SL NEO 1000

Multi-Channel SD/HD Recording Servers

A Universal Solution for Automated Multi-Channel Ingest to Files for Production, Broadcast and Archive

The ingest solution is a client/server system designed to be scalable. The system can have arbitrary numbers of servers and clients, the configuration of clients and servers is unconstrained allowing for flexibility in deployment and use.

As a system designed to interoperate with a number of different broadcast technologies, SL NEO 1000 supports real-time multi-channel ingest to a wide range of codecs and file containers including:

- AVID DNxHD (120, 145, 185, 220 Mbit/s),
- Panasonic (DVCPRO25, DVCPRO50, DVCProHD),
- Sony XDCAM IMX (30, 40, 50 Mbit/s), DV25/DVCAM, XDCAM HD 422, HDV, AVCHD,
- MPEG-2 4:2:0, 4:2:2, IPB GOP or I-frames,
- MPEG-4 (H.264),
- File Containers: AVI, MOV, MP4, MXF D-10/OP1A, RAW DV/DIF, MPEG PS/TS, FLV.

Each ingest server SL NEO 1000 Series is capable of recording up to 12 SD or to 8 HD channels simultaneously, with each channel being captured to one or two independent codecs along with a low resolution proxy.

Metadata about an ingest is stored in a built-in media-database. Client applications can be used to add metadata to a live or prerecorded feed.

Key Features and Benefits

- Simultaneous and independent functioning of several recording channels, recording to local or networked storage, AVID storage support;
- Automated multi-stream media file export during file recording;
- Automated recording to files of media materials according to the record-lists from AV/SD-HD SDI/DVB-ASI/IP/WEB sources;
- Full access to the material within seconds after recording starts;
- Control of recordings from clients' PCs using SL NEO Client Software and via Hot Keys/GPI;
- Creation of several recording profiles and instantaneous profile interchange;
- Layout, editing, import, and export of record-lists for recording channels;
- Automatic creation low resolution proxy-copies of materials during recording, IP-streaming for Live Preview;
- External Routers control, automated line source change in accordance with the record-list events;
- VTR device control using RS-422/IEEE1394 server ports/batch capture mode is used when working with a VTR according to record-lists;

SL NEO 1000 Provides:

- Centralized view of all ingest and playout SL NEO servers;
- Integration with automation systems, nonlinear editing systems and broadcast servers;

The system also incorporates an edit-while-capture module that was implemented as a virtual filesystem. This allows editors to start working with a file being captured before the capture is finished.

A further advantage of the virtual filesystem is that the same essence can be presented within multiple edit-while-capture files without having an additional storage overhead.

Servers can be controlled locally or remotely via LAN/WAN from PC-based client workstations. The embedded Web-Based Interface provides access to the system administrative functions associated with configuring and customizing the system.

- Immediate access to full-resolution video & low-resolution video proxies;
- Support for both HD and SD content;
- Task-focused user screens that make it easy to view content available on delivery and edit systems;
- Support for the delivery of content directly to edit systems and video servers;
- Rec-list integration with traffic, programming and promo systems.

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SL NEO 1000 Advantages

Ingest System can be configured to meet your most demanding ingest requirements.

The system enables you to:

Recording of files onto a local server storage or on a central array (SAN/NAS) in shared folders for subsequent editing or for transfer to the archive;

File recording in the central storage of the collective editing system, registration in the system database (for example, Avid Unity/Avid Interplay);

File recording in the central storage of the broadcasting system, registration in the SL NEO media database;

Make more time available for important projects by reducing the cost of ingest;

Fully automate digital file ingest and transfer;

Import key metadata supplied with the media directly to the biult-in media database;

Move media throughout the workflow without manual intervention;

Use configurable rules to adapt workflow processes to your operation;

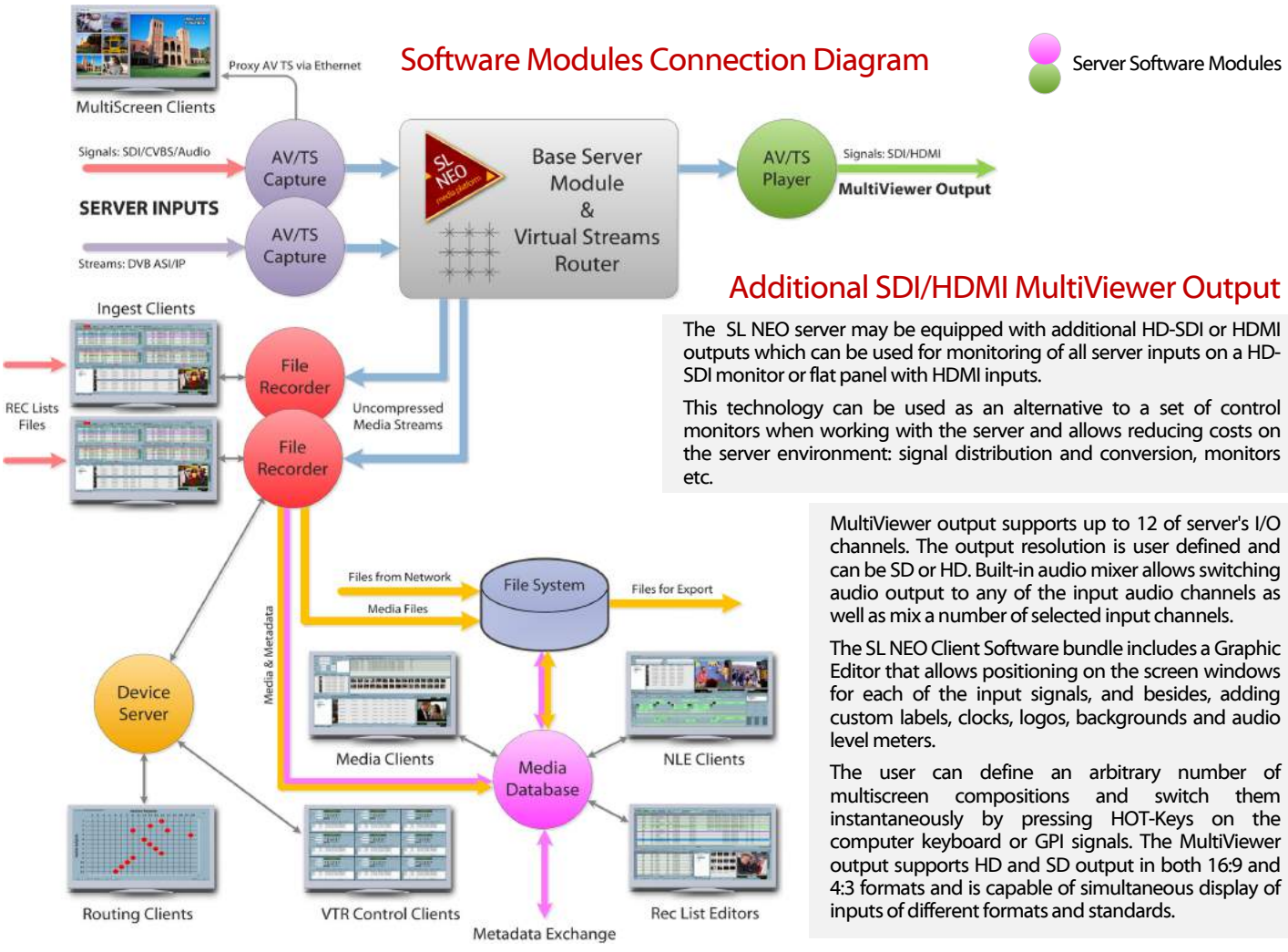
Transcode media automatically to your broadcast server;

Integrate seamlessly with playout automation, and to add ingest capabilities to any of the SL NEO family of workflow products.

Technical Specifications

- Video Formats (depends on model): SD: 625i, 25 f/s, or 525i, 29.97 f/s, HD: 1080i, 25 or 29.97 f/s, 720p, 50 or 59.94 f/s;
- Inputs (depends on model): SD/HD SDI/CVBS/YUV, Analog/AES/SDI Embedded Audio, MPTS/SPTS over DVB ASI/IP, UDP/RTP Unicast/Multicast, DVI-I/D;
- Audio: 4 AES/EBU pairs per video I/O channel, 8 pairs embedded per video I/O channel 16-, 20- or 24-bit PCM, 48 kHz;
- SD/HD File Encoding: AVID DNxHD (120, 145, 185, 220 Mbit/s), Panasonic (DVCPRO25, DVCPRO50, DVCProHD), Sony XDCAM IMX (30, 40, 50), XDCAM HD 422, HDV, AVCHD, DV25, MPEG-2 IBP GOP, H.264;
- File Containers: AVI, MOV, MP4, MXF D-10/OP1A, RAW DV/DIF, MPEG PS/TS, MPG;
- Timecode/NTP Support: NTP client over Ethernet, LTC in (option);
- GPI I/O: Inputs 4…16 (option), Outputs 4…16 (option);
- Remote Serial Interface: 4…8 RS-232/422 ports for switchers/routers control (option). Supported Routers Protocols: Harris/Leitch, Nevion, Evertz, Snell, Miranda and other;
- Remote Serial Interface: 4…8 RS-422/IEEE1394 ports for VTRs;
- Dimensions (depends on model): 1…6RU, Weight (5…50 kg);
- Power Supply: Dual hot-swappable; Voltage: AC 115 to 120 V, 200 to 240 V, auto select.

Software Modules Connection Diagram



Additional SDI/HDMI MultiViewer Output

The SL NEO server may be equipped with additional HD-SDI or HDMI outputs which can be used for monitoring of all server inputs on a HD-SDI monitor or flat panel with HDMI inputs.

This technology can be used as an alternative to a set of control monitors when working with the server and allows reducing costs on the server environment: signal distribution and conversion, monitors etc.

MultiViewer output supports up to 12 of server's I/O channels. The output resolution is user defined and can be SD or HD. Built-in audio mixer allows switching audio output to any of the input audio channels as well as mix a number of selected input channels.

The SL NEO Client Software bundle includes a Graphic Editor that allows positioning on the screen windows for each of the input signals, and besides, adding custom labels, clocks, logos, backgrounds and audio level meters.

The user can define an arbitrary number of multiscreen compositions and switch them instantaneously by pressing HOT-Keys on the computer keyboard or GPI signals. The MultiViewer output supports HD and SD output in both 16:9 and 4:3 formats and is capable of simultaneous display of inputs of different formats and standards.

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SL NEO 1000 Models

Ordering Information

What's included: fully configured and ready for work server platform with pre-installed video IO boards, pre-installed SL NEO Server and Client software bundle, software codecs, 1 client software license for an additional client workstation.
1-year standard warranty, 1-year telephone/e-mail technical support.

1100/1300 Models. File recorders.

HD/SD or SD-only configurations. Multichannel capture for production, playout and archiving, time-table based automated recording, optional VTR control and batch-captures, Closed Captions and Teletext data capture.
Supported file containers: AVI, MOV, MP4, MXF D-10/OP1A, RAW DV/DIF, MPEG PS/TS, FLV.
Supported codecs: AVID DNxHD (120, 145, 185, 220 Mbit/s), Panasonic (DVCPRO25, DVCPRO50, DVCProHD), Sony XDCAM IMX (30, 40, 50 Mbit/s), XDCAM HD 422, HDV, AVCHD, DV25/DVCAM, MPEG-2 4:2:0, 4:2:2, IPB GOP or I-frames.
VITC support (for frame-accurate captures from tape), low-res copy generation (1/4 resolution, MPEG-2 or H.264).

HD/SD models with SDI (optional additional IP/ASI) inputs

Base Model	Inputs	Outputs	Video IO Platform	Signal types
Matrox DSX LE3 based models				
SL NEO 1310 M4	1	0	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1320 M4	2	0	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1340 M4	4	0	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1360 M4	6	0	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1380 M8	8	0	Matrox DSX LE3	HD/SD SDI+AE

HD/SD models with MPEG-2/H.264 ASI TS or SD SDI inputs

Dektec DTA based models				
SL NEO 1310 D4	1	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1320 D4	2	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1340 D4	4	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1360 D4	6	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1380 D8	8	0	Dektec DTA	ASI SPTS/SD SDI+AE

HD/SD models with MPEG-2/H.264 IP UDP/RTP TS inputs

SL NEO 1310 E4	1	0	Onboard Ethernet	IP SPTS
SL NEO 1320 E4	2	0	Onboard Ethernet	IP SPTS
SL NEO 1340 E4	4	0	Onboard Ethernet	IP SPTS
SL NEO 1360 E4	6	0	Onboard Ethernet	IP SPTS
SL NEO 1380 E4	8	0	Onboard Ethernet	IP SPTS

HD/SD models with DVI-I/DVI-D/VGA inputs

SL NEO 1320 P4	2	0	DataPath	DVI-I/DVI-D/VGA
SL NEO 1340 P8	4	0	DataPath	DVI-I/DVI-D/VGA

SD-only models with SDI (optional additional IP/ASI) inputs

Base Model	Inputs	Outputs	Video IO Platform	Signal types
Matrox DSX LE3 based models				
SL NEO 1120 M4	2	0	Matrox DSX LE3	SD SDI+AE
SL NEO 1140 M4	4	0	Matrox DSX LE3	SD SDI+AE
SL NEO 1160 M4	6	0	Matrox DSX LE3	SD SDI+AE
SL NEO 1180 M4	8	0	Matrox DSX LE3	SD SDI+AE
SL NEO 11120 M8	12	0	Matrox DSX LE3	SD SDI+AE

SD-only models with MPEG-2/H.264 ASI TS or SD SDI inputs

Dektec DTA based models

SL NEO 1120 D4	2	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1140 D4	4	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1160 D4	6	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 1180 D4	8	0	Dektec DTA	ASI SPTS/SD SDI+AE
SL NEO 11120 D8	12	0	Dektec DTA	ASI SPTS/SD SDI+AE

SD-only models with MPEG-2/H.264 IP UDP/RTP TS inputs

SL NEO 1120 E4	2	0	Onboard Ethernet	IP SPTS
SL NEO 1140 E4	4	0	Onboard Ethernet	IP SPTS
SL NEO 1160 E4	6	0	Onboard Ethernet	IP SPTS
SL NEO 1180 E4	8	0	Onboard Ethernet	IP SPTS
SL NEO 11120 E8	12	0	Onboard Ethernet	IP SPTS

1200/1400 Models. File recorders with playout capabilities

Multichannel HD/SD or SD-only configurations for production, ingest and play-list based or manual clip playout (no graphics).

HD/SD models with SDI inputs-outputs

Base Model	Inputs	Outputs	Video IO Platform	Signal types
Matrox DSX LE3 based models				
SL NEO 1411 M2	1	1	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1412 M2	1	2	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1422 M2	2	2	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1424 M2	2	4	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1442 M2	4	2	Matrox DSX LE3	HD/SD SDI+AE
SL NEO 1444 M2	4	4	Matrox DSX LE3	HD/SD SDI+AE

Software and hardware options for SL NEO 1000 series

Name	Description
HP/Dell Chassis	HP/Dell Hardware Platform
AES IN/OUT	AES I/O Hardware Option
Additional ASI SPTS inputs	
ASI HD SPTS IN	1x Additional HD ASI SPTS IN or OUT Ch. via Dektec DTA
ASI SD SPTS IN	1x Additional SD ASI SPTS IN or OUT Ch. via Dektec DTA
Additional IP SPTS inputs	
IP HD SPTS IN/REC CH	1x Additional HD IP SPTS Input/Rec. Ch. via Onboard Ethernet Port
IP SD SPTS IN/REC CH	1x Additional SD IP SPTS Input/Rec. Ch. via Onboard Ethernet Port
Transport Stream Multiplexer/Demultiplexer/Cherry-picker	
SL NEO TS REMUX	Remux Software Option for IP/ASI TS
Additional MultiScreen (HD SDI/HDMI) outputs	
4 CH MultiScreen OUT	1x Additional HD SDI/HDMI Ch. Output
8 CH MultiScreen OUT	1x Additional HD SDI/HDMI Ch. Output
12 CH MultiScreen OUT	1x Additional HD SDI/HDMI Ch. Output
Internal RAID-array expansion	
Up to 8/12/16/24/36/48TB Storage	
Device control, device server	
RS-422/1394 VTR Device Server	1…4 x VTR Control for Ingest (RS-422 PCIe board included)
AV Router Device Server	AV Router Control Server Software for Control from Client PC
AV Router Device Server for Ingest	AV Router Server Software for Switching from Rec-List
GPI I/O Device Server	GPI Device Control (1…8 ports, ext. USB GPI module included)
External CP	External USB Control Panel (10…80 keys)

Automated file transfer

Media File Transfer Software	Automatic File/SL NEO Clips Transfer use Transfer Rules

Client workstation software for SL NEO Media-Servers

Name	Description
Air Manager Client Software	Ingest/Playout Ch. Control, Graphics/Playlist Editors, MAM Client
News Cut Client Software	Networked fast NLE with Proxy Support
Multiscreen Client Software	Networked Client for Live I/O ch. Monitoring on Client PC
Routing Client Software	AV Router Multiuser Control Software from Client PC
Full Client Software Kit	All Clients Software Modules Included

Model Designation: SL NEO ABCDEF

A	Server Series 1…7	
B	1...2 - SD models, 3...4 - HD/SD models	
C	Number of Inputs (Live & Rec Channels)	
D	Number of Outputs (Program/Playout Channels)	
E	I/O Board Type/Brand Name or TS Interface Type:	
	M	Matrox DSX Series
	D	DekTec DTA Series
	B	BlackMagic DeckLink Series
	P	DataPath
	E	Ethernet, Onboard Ethernet Port
F	Internal Storage Capacity (Tb):	
	4	4 Tb, Hardware RAID-10, 4xHDD RE 2Tb
	8	8 Tb, Hardware RAID-10, 8xHDD RE 2Tb

I/O Signals & Streams Designations:

CVBS	Composite Video	**ASI**
AA	Audio Analogue	**IP**
SDI	Digital Video SDI	
AE	Embedded Audio in SDI	
AES	AES I/O available in some models with Matrox DSX Boards	