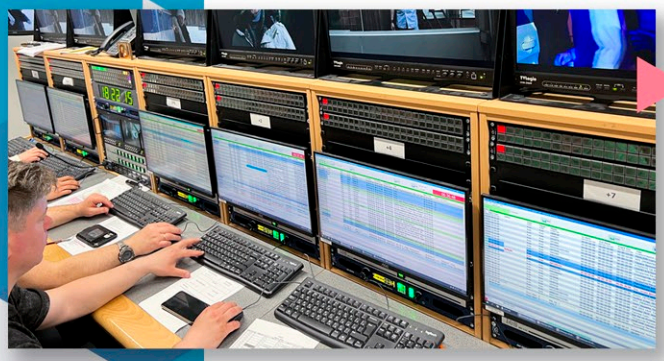
# SL NEO 3000 Servers
## Channel In A Box

- Automated Ingest, Playout, Branding with Multiformat Streaming
- Up to 16x HD or 4x UHD I/O Ports
  Up to 8x REC and 8x PGM HD Channels
- SDI/HDMI, ASI/IP Reassignable I/O Ports and PGM & REC Channels
- Base Configurations Supports: NDI, HLS, RTMP, RTP, UDP, SRT, Zixi, RIST


SL NEO 3000 Servers are designed to automate workflows on any type of TV Channel - satellite, cable, terrestrial, corporate, cloud. They successfully operate on both regional and federal TV Stations.

Based on SL NEO Software Media Platform, Servers has a powerful system of processing files, signals and streams. Buffering, frame synchronization together with up/down/cross-conversion provides the ability to frame accurate switch, mix and playback live sources and files at various resolutions and FPS.



## Main Features

### Capture & Live Ingest

Server SL NEO 3000 inputs are intended to receive external SDI and ASI/IP streams that are used in workflow for:

- **Live events in output program;**
- **Playout with a delay (input stream for delay);**
- **Insertions of regional ads and local programs (stream from central station);**
- **Live events recording to files according to Shedules.**

Recording is automatically performed according to schedules and configurable rules. Full control over all recording processes is available from the Air Manager client application or through web clients.

- A built-in **Schedule Editor** is provided for creating and editing recording schedules, and import from traffic systems is supported. Each recorder can work according to an internal schedule on specified days and hours of the week.
- A variety of **Start Types**, including Manual, Hard Time, external XML-RPC, VDCP, GPI commands, incoming SCTE-104, SCTE-35, DTMF markers, and synchronous start for several recorders.
- **SDI Switch Control** function is used for automatic or manual source switching before the event, automatic VTR control via RS-422, IEEE1394 in batch recording mode is possible.
- The built-in **Rec Manager Scheduler** analyzes list of events and generates tasks for recorders, minimizing their downtime.
- **Seconds after recording starts**, incoming clips can be used for immediate editing in the News Cut application or playback by the SL NEO Server.

### File Ingest

**Transfer Manager Lite** - Server/Client tool for automatic copying and moving file content between production units.

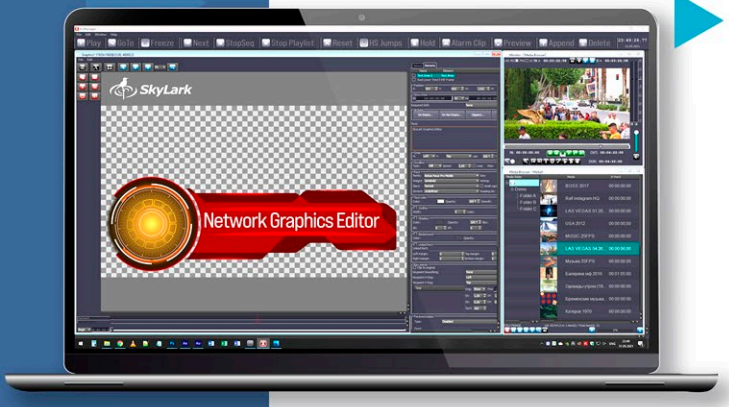
File operations are performed in multi-threaded mode, automatically, according to configurable rules.

TM Lite used for moving files from Ingest to Playout zone, NLE and to archive. Integration with SL NEO Media Database allows to start the file copying process simultaneously with the start of recording.

The second scenario - priority copying from NLE and archive to Playout Servers arrays with analysis of executable playlists. Files first in the play queue are copied first.

TM Lite supports copying CLF playlists files for guarantee delivery from traffic to watch folders on Playout Servers.

The full version - **Transfer Manager Pro** is available as an option. It allows transcoding files: changing codec and container, performing up/down/cross conversions and Loudness Level normalization.




### Preparing on-Air Graphics

**Graphics Editor** allows you to create and edit titles and graphic compositions. It is a module within the application's Air Manager, News Cut, connect and interacts with SL NEO Media Database.

All source materials for and results of the work are stored on an array Server, allowing for network collaboration between multiple users and instant playback of created compositions.

Rendering is performed by the SL NEO 3000 Server directly during playback.

Graphics Editor allows you to work with static graphics files, fragments of 32-bit animation and video, with access to the database and proxy copies.

Editor has a comprehensive set of tools for quickly creating graphics with 2D effects and titles including reels, crawls, TV clock, PIP and RSS feeds.

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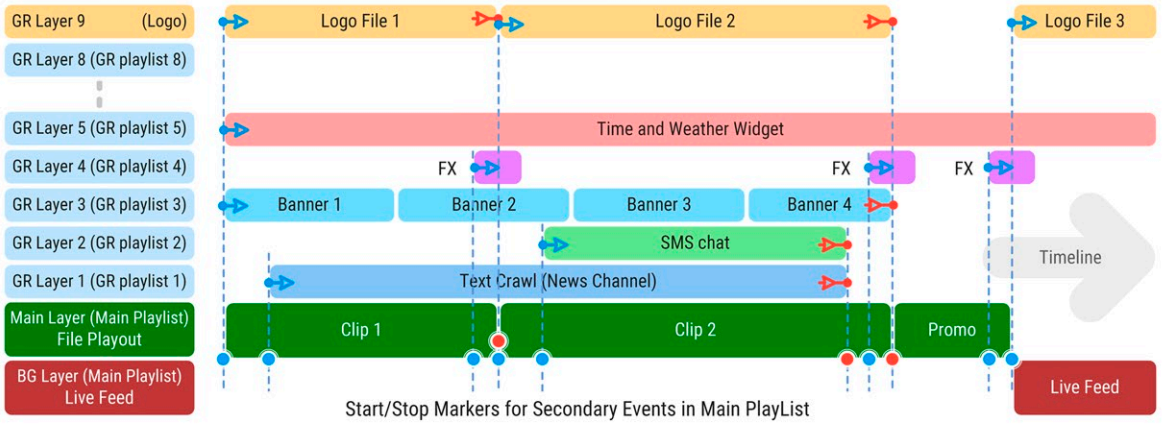
## File & Live Events with Graphics

The SL NEO 3000 Server plays files and switches Live sources to the Program Outputs according to the events in the playlists. The start type is set for each event: manually, by hard time, by external command, or sequentially.

Servers supports mixed content playback: UHD/HD/SD and SDR/HDR. Up/down/cross conversions are performed in real time during playback.

**8x Graphics & Title Players plus 1 Logo Player for each SL NEO 3000 Server Program Output.**

The start and stop of graphic events are linked either to events in the main playlist, or to a hard time, or done manually. Linking a "secondary" graphic event to a "primary" event means starting/stopping a "secondary" event synchronously or from time shift from the start/stop of the "primary" event.




Start/Stop Markers for Secondary Events in Main PlayList

## Device Control

Automatic control of external SDI router or GPI devices is performed during recording and playout. SDI router controlled via the Device Server software module.

According to the events in the record- and play- shcedules, the server modules **File Recorder** and **Program Player** send commands for switching to the **Device Server**, which translate commands to the SDI Router. Thus, before starting a record or playback event, a certain signal source at the server input is automatically switched.

## Integration with External Systems

SL NEO 3000 Server Software directly integrated with **Chyron** and **Vizrt** Graphics Stations. External graphics are controlled from the main playout schedule of the SL NEO System. The current statuses of external systems are displayed in a main ingest & playout control interface - **Air Manager** client application.

Integration with **FAB**, **Polistream** systems allows you to implement **Automated Live Captioning** for News, Sports and other live programming.

SL NEO 3000 Servers are integrated with the **U.S. Emergency Alert System (EAS)**, the National Public Notification System during a national emergency.

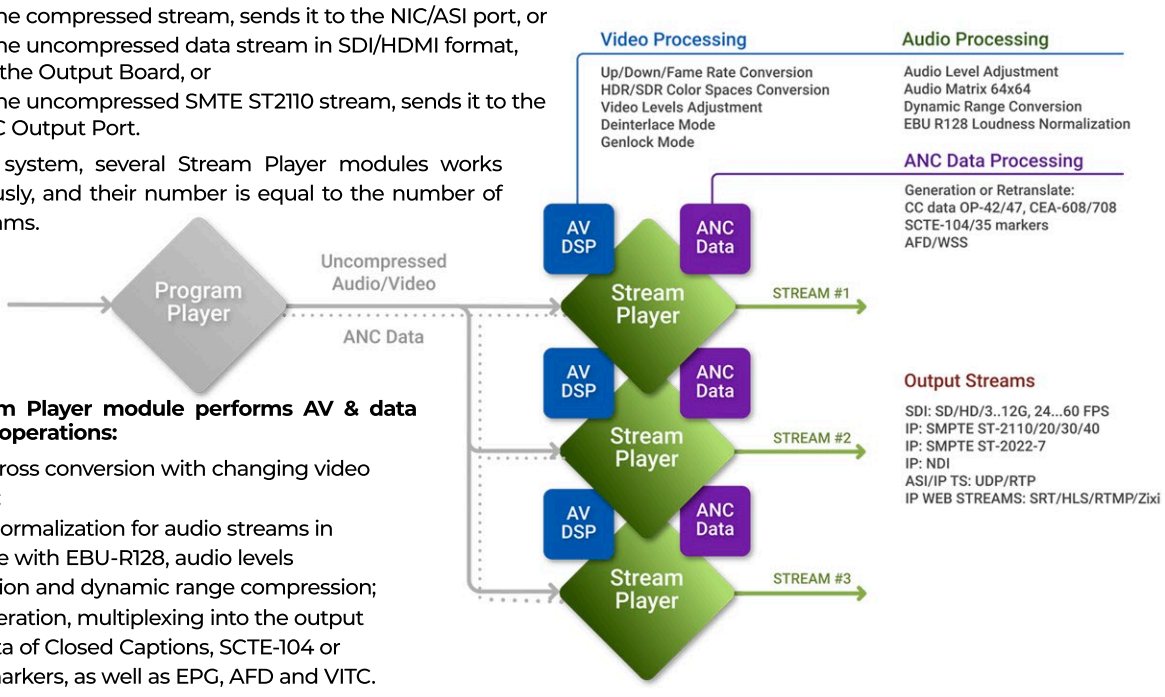
## Encoding & Processing

To distribute output programs in various environments, SDI/ASI/IP Streams with the necessary resolution/fps parameters, IP-protocols, and bitrates are generated at Server Output Ports. The procedure for creating a single output signal/stream is performed by the **Stream Player software module**.

In Playout configurations, it receives uncompressed AV and ANC data from the **Program Player** module and then:

- encodes one compressed stream, sends it to the NIC/ASI port, or
- encodes one uncompressed data stream in SDI/HDMI format, sends it to the Output Board, or
- encodes one uncompressed SMTE ST2110 stream, sends it to the NVIDIA NIC Output Port.

Within the system, several Stream Player modules works simultaneously, and their number is equal to the number of output streams.




**Each Stream Player module performs AV & data processing operations:**

- up/down/cross conversion with changing video frame rate;
- loudness normalization for audio streams in accordance with EBU-R128, audio levels normalization and dynamic range compression;
- DTMF generation, multiplexing into the output stream data of Closed Captions, SCTE-104 or SCTE-35 markers, as well as EPG, AFD and VITC.

# SL NEO 3000 Servers
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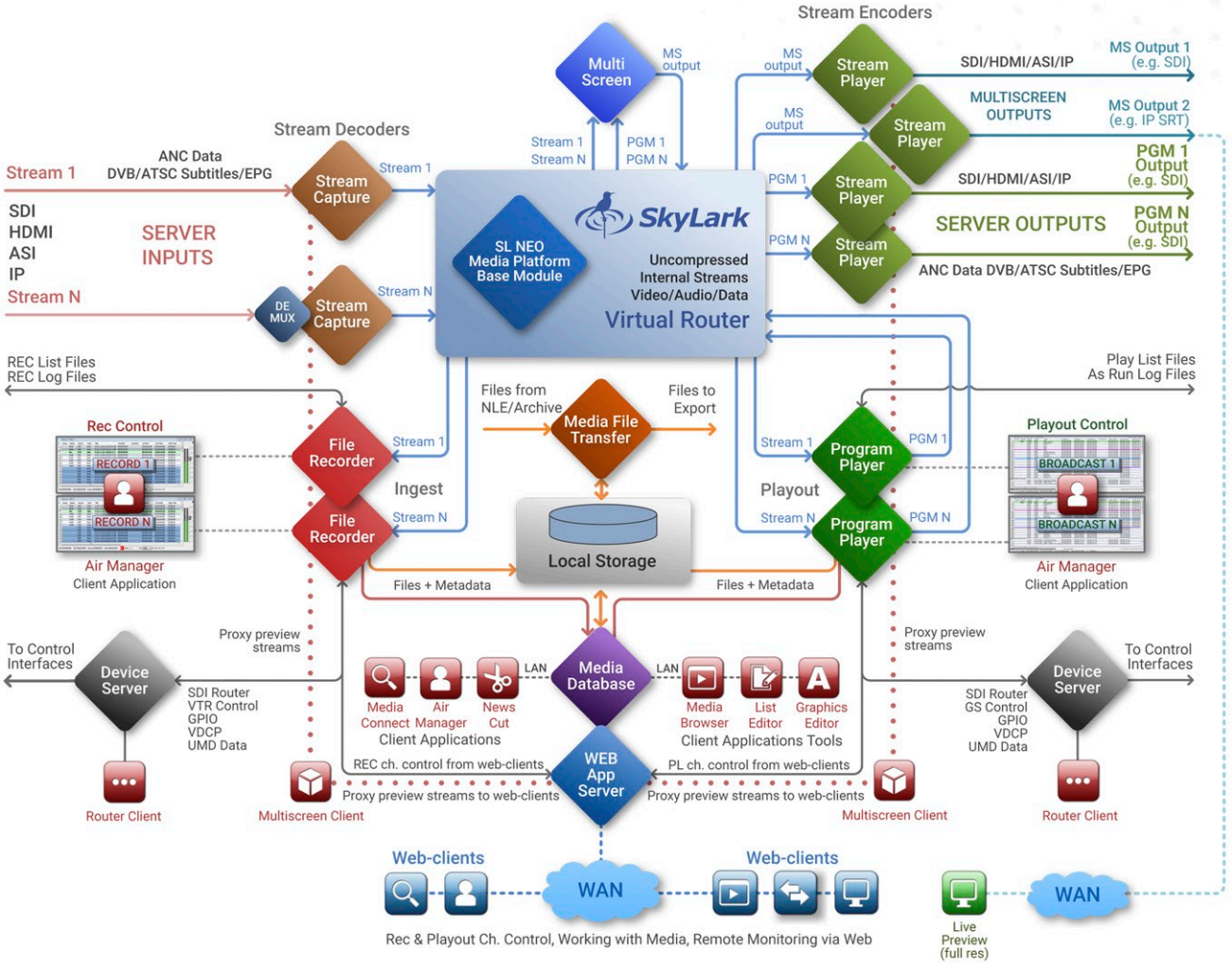
## Software Modules Connection Diagram for SL NEO 3000 Servers Series




## SL NEO 3000: I/O Data Types

The SL NEO 3000 Series Servers offer the widest range of functionality in the line. The diagram shows the main categories and types of data used by the Server Platform to interact with external infrastructure components.

**I/O Interfaces and Protocols for Media Data**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SDI | | | | | | HDMI | IP | | | | | | | ASI |
| 4x3G | 12G | 6G | 3G | HD | SD | 1.4 | 2.0 | ST 2110 | ST 2022-7 | NDI | DVB | ATSC | | |
| IP | | | | | | | | | | | | | | |
| UDP | RTP | RTSP | SRT | ZiXi | RIST | RTMP | HLS | MPEG-DASH | | | | | | |

**I/O ANC Data and MPEG-2 Data Embedded**

| | | | | | | |
|---|---|---|---|---|---|---|
| SCTE-104 | CEA-608 | CEA-708 | VITC | WSS | AFD | DTMF |
| SCTE-35 | OP-42 | OP-47 | DVB/ATSC Subtitles | | DVB/ATSC EPG | |

**I/O Media and Metadata Files**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Full Screen I/O, Import files with Alpha channel (see full list in Tech Spec) | | | | | | | | |
| Audio/Video/Metadata | | | | | Still Graphics and Sequences | | | |
| MXF | | MPEG | AVI | MOV | MPG | BMP | JPG | PSD | PNG |
| OP | OP1A | OP1B | D10 | PS | TS | DV | DIFF | MP4 | SLG (XML-based GR templates) |

**Input Data and Files for Closed Captions & Subtitles**

| | | | | | | |
|---|---|---|---|---|---|---|
| Live CC Data | Recorded Clips in DB | MXF | SRT | SMI | TTML | STL |
| Pass through or transcoding CC from one format to another | | | | | | |

**Input Data for Synchronization, Data from External Systems, Schedule files**

| | | | |
|---|---|---|---|
| NTP | PTP | Bi-Level Sync | Tri-Level Sync |
| VDCP | CII | GPI | SL NEO Control Protocol via XML-RPC or REST |
| REC Schedules Files | PLAY Schedules Files | EDL Files | |

**Log Files, Data for Controlling External Systems, SNMP Monitoring**

| | | | |
|---|---|---|---|
| REC Log Files | As Run Log Files | Tech Log Files | EDL Files |
| SL NEO Control Protocol via XML-RPC or REST | | SDI Router | VTR |
| Vizrt | Chyron CII | GPO | EMBER+ Data | TSL5 UMD Data |
| SNMP Data (from Hardware & SL NEO Software) | | | |

# SL NEO 3000 Servers
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## Client Software: Air Manager, News Cut, Routing Client

**Air Manager** is the main client application of the SL NEO Media Platform, a comfortable tool for managing multiple playout and recording channels with functions for editing schedules, searching, browsing, importing/exporting & transcodimg file content.

The Air Manager GUI consists of the following types of windows: **"Recording"**, **"Broadcast"**, with executable schedules that display lists of events and their current statuses.

The number of windows of each type in the work interface and access rights are configured individually, depending on the role of the workstation in the workflow.


Workstations with Air Manager in Control Room

**Record- and Playlists** are loaded from traffic systems, from Excel files or compiled in the built-in lists editors of the Air Manager application.

**The Media Browser window** displays the contents of the Media Database of each of the SL NEO servers to which there is a network connection. In the SL NEO virtual file system, you can search for clips by text attributes, markup and view proxy.

**The File Monitor window** is used to view and edit the clips selected in the Media Browser or in the playlist and record rows.

The tools of the File Monitor window allow you to carefully and quickly edit executable playlists directly in the "Broadcast" windows: change IN and OUT markers, cut and trim the clip currently playing.

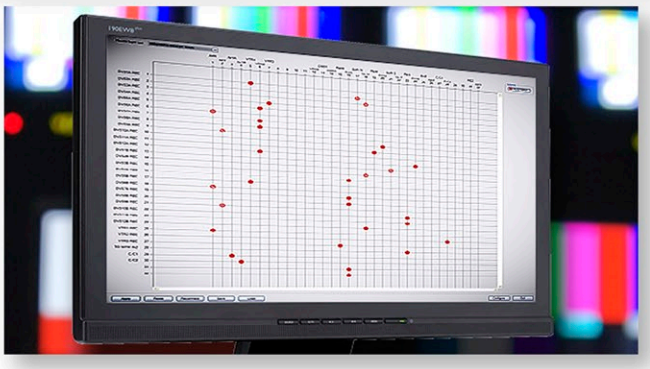
News Cut Application

**The Network Graphics Editor** lets you create and edit titles and graphic compositions. It works as part of the Air Manager and News Cut applications and interacts with Media Database.

All source materials for and results of the work are stored on server storage. Rendering is performed by the SL NEO server directly during playback.

**News Cut** is network client application for collective editing of news reports using proxies. Source material is stored in a database of one or more SL NEO servers, all News CUT users have network access to the database and proxy.

The results of editing are stored in the server database in the form of text XML descriptions of the editing solutions, and the stories are available for playback immediately after editing is completed.



Routing Client Application

**Routing Client** is a client application designed for manual remote control of SDI-switches, IP-stream redirection, as well as for switching control interfaces.

The application has a classic interface for this kind of tasks and allows several users at the same time to quickly perform switching at their workplaces.

## SL NEO 3000 Use Cases

**Operational production:** 1). Live recording, fast editing, delayed playback. 2). Short Delay (profanity delay). 3). News Production.

**Central playout station:** Broadcasting to multiple Time Zones (SCTE/DTMF control markers generation for auto-replacement of ad/program blocks in regions.

**Regional playout station:** decoding control commands in the signal from the central station, inserting of ad/program blocks. Commands to Start/Stop by results of matching a pre-selected fragment with fragments of the received video (in the absence of control signals).

**Cloud playout system:** remote access and monitoring from WAN area. Management of recording channels, playback SL NEO 3000 server, access to the content through a web-browser (via Web Application Server).

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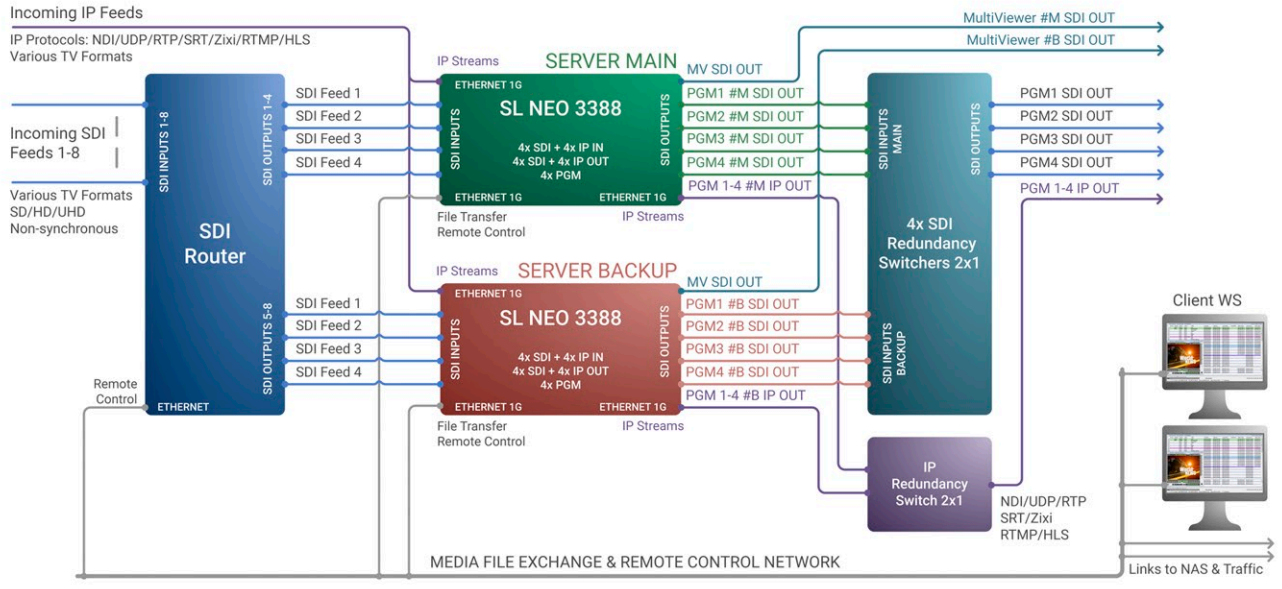
## Playout Systems Based on CIAB. SDI and Compressed IP Streams Mix

In the example, you can see 2 SL NEO servers 3000 series (main and backup). Each generates 4 output programs. The sources for these 4 programs are files and external feeds: 4 SDI lines and 4 IP streams.

Fault tolerance is provided by 100% "hot" redundancy of servers. Redundant playlists and playout channels operate in parallel and synchronously with the main channels. This allows you to instantly switch to a redundant half-set if necessary.



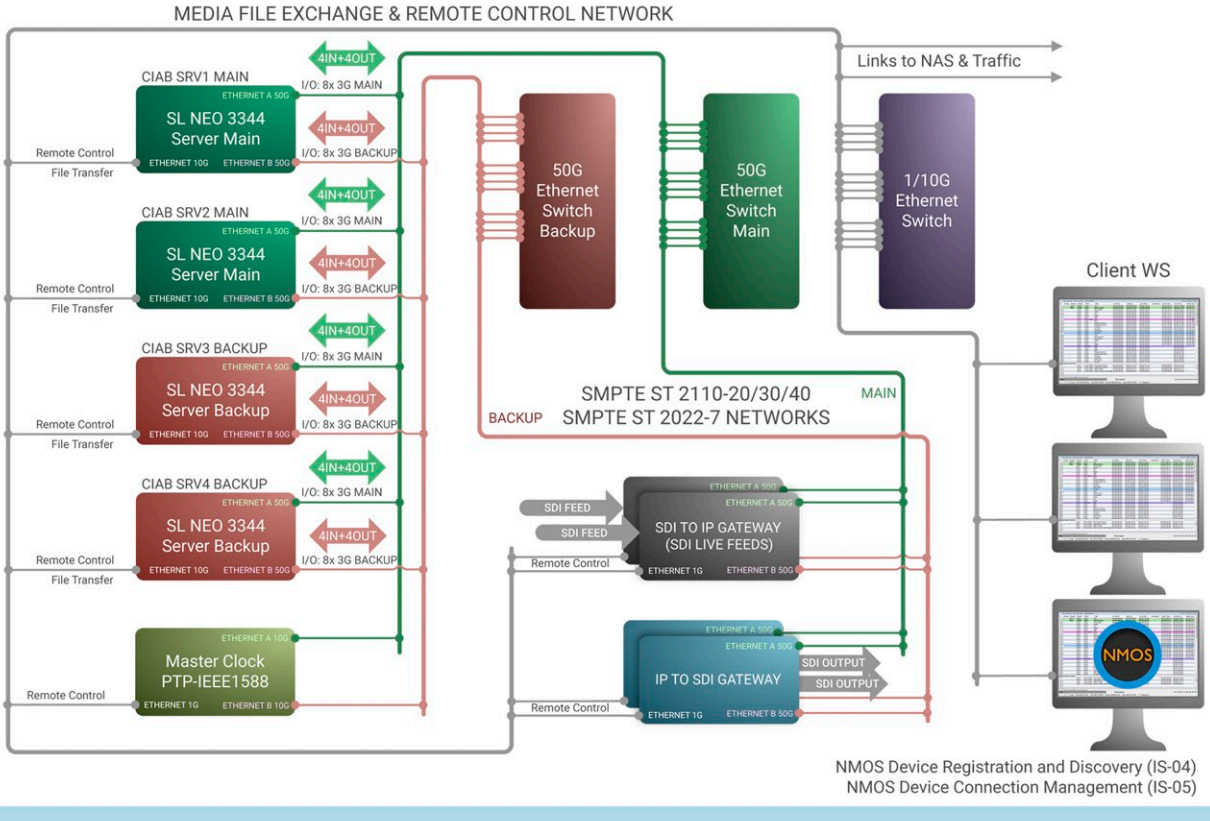

It's possible to combine the input SD/HD/UHD SDI signals and IP/ASI streams with different resolutions and frame rates. All ports/inputs use buffering and frame synchronization together with up/down/cross conversions. This ensures parallel processing of signals of any standards and frame rates.

Therefore, Skylark's solution provides possibilities of switching, mixing, and playing files and live sources with different resolution and FPS on-air. The same can be said about multiscreen displaying on a single monitor for signals of various formats: NTSC/PAL/720p/1080i/1080p/2160p with FPS values varying from 25 to 60.

The external SDI router receives the commands from servers and switches signals to server inputs for recording or for using in output programs as Live sources. 8 streams: SDI and IP for each program on the outputs of the main and backup server.

## SMPTE ST 2110 IP Streams

SkyLark's Channel-in-a-Box allows you to create a multichannel playout system that uses the SMPTE ST2110 IP-protocol. For receiving/transmitting SMPTE ST 2110–20/30/40 streams, NVIDIA Rivermax network adapters are used. The ST2022–7 redundancy and 'seamless' switching standard is supported. Device detection and connection is implemented in NMOS browser (IS-04, IS-05). The diagram shows an example of creating a fault-tolerant 8-channel system that uses the ST2110 transport.



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The Name of the Base Model of the SL NEO Server is made up of the values of the 5 variables located after the name of the product line:

**SL NEO S F.C.P H A**

| | | | | | |
|---|---|---|---|---|---|
| **S** First Digit of the SL NEO Series Number | **F** Maximum Video Operating Mode | **C** Number of Capture Ports or REC CH | **P** Number of PGM CH or Output Ports | **H** Type of Hardware I/O Board (Brand) | **A** Useful capacity of the Array in Tb |

### SERIES
S = 3 - 3000 Series Channel in a Box

### FORMAT
| | |
|---|---|
| F = 2 - HD 1080i 50/60 | FULL GRAPHICS KIT |
| F = 3 - 3G 1080p 50/60 | FULL GRAPHICS KIT |
| F = 4 - UHD 2160p 50/60 | FULL GRAPHICS KIT |
| F = 5 - HD 1080i 50/60 | LOGO ONLY |
| F = 6 - 3G 1080p 50/60 | LOGO ONLY |
| F = 7 - UHD 2160p 50/60 | LOGO ONLY |

### CAPTURE
| |
|---|
| for F = 2, C = 1...8 |
| for F = 3, C = 1...8 |
| for F = 4, C = 1...2 |

### PLAYOUT
| |
|---|
| for F = 2 or 5, P = 1...8 |
| for F = 3 or 6, P = 1...8 |
| for F = 4 or 7, P = 1...2 |

**For Base Models 3000 Series:**
C = No. of Capture Ports = No. of REC CH
P = No. of PGM CH = No. of Output Ports

### HARDWARE / ARRAY
| HARDWARE | ARRAY |
|---|---|
| H = D – Dektec DTA | SDI + Audio Embedded |
| H = A – Dektec DTA | DVB/ATSC ASI (SPTS) |
| H = M – Matrox DSX LE3/4 | SDI + Audio Embedded |
| H = N – Nvidia NIC | IP: SMPTE ST 2110/2022-7 |
| H = E – Onboard 1GbE Port | IP: NDI, HLS, RTMP |
| | SPTS IP: RTP, UDP, SRT, Zixi |
| H = B – BlackMagic SDI I/O | SDI + Audio Embedded |
| H = H – BlackMagic HDMI | HDMI + Audio Embedded |

For cases where layered graphics functions are unnecessary, you can use Models without Graphics Package: only Logo Layer will be active in ALL PGM CH.

In **variable F** these models are marked with numbers 5, 6 and 7 for HD, 3G and UHD formats respectively. **You can activate the full graphics package for each PGM Channel at any time.**

| Example: | SL NEO 32.4.6 D8 |
|---|---|
| Max mode: | HD 1080i 50/60 |
| Number of Capture Ports and REC Channels | 4 |
| Number of PGM Channels and Output Ports | 6 |
| Hardware: Dektec DTA | I/O: SDI + Audio Embedded |
| Internal Array: | Useful capacity 8 Tb |

Series 3000 Base Models with reassignable I/O ports and REC/PGM Channels: total number of REC/PGM Channels in Model Name - after letter X

**SL NEO S F X P H A**

| | | | | | |
|---|---|---|---|---|---|
| **S** First Digit of the SL NEO Series Number | **F** Maximum Video Operating Mode | **X** | **P** Total Number of I/O Ports (REC/PGM Channels) for self-configuration | **H** Type of Hardware I/O Board (Brand) | **A** Useful capacity of the Array in Tb |

### SERIES
S = 3 - 3000 Series Channel in a Box

### FORMAT
| |
|---|
| F = 2 - HD 1080i 50/60 |
| F = 3 - 3G 1080p 50/60 |
| F = 4 - UHD 2160p 50/60 |

FULL GRAPHICS KIT

### PORTS/CHANNELS
| |
|---|
| for F = 2 or 5, P = 2...8 |
| for F = 3 or 6, P = 2...8 |
| for F = 4 or 7, P = 2...4 |

### HARDWARE / ARRAY
| HARDWARE | ARRAY |
|---|---|

| Example: | SL NEO 32X8 D16 |
|---|---|
| Max mode: | HD 1080i 50/60 |
| Total Number of I/O Ports, REC/PGM Channels | 8 |
| Hardware: Dektec DTA | I/O: SDI + Audio Embedded |
| Internal Array: | Useful capacity 16 Tb |

## Technical Specifications for SL NEO 3000 Servers

Hardware configuration, including CPU/HDD models, number and types of I/O Boards depends on the selected SL NEO Server Model and set of Options.

**Server Hardware**
Supermicro 2...4U chassis, two power supply modules in hot backup.
One or two Intel Xeon Gold CPU, 48/96Gb DDR4 RAM,
SSD for OS, two onboard 1GbE ports.
Built-in hardware RAID-10, 8x or 16x SE SAS 3.5" RE 8 or 16Tb array useful capacity.
OS Windows Server 2022 x64

**I/O Ports & PGM Channels**
Capture Ports HD/SD: 1...8, Capture Ports UltraHD: 1...2
REC Channels HD/SD: 1...8, REC Channels Ultra HD: 1...2
PGM Channels HD/SD: 1...8, PGM Channels Ultra HD: 1...2
Output Ports HD/SD: 1...8, Output Ports UltraHD: 1...2

**Video Formats and Color Spaces**
625i/525i, 720p, 1080i/1080p, 2K cinema 2048x1080p, 2160p
25/29,97/50/59.94/60 fps
Color Spacing: BT.601/709/2020, SMPTE ST2084, ARIB STD-B67

**I/O Streams: Interfaces, Protocols, Codecs**
SDI: SD/HD/3...12G SDI, 4x 3G SDI/Embedded Audio
IP: SMPTE ST 2110, SMPTE ST 2022-7
IP: NDI, HLS, RTMP, UDP, RTP, SRT, Zixi, RIST, MPEG-DASH
DVB/ATSC IP UDP/RTP Unicast/Multicast SPTS/MPTS
DVB/ATSC ASI: SPTS/MPTS
Video Codecs: MPEG2/H.264/HEVC
Audio: 48kHz/16/24 bit PCM, ADPCM, MPEG-1 L-II/III, AAC, AC3

**I/O Ancillary/MPEG2 TS Data**
OP-42/47 Teletext, CEA-608/708 Closed Captions
DVB/ATSC Subtitles, EPG
SCTE-104/SCTE-35 markers with metadata
VBI/VANC Data: VITC, AFD, WSS

**Video Codecs (File Rec & Playout)**

**SD/HD**
DV25, DVCPRO25, DVCPRO50, DVCPROHD100, HDV
IMX 30/40/50
XDCAM EX SP/HQ, XDCAM HD LP/SP/HQ.422
DNxHD 120/145/180/220
AVCHD
XAVC 50/100/200, XAVC Long GOP
AVC-Ultra 50/100/200
AVC-Ultra Long G (12/25/50)
PRORES HQ/SD/LT
MPEG-2 I-Frames/Long GOP
H.264 L I-Frames/Long GOP

**Ultra HD**
H.264 8/10 bit
XAVC 300/480, XAVC Long GOP
AVC-Ultra 300/480, AVC-Ultra Long G
PRORES SQ/HQ
DNxHR SQ/HQ
HEVC 8/10 bit

**Audio Codecs (Files Playout)**
RAW 16/24 Bit PCM, ADPCM, MPEG-1 L-II/III, AAC, AC3

**File Containers**
MXF-OP1A, MXF-D10
Avid MXF (OP-Atom)
Sony XDCAM HD/422 (MXF-OP1A)
Sony XAVC 50/100/200/300/480/LongGOP (MXF-OP1A)
P2 AVC-Ultra 50/100/200/300/480/LongG (MXF-OP1B)
Microsoft AVI, MPEG PS/TS
QuickTime MOV, DV DIFF
MP4, MPG, GXF

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**Still Graphics (single files and sequences)**
JPG, BMP
With Alpha: PNG, TGA, TIFF, PSD

**Video Codecs with Alpha**
Uncompressed
TGA, QTRLE
Speed HQ, Lagarith
Key from a separate file
JPGA codec for AVI

**File Containers for Video with Appha**
Microsoft AVI
QuickTime MOV
Audio supported

## Hardware & Software Options

**Hardware Options**
LTC Input (Including one of supported LTC Readers and Software License: Adrienne AEC-41, Plura PLC, Miranda Little Red, Horita TCI-50)
GPIO (Including one of supported USB GPIO and Software License, up to 8 IO Ports: Ontrak ADU200, ADU2X8)
GPU Board
Increase Internal RAID Array Capacity
2x SSD in RAID-1 for System

**Additional Hardware Ports**
SD/HD/3/6/12G, 4x3G SDI, HDMI, ASI I/O Ports
NVIDIA ConnectX 10/25/40/50/100/200G Ports for SMPTE ST2110/2022-7
1G Ethernet Ports for UDP/RTP IP with SMPTE 2022-1 FEC
Standard 1/10G Ethernet Ports for IP Streams, Control, File Transfer
RS-232/422/485, i-Link/IEEE1394 Hardware Ports
AES I/O for Matrox DSX Boards

**Software Options**
Transfer Manager PRO
Profanity Delay
Time Shift
SCTE-104/SCTE-35 Generation (for Single PGM Channel)
EBU R128 Loudness Normalization (for Single Output Port)
CEA-608/708, OP-42/47 Live Closed Captions (generation from Live Data Source or from Files, for Single PGM Channel)
DVB/ATSC Subtitles (generation from Live Data Source or from Files, for Single PGM Channel)
Main - Backup PGM Channel Sync (for Single PGM Channel)
NVENC Assistance (for File Encoding or Output Stream Encoding)
Avid Unity/Interplay Support (for REC Channels)
Web Application Server
TS Mux (up to 16x SPTS in 2x Groups)

**Client Applications**
Air Manager, Rec Manager, News Cut

**Additional I/O Ports & Channels (SD/HD or UHD Software Licenses)**
Capture Port (SDI/HDMI, ASI/IP with DeMux and Stream Decoding, all supported Protocols including SDI/NDI Fill+Key)
Output Port (SDI/HDMI, ASI/IP with Stream Encoding, all supported Protocols including SDI/NDI Fill+Key)
MultiScreen Processor (4, 8, 16 or 24 Inputs Software License)
REC Channel (Full Res + Proxy)
PGM Channel with Full Graphics (8 GR Layers + Logo Layer)
PGM Channel with Lite Graphics (1 GR Layers + Logo Layer)
Graphics for PGM Channel (additional GR Layers)

**Device Server Software Licenses**
VDCP for REC Automation (Slave mode for Single REC Channel)
VDCP for Playout Automation (Slave mode for Single PGM Channel)
VizRT (Master mode for Single PGM Channel)
Chyron CII (Master or Slave mode for Single PGM Channel)
SDI Router for Playout Automation (for Single Device)
SDI Router for REC Automation (for Single Device)
VTR for REC Automation (for Single Device)
TSL5 UMD (Master mode for Single Device)
Ember+ (for Junger Audio Devices. Master mode for Single Device)

## Ordering Information

**To order the SL NEO 3000 Series Server, send us the following information:**

- Base Model Name,
- Capture/Output Ports formats (HD/3G/UHD, fps), types (SDI/HDMI/ASI/Ethernet) and number,
- Types and protocols for I/O IP Streams,
- REC Channels formats (HD/3G/UHD, fps) and number,
- PGM Channels formats (HD/3G/UHD, fps) and number,
- Codecs and Containers for Media Files,
- External Data Sources for Graphics and Closed Captions,
- Information about redundancy scheme,
- Type (internal, external) and useful capacity of RAID-array,
- Required Hardware and Software Options,
- Required Client Licenses.

The Client Applications are pre-installed on the server platform, and one set of Client Software for installation on a workstation is included with each SL NEO Server.

**SDI Router Control Protocols supported by the SL NEO Software**

Grass Valley Triton BDS
Grass Valley Nvision/Native Protocol/Vega/M-2100
Nevion Vikinx v128/Thor
Leitch, Imagine LRC
Kramer
BMD Videohub Ethernet/RS-232
Snell Switcher/Remote Protocol
Evertz Quartz/QMC-2
Sierra XXvse
Utah SC-4/RCP-1
Pro Bel SW-P-02/SW-P-08
Venux VM/SI/3000 ASCII
Ross Video Presmaster/NK-SCP/A
ELPRO SDZHD Series
AJA KUMO
LES, Profitt