

## Multimedia Element Control, Navigation and Manipulation

Reduced to its fundamental operations, the non-linear editing (NLE) process is composed of assembling frames of digital video into a coherent whole. Just as the print page creation process consists of placing many textual and image elements on a page in a logical sequence, NLE requires the orderly positioning of video frames and clips. Dedicated high-end NLE systems provide specialized hardware for this process, whereas PC-based systems adapt the keyboard and mouse for this purpose.

At the heart of the NLE video editing process is the precise selection of individual video frames and frame sequences, or clips. A skilled editor must maintain the precise control necessary to locate and select any required frame sequence, and then apply the appropriate editing functions. The two actions that are key to this process are *jog* and *shuttle*. Jog is the process of moving left or right in single frame increments to display a particular image. Shuttle is the process of moving rapidly, at variable speed, either left or right along the clip, or the project's timeline, to locate a particular area of interest. These operations correspond to the familiar Play, Rewind, and Fast-Forward modes common to music and video players and recorders. Jog and shuttle are used together throughout the video editing process, and are likewise used in audio editing. It is, in fact, such a useful tool that many VCRs have built-in jog and shuttle dial/wheel controls to enable users to quickly locate scenes on a VHS tape.

Every significant software application, regardless of its purpose, has a multitude of functions and user-selectable options, settings and controls. Whatever the user interaction may be, it is typically executed through the use of the keyboard and mouse. For much of what we do with a computer, this is fine, and in most respects, applications have been created for this common means of input. However, there are applications, in particular digital video editing, wherein the keyboard and mouse are ineffective, inconvenient, or inappropriate. In PC-based digital

video editing environments the software has been created to act as it does on expensive proprietary-based non-linear editing systems, which include specialized hardware to interact with the software on a precise frame-by-frame basis.

Although many software developers have done an impressive job of bringing professional NLE capabilities to the desktop, they have been constrained by the typical desktop computer input tools. A solution to this dilemma are third-party products, such as the ShuttlePRO Multimedia Controller,\* which provides a means of inputting and controlling a vast range of programs with an ease and precision previously unavailable to personal computer users. The ShuttlePRO (FIG. 1), as with other jog/shuttle controllers, provides the user with a new level of physical connection, and more intimate control over the movement of their footage.



FIG. 1. The central control element of the Contour ShuttlePRO is the jog wheel and shuttle knob. The shuttle knob is the outer ring that controls the rapid forward or rewind of digital frames. The jog wheel, located in the center of the knob, provides precise frame-by-frame control. (Photo courtesy of Contour Design Inc.)

The ShuttlePRO, which connects via USB, is compact and has a very low profile, which makes it comfortable to use since the built-in palm rest curves gently downward towards the work surface desktop. There are 13 programmable keys, 9 above the jog/shuttle control with snap off caps which

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allow for the insertion of custom labels, and four larger curved buttons below.

The ShuttlePRO was devised to provide professional video editing control comparable to Jog & Shuttle Controllers costing far more. The device provides rapid, immediate, and precise control over selectable parts of the video editing process, simplifying access to individual video frames and the actions that are applied to them.

A feature of ShuttlePRO (available both for Macin-

tosh and Windows 2000) is its programmability—to adapt to whatever application is being used. It can sense the operative application and adjust its programmable keys accordingly. The manufacturer provides many presets for the most popular programs, and in the area of NLE these are Final Cut Pro, Premiere, and iMovie. Buttons on the device, rather than keystrokes or mouse selections, execute common functions such as setting the In and Out points on a clip. The user can override any of the presets, and apply global changes that affect all installed applications.