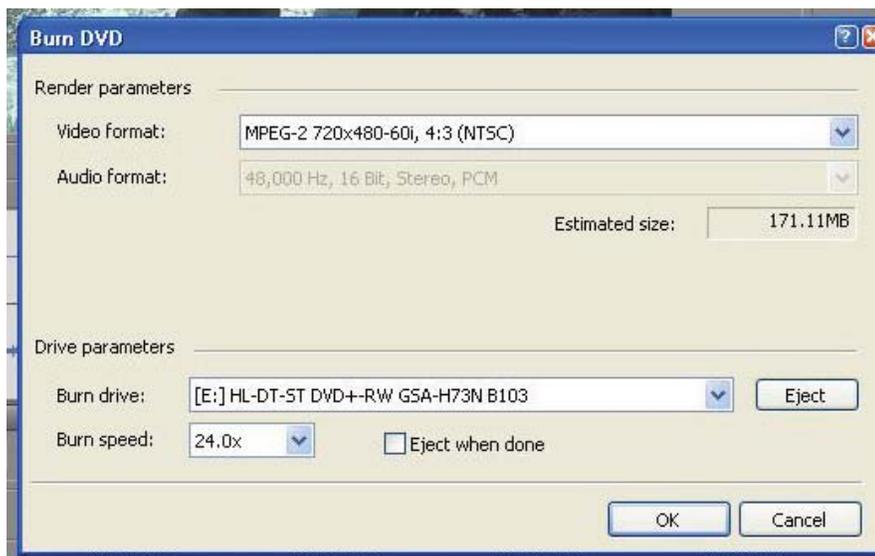
Even though you have shot your material on high definition and edited it in HD, you still might need to downconvert it to standard definition to show your movie. AVCHD footage will make dazzling standard definition DVDs. Sony Vegas Pro 9 can easily make a Standard Definition DVD from your AVCHD footage.

### STEP #1 – CLICK ON TOOLS>BURN DISC>DVD



This will open the Burn DVD Disc Window.

### STEP #2 – SET DVD BURN PARAMETERS



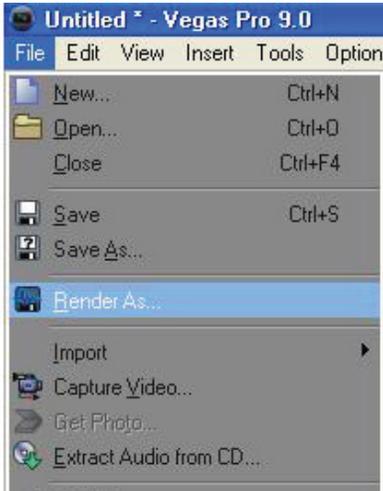
Choose your Video and Audio Formats  
Pick your DVD drive. Select the Burn Speed  
and click  
Eject When Done.  
Click OK. Your DVD will be ejected when  
finished.

# OUTPUT TO IPOD, IPHONE

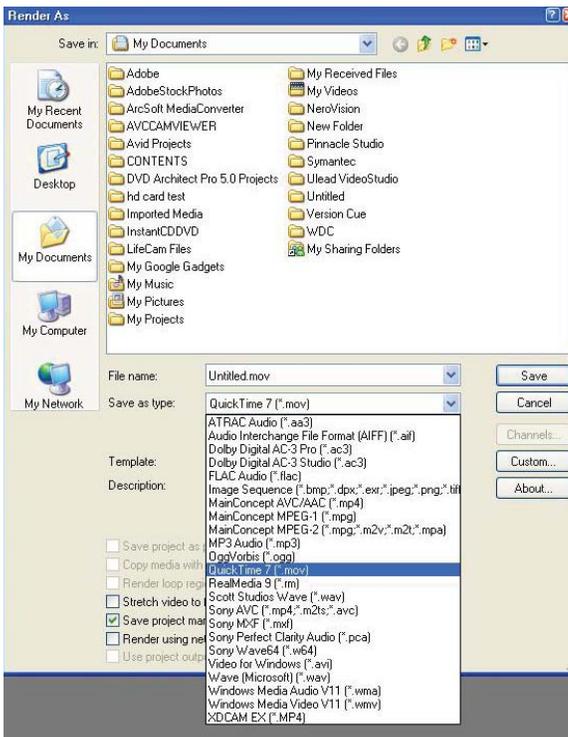
One of the coolest ways to display your AVCHD footage is on an iPod or iPhone. Here is how you do that with Sony Vegas Pro 9. If your goal is to display your movie on an iPod or iPhone, you should try to match the size and aspect ratio of the iPod display as best that you can. In landscape mode, the iPod touch and iPhone display is 480 x 320 pixels, so to preserve your movie in a 4:3 aspect ratio 480 x 360 pixels would be a good choice.

## STEP #1 – RENDER

CLICK ON FILE>RENDER AS.



## STEP #2 - CLICK ON QUICKTIME AND THEN SAVE



When finished your file can be added to your library in iTunes and the resultant movie can be displayed on your iPod or iPhone.

# OUTPUT TO YOU TUBE AND THE WEB

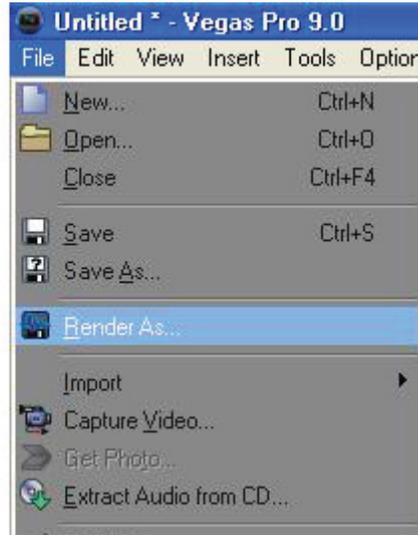
You might want to share your movie with the world on YouTube or other locations on the Web. This is easy to do.

**NOTE: TO USE YOUTUBE, YOU MUST HAVE A YOUTUBE ACCOUNT IN ORDER TO UPLOAD YOUR MOVIE.**

To prepare your movie for YouTube uploading follow these simple steps. For more detailed information on YouTube specifications and instructions on uploading your video, please visit [www.youtube.com](http://www.youtube.com) and click on Help.

## STEP #1 – RENDER

CLICK ON FILE>RENDER AS.

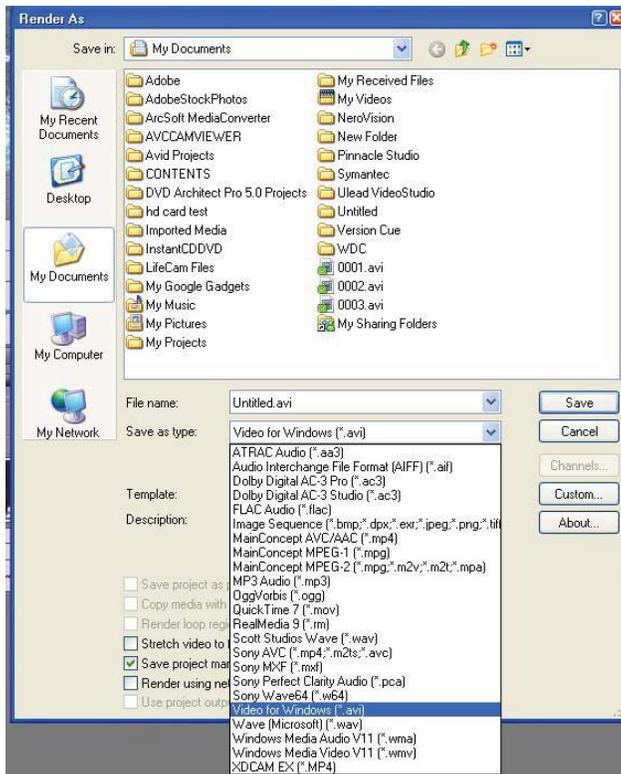


The Render As window opens.

You can select AVI, MPEG, QuickTime, or Windows Media. For this example, we will pick Windows Media.

## STEP #2 – SELECT WINDOWS MEDIA AND SAVE

Your file will be saved and ready to upload to YouTube.



## STEP #3 – SIGN ONTO YOUR YOU TUBE ACCOUNT.

For more information on uploading videos to You Tube, please visit [www.youtube.com](http://www.youtube.com)

## THE AVCHD WORKFLOW – ARCHIVING

Once your project is finished, you will want to archive your High Definition AVCHD footage. There are a number of options available at this time depending on your budget and how long you want to keep the footage. How long you want to keep your footage is a very important question when dealing with Archiving. The answer to “How Long You Want To Keep It?” will determine what media you store it on today. If you want to keep your data for 1-10 years, you have many options, but if you must keep your material for 20 years or longer, then your options decrease. And regardless of the media you choose today, be prepared to move your data as new improved storage becomes available.

**KEY POINT #4. THE SECRET TO SUCCESSFUL ARCHIVING OF ANY FILE BASED MEDIA IS REDUNDANCY AND MIGRATION.** Make multiple copies and move your data as technology advances.

### ARCHIVING TO HARD DRIVE (SHORT TERM STORAGE)

The quickest and least expensive way to archive your AVCHD footage is to copy your files to a hard drive. **NOTE: THIS IS SHORT TERM STORAGE.** This is accomplished in the same way as copying any other data to a hard drive. Copy the Private Folder of your AVCHD to your drive. There are a number of manufacturers who make inexpensive USB hard drives. I suggest copying to two different hard drives, be redundant. Also these hard drives should not be considered permanent long-term storage. Create a regular schedule to move your data to newer hard drives. Migrate your data.

### ARCHIVING TO BLU-RAY DISC (MID-TERM STORAGE)

To archive to a Blu-ray, you will basically be making a Blu-ray Rom data disc. To do this, you will need a Blu-ray burner, Blu-ray media, and specific Blu-ray burning software, such as Roxio Toast 10 or Adobe Encore (part of CS4/CS5 suite). Remember, in order to retrieve your data from this archive in the future, you will need a Blu-ray drive. Keep your eye on how technology advances and migrate your data to new storage technology as needed.

### ARCHIVING TO STANDARD DVD DISCS (MID-TERM STORAGE)

Although DVD-R media is technically not specified as archival media, you can archive your data onto standard DVD discs. Since these discs do not hold high amounts of data, this is very time consuming and requires a lot of discs. Remember, in order to retrieve your data from this archive in the future, you will need a DVD drive.

### ARCHIVING TO DLT OR LTO TAPE (LONGEST TERM STORAGE)

If you have to store your footage for a very long time and want absolute confidence in your archival media, do what financial and medical institutions have been doing for years, back up your data on either DLT (Digital Linear Tape) or the newer LTO (Linear Tape Open). These are more expensive options than those listed above, but they are time tested. A number of companies, such as Quantum ([www.quantum.com](http://www.quantum.com)), Cache-A, (<http://cache-a.com/products.php>) and others make DLT and LTO tape drives and media. (See [WWW.LTO.org](http://WWW.LTO.org) for more info)

## SIMPLE, QUICK, FLEXIBLE AND INEXPENSIVE! THAT IS THE AVCHD PRO EDITING WORKFLOW.

Please see the AVCHD WORKFLOW ACQUISITION White Paper. You will find that shooting and transferring AVCHD material is again simple, quick, flexible and inexpensive.

#### ABOUT THE AUTHOR:

Bernie Mitchell is President of Silver Platter Productions, Inc. an Emmy nominated Producer/Director, a Multimedia Person of the Year and member of the DVD Association Hall of Fame. Bernie is the Panasonic AVCHD Evangelist and a paid consultant to Panasonic. Panasonic provided AVCCAM cameras and Dell Computer for this white paper. Sony Vegas Pro 9 Software was provided by Silver Platter Productions, Inc.