# SL NEO Software
## Server Software Components

**SkyLark**



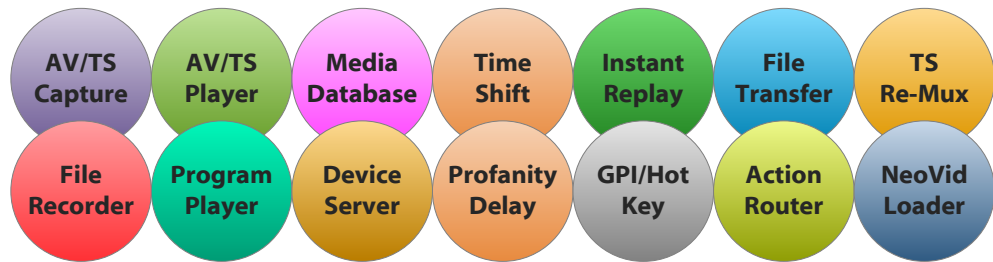| | | | | | | |
|---|---|---|---|---|---|---|
| AV/TS Capture | AV/TS Player | Media Database | Time Shift | Instant Replay | File Transfer | TS Re-Mux |
| File Recorder | Program Player | Device Server | Profanity Delay | GPI/Hot Key | Action Router | NeoVid Loader |

SL NEO server software facilitates the functioning of the server platform: content management, recording and playback operations, file encoding and decoding, online graphics rendering and device control.

## SL NEO Media Platform

SL NEO Media Platform is the basic program module that facilitates the operation of any SL NEO server series. It is a part of every server and contains a certain selection of encoders/decoders and program modules that facilitate the operation of the server platform.

## AV/TS Capture Module

SL NEO AV/TS Capture is a server module that captures audio/video data. It captures audio/video signals or MPEG transport streams from input interfaces/boards. Supported signal standards, formats, and parameters:
- 720i 50/60 (NTSC, PAL), 1080i60, 1080i50, 1080p24, 720p 60, 720p 50;
- SDI, HD-SDI, YCrCb, CVBS, Analog/AES/SDI Embedded Audio;
- MPEG-2, H.264/AVC SPTS/MPTS through DVB-ASI or UDP/RTP over IP.

Basic functions of the SL NEO AV/TS Capture module:
- Capture, demultiplexing, and decoding of MPEG-2 and H.264/AVC transport streams through ASI interfaces or UDP/RTP over IP;
- Video/audio signal capture (SD-HD SDI, CVBS, etc.);
- VBI Capture and decoding (VITC, Closed Captioning, TeleText, GPI in VBI commands);
- Capture of multi-language audio stream as a part of MPEG TS;
- Capture of DV and HDV streams through IEEE-1394;
- Capture and decoding of DTMF, SCTE commands.

## File Recorder Module

SL NEO File Recorder is a server module for the recoding of audio and video data. It interacts directly with the SL NEO AV/TS Capture module, encodes media data in a chosen broadcast-quality format, makes a proxy copy in parallel, and record video/audio data on disks into files. The recording is conducted automatically by schedule (record lists), in manual mode or according to external commands.

Supported encoders/decoders and encoding standards:
- DV-25, DVCPRO-25, DVCPRO-50, DVCPROHD-100;
- HDV, IMX-(30/40/50), XDCAM-EX-(SP/HQ), XDCAM-HD-(LP/SP/HQ);
- XDCAM-HD422;
- DNxHD-(120/145/180/220);
- H.264/AVCHD, MPEG2 I-Frames or IBP GOP.

Supported file containers: Microsoft AVI, MPEG PS, QuickTime MOV, DVDIFF, MXF (OP-Atom), MXF (OP-1A), MXF-D10, FLV.

Possible recording environments:
- The server's file system, NAS, DAS (recording to files mode);
- SL NEO Storage using Media Data Base (recording to DB mode);
- Avid Storage: Unity/Interplay.

## AV/TS Player Module

SL NEO Signal/Stream Player is a server module that generates final output signal or transport stream. Supported output boards and interfaces:
- Matrox DSX.SD, DSX.LE, X.MIO boards;
- Decklink Blackmagic boards;
- Dektec PCI and PCI-e DTA boards;
- Standard network interfaces;
- IEEE-1394 interfaces;
- Standard VGA/DVI outputs;
- HDMI outputs.

Supported signal standards, formats, and parameters:
- 720i 50/60 (NTSC, PAL), 1080i60, 1080i50, 1080p24, 720p 60, 720p 50;
- 320x240, 360x288, 640x360, 504x480, 720x480, 504x576, 720x576, 960x720, 1280x720, 1280x1080, 1440x1080, 1920x1080;
- SD/HD SDI, YCrCb, CVBS, Analog/AES/SDI Embedded Audio;
- MPEG-2, H.264/AVC SPTS/MPTS through ASI or UDP/RTP over IP.

Basic functions of the SL NEO Signal/Stream Player module:
- Video/audio signal generation (SDI, CVBS, etc.), FILL with audio and KEY generation;
- Encoding, multiplexing, and generation of MPEG-2 and H.264/AVC transport streams through DVB-ASI interfaces or UDP/RTP over IP;
- Closed Captioning and TeleText signal generation in VBI/VANC;
- Generation of multi-language audio stream as a part of MPEG transport streams;
- Generation of DV and HDV streams through IEEE-1394;
- Generation of DTMF, SCTE commands.

## Program Player Module

SL NEO Program Player is a server module that automatically conducts events contained in the playlist. The resulting "program" uncompressed stream is a composition consisting of several layers:
- The BG layer (which may be, for example, the signal from the server input - from AV/TS Capture module);
- The main program layer, which covers the BG in accordance with the playlist events. The main layer is generated by the full-screen file materials being played;
- Graphic layers – clips or managing individual playlists (from 1 to 8). In each layer, the composition may, in turn, contain several layers. There may be a total number of several dozen layers. Management of the broadcast of "graphic" events may be connected to each other and to events in the main program playlist;
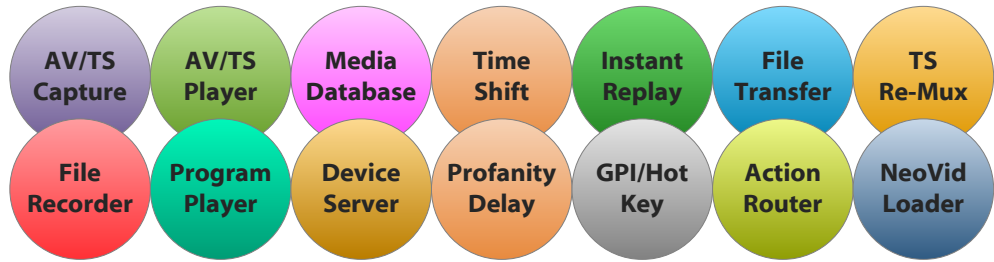- The logo layer, which may be run from any playlist.

During playout process, the SL NEO Program Player carries out routing in accordance with the events in the playlists, control the external SD/HD SDI routers through SL NEO Device Server Software Module.

The rendering of all graphic layers takes place in the on-fly mode directly within the playout process.

Quantity and Settings of SL NEO Server Software Modules, Quantity and Settings of Inputs, Outputs and Remote Control Channels - define Series and concrete Model of each SL NEO Server.

# SL NEO Software

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### Media Database Module

SL NEO Media Database is a server module that fulfills the function of a specialized database. It permits the archiving of attributes (metadata) for audio/video/graphics materials, the provision of a selection of services for content management to users (attribute search, key frames, "lifetime" setting, etc.), and the automation of the import of materials into the server storage and export from that storage.

### Device Server Module

SL NEO Device Server is a device control module which directly manages equipment: VTR, SD/HD SDI routers, through RS-422/232/ Ethernet interfaces using Harris/Leitch, Evertz, Network, Snell, Miranda, Sony and other protocols.

## Software Modules Connection Diagram Example (for SL NEO 3000 Series Server)