Composition for Video Synth

<table>
<thead>
<tr>
<th></th>
<th>video</th>
<th>animation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>- color bars, ( v_{s} + v_{s}^{'} ), ( \Phi )</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>( v_{s} + v_{s}^{'} ), ( \Phi )</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>( v_{s} + v_{s}^{'} ), ( \Phi )</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>( v_{s} + v_{s}^{'} ), ( \Phi )</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>( v_{s} + v_{s}^{'} ), ( \Phi )</td>
</tr>
</tbody>
</table>

Notation for Video Synthesizer

- \( \Theta_{f} \) = horiz animation of TV raster
- \( \Theta_{f} \) = horiz animation using a high speed oscillator
- \( \Theta_{f} \) = vertical animation of TV raster
- \( \Theta_{f} \) = vertical animation using a high speed oscillator
- \( \Psi_{f} \) = depth animation (simultaneous animation of length & width)
- \( \Psi_{f} \) = width animation
- \( \Psi_{f} \) = intensity modulation of video signal
- \( \Psi_{f} \) = rotation animation, (c) oscillators 90° out of phase

- \( w \) = waveform \( S \)-sine, \( T \)-triangle
- \( f \) = frequency \( 1-60, 2-120, 3-240, \text{ etc.} \)
- \( \phi \) = phase lock, low speed osc's lock to vert synch, hi speed to horiz
**AM - amplitude modulation**

\[ \circ \circ_{s}^{2} A M_{s} \circ_{s}^{0} l o w_{s}^{0} \circ (s p i r a l ) . \]

- ✶ zoom back
- ✶ zoom up
- ✶ fold in width
- ✶ fold in length

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### Composition for Video Synthesizer #4

<table>
<thead>
<tr>
<th>Video</th>
<th>Animation</th>
<th>Color</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td></td>
<td>0-5</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Title**

- mix
- feedback
- titles
- \( s \circ \circ_{s}^{2} A M_{s} \circ_{s}^{0} h i_{s}^{0} \)
A Tape for Alix

<table>
<thead>
<tr>
<th>Video</th>
<th>Animation</th>
<th>Color</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>part one</td>
<td>color bars</td>
<td>Δ R₁, Bl₂, W₃-5</td>
<td>(1) only</td>
</tr>
<tr>
<td>edit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

part one

Δ R₁, Bl₂, W₃-5

part two

Δ B₁, BG₂, O₄, Y₂, W₅

part three

Δ R₁, Bl₂, W₃-5

part three

Δ B₁-5

Δ W₂, BG₂, O₄, R₅

Δ W₁, BG₂

Δ W₂

Δ K₁, Bl₂, W₃-5

Δ B₁, R₂, G₃, O₄, Y₅

Δ B₁, W₂, Bl₁-5

Δ B₁, O₂

Δ B₁, P₂, B₅, R₄, O₅

Δ B₁, W₂, Bl₁-5

Δ B₁, O₂

Δ B₁, P₂, B₅, R₄, O₅

Δ B₁, W₂, Bl₁-5

Δ B₁, O₂

Δ B₁, P₂, B₅, R₄, O₅

Δ B₁, W₂, Bl₁-5

Δ B₁, O₂

Δ B₁, P₂, B₅, R₄, O₅

Δ B₁, W₂, Bl₁-5

Δ B₁, O₂

Δ B₁, P₂, B₅, R₄, O₅
Videotape by Walter Wright - Program.

1. "31" 6/14/72
   1/2" Sony color - an abstract tape using a series of still photographs & computer drawn cells - intended to demonstrate the potential of a video synthesizer - grand prize winner, First National Video Tape Festival.

2. Composition #4 - Son of Godzilla 8/20/72
   1/2" Sony color - the last in a series of compositions for live TV input - uses two channels of video (a movie, Son of Godzilla and the Trenton 300 Stock Car Race) and three audio tracks (the movie, the stock car race and the synthesizer).

3. A Tape for Alix 9/3/72
   1/2" Sony color - a composition using pre-recorded tape (from an Akai 1/4" portapak) as input - pieces of the original tape are introduced unanimated then repeated in animation - a mood piece.

4. Hendrix, Joplin, Alice Cooper 9/14/72
   1/2" Sony color - real time animation over an original 2" tape - the Hendrix sound track is distorted on the master.

5. Paper Shoes 10/7/72
   2"quad hi band color - animation of two basic cells (one of horizontal lines the other vertical lines) done in two passes - the first pass becomes background on which the second pass is keyed - the track is Paper Shoes by Yoko Ono.
The animated image is output from a high-resolution CRT display. It is rescanned with a 3-plumbicon camera at standard TV rates (525 lines/frame; 15,750 lines/sec). The output of the rescan camera goes to the Colorizer.

At the input to the Colorizer, the image is encoded in 5 grey levels. Any color may be keyed over a grey level by using the Red, Green, Blue slider pots assigned to that level. The electronically colored image then goes to a switcher where other video signals may be mixed, keyed, or become a background replacing one of the five grey levels.

I play Scanimate as an instrument and all my tapes are made in real time without preprogramming. I also try to avoid editing. I am designing & hope to build a live performance video synthesizer using components of the Scanimate system and adding, portable cameras, an 8 level colorizer, a controlled feedback loop & 8" color tape input & output. Most of my tapes have a score as in music. I am slowly developing a notation system representing the basic animators available on a video synthesizer. I include with these notes a brief outline of these notation symbols and two scores.

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The Scanimate Block Diagram includes a detailed diagram of the system's components and connections. The diagram illustrates the flow of signals from the camera, through the Colorizer, and into the output. It highlights the various parts such as the camera, Colorizer, and output, showing how they are interconnected.

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Scanimate Block Diagram

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My tapes are made on the Scanimate "computer" system built by Computer Image Corp. Scanimate is a first-generation video synthesizer. Images are input in a number of ways — thru (2) 1000 line R. B. W. vidicon cameras (these cameras may look at still artwork, a TV monitor, etc.), from an Ampex 2" VTR, or from a studio camera. Any of these input channels pass thru a video mixer to the Scanimate CPU (main control unit) where position & size of the image are controlled. The input TV raster may be repositioned right or left, up or down; it may be reduced in width or length (height); it may be reduced in overall size to a point or thru a point reappearing inverted and mirror image.

Also on the CPU are (3) oscillators. The horizontal oscillator repositions the raster lines left to right producing a wave-like distortion running up or down thru the TV image. The vertical oscillator repositions the raster lines up or down producing a rolling distortion. The depth oscillator affects the overall size of the raster producing at low frequencies a pulsating zoom & at higher frequencies a 3-D roll distortion. The CPU also controls the axes (the lines about which an image folds) and allows the image to be broken into as many as (8) separate sections.

The Animation Aid provides (6) more oscillators, timing control, and a patchboard allowing separate control over individual sections. There are (4) high speed oscillators (15k Hz up) which may be phase locked to the horizontal sync pulse and (low speed oscillators lock to the vertical sync pulse). There is a special pair of oscillators running 90° out of phase which are used to generate circles, spirals, & diamond shapes. And finally one additional low speed oscillator similar to those on the CPU. The oscillators on the Animation Aid allow amplitude modulation. There the patchboard these oscillators may drive horizontal, vertical, depth, width, length, axis, or intensity.