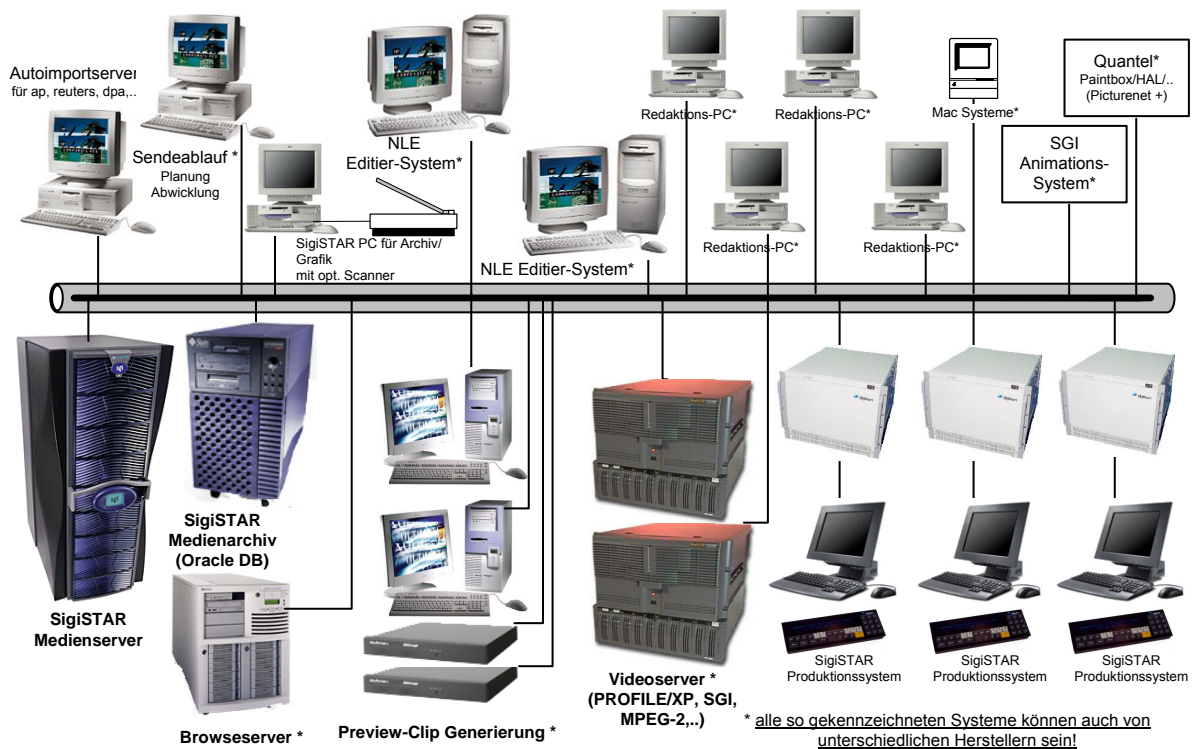


SigiStudio



SigiSTAR, the enhanced digital video system series from Munich is a completely integrated solution for the creation of video productions like live programs, news, editorial contributions articles or computer animations.



SigiStudio MediAsset Systemkonzept

By a local heterogeneous computer network (e.g. on the basis of Fast-Ethernet with TCP/IP or using GbE, FC or FDDI) standard workstation PCs or existing news-archiving systems can be linked to the digital still-stores as well as to media archives for images and clips media archive SigiStudio MediAsset for images and video clips. To the same network, image editing systems or video server are attached which can be directly attached to automatic transmit mode or productions. The same network can be used to connect image editing systems, sequential systems and video servers or to control automated broadcast operations or productions.

Single user workstations, large networked multi-user configurations as well as connected remote stations are available with integration of remote studios. Internet research places offer a comfortable access to the media archive.

All units of the SigiSTAR series use the digital D1 studio format according to CCIR 601 (625/50 with 720x576, or 525/60 with 720x486 respectively, optionally with 16:9 support). The image data is stored with 8 or 10 bit resolution.

Every production system is equipped with a video RAM memory to allow the video-fast access to the images, the recording and reproducing of stills and real-time sequences and the easy production of animations. Every output channel (serial digital video interface) is equipped with a full linear key (4:2:2:4). An optional MIX/WIPE module is available to provide all kinds of transition effects as well as keyer functions between stored images or live scenes. The optional audio support of SigiSTAR allows many productions playing video clips without the use of an external mixer. The functionality of the unit is designed for production requirements and can be linked to by a comfortable control panel, a fader panel,

the windows based graphical user interface SigiStudio or remote control. GPI modes, fully automated playback control and communication protocols like a MOS server or device driver for newsroom systems to various systems like OpenMedia or INEWS are available.

The standard SigiSTAR components are:

- SigiStudio MediAsset Image and Media Archive server to be connected with production or sequential systems and automated transmission of images and clips selected for a production.
- SigiStudio THS Image/Media Archive with text retrieval and optional Thesaurus-Module
- SigiStudio CONTENT MEDIA ARCHIVE extended Media Archive with text-retrieval
- Auto import server option for media archive for integrated interlinking with image broadcast or image library systems (e.g. Reuters, AP, or DPA)
- Editors workstations based on standard PCs with SigiStudio software and retrieval of stills, sequences and clips for creation of productions and play lists or SigiStudio INTERSERV-M option for comfortable access to the stills and clips archive via internet browser without special client software
- SigiStudio TEXTWRITER for news graphics using standardized design templates
- 1-, 2-, 3-, 4 or up to 8-channel SigiSTAR Production Systems with optional Audio support
- SigiSTAR Sequential systems for long image sequences and animations using RAM or video server storage
- SigiSTAR PROFILE Video server Systems for image sequences, clips and animations with Thomson GV PROFILE video server and optional, integrated Audio support for fade/wipe functionality without external hardware
- SigiSTAR and SigiStudio video server systems as low cost Playout stations for large video server applications with SAN or RAID storage systems and integrated Audio support for fade/ wipe functionality without external hardware
- SigiSTAR and Silicon Graphics video server Systems for image sequences, clips and animations with SGI ORIGIN video server and optional, integrated Audio support for fade/ wipe functionality without external hardware
- SigiStudio Q-Server for easy integration of Quantel systems using Picturenet+ interface with comfortable replication- and backup functionality and various file formats for import and export and optional SigiStudio INTERSERV-Q Option for access via internet browser
- SigiStudio MOS-Server for integration of newsroom- and broadcast control systems like OpenMedia or INEWS with SigiSTAR systems using meta data
- SigiStudio Plug in for Adobe Photoshop to interface SigiSTAR systems from graphical systems
- Data server systems to interface video systems of other manufacturers

Important system characteristics:

- 4:2:2:4 digital component storage format with full linear key (D1, CCIR 601, 8 or 10 bit)
- 4:2:2 digital component storage format without key (D1, CCIR 601, 8 or 10 bit)
- Serial digital video output (1 up to 8 channels per production system) with corresponding serial digital key output
- Serial digital video input with corresponding serial digital key input
- RAM memory for each production station for real-time access to single-frames and sequences and for animations
- Production effects like WIPE, MIX and FADE also for superimposing with live images including key signal or keyer functions
- Integrated audio support for embedded SDI and AES/EBU digital audio signals
- Graphic and paint functions for complete image processing in smaller studios and creating of news graphics using standardized design templates without using Paintboxes
- Real-time play lists for sequences and scenery animations like moving logos or weather charts also using integrated video servers e.g. for moving backgrounds
- Flexible multi-user concept with standard PCs, workstations or animation systems, which are connected by a heterogeneous network with editors workstations, distributed image output stations and production systems, sequential systems and, if required, with a central server system
- Central broadcast and production management (content management), i.e. automatic selection and transmission of images or video clips for production into the accompanying video output systems
- Integration of Thomson GV Profile, SGI or SigiStudio video servers with control of all functions using SigiStudio-software
- Full access of all editors' workstations and output stations to the entire image and clip stock possible
- User interface by windows based graphic user interface SigiStudio, control panel or fader panel
- GPI trigger, network and MOS server protocol for communication with other studio components (in/out)
- Link with regional studios and image transmission via phone line or ISDN

- Media archive server based on SUN Enterprise servers, Silicon Graphics servers or Windows servers with large SAN or RAID arrays to store stills, sequences and clips
- Flexible multi-format handling systems with tapes and other media to archive video clips
- Comfortable data base system for image retrieval and composing of productions based on Oracle
- Printing facility for results of researches, production lists and storyboards with colour and black and white pictures on all standard printers
- Link to news information systems as well as text and image libraries or digital video systems already installed
- Simple interface to super graphic workstations used for computer animated productions, Quantel systems or systems of other manufacturers

System Concept

The entire system has been designed as a heterogeneous network, which can be connected to standard computers like PCs or workstations or to editors' workstations, production systems with local image library and sequential systems and to a central image/media archive server. In the future, the editor's workstations software clients will be replaced by standard INTERNET browsing software.

Editors' workstations and internet access

Editors' workstations linked to the network are using Windows computers. A short image comment, (up to 80 ASCII characters), is stored together with the image data at the digital video image library. Any additional image description is stored in the corresponding database. The selection of images for a production, e.g. a news program, can be done by retrieval at the editorial systems. First some short text data together with poly photos of the images can be shown after input of various research criteria. If required, the accompanying images can be displayed in full resolution on the PC screen, or using an appropriate video output card in studio quality on a video screen, which can be connected to the editor's workstation. If required, video preview clips can be displayed on the PC, too. Even a direct reproduction of stills, sequences or video clips can be arranged on a related production system. Since there are no images or video clips stored locally at the editor's workstation itself, they can be transmitted from the media archive via network. If images are supposed to be marked for further processing, they can be entered into a production list, e.g. for the "eight o'clock news program". Later on, these lists can be worked on and be printed together with the images in colour or black and white by a standard windows printer as production proposal or story-board. The completed suggestions are then directly transmitted via network to a production system or to other editors' work for further processing. In the future the specialized editor's workstations will be replaced by standard internet browsing systems. All retrieval tasks, image and clip selections, transfer of stills, sequences or productions can be handled via Internet using the SigiStudio INTERSERV option.

Production Systems

The most important component of our SigiSTAR system series are the production systems, which can also be connected to a digital media archive system. Simple animation productions and productions of real-time scenic animations with several super fading effects are possible.

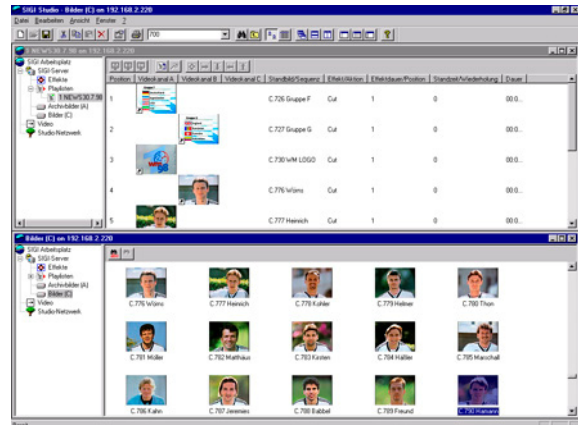
Images selected for a production by editors can be assessed and, if required, transferred to a Paintbox system for graphic processing. If there is no appropriate unit available, simple graphic and paint functions can directly be done with a corresponding option on the production systems.

Images which have been allocated to the system by an editor or a server's supervisor workstation to be used for a production, e.g. a news program, are filed in the local disk system.

Media Archive Server

If a studio area consists of several production systems or if a large amount of images or clips has to be handled, a central archiving system is designed to be the server. Usually, this system is able to work with e.g. a RAID disk array or SAN systems.

Usually, an archiving or graphical department is providing and administrating images. A super user can decide which images or sequences are supposed to be archived on long term. Any number of production systems can be assigned to each client system. They are all linked to the server via network. An editor is able to decide which images or clips should be transmitted to a Playout station to be available for a production. The server is interfaced with the production systems or with the editors' workstations by network for the receiving of production lists or story-boards.



The production systems receive their images, as already mentioned above, by an instruction of an editorial system or a super user, but can also have access to the entire image stock and request images or clips via network. The server stores the images and clips in several formats and is able to do format conversions.

Supported formats are:

- Original image files like TIF, JPEG, BMP, TGA, VBP
- Production ready video files with rectangular pixel size (D1 CCIR 601, 4:3 or 16:9)
- Browse images with square pixels to be displayed on PC systems or via internet
- Full size video formatted image with square pixels to be displayed on PC systems or via internet
- Uncompressed or lossless compressed image sequences using Silicon Graphics video servers
- M-JPEG, M-PEG2 or DVC-PRO compressed sequences using Thomson GV Profile video servers

Sequential systems without data compression

Standard production systems are able to record and replay in addition to the stills short image sequences or animations in uncompressed data format. For longer image sequences special systems with integrated video server systems are available. The data are stored in D1 standard. The play-time can be up to 300 minutes and more. Sequences are using the same description data like images and also each clip has its own entry in the database including the accompanying time codes, if necessary.

SigiStudio, Thomson GV Profile or SGI based video server systems

If very long sequences or clips should be used this system is available. Two configurations are possible: A video server only based system version, where clips and stills are completely handled by the video server hardware and a hybrid SigiSTAR & video server system version, equipped with RAM video memory for uncompressed video and short sequences and a video server for video clips. An integrated, optional audio support is able to fade/wipe video clips without using external hardware. All controlled by the same, comfortable and windows based graphical user interface SigiStudio.

Local real-time RAM storage

Every production system is equipped with a RAM memory for 640 and more images (10 bit with key), which allows image access in video real-time (40 or 33 ms/frame). Programmed access to image sequences and animations like moving weather charts or logos can be made by play lists. For larger storage capacities video server systems are used.

Mix / wipe functions

In combination with optional digital effects for video mixing (wipe, mix, fade, ...), even complex processes can easily set and produced without using external units. Stills and

sequences/ clips in the system can be faded, and all effects can be produced with live images. At the same time, keys are processed correspondingly, and the system can also be used as digital keyer. For all effects, any transition time can be defined in frames. These transition periods can vary from one image to the other. For WIPE and other special functions hard and soft transitions or colour borders with adjustable effect width can be used. Also audio signals can be mixed/ faded in the SigiSTAR environment. Using the Picturemix option all images can be used as effect template.

Graphic / OTS functions

If no Paintbox is available for a simple application, this option allows to produce images with key ready for transmission directly in the production systems. Any image sector can be cut and fit into another image with or without shade or borders. At the same time, the cut's size can be enlarged or reduced. Of course, also coloured objects can be produced, and optional even an integrated character generator with varying font sizes and different standard fonts is available. The image processing includes key operations so that images can easily be produced with an accompanying key. News graphics can be created using standardized design templates.

Play list operation

All images for a production are first transmitted automatically from disk to RAM after selection to be available there for real-time access or are directly played from video server systems. The required order of presentations can be prepared in a play list, in which the desired transition and mixing effects for every single image/clip is defined. In production mode, the process can be controlled by pushing a button or by GPI trigger and be monitored on the screen. At any time it is possible to operate manually and also to leave out single images and sequences. When using two or more independent output channels, a separate play list entry for each channel can be defined and processed. Later on, all play lists can be combined for automatic processing. It is also possible to create a separate play list for each channel. A play list can be created and used from newsroom systems, too.

Fully automatic operating

For each image, the effect with transition time (in frames) to be used for presentation and a waiting time (also in frames) to define a pause before starting to switch to the next image or clip is also defined in a play list. The independent flow of sequences and animations in video real-time is defined by using loops and jumps in a play list. Even infinite processes (e.g. moving interval captions), which are only stopped after a certain signal, can be defined. Accompanying time codes are included in the play lists for special sequence functions, which allow easy control. Audio signals can be handled in a play list, too.

Operation Modes of production system

To meet the demands in the broadcast area, various operating modes can be used with a production system:

- 1-channel-operation on channel A, B, C or D ...
- 2-channel-A/B-mode or B/A-mode changing output of images on A, B, A ...
- Program / preview mode. First, every image is shown on the preview-channel and then switched to the program channel with the effect fixed
- 2-channel-parallel-mode. Independent output of images on channel A and B, defined by an own playback channel command
- 3-4-or more channel-operation. The channels A, B, C, D can be used with the operation modes as described above

SigiStudio Graphical User Interface

The standard user interface for SigiSTAR systems is normally the graphical user interface SigiStudio, which runs on Windows based PCs (WindowsNT, Windows2000 and WindowsXP). All images and clips are represented by image icons. Copy and Paste functions can be handled by drag and drop. The production play lists are edited graphically and in production mode the status of a video output will be displayed by image icons. The same play list can be used for simple replay by SigiSTAR control panels or fader panel. Clips and stills are treated the same way, independently if stored in video RAM or e.g. on video server systems.

Technical Specifications

IMAGE DISPLAY

Display format is 625/50 (opt. 525/60) with a page proportion of 4:3, 2:1 interlaced according to CCIR 601 / SMPTE / RP125 / EBU Tech 3246E / D1 / 4:2:2:2
Optional support of 16:9 format also with 360 Mbit/s standard.

SCANNING RATE

13.5 MHz for standard CCIR 601

625 SYSTEMS

Active frame 720 samples/line x 576 lines for standard CCIR 601

525 SYSTEMS

Active frame 720 samples/line x 484 lines for standard CCIR 601

SYNCHRONIZATION AND TIMING ADJUSTMENT

Output synchronized internally or linked to external synchronization signals (digital or analogue). Adjustable +/- over an entire line relative to analogue or digital synchronization signal. The key channel can be delayed. The input is using a separate frame and thus completely independent from the output. It can be synchronized by a separate signal

STORAGE FORMAT

digital Y, Cr, Cb and Key with 8 bits/sample or 10 bits/sample, linear quantization, CCIR 601 sampling structure. Ready for 10 bit data format for storage, input/output by digital video interfaces

VIDEO INTERFACES FOR SIGISTAR PRODUCTION SYSTEM

Digital serial 75 Ohm BNC

DIGITAL-INPUTS

Video serial digital input, corresponding to SMPTE 259M-ABC, SMPTE 272M-ABD

Key serial digital key input, corresponding to SMPTE 259M-ABC, SMPTE 272M-ABD

Opt. audio support embedded SDI or digital AES/EBU audio signals with up to 2 stereo channels for each video channel (20 bit Audio, AES-3id, SMPTE 276M)

DIGITAL VIDEO SERVER INPUTS

Video serial digital input, corresponding to SMPTE 259M-ABC, SMPTE 272M-ABD

Key serial digital key input, corresponding to SMPTE 259M-ABC, SMPTE 272M-ABD

Opt. audio support embedded SDI or digital AES/EBU audio signals with up to 2 stereo channels for each video channel (20 bit Audio, AES-3id, SMPTE 276M)

DIGITAL OUTPUTS

Video serial digital output corresponding to SMPTE 259M-ABC, SMPTE 272M-ABD

Key serial digital key output corresponding to SMPTE 259M-ABC, SMPTE 272M-ABD

Opt. audio support embedded SDI or digital AES-EBU audio signals with up to 2 stereo channels for each video channel (20 bit Audio, AES-3id, SMPTE 276M)

Channels max. 8 independent output channels with Video and Key

POWER

180-264V or 90-132V at 50/60 Hz

OPERATION FACILITIES

Control panel, keyboard and screen and remote control e. g. via server, newsroom or a SigiStudio PC system etc.

Interfaces RS232 serial connections (opt. RS422) for Remote-Control, control panel, fader panel

Parallel port for connection to printer

Ethernet-connection via RJ45 socket (100 or 10 Mbit/s, opt. GigaBit etc.)

SCSI-Interface for external storage devices

Opt. fibre channel interface for external storage devices

VGA, keyboard and mouse interface for local diagnostic

MEASUREMENTS (without interface connectors)

MODULE	HIGHT	WIDTH	DEPTH
SigiSTAR Production System	355mm/14"/8RU	483mm/19"	533mm/21"
SigiStudio PC Control	180mm/7"/4RU	483mm/19"	457mm/18"

