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Multi-Tasking Computer Control Of Video Related Equipment

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Exchanging audio-visual information is a daily part of human communications. The video medium is the most popular choice for quickly and effectively conveying simple or complex information. However, like other communication methods, certain conventions must be followed in order to prevent video from becoming a collection of useless information.

A completed video presentation originates from raw audio-visual material that must be organized into a continuous flow of information. The physical equipment necessary for the post-production process is usually dedicated computer-based devices that perform synchronization and control, generate visual effects, and combine audio and video signals. Most video production studios are made up of these separate devices independently performing their specific tasks.

The flexibility, cost-effectiveness and widespread availability of personal computers now makes it possible to completely integrate the previously separate elements of video post-production into a single device. Specifically, a personal computer, such as the Commodore-Amiga, can perform multiple and simultaneous tasks from an individual unit. Relatively low cost, minimal space requirements and user-friendliness, provides the most favorable environment for the many phases of video post-production.

Computers are well known for their basic abilities to process numbers, text and graphics and to reliably perform repetitive and tedious functions efficiently. These capabilities can now apply as either additions or alternatives to existing video post-production methods.

A present example of computer-based video post-production technology is the **RGB CVC (Computer & Video Creations) WorkSystem**. A wide variety of integrated functions are made possible with an Amiga computer existing at the heart of the system.

EDITING

Beginning with video editing functions, the Amiga-based editing system operates using either SMPTE Time Code or Control Track as a reference for editing points. With SMPTE, the preferred reference format, a high degree of accuracy is obtained. The **CVC WorkSystem** has full control of transport (rewind, fast-forward, play, stop, still and search) and editing functions (Insert, Assemble, Goto, Preview, Perform and Review) while maintaining a constant update of system status information. The time-consuming tasks of logging specific SMPTE Time Code values, calculating and storing pertinent edit information (edit points, match-frames, running-time and preroll) and searching through raw footage are now built-in features. The task of processing and managing the data necessary for edit decision lists and

cataloging tapes can now be delegated to specific database management software.

Custom interface hardware allows the **CVC WorkSystem** to communicate directly with the transport of a single machine or up to 32 separate transports. Normally incompatible machine formats and brands can now function within a unified system. This network environment provides a common device communications link that gives the ability to handle multiple applications and devices individually or simultaneously within a consistent operating environment.

CHARACTER GENERATION AND GRAPHICS

When incorporated properly, captions, illustrations and backgrounds can greatly enhance the impact of a video production. Almost every video production, simple or complex, requires the use of some type of character or graphics generator. Character generators are usually independent, dedicated computers that perform the sole function of adding text and possibly graphics to video. Choosing a specific character generator can be difficult. They range in price from a few thousand to a few hundred thousand dollars. The features of various character generators are also widespread. However, the general criteria that most will use in making a selection is ease-of-use, quality, and reasonable cost.

The **CVC WorkSystem's** graphics processing power and direct video compatibility provides a natural ability to fit the character generator description. Sophisticated graphics and text are easy to achieve at a fraction of the traditional cost. The real significance though, is that the graphics and character generating process can simultaneously occur from the same unit that is also performing the editing functions for a continuously flowing editing process. It is no longer necessary to switch between machines (and needing to know the subtleties and differing functions of each device in the process). Instead, the average video post-production project can be completed from one location just by switching between simultaneous applications.

ANIMATION AND EFFECTS

Besides static text and graphic images, animation capabilities are also provided with the **CVC WorkSystem**. Both 2-dimensional and 3-dimensional animation can be created quickly to allow greater enhancement and effect. Imaginary and real images can be digitally manipulated to create the popular effects and simulations that are common to many present day video productions. The quality of the animation cannot yet replace those from dedicated high-end systems but the compromise is offset by the minimal effort and time necessary to achieve results that remain pleasing and above all, cost-effective. Once again, the single system, single operating environment approach provides a tremendous amount of flexibility.

OTHER POSSIBILITIES

The **CVC WorkSystem's** open-architecture provides a great amount of expandability. The power of the system is mainly accessed through additional applications software; keeping the necessity for extra hardware peripherals to a minimum. Simply put, the limit to the system's capabilities is dependant on the available software.

Because of its personal computer nature, other applications software exists to perform tasks that are indirectly but beneficially related to the video production process: word processing, scripting, storyboarding, database management, desktop publishing and accounting to name a few.

More direct applications could involve MIDI (Musical Instrument Digital Interface) software to help in creating soundtracks and sound-effects for the finished video. With the appropriate software the video and audio aspects of the production become a completely synchronous process.

Quality video production should no longer be considered an extravagance. The techniques and processes that were once supposedly limited to elite organizations and people are now accessible to all types of professionals. The **CVC WorkSystem** can be applied to many areas requiring the benefits of a reasonably-priced, multi-featured computer and video workstation.

Marketing agencies can now afford an in-house system to present clients with immediate ideas and receive instant feedback. If necessary, full commercial video productions can even be produced completely on-site.

Corporate training videos can become easier and less costly to produce with a system that does not require specially trained operators.

Schools and Universities can now incorporate up-to-date video communications training into their curriculum. Unlike previous video systems, the expandable design will be well protected from obsolescence.

Scientific research institutes can also benefit from the barrage of capabilities that the **CVC WorkSystem** can help make data presentations more widely understood.

Of course, the **CVC WorkSystem** is not proclaimed as the answer to all video post-production needs, but it supplies enough significant features to make a truly integrated computer/video system a cost-effective reality. A single computer in a video studio can now be integrally involved in every step of the creative process: as a word processor creating a script and project proposal, as a spreadsheet creating the project budget, as a tape synchronizer for audio and video transports during editing, as

a database to log scenes, transcribe dialog, and manage an edit decision list, as an audio sequence controller (MIDI) for electronic musical instruments used in the soundtrack and special effects, as a video effect generator and character generator, and finally as a business machine for invoicing and accounting when the project is finished.

