

Live, Interactive Performance Graphics (Visualization Systems)

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The definitive term for this kind of imagery is still in flux. In some instances it is referred to as “visualization software.” In other venues, it is called “interactive performance graphics” or “interactive video.” In North America, the medium is barely out of the gate, while in Europe and Japan, it is much more established.

It is only with the recent introduction of more powerful computers that this medium has become economically viable. It has always been a matter of money versus speed versus quality. Pick any two. Finally, after 27 years of development, the performance graphics artist can have all three.

Is There A Visualization Department In Your Future?

Live, interactive performance graphics represents a marriage of art, computer science and music. It is a new medium that deserves consideration as a course of study in the institutions of higher learning.

And which department at the universities will champion this medium? The computer science department? Of course not. The art department? Not likely. It's got to be the music department that takes the lead, because its ultimate use is in the concert hall.

Manufacturer will have to approach the classical and jazz markets through those entities which support the classical and jazz art forms... the universities and other teaching institutions.

I am offering to meet with your organization at any time to discuss the viability of establishing a visualization and performance graphics department. I can recommend the products and provide the initial training to get you started. A simple invite is all it takes. Just get me in front of the right people in your organization and let me make the presentation. Or, schedule a production of one of my composition produced for performance graphics, and let that piece be the introduction of this medium to your organization. A list of these compositions, including the 1st Prize *Round House* and *Round Mountain* pieces seen at the ITG Conference, is available at the Chariot Publishing exhibit booth. A copy of the video from the ITG conference, along with other information about performance graphics, will be posted at the Chariot Publishing website (www.chariotpublishing.com).

Entry Level Costs

Different manufacturers are approaching the market with different solutions. The entry price for software starts at \$40, and this price assumes you provide the computer, graphics production software, production equipment (video cameras and editing equipment), projection and display equipment, audio equipment, and of course, the musical and visual artistry.

\$40.00 buys the visualization software for use on a standard computer with P4 processing speed. At this time, there are two different software packages in this price range, and each package approaches the construction of graphics in a different manner. The approaches are not compatible, although each approach has some compensating avenues to incorporate the opposing methodology.

One of the software packages utilized at the ITG Conference represents the bit-mapped approach to generating graphic images. The other software package, also seen at the ITG Conference, uses the vector-based approach. Creating the raw graphic images requires use of products like Adobe's PhotoShop/Illustrator or Corel's PhotoPaint/Draw. Even live video can be incorporated to a small extent in one of the \$40 packages.

The \$40.00 vector-based software package requires a basic knowledge of C++ programming language to maximize its effectiveness.

While these \$40.00 packages come with some canned visuals and effects for immediate use, the can is pretty shallow, and the need to take control of the entire creative process is almost immediate. These entry level packages do, however, including audio sensing menus so that the graphic images respond to the music.

On the other end of the spectrum, \$4,000.00 buys a proprietary software and hardware package designed expressly for the visualization market. The processing of audio stimuli is a part of this package.

Not included in any of these prices is the production hardware such as cameras and editing equipment, or the display devices such as video projectors and LED matrix panels.

Vusic

Vusic is a \$40 software packages developed by Rick Hocker of the Morgan-Hocker Group in California. **Vusic** is based on a bit-map file structure. Knowledge of C++ programming is not necessary for use of **Vusic**, but familiarity with software packages such as Adobe PhotoShop or Corel PhotoPaint is mandatory. Once the bit-mapped image is created (using .bmp format), it can be animated in a variety of methods as it appears on

screen. Different movement patterns can be assigned to the image, and the color palette of the image itself can be cycled at different speeds.

Movement patterns can be set to react to different characteristics of the audio input. For example, the graphic may be programmed to zoom according to the amplitude of the audio input. The louder the sound, the bigger the image. Images can be made to appear and react to pre-defined audio criteria in a variety of ways.

An unlimited number of images can be called from the hard drive during a single composition. What is unique to the **Vusic** approach is the incorporation of a “beat counter” that works with the triggering system. For example, the audio sensing menu can be set to “favor” notes approximating A 440 (or any other note up to 600 Hz). The software then “counts” those A440 notes (of certain volume), and after it has counted a given number of A440 notes (predetermined by the user), it triggers the next event.

Vusic can be found on the Internet at www.vusic.com
Rick Hocker can be reached at r@vusic.com.

G-Force

Another \$40 visualization software program used during the ITG Conference concert comes from Sound Spectrum in New York. The package is called **G-Force**, and its vector-based imagery is familiar to anyone who has used Windows Media Player. **G-Force** was developed by Andy O'Meara and is licensed to a variety of digital media players such as Apple's iTunes.

To create the graphic elements in **G-Force**, a basic knowledge of C++ programming and a foundation in mathematics (especially trigonometry) is helpful. The software program uses config files written in simple .txt form to create new visual elements and sequencing scripts. It is possible to learn the scripting language with careful and patient study of the comment lines included in the sample files.

The emphasis on computer programming skills is one of the attractions of **G-Force**. The math background required for creating new visual elements and for modifying those elements will be second nature to students at the college level. To the novice, it provides the motivation to learn a common programming language.

G-Force does allow the introduction of bit-mapped still images and video files by calling Apple's Quick-Time Player into the mix. But **G-Force's** forte is the elaborate vector-based imagery.

Certain elements in the **G-Force** images can be made to respond to either the amplitude or frequency characteristics of the audio input. The overall advancement of stored images is controlled by the computer's internal clock or by keyboard commands.

Edirol's Entry

In the last two years, a prominent Japanese manufacturer has entered the visualization arena with its own hardware/software product line. Roland has introduced a series of products designed to encourage the development of the visualization medium. The division of Roland responsible for marketing this equipment is Edirol.

Edirol has two products targeted for the visualization market. The CG-8 model (list price around \$4,000.00) will combine both bit-mapped graphics and vector-based files. Images can be triggered and manipulated via standard audio input, MIDI control signals, computer keyboard commands, or unique tactile control devices developed specifically for this equipment. Edirol's PR-80 model (list price around \$6,500) will synchronize full-frame video clips to audio input.

Finding these products can be a bit frustrating, and I have obtained the name and telephone number of the National Sales Manager for this product line. I spoke with Roland's Sales Manager about using the ITG as an entry point to the classical and jazz market, and he has agreed to provide individual direction and support for those who ask. In order to monitor the response of the ITG Conference, I would be happy to provide the contact information if you will just email me at bnh@bnh.net or call at (214) 403 – 0005. I want to keep track of the response coming from the ITG Conference, and use this response to gain Roland's interest in the ITG organization.