SOFTWARE & PRINTED TEXTS FOR THE "PIONEERS" EXHIBITION

In addition to a 15 page section on the exhibition in the ARS ELECTRONICA catalogue there will be produced three major formats for the software/information specific to the exhibition:

BARCODE INTEGRATED SOFTWARE & PRINTED TEXT

1. Laserdiscs (30 minutes each) with still and short sequence moving images, stored and retrieved interactively with a BarCode light pen.
   
   a. Laserdisc programs with information on the audio/video instruments - one on audio and one on video.
      
      1) The audio program will contain sequences of sound, photos, and some moving images that will present the audio origins related to the instruments on exhibit.
      
      2) The video instrument information programs will contain images of the instruments, their inventors, and other available data related to the hardware. Each program will be dubbed so that there are multiple copies - one for each large gallery where the instruments themselves are on display.

   b. Five laserdisc programs with short audio/video works, or excerpted works composed on the instruments exhibited (or related instruments). The selections in these compilations will have a particular relationship to the development of the electronic image. They will be grouped by the dominant processes used to generate and manipulate the images electronically, e.g. keying, colorizing, scan processing, switching, etc. The various audio/video laserdisc programs are being prepared for exhibition in the smaller galleries we have designated as Nanotheaters.

2. Printed catalogue - a traditional paper format - with BarCodes (to access images on the laserdiscs) printed and integrated into the text.

The composition of the catalogue and the laserdiscs are related through the BarCodes. The printed descriptions and photographs of the audio/video instruments in the exhibition will be directly related to the laserdisc instrument information programs. As for the contextual essay by David Dunn, BarCodes will be integrated throughout this overview at appropriate points in order to access
audio/video, including still and moving images.

SPECIAL PROGRAM VIDEOTAPES

3. Videotape programs that can accommodate last minute programming. These programs are being prepared for viewing on a daily schedule in the space we have designated as the "Endotheater".

   a. Programs of full length video pieces

   b. A special program on the early computer animation work of Lee Harrison
(Half Title Page)

ARS ELECTRONICA 1992
EIGENWELT DER APPARATE WELT
PIONERE DER ELEKTRONISCHEN KUNST

(Title Page)

ARS ELECTRONICA 1992

This catalog has been published on the occasion of the exhibition:

EIGENWELT DER APPARATE WELT
PIONERE DER ELEKTRONISCHEN KUNST

JUNE 22 - JULY 9, 1992

Museum Francisco Carolinum
4020 Linz, Oberösterreich

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ARS ELECTRONICA
Management Committee: Karl Gerber, Director (LIVA), Dr. Hannes Leopoldseider, Co-Founder (ORF), Peter Weibel, Artistic Director. Permanent Artistic Advisory Board: Dr. Katharina Gsöllpointner (LIVA), Mag. Gritte Vasicek (LIVA), Dr. Chrtistine Schöpf (ORF) Technician: Wolfgang Dörniger.
Contact address: Brucknerhaus Linz, Linzer Veranstaltungs-gesellschaft mbH (LIVA), Untere Donaulände 7, A-4010 Linz, Austria.

Exhibition Designers: Eichinger oder Knechtl, Vienna, Austria
ACKNOWLEDGEMENTS

This exhibition and catalog were initiated and realized because of the enthusiasm and support of Peter Weibel, Artistic Director. We are also completely indebted to Ralph Hocking and Sherry Miller Hocking of the Experimental Television Center, Binghamton, for their extraordinary generosity in the assembly of the majority of the hardware and their careful attention to the myriad details of both hardware and archival information. Their professionalism and humor have been an inspiration and a pleasure.

Of course, we are especially grateful for the special efforts and cooperation of those inventors who personally excavated their past by agreeing to be interviewed, and by digging up schematics, photos, and dormant documents and, in many cases, by resuscitating their own machines. Thank you Stephen Beck, David Behrman, Don Buchla, Bob Diamond, Lee Harrison, Bill Hearn, David Jones, Don McArthur, Nam June Paik, Steve Rutt, Dan Sandin, Jeff Schier, Eric Siegel, Glen Southworth, and Aldo Tambellini. We deeply regret that during this process we were never able to locate Shuya Abe and George Brown.

We also wish to acknowledge Steve Anderson, Michael Czajkovsky, Gary Hill, Norman Lowrey, and Sara Seagull for their extra efforts and assistance in lending significant audio/video instruments to the exhibition.

The success of this venture has relied on the contributions of the team we have assembled: David Dunn, catalog editor and essayist, David Muller, technical supervisor, Jeff Schier, technical advisor and author of technical descriptions and block diagrams, Michael Sumner, catalog designer, Melody Sumner, managing editor, Bill Heckel, computer hacker, Dave Stafford, interview transcriptions and typing, and Pavel Skrýja, indefatigable driver and handyman.

None of this would have been possible without the funding of Ars Electronica and their dedicated staff, especially Dr. Katharina Gsöllpointner, Director, and Wolfgang Dorninger, Technical Director. In addition, we appreciate the attentions of Eichinger oder Knechtln, the designers of the exhibition installation at the Landesmuseum – Francisco Carolinum, Linz, Austria.

In addition to the subject of the interviews transcribed for this catalog, we acknowledge the following authors, editors and publications of the writings we have selected to print and reprint for this catalog: Arn, Robert. "The form and sense of video," artscanada (October

Woody Vasulka
Steina Vasulka
Curators

MaLin Wilson
Coordinator &
Contributing Editor
LIST OF ILLUSTRATIONS:

(For possible cover photo)

(Integrated into David Dunn's essay)
Salvatore Martirano with his SAL-MAR CONSTRUCTION, 1969-72, School of Music, University of Illinois, Champaign/Urbana. Courtesy of Salvatore Martirano.

Salvatore Martirano's SAL-MAR CONSTRUCTION, 1969-72, set up for concert at State University of New York (SUNY), Stonybrook, Long Island. Courtesy of Salvatore Martirano.

Don Buchla in his Berkeley, California, studio with several of his creations, late 1970's. Courtesy of Don Buchla.

(Illus. for Crutchfield article)
James P. Crutchfield, feedback image classified as a quasi-attractor displaying "dislocation." Photo: James P. Crutchfield.

(Illustrations for Audio/Video Instruments)

Lee Harrison III, photo montage featuring a dancer with body mounted sensors controlling real-time animation on the ANIMAC, 1962, Denver. Courtesy of Lee Harrison III.

Lee Harrison III (right) receiving the National Academy of Television Arts and Science award for "Outstanding Achievement in Engineering Development," 1972, with his colleague Edwin J. Tajchman (left), V.P. of Engineering at Computer Image Corporation, Denver, Colorado. Courtesy of Lee Harrison III.

Don Buchla. Courtesy of Don Buchla.

Robert A. Moog at conference on Electronic Art Tools, 1977, at the State University of New York (SUNY), Buffalo.


PUTNEY, MODEL VCS 3, 1968.


Eric Siegel, 1971, from a video tape made at the Howard Wise Gallery, New York City.


Glen Southworth, inventor and founder of CVI/Colorado Video, Inc. Self Portrait with first experiments on direct CRT copying with original XEROX color machine. Courtesy of Glen Southworth.


(? Shuya Abe, ca. 19 , from a video tape made .)

Nam June Paik and Shuya Abe's PAIK/ABE SYNTHESIZER & SCAN MODULATOR, 1971. Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton.

Nam June Paik and Shuya Abe's PAIK/ABE SYNTHESIZER SCAN MODULATOR component, ca. 1971. Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton.


Dan Sandin with the IP (IMAGE PROCESSOR), 1972, Chicago. Courtesy of Phil Morton.

Dan Sandin's IP in studio with other instruments. Courtesy of Phil Morton.


(? Bill Etra, ca. 19 , from a video tape made .)

(? Steve Rutt, ca. 19 , ?)

Left to right - Kit Galloway, Dave Jones, Jack Henry Morre, founders of VIDEOHEADS, at the Melk Weg, Amsterdam, 1972. Courtesy of Dave Jones.


Don McArthur (right) and Woody Vasulka (left), 1976, Buffalo, New York. Photo: Steina Vasulka.

Don McArthur (middle) and Woody Vasulka (left) and Lou James (right), 1976, Buffalo, New York. Photo: Steina Vasulka.


(? Woody - Don McArthur and Jeff Schier's DIGITAL IMAGE GENERATOR. Collection of the Vasulkas, Santa Fe, New Mexico.)

(Illustrations for Special installations)


Skip Sweeney, black and white feedback images photographed from a video monitor. Courtesy of Skip Sweeney.

David Behrman's diagram and summary of CLOUD MUSIC, ca. 1975. *Courtesy of Sara Seagull & Dabid Behrman.*

CLOUD MUSIC monitor with image of 6 crosshairs amidst lively cloudscape. *Courtesy of Sara Seagull.*


Bob Diamond with CLOUD MUSIC, work in progress, ca. 1976. Video analyzer (rear left) and music synthesizer (foreground). *Courtesy of Sara Seagull.*

(Assorted illustrations)
Conference on Electronic Art Tools, 1977, at the State University of New York (SUNY), Buffalo. First row - Wendy Clark, Jean-Pierre Boyer; second row - Taka Imura, Woody Vasulka, Nam June Paik, Dr. Gerald O'Grady; third row - Bill Viola, Ed Emshwiller, Kit Galloway, Steina Vasulka; standing - Walter Wright.


Nam June Paik and Shuya Abe's SCAN MODULATOR, ca. 1971. Right-wave form input; left - output on monitor. *Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton. Photo: Susan Rothstein.*


Left to right - unidentified, unidentified, Jack Henry Moore, Kit Galloway, Dave Jones, unidentified, VIDEOHEADS, at the Melk Weg, Amsterdam, 1972. *Courtesy of Dave Jones.*
Electronic Audio/Video Instrument Descriptions

1962
Lee Harrison Associates
ANIMAC (Hybrid graphic animation computer)
Destroyed, documented on film

1964
Don Buchla
BUCHLA PRE-100 SERIES (Audio synthesizer)
Collection of Michael Czajkowsky, New York City

1968 - 1969
Robert Moog
MOOG MODULAR AUDIO SYNTHESIZER
Courtesy of Norman Lowrey, Professor of Music
Collection of Drew University, Madison New Jersey
Donated by CBS (Columbia Broadcasting System)

1968 - 1969
Bill Hearn
VIDIUM (Analog XYZ driver sequencer)
Courtesy of Steve Anderson, Physics Department,
Sononma State University, Rohnert Park,
California
Collection of Bill Hearn

1968
Industrial
PUTNEY, MODEL VCS 3 (Audio synthesizer)
Collection of the Experimental Television Center,
Ltd. & The State University of New York,
Binghamton

1969
Aldo Tambellini & Tracy Kinsel
& Hank Reinbold
BLACK SPIRAL INSTALLATION (Prepared television set)
(Awaiting restoration)
Collection of the Everson Museum of Art,
Syracuse, New York

1969 & 1970
Glen Southworth
CVI (COLORADO VIDEO INC) QUANTIZER (Colorizer)
&
CVI DATA CAMERA (Camera scan processor)
Collection of the Experimental Television Center,
Ltd. & The State University of New York,
Binghamton
Ubiquitous

1970 & 1974
Stephen Beck
DIRECT VIDEO SYNTHESIZER (Analog)
(Awaiting restoration)
BECK DIGITAL VIDEO WEAVER (Synthesizer)
Collection of Stephen Beck, San Francisco
1970 & 1972

Eric Siegel

EVS (Analog ELECTRONIC VIDEO SYNTHESIZER)
Whereabouts unknown, last in the possession of Al Phillips, documented in photographs

DUAL COLORIZER (Analog)
Collection of the Vasulkas, Santa Fe, New Mexico

1971

Nam June Paik & Shuya Abe

PAIK/ABE SYNTHESIZER (Keyer & colorizer)
& SCAN MODULATOR (a.k.a. as the "Wobbulator")
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

1971 & 1973

George Brown

VIDEO SEQUENCER (a.k.a. FIELD FLIP/FLOP SWITCHER, with digital control)
MULTIKEYER (Analog with digital control)
Collection of the Vasulkas, Santa Fe, New Mexico

1971

Dan Sandin

IP (Analog IMAGE PROCESSOR)
Collection of Phil Morton, West Yellowstone, Montana

1973

Bill Etra & Steve Rutt

RUTT/ETRA SCAN PROCESSOR (Analog)
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

1976

David Jones

JONES FRAME BUFFER (Digital buffer)
Collection of Gary Hill, Seattle, Washington

1976

Don McArthur

SAID (SPATIAL AND INTENSITY DIGITIZER)
Collection of the Experimental Television Center, Ltd. & The State University of New York, Binghamton

1976

Don McArthur

DIGITAL IMAGE GENERATOR
Catalog Contents

1. Introduction by Peter Weibel
2. Curatorial Statement by Woody Vasulka
3. A History of Electronic Music Pioneers by David Dunn (with bar codes correlated to 150 images and 53 sound examples on laser disc)
4. Video: State of the Art by Johanna Gill (with bar codes correlated to still and moving images on laser disc)
5. Descriptions of Tools and Designers (includes 80 pages of photos, diagrams, bios, interviews and bar codes correlated to laser discs about the tools on exhibit)
6. Installations (descriptions of installations on exhibit)
7. Tape List (list of videos to be exhibited)
8. The Form and Sense of Video by Robert Arn
10. Video Synthesis by Tom Dewitt
11. Space-Time Dynamics in Video Feedback by James Crutchfield
12. Notes on an Early Animation Device by Lee Harrison