THE UNIVERSITY of MANCHESTER

Video production Services

Computer Graphics Unit Manchester Computing

MANCHESTER COMPUTING

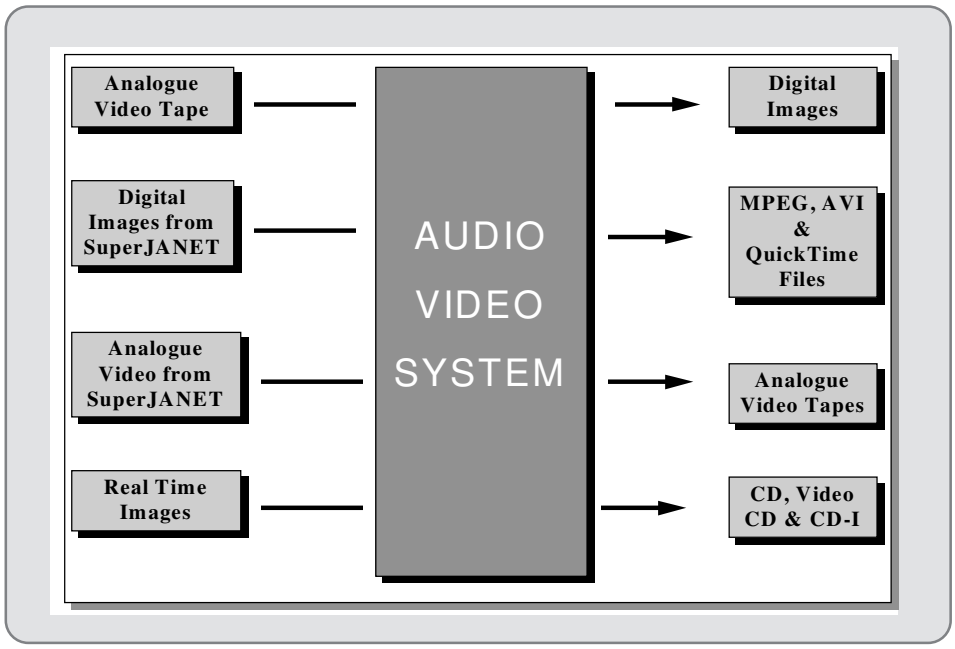
About This Booklet

This booklet describes the video services available at the Computer Graphics Unit (CGU). It covers the facilities available, the access methods, training courses and charges.

The CGU Facilities

The major components of the interconnected system are:

- Workstation with video frame buffer.
- PC with Real-Time MPEG/AVI/QuickTime encoder.
- PC with FAST Video Machine for editing and digitizing.
- Pioneer Laser Videodisc recorder and S-VHS VTRs .
- Commercial and In-house software.



The audio-video process

The system is capable of accepting :

- **Analogue video and audio:** from videotapes (VHS or S-VHS), or real-time from part of the SuperJANET network.
- **Digital Images:** sequences of Digital Images stored on the network.

The system is capable of generating:

- **Digital Images:** either digitizing from the analogue tapes, or one of the in-between frames computed from the sequence.
- **MPEG, AVI or QuickTime files.**
- **Analogue video tapes.**
- **CD:** ISO 9660, VideoCD or CD-I formats.

Video Production

Audio Video System

In-house Software

A library of functions for processing digital images, including making MPEG movies is available. It supports reading and writing of about 90 common image formats including TIFF, GIF, JPEG, MPEG, PostScript, TGA,... The software can generate a number of in-between frames to create scrolling, rolling, fading and other effects including linearly interpolated intermediate frames, to produce the effect of smooth motion; resize (through bilinear interpolation) the image to PAL resolution; convolute each image, to smooth, particularly appropriate for PostScript files; gamma correct images; snap-shot the images, including internally generated images; generate an MPEG file of all or part of a sequence. A number of novel user interfaces to the software can be used:

- VideoPrint: is the simplest of the interfaces. It is a program which accepts a script file containing a list of images and commands which indicate how the images are to be dealt with.
- TCL/Tk: has been extended to offers a more powerful script file mechanism than VideoPrint.
- Python: has been similarly extended.
- AVS: a number of modules exist which enable the user to easily create video sequences of AVS images. The available modules include ones for sending images to the video hardware, creating an MPEG, creating a number of in-between images by linear interpolation, image cropping, colour correction and gamma correction.
- VMAKER: is a fully featured Graphical User Interface to the software. This interface provides a timeline which provides a graphical representation of your work. A TCL/Tk file is produced which can be executed from the interface or customised and executed manually.

Commercial Software

A number of commercial packages are also available to complement the in-house software.

- VM Studio: a linear editing package which can be used for adding graphics, applying transition effects and digitizing video.
- MPEG Tools: a complete MPEG authoring suite. It enables you to produce and edit MPEG files as well as grab frames and convert MPEG to AVI or QuickTime formats.
- WinOnCD: a CD authoring suite which allows you to produce standard ISO 9660 CDs, VideoCD, CD-I and multimedia presentations.
- SoftImage: a professional animation suite. Not only can high quality animations be produced but they can be overlayed onto video.

Example Uses

The comprehensive set-up offered at the CGU provides a wide range of facilities. Here are some examples:

- Send us a video tape and we will ftp you an AVI or MPEG file, or post you a CD.
- Generate a sequence of images, ftp them to the CGU, use VideoPrint to lay them onto tape. This has been done remotely by several users, who have still to visit Manchester!
- Use AVS at your workstation and remotely execute the create_video module on the CGU machine to write frames to the Pioneer Laser Videodisc.

Further information

It is possible to access the video facilities remotely, either accross the University network, or from JIPS, or SuperJANET; hence a lot of the work can be done remotely. However, all tape handling and editing are undertaken by CGU staff. Use of the video service is **free** but a charge is made for the master tape (held in the CGU), any copies made, and the cost of any CDs produced.

There is a comprehensive range of documentation available from the CGU detailing all aspects of the service. Staff are also available to help with your video and to answer any questions you may have. A course is run from time to time on using the video services.

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