

# Managing Stereoscopic Content For 3D-TV Viewing PART 2

## Introduction

In Part 1, we looked at the simplest approach to viewing our 3D images on a 3D-TV. There, we explored the direct connection of our camera to a 3D-TV by way of the HDMI socket, inserting the memory card removed from our camera into a provide SD card receptacle on the 3D-TV and finally, using our computer with StereoPhoto Maker (SPM) installed, to manipulate images ready for transfer back to an SD card or Flash drive for viewing on our 3D-TV. These methods for viewing our images are of course, restricted to the available features of the media player built into the 3D-TV; that is to say, we have little control over timing, transitions and sound.

Now we shall explore a more advanced approach to viewing our images. In doing this we shall take a look at the media player devices that can be connected to our 3D-TV. We shall also look at the software needed to create a sequence of images, collated in a structured manner, to form an Audio Visual (AV) show. The show need not be complex, but could include background music and sub-titles to help the show along. Such a show could be written to an optical disk - CD, DVD and BLu-ray (BD), or alternatively to a USB connectable Flash Drive. In doing this, it will be possible for others to view our work on their 3D-TV directly, or by way of a media player. The completed AV could also be used for 3D projection purposes.

## Overview of Media Players

The choice of available devices capable of connection to a 3D-TV by way of the HDMI sockets is overwhelming. There are HDMI media players available with, or without internal storage (Fig. 1.) These range in price from £50 to £150 depending on their storage capacity, if any, and their file handling capability, still image, video streaming etc. Many of these devices are now '3D Ready'. All media players will provide a USB connection for external storage devices, including hard disk drives (HDD) and often SD cards. All media players will have a TV like guide to navigate the stored files, images, music, video and even Internet in some cases (Fig. 2.)



Fig. 1 Simple player



Fig.2 Player with HDD and Network capability

Owners of a Fuji W1 or W3 have access to a dedicated MPO file player, the HDP-L1 at around £40.

An alternative to the media player is a 3D Blu-ray disk player or games console, such as a Play Station 3 (PS3) which is 3D capable and includes HDD storage. Prices for 3D Blu-ray players have fallen dramatically in recent times and can now be purchased for less than £100. The cheaper of these devices will be capable of playing CD, DVD and BD media and will include at least USB and network input connectivity; with an HDD and TV tuner installed, the price will be more like £250. Either way, as a device for sending our 3D work to a 3D-TV, these players are probably the most convenient and are mainstream in terms of development (Fig.3).



Fig. 3 - Typical 3D Bly-ray disc player

From this point on, I shall assume that the chosen device for presenting our 3D work to a 3D-TV is indeed a 3D Blu-ray player, as this is the device that you are most likely to own having purchased a 3D-TV. I should add that this does not mean you will need to work with Blu-ray media when preparing our shows, as these players will accept CD and DVD media having 3D content that complies with certain criteria.

### **File Format Compatibility**

In Part 1 we concluded by having side-by-side images horizontally compressed to half width and positioned in a 1920 x 1080 (16 x 9) frame. What we didn't cover was the image file extension compatibility with our chosen media player. This will vary from one 3D-TV to

another and also from one 3D media player to another, but several of the common formats are embraced by all manufacturers. I have observed that with still images ‘.jpg’ is commonplace but ‘mpo’ less so. With video, the popular formats are DivX, MKV and AVCHD. The instruction manuals supplied with your player will list the format options available.

It does seem sensible that our AV shows and sequences are pieced together as a Video (AVI) file rather than a computer dependent Executable (EXE) file. It follows then, that when we choose a software tool for compiling our shows, we consider video editing programs as an alternative to the slideshow programs that some of us are familiar with. It is very noticeable that with the renewed interest in 3D movies and the availability of digital cameras with 3D video capability, video editing software with a 3D capability is now easily obtained. Of course, familiar slideshow software, such as **Photodex ProShow** (PSH) and **Pictures to Exe** (P2E) are capable of producing an AV show as a video and writing these to optical disk or Flash Drive. Those of you already in possession of such a program, may wish to continue using it, but those not yet having AV production software, should certainly consider using 3D video editing software from the outset.

Leaving the detail until later, we can now expect to follow the practice of the TV companies and film producers and recognise that our viewing devices 3D-TV, computer monitors and digital projectors all encompass a 16 x 9 aspect ratio frame, albeit that we will sometimes have ‘black borders’ compensating for the difference in image size. We should also accept that currently this frame has a resolution of 1920 x 1080 pixels. In Part 1, we went about producing side-by-side images each having this aspect ratio, this is how we will proceed in future with both still and moving images (Fig.4).



Fig. 4 - Horizontally scaled combination of the left and right eye frames

It so happens that this format is commonplace in the video editing programs now available which are equally suitable for producing slideshows and more importantly, well designed to handle a mix of 3D content.

There are currently three outstanding contenders for our money when it comes to purchasing video editing software, each has its own merits and choosing one or the other will depend greatly on how involved we wish to become with compiling shows; it is engaging and can be very time consuming. A short learning curve is one desirable aspect of a new program and currently the most user friendly product is **Cyberlink PowerDirector 11** at £76. More so than its competitors, this program appears to put 3D editing on equal terms with 2D. The process of producing a Blu-ray compatible DVD from images, as presented in Part 1, is very straightforward. **Magix Movie Edit Pro MX** at £80 is a little more advanced when it comes to adding motion effects. **Sony Vegas Movie Studio HD Platinum 11** is extremely good value for money at £40 but is less intuitive than the aforementioned. It has many of the features found in the Vegas professional software costing ten times the quoted figure. These features do bring complexity to the program but is probably the best choice for those interested in serious video editing.

Each of the programs mentioned are able to produce files direct to optical media or to our computer hard drive in the 'Advanced Video Coding High Definition' format (AVCHD). This is the format that we shall be focusing on in Part 3.

Each of these programs are available on a 'Try before you buy' (TBYB) basis.