Technical Department

VSN OVERVIEW

(Book A v1.2c)

User Manual

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1. Description of the system:

A vsn system provides the user with the tools and machines needed for the production and broadcasting of TV and News. The system has a set of modules that integrate and interact with each other to provide an optimal workflow. These modules can work on their own and also interact with third-party products.

The different modules are:

Video ingest -> vsnautorec/vsnrecpro, vsnscenes
Continuity broadcast -> vsnmatic
News Production/broadcast -> vsnnews
Character generation -> vsncg
Contents archiving -> vsnarchive
Legal copy -> vsnlegalrec
Render farm -> vsntranscoder

The modules store most of their information in various MS SQL databases and talk to each other via TCP/IP, a gigabit ethernet network is required for optimum performance.

Apart from the modules above commented and their associated software there are some additional pieces of software which perform smaller tasks: vsnnetsharer for importing and exporting clips into the system or vsncentralcontroller for the control of audio/video switchers.

There is also the License Server, which together with a license file will authorise the user to run the software.

NOTE: This introduction guide has been written to familiarise technicians with the internal workings of the system and help future troubleshooting. The system delivered to you should have been previously configured so that you would not need to change anything.

NOTE: In further documents there will be mentions of chapters belonging to other documents such as this one. Please make sure you have all the required documents for a complete understanding of the system.

2. Explanation of the vsn software:

vsnautorec (ingest)
    terminal = allows remote control of director
    director = captures (manually, scheduled and batch modes) from vtr and external lines
vsnrecpro (ingest)
    recpro = captures (manually and batch modes) from a pool of VTRs
    resourcesmanager = allows the control of local vtrs from any terminal in the system
vsnnews (news production)
    playout = edits, produces and broadcasts the news playlists
    remote = edits the news playlists
    netmanager = controls the transactions between the newsremotes, playout and playlists
vsnmatic (continuity playout)
    playout = edits, produces and broadcasts the tv playlists
    remote = edits the tv playlists
    backup = replicates the playout and takes over in case of technical failure
    publi = manages the advertment playlists and contracts
vsncg (character generator, graphics)
    cg = edits and overlays text and graphics over the broadcast
    datacollector = grabs data from xml files or internet servers for the cg to use
vsnlegalrec (legal copy)
    legalrec = records the broadcast on a 24x7 on a lower quality format
    legalplayer = browses past broadcasts and produces clips given a time segment
vsnarchive (archive)
    archive = keeps track of the contents that have been stored offline
    nearlinemanager = helps with the transactions between archive and storage devices
vsntranscoder (render farm)
    server = receives requests from the vsn system or NLE to perform render tasks
    renderer = performs the render tasks
vsnlicense (licensing)
    manager = produces license requests for many computers and programs
    server = activates the license files
vsnscenes = allows sgment editing and material ingestion on both VTRs and XDCAM devices
vsnprompter = displays the text contained on a news playlist for the presenter
vsnwires = converts information from news providers feeds and broadcasts it to the journalists
vsncentralcontroller = controls of a local switcher from any terminal in the system
capturer = captures video into a digital file
vsnnetsharer
    terminal = import/exports clips from the system and into the archive
    server = same as terminal but allows deletion of content and category management
logmanager = retains all logs from all the machines in the system for easier troubleshooting/alerts
languagemanager = creates and modifies language files for some of the vsn software
dvenumerator = identifies all the firewire dv devices on the system

3. How do the modules talk to each other:

All the modules in a given system will talk to each other via TCP messages across the LAN network. The locations for the different machines are stated on the .ini files which accompany each software. Examples:

-**MATIC** talks to the **CG** for the graphics, to the **AUTOREC** for recording the broadcast, to **NEWS** for certain playlist lines and also to the **CENTRAL CONTROLLER** to switch the matrix lines.

-**NEWS** talks to **MATIC** to pass control after a playlist has been played, talks to the **CG** for the titling, to the **PROMPTER** for the text to be read and to the **CENTRAL CONTROLLER** to switch matrix lines.

-**AUTOREC DIRECTOR** receives messages from **MATIC** and **NEWS** and **AUTOREC TERMINAL**.

-**CAPTURER** receives messages from **AUTOREC DIRECTOR** and **RECPRO**.

-**CG** receives messages from **MATIC** and **NEWS**, and data from the **DATACOLLECTOR**.

-**CENTRALCONTROLLER** receives messages from **MATIC**, **NEWS** and **AUTOREC**.

-**NETSHARER** talks to **MATIC** and **NEWS**, is the software used to import/export clips towards the system.

It is therefore of utmost importance to have all the machines configured to be on the same network and meaningfully named.

4. The Databases:

A vsn system will rely on MS-SQL databases to store all sorts of data: clip information, playlists, users, graphics, configurations and so on. Most of the applications require a database of their own to be installed either locally or in any computer in the network.

Together with the software there are .sql files used to create and update the databases mentioned above. Each database has a standard table, called AUX, which states the database version.

The MS-SQL desktop engine used is: **Microsoft SQL Server 2000 Desktop Engine**.

The **Service Pack 1** for Desktop Engine is also required for the system to function properly.

The software also uses the superadministrator user from the Desktop engine: "sa", and expects it to have no password. Make sure that you don't set any password to it at installation time.

NOTE: Due to security reasons it is also unstable to use a vsn system together with Windows XP service Pack 2, as it makes harder the communication towards SQL server.

NOTE: The Microsoft SQL Server 2000 Desktop Engine to be installed has to be the original version, not the "release A" available at the Microsoft Website. This is due to the increased security issues, it does not allow the superuser "sa" to have no password.

NOTE: An entry on the Windows registry is usually required to allow the superadministrator with no password. The file with the modification is "Loginmode.reg" and the contents are:

REGEDIT4

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer]

"LoginMode" = dword:2

Most of the programs will be delivered together with a .sql file, depending on the filename we can tell if it's a full installation of a database or an update, and certain characteristics of it.

Examples:

VSNCG_130.sql → this is version 1.3.0 of the CG database and it's a full installation

VSNCG_214-215.sql → this is the update from version 2.1.4 to version 2.1.5 of the CG database

VSNSTORE_120_ENG_PAL.sql → this is the full install of v1.2.0 of the archive, ENGLISH PAL

The Language characteristic defines where to store the database files, depending on your Windows installation language you might have to change the path on the .sql file.

The video format characteristic is used only in certain applications, but this can be set from inside the software itself.

5. Usage of OSQL:

OSQL is the SQL command line application installed by default with MSDE, it is used for the creation and update of vsn databases. It can also be used to troubleshoot certain problems or find out logins for certain applications like NEWS or ARCHIVE.

NOTE: To use OSQL a DOS window shall be opened. This is accomplished by clicking RUN... on the Windows Start menu, and then typing "cmd" (enter).

NOTE: If the computer we are running the OSQL command from (when working remotely) doesn't have MSDE installed the following won't work.

The parameters and options of OSQL in order to run a .sql file are as follows:

osql –Usa –P –SCG01 –i"VSNCG_214-215.sql"

-U sets the user to login with (sa stands for superadministrator, which has access to everything)

-P sets the password to login with (no password)

-S states which server we want to login to (the computer name, in this case CG01, could be IP too)

-i will execute a given .sql file (in this case VSNCG_214-215.sql)

In case we were sitting in computer CG01, just by typing "osql" the user would be prompted for a user and then a password. Typing "sa" (enter) and then nothing for the password (enter again) would get the user inside the database system of CG01.

Once inside the SQL prompt we can type SQL queries, these will be executed by typing in GO on a new line and then pressing enter.

To select a database:

USE nameofdatabase

GO

To find out which databases are installed

SELECT name FROM sysdatabases

GO

To find out the version of a database

SELECT * FROM AUX

GO

The statement above means: "select everything from the table AUX", the table aux contains only one record and 3 columns. These state the major version, the minor version and the revision. Every vsn database has the AUX table in order to determine its version.

To delete records from a table

DELETE * FROM rutas WHERE id = 72

GO

This will erase record 72 from the table rutas.

NOTE: OSQL software makes a difference between small letter and capital letter parameters.

NOTE: the –i command might or might not require quotes to specify the file to use depending on the operating system, if using double quotes (") doesn't work, try using single ones (').

6. The .ini files:

Most of the software modules have an .ini configuration file. The name of this file is exactly the same as the .exe executable file, if there are differences on the naming, the program will not use the .ini file.

Changing the configuration of the software is as easy as browsing into the Program Files/VSN directory and looking for the program we want to reconfigure, double clicking the .ini file there will open notepad and allow us to change the data there. (**NOTE**: if you cannot see extensions of file, just double click whatever notepad document named like the main program residing there).

Although .ini files are different depending on the program they belong to, they also have many entries in common. These are:

```
[LicenseServer] *section to configure where to get the software licensed from
DIR_IP1         = 192.168.100.52        *states which computer is running the server
PORT1           = 13900                 *which port will be used to access licensing, never changes


[TCPIP] *this section states network information, extended example from many .ini files)
USE             = yes                   *deprecated, newer software does not need it
DIR_LOCAL       = 192.168.100.25        *deprecated, states the IP of the actual machine
NET_MASK        = 255.255.255.0         *deprecated, states the netmask of the system
NEWS_NETMAN     = 192.168.100.100       *IP of the machine running News Network Manager
NEWS_DB         = 192.168.100.100       *IP of the machine running the News Playout database
NEWS_PORT       = 13010                 *port to access News, never changes
PROMPTER_PORT   = 13020                 *port to access the Prompter, never changes
CG_DB           = 192.168.100.22        *IP of the machine running the CG database


[LogManager]    *section to define where to send the software logs to
LOGMAN_IP       = 192.168.100.91        *IP of the machine running the Log Manager software
VERBOSE_LOGS    = YES                   *maximum detail for the logs


[CONFIG]
Lang            = 1                      *language, obsolete, 1 for English and 0 for Spanish
LanFile         = E:\aprogs\AVI\Venetian\VSNSharer\sharer.jlp *path to language file
```

NOTE: The examples above are just that, examples. Every system has different IP´s and, depending on your configuration, maybe different access ports.

NOTE: It would be advisable to make backups of all the .ini files in your system as you get it from your dealer, so if any unproductive change is ever made you can always go back to the original configuration.

NOTE: A semicolon before an statement will render it invisible towards the program so that if you have a line on the .ini file that looks like…
;MAIN_PORT   = 13000
…it will be ignored by the software at running time.

NOTE: If an statement declaring the IP for a database is empty the software will automatically look for the database on the local computer, same thing can be obtained by setting 127.0.0.1.

7. The .ax files:

These are ActiveX controls, which replace older Microsoft´s OLE (Object Linking and Embedding) controls. They allow greater control and lower level access to the computer resources and functions. Depending on the machine configuration some of these .ax files will have to be registered or not.

Different programs use different .ax files, therefore they are usually stored in the same folder as the program they belong to. If we need to register an .ax filter (i.e. the original got corrupted or we want to install a newer version) first thing would be to copy the .ax file to its permanent destination (the specific software folder or a common folder for all VSN filters and controls).

Once the file has been copied a DOS window shall be opened (see chapter 1.5). After this the folder should be changed to where the files have been copied. This is accomplished by typing:
"cd\" (enter)   → will take us to the root folder
"cd program files" (enter) → change to program files folder
"cd vsn" (enter) → change to vsn software folder
"cd name_of_folder_containing_the_files" (enter) → self-explanatory

Typing "dir" (enter) → will display a list with all the files and folders inside the actual folder
Typing "dir .ax" (enter) → will display all the .ax files in the folder

Once we know the exact filename of the .ax file to be registered we shall run:
"regsvr32 filename.ax" (enter) → will register the file and display a window to confirm it

In case of wanting to unregister the file we shall type:
"regsvr32 /u filename.ax" (enter) → will unregister the file and confirm so too

A .reg file is available to make these tasks easier (see chapter 1.8) via mouse commands.

.ax file list:

JEQueueWriter.ax   → required in playout machines
JEQueueReader_1t.ax   → required in playout machines dependant on DirectShow
DifParser.ax   → required for compatibility with the DIF DV format
AVdv2dvsd.ax   → required for compatibility with the AVI DV format
jeutfilter.ax   → required for buffering/synching purposes in playout and ingest
2fwball.ax   → required for playout and print to tape when using firewire devices
mcspmpeg.ax   → required in MPEG playout machines
jevumeter.ax   → required for ingest and legalrec machines
difnab.ax   → superseded by DifParser and 2fwball
silencedetector.ax   → required for legalrec machines
ball.ax   → superseded by 2fwball

NOTE: The .ax files needed varies from machine to machine, it depends on the hardware and the software used. Do not attempt to register or unregister files without advice from Technical Support or your distributor.

8. The .reg files:

These files do modify the registry in Windows, which affects the configuration of the system. When double clicked the user will be prompted to confirm that the information will be entered into the registry.

There are a certain number of .reg files available to add extra functionality to vsn systems, they provide some shortcuts for repetitive tasks, configure devices or emulate them.

The usage is as simple as double clicking the .reg file and confirming addition to the registry.

.reg file list:

playout.reg   → obsolete, used for playout machines before OmegaPlay
QTParserPriorBoost.reg → used for playout machines requiring Quicktime compatibility
RegfileEasy.reg   → adds register/unregister command when right-clicking over .ax files
DesactivarMediaSense.reg   → emulates an Ethernet connection for standalone machines
OmegaPlay.reg   → required for multimformat playout machines
LoginMode.reg   → configures MS SQL server to allow user "sa" with no password

9. The .jlp files:

These are language files featured alongside the software, therefore allowing customization for different countries/languages. The file paths will have to be specified in the .ini files of the software so that they are loaded at startup time.

If the .jlp files are missing or unspecified the software will start automatically in English.

example of language configuration for sharer:

```
[CONFIG]
LanFile          =E:\aprogs\AVI\Venetian\VSNSharer\sharer.jlp
LanImportFile        =E:\aprogs\AVI\Venetian\VSNImportFile\importfile.jlp
LanRegFile          =E:\aprogs\AVI\Venetian\VSNRegFileDLL\RegFile.jlp
```

The paths shall be added on the CONFIG section of the .ini file and depending of the software it will have one or more statements/files.

The language files are created using the Language Manager software, which displays the original texts in English so that they can be translated into any other language.

10. The .lrq/.lic/.cif files:

All the software requires to be licensed in order to run. A license server shall be run together with a license file, this will authorise one or many computers and software. Any computer on the network can point to another computer for licensing.

Most modules will have its own license and license server loaded so they don´t depend on another computer for licensing their software. When it comes to News Remote Clients (journalist workstations) their software will usually point to the News Playout Server for licensing. This will allow floating licenses and easier scalability in case more journalist licenses are to be added.

An .lrq file is a license request, which will have to be sent to us for licensing. After this a .lic file will be sent back to the customer, this is the final license file.

License files have to be run with the License Server. Normal usage would involve copying the .lic file into the License Server folder and then modifying the .ini file of that License Server so the license file used is the newly copied one.

The License Server should be run at startup, so that everytime the computer is started it loads automatically the license. If the License Server isn't running the user won't be able to open any program.

Once the License Server is running it will sit by the clock area, right clicking over it will give the user the possibility to see which software is licensed from that machine and also which software is connected at the moment.

License files are created with the License Manager software, which uses a .cif file for each product to be licensed. So that if we are to license a machine with both Autorec and Sharer we will have to use the License Manager together with the .cif files related to these products.

The software will then provide a license request file based in the software wanted and the hardware details of the machine.

NOTE: Your system should have been already licensed when you receive it. No additional licensing should be done initially unless you want to add more software or journalist workstations.

NOTE: If any hardware of the vsn system is changed due to malfunction or update the license files for that machine will have to be recreated, as it will render the older .lic file unusable.

11. DV Enumerator:

This utility is used with DV external devices (firewire) to find out their ID. Some modules (News Playout, Autorec) may have one or more devices attached to them and upon misconfiguration or replacement of these can cause the software to stop functioning.

In these cases the .ini files (in the case of News Playout) or the configuration of the software (Autorec Capturer) will have to be modified. This way the software will know which device to use for the playout or the ingestion of video.

Upon execution the software will display all the devices available on the system. The Rescan button will search for new devices and the Copy ID button will copy the selected device ID to the clipboard so the user can then paste it over the software configuration window or over the .ini file.

12. Storage:

Depending on the Vsn module certain type of storage will be used for clip storage and playout. By default all machines are configured on a RAID 0+1 (mirror and span) system with 2 or 4 internal hard drives. They are provided with 3 partitions: A Ghost backup image of the system, the operating system and a data/temporary storage partition.

The Ghost partition holds an exact backup of the state and configuration of the machine when handed to the customer and can be used to restore the system on a very quick manner. This partition has also enough space remaining to store additional Ghost images as the system experiences upgrades, changes or customizations.

The operating system loaded will usually be Windows 2003 server (for daily storage serving only) or Windows XP Professional SP1 and all the VSN software shall be installed under Program Files on a directory called VSN. Some VSN applications might be loaded automatically upon startup by having their shortcuts added into the Startup Folder (License Server, Central Controller, Net Sharer).

The data/temporary storage partition is used mostly in Autorec machines for temporary video captures. Once the video is captured is registered and then moved to a definitive storage unit (located in Matic, News or Daily). Depending on your configuration you might have decided to use the internal storage for playout purposes (Matic and News servers). This can be done when using the MPEG-2 format due to its lower bandwidth requirements but also discouraged. Legalrec machines do store all the compressed WM9 format video material on their internal storage, then again bandwidth requirements are really low (300 and 600 kbps).

For playout storage (Matic and News) and Daily Server (shared contents library) Proware SCSI systems are normally used. These are NAS (Network attached storage) devices hooked to a server machine (Matic, News or Daily) via a SCSI interface. They come in different sizes: from 1 to 16 Tb and have one volume (mirrored and spanned also).

Proware devices can be accessed via LAN for troubleshooting and administration. The IP configuration can be set from the front panel. We will access the menus via a web browser pointing to the Proware ´s IP and using the username "admin" and password "00000000".

NOTE: The customer should not need to change any configuration related to the Proware, everything is configured already configured beforehand.

NOTE: Daily Server is also known as PC Host.

NOTE: Depending on requirements the customer might want to have the databases installed also on the Proware server. This way a Backup Playout could be used anytime just by switching the SCSI cable (as long as all the playouts are configured to read the database from the proware path).

13. Windows Configuration and Shared Drives:

The systems are set up with either Windows 2003 Server (for daily server purposes or bigger database size systems) or Windows XP Professional Service Pack 1. In all of them the "administrator" user is set up with no password, and should remain like that if possible so that networked drives and shares are easily accessed from any computer in the network.

For the system to be able to register new clips into the different servers (Matic, News, Daily) there has to be a shared directory in each of these for storage. If this doesn´t exist the software will display error messages as it won´t be able to write the files. Directories created on Matic, News and Daily Prowares must be shared with write privileges across the network. Autorec machines also have a local directory for the captures, which shall be shared also.

These directories should also be used at least once from each of the servers, this way Windows will save the user/password details. In case the shares are erased or modified, the login process should be repeated before VSN software attempts to make use of these directories.

Additional directories might be created inside of the initial shared directories in the Prowares so that clips are a bit more organized. Once these directories are created paths should be assigned for saving clips on these. Daily server (via Sharer) can take many paths for each category and assigns them automatically at save time. Matic and News can take many paths but the user will have to decide each time which path to use for the newly registered material.

Whenever there are editing suites in the system there will be an additional shared directory on the Daily Proware Server called VEGAS. All the journalist or editing workstations will have a Network Drive configured as Z. This way both projects and media (voiceovers, additional materials) will be accessible from any workstation, as they all share the same drive. This will be configured in the NLE (Non Linear Editing) software too.

14. Cables and connectors:

RCA
Analogue connector, used for the transmision of audio and video (yellow for video, red for right audio channel and black/white for left audio channel).

XLR (Cannon)
3-pin connector for the transmission of balanced audio.

BNC
Used for transmission of analoge audio and video and also SDI (serial digital interface) signals. It's shielded and interference proof.

Jack (3,5mm and 6,5 mm)
Stereo or mono connector, used in consumer audio devices like headphones and microphones.

Firewire (IEEE1394)
Electric connector for data transfer. Associated to DV cameras in the professional video environment.

S-Video (Separate video)
Used for the transmission of analogue video signals. Chrominance (C) and Luminance (Y) are sent separately providing better quality that composite (RCA) cables.

Fiber Optic
Used for the transmission of digital audio and video signals via optical cable.

DB-9
Used to control electronic devices (switchers, VTR, mixers) from a computer via the serial port using the RS-232 standard.
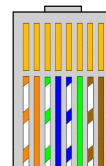
RJ-45
Used for the transmission of data between computers and network switches. Working bandwidths are: 10, 100 and 1000 Mbps (1000 Mpbs connectivity is required for vsn systems).
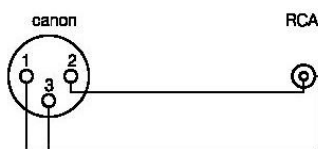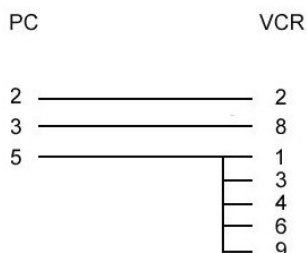
NOTE: The diagrams above show how to build (from left to right): a 232 to 422 interface cable (for Sony VTRs), a cannon to RCA converter (1 audio channel), a RJ45 data cable connector.

15. File formats accepted:

Depending on the hardware and software installed the system will be able to use different video formats for the ingestion or playout of video.

For ingesting video (vsncapturer):

Canopus Firewire ADVC converters are used for AVI and DV files.
Canopus PCI Amber cards are used for MPEG2 files from 2 to 15 Mbps at 4:2:0.
Skymicro PCI cards are used for MPEG2 files from 2 to 25 Mbps at 4:2:0 and 4:2:2.

For legal copy (vsnlegalrec):

Avermedia TV PCI cards are used for WMV files from 150 Kbps to 600 Kbps.

For playout of video (vsnmatic, vsnnews):

Blackmagic PCI cards are used for multiformat (AVI, MOV, DV, MPEG2).
Stradis PCI cards are used for MPEG2 files.
Canopus Firewire ADVC converters are used for AVI and DV files.
Skymicro PCI cards are used for AVI and DV files.

Regarding the creation of video files, these should adhere to the following specifications:

PAL: 720 x 576 @ 25 fps video, 48.000 Hz 16 bit stereo locked audio.
NTSC: 720 x 480 @ 29,97 fps video drop frame, 48.000 Hz 16 bit stereo locked audio.

NOTE: For MPEG2 files program stream shall be used, transport stream can be used but not encouraged and elementary stream is not supported.

NOTE: AVI files should follow the Open Dml specifications, to allow file sizes bigger than 2GB.

NOTE: Your system might have more than one device in the same computer for 2-channel playout, recording simultaneous streams or performing legal copy of more than 1 channel at the time. The user can decide which device is meant for which channel or recorder via .ini files and software configuration menus.

NOTE: For buffering reasons, it is advised that clips registered into the system for playout purposes are at least 5 seconds long. Shorter clips can be used but stability might be compromised.

16. Windows Media Encoder:

In order to create proxy files out of the materials being registered into the shared storage and/or the News server Windows Media Encoder will have to be installed on the users' computers. At register time Windows Media Encoder will be called and fed the newly registered clip to be converted.

Windows Media Encoder can be downloaded from Microsoft's website for free at:

http://www.microsoft.com/windows/windowsmedia/9series/encoder/default.mspx

By default most vsn softwares rely on a Windows Media Encoder Project file called "DV lince.prx", which should be copied or created at:

C:\Program Files\Windows Media Components\Encoder\Profiles

To create the proxy settings file the Windows Media Profile Editor shall be run by clicking on the Start Menu – Windows Media – Utilities. The settings are:

Name: "DV Lince"
Audio (checked): CBR Windows Media Audio 9.1
Video (checked): CBR Windows Media Video 9
Video format: NTSC or PAL depending on your standard

Then add a bitrate of "300k", meaning 300 kilobits per second.

The next window will be autoconfigured according to the earlier settings and nothing needs to be changed there (resolution and frame rate will be dependant on your video standard).

Click on Save as… and locate the profiles directory mentioned above, once there name the file: "DV Lince" and confirm the save.

NOTE: If there is a transcoder server on the network and it is not necessary to create proxy files on the reporters' computers then there is no need to install Windows Media Encoder in these.

17. Matic & SANs:

To improve performance and bandwidth towards video file access on installations where multiple playouts are sharing contents the use of SAN and fibre channel network is recommended.

The playout machines will be connected to the SAN via the fibre channel switch. In order to be able to see the contents of the SAN a **file access and locking software** is required, as all the computers connected will see the SAN as a **local** drive rather than a **networked** drive.

For the edit suites to be able to push materials into the SAN for later playout without affecting performance there shall be a number of **gateway computers** across which the files will be sent. These gateway computers will also be connected via fibre channel to the switch and have the SAN software installed so they can write to the storage area.

The files will then be sent via ethernet from the edit suites to the gateway computers and from these they will go via fibre channel. The storage area will be seen on the edit suites as a **network shared drive** on the gateway computers. Hence once the SAN software is loaded on the gateway computers the SAN drive should be shared with read/write rights towards the edit suites.

The path for registered clips on the matic playout database always contains the whole UNC route (i.e. //ComputerName/ShareName/DirectoryName/FileName.mpg). This poses a problem when using SAN storage as it will appear as a **local** drive on the playout servers rather than a **networked** drive. To avoid the playout servers accessing the clips via ethernet (much slower) a **path conversion** feature has been implemented in matic.

The conversion will replace the **UNC path segment** so that the playout looks for the clip on its **local SAN drive** instead of going to the gateway computers network shares.

To create a conversion rule we will have to use the menu option **SAN mappings** from the **configure** menu in matic. There we can set as many conversions as we wish, in each of them we will have to define the complete UNC path and the same path for local access from the playout.

NOTE: It is of utmost importance that all clips are **registered through the gateways**, even if we are registering them from the playouts themselves. If we register materials with the local path from the playout servers any other station accessing the material will use the playout as the gateway and greatly affect performance.
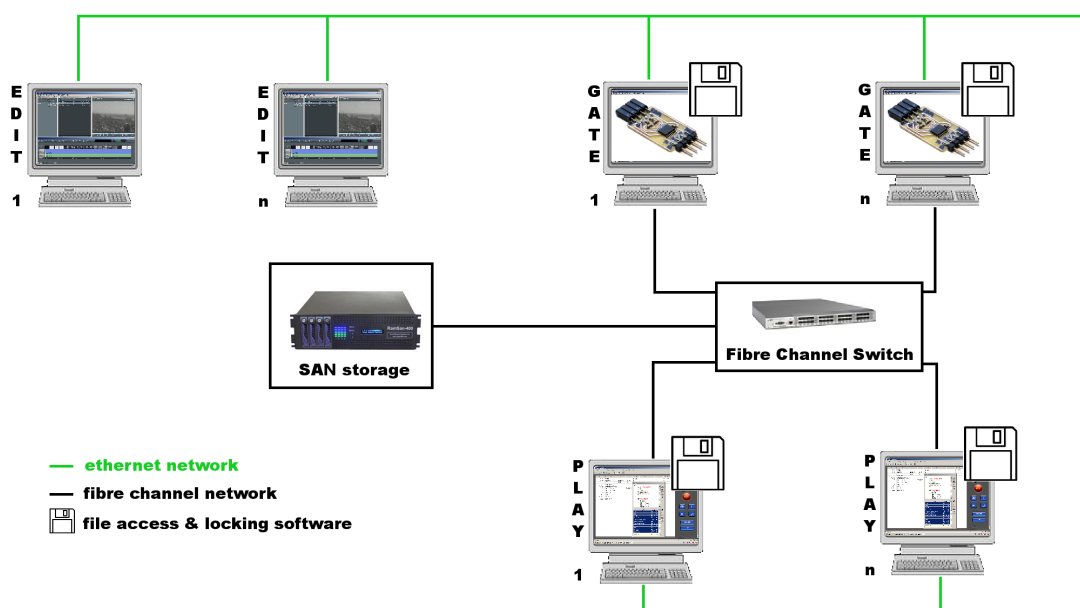
18. Document version changelog:

Book A (vsnoverview) version 1.2c from the 25th August 2006
      - Added section 17 on SANs

Book A (vsnoverview) version 1.2b from the 23rd August 2006
      - Added some additional notes and changes on section 6

Book A (vsnoverview) version 1.2 from the 12th July 2006
      - Added some additional notes and corrections on section 5