Sigma Playout

Introduction

Sigma Playout is the latest solution from Sigma Streaming Platform providing broadcast management and automation for media organizations.

Key Features

- **Content management:** Automates the management and broadcasting of video content.
- **Broadcast automation:** Automates scheduling and broadcasting of content with high precision.
- **Flexible integration:** Supports various formats and broadcasting protocols.
- **User-friendly interface:** Offers an intuitive interface with easy-to-use management tools.
- **Scalability:** Easily scalable and integrates with other systems in the media infrastructure

Sigma Playout from Sigma Streaming Platform is a powerful and flexible Playout solution, ideal for media organizations looking to enhance broadcast performance and optimize content management processes.

Broadcast Automation

- **Precision in Scheduling and Broadcasting:** Sigma Playout automates the scheduling and playback of content with exceptional accuracy. This means that the software ensures that each piece of content is played exactly when it's supposed to, down to the millisecond.
- **Error Reduction:** By automating the broadcasting process, the software significantly reduces the risk of human error, such as playing the wrong content or missing a scheduled broadcast. This level of precision is particularly important in live broadcasts or when managing a large number of channels.
- **Dynamic Adjustment:** The system can automatically adjust the schedule in real-time to accommodate last-minute changes or unexpected events, ensuring that the broadcasting remains seamless and uninterrupted.
- **Seamless Transitions:** The software handles transitions between different pieces of content smoothly, whether it's switching from one program to another, inserting ads, or handling live feeds. This results in a polished and professional broadcast experience.

Advance feature: Draft – Publish Mode

Draft - Publish is an important feature that allows users to draft, edit, and review broadcast content (Draft) before officially releasing and airing that content (Publish).

Draft Mode

- **Drafting and review:** In Draft mode, users can schedule broadcasts, edit content, organize programs, and review everything before it is aired.
- **Safety:** Content in Draft mode is not yet broadcasted, allowing users to make changes without affecting the current broadcast schedule.
- **Preview:** The preview feature allows users to see what the content will look like when broadcasted, ensuring everything is as expected before it is published.

Publish Mode

- **Release and broadcast:** When content is ready and approved, users transition it from Draft mode to Publish mode. This means the content will be broadcasted according to the set schedule.
- **Content lock:** After content is published, further changes are restricted or require additional approval processes to ensure consistency and quality.
- **Automated broadcasting:** Published content will be broadcasted automatically according to the schedule, ensuring accuracy and continuity without the need for manual intervention.

Daily and Endless Modes

The **Daily** and **Endless** modes offer flexibility in managing and broadcasting content, meeting the diverse needs of television stations and other broadcast platforms.

Daily Mode

Definition:The **Daily** mode is a broadcast method in Playout software where content is scheduled to be broadcast on a daily basis.

How it works:

- Content is organized and broadcast according on a daily schedule

⇨ Suitable for TV shows with a fixed broadcast schedule, such as news programs, entertainment shows, or daily dramas.

Endless Mode

***Definition*:** The **Endless** mode is a continuous broadcast mode where content is aired non-stop, without being restricted by time of day.

How it works:

- Broadcast content in a continuous series, not limited by time of day

⇨ Ideal for 24/7 broadcast channels, radio stations, or platforms that require continuous content broadcasting like advertising loops or music streams.

Key Highlights

- **Cloud-based platform:** Integrates cloud technology for flexible content management and distribution
- **Redundancy and recovery:** Features redundancy and recovery capabilities to ensure uninterrupted broadcasting
- **Analytics and reporting:** Provides detailed analytics and reporting tools to monitor broadcast performance.

Benefits

- **Enhanced performance:** Optimizes broadcasting processes and minimizes errors
- **Cost-effective:** Reduces operational costs through automation and high operational efficiency
- **Improved service quality:** Ensures stable and reliable broadcast quality.

Applications

- **Television and radio broadcasting:** Widely used in TV and radio broadcast facilities for content management and broadcasting.
- **Online content:** Broadcasts content through OTT platforms and online streaming.

Input

Compressed Input	**Type**: UDP MPEG-2 TS (MPTS & SPTS) via unicast or multicast (IGMP v2 and v3), RTMP (H.264 HD, ACC) **Protocols**: MPEG-2 TS (MPTS & SPTS), RTMP **Codec**: MPEG-2, H.264, HEVC – MPEG-1 LII, Dolby Digital (AC-3), Dolby Digital Plus (E-AC3), AAC, HEAAC v1 and v2, Dolby E (baseband input only) **Data rate**: SD/ HD up to 50 Mbps, UHD up to 80 Mbps
Redundancy	Auto switch to backup input when primary input fail

Pre-Processing

Aspect ratio	WSS, AFD, Video index
Metadata	SCTE-104, SCTE-35, IA 608/ 708 Closed Caption, SCTE-20, DVB Teletext, DVB-VBI, SCTE-27, OP47, SMPTE 2031, VITC , SMPTE 2038, ARIB B24
Image settings	Brightness, Contrast, Saturation, Hue, Gamma, Temperature
Enhancement filters	**Video**: De-interlacing, Cropping, Letter boxing, Stretching, SD and HD Cross-scaling, 3:2 Pull down, MCTF, Deblocking filter, Spatial Denoising filter, Cross Talk filter, Sharpening, Diamond filter **Audio**: Automatic loudness control (A/85), Audio gain adjustment, Mute
Image overlays	Image insertion on input loss (blackout) logo insertion
Filter	

Video Encoding

Video codec	HEVC Main 10, HEVC Main Profile, H.264 Baseline / Main / High profile, MPEG-2 HDR: HDR10, HLG10, PQ10. Dolby Vision 8.1 & 5.0
Rate control	CBR, VBR, Statistical Multiplexing, Constant Video Quality , ACT
Data rate	From 100 kbps to 60 Mbps (1)
Resolutions	**Progressive**: from QCIF to UHD, up to 60 fps **Interlaced**: 480i, 576i, 720i and 1080i
Multi-stream	Shared and Split encoding for ABR outputs
Templates	Channel templates creation and management Default profiles templates for SD, HD & UHD services
Hardware Acceleration	**NVENC and Normal CPU encoding** up to UHD, H.264, HEVC, MPEG-2 CBR **Compression CPU encoding** up to FullHD with H.264, HEVC

(1) Depends on codec and resolution

Audio Encoding

Audio channels per service	Up to 8 stereo pairs. Radio Channels
Audio encoding	MPEG-4 / MPEG-2 AAC, HE-AAC v1 and v2, AMR-NB, AMR-WB, Windows Media Audio / Audio Pro, Transcode to Dolby Digital Plus (DD+)
Pass-through	MPEG 1 LII, AC-3, Dolby Digital Plus (E-AC3) 5.1-ch or stereo, Dolby E
Data rate	From 4.75 kbps to 320 kbps

Metadata

Subtitles pass-through and translation	EIA 608/708 Closed Caption, SCTE-20, DVB Teletext, DVB Subtitles, SCTE-27, ARIB B24
Ad insertion	EBIF / EISS / AITSCTE-35 pass-through
Nielsen	Watermark extraction for multi-screen devices

Multiplexing

Inputs and outputs	IP (UDP or RTP) input and output of MPEG Transport Streams ASI input and output (max 8 per server, optional hardware required) RTP re-ordering IGMP V3 redundancy Input bit-rate monitoring and CC error detection SMPTE 2022-1 FEC on input and output
Processing	Full re-multiplexing support including real-time PSI regeneration, and dynamic rules-based pass-through of descriptors PID re-mapping SI/PSI generation/re-generation and insertion from external source Statistical multiplexing bit-rate allocation for Sigma software encoder Bitrate policing Input Content Extraction

Streaming Output Processing

Formatting	Apple HTTP Live Streaming (Over CMAF or TS), Microsoft Smooth Streaming, DASH Common CMAF segment delivery for HLS and DASH Low Latency Chunking support for DASH and Apple Low Latency
Subtitling	**Closed Captions**: WebVTT for HLS, WebVTT or SMPTE-TT for DASH **DVB-Teletext page 888**: WebVTT for HLS, WebVTT or SMPTE-TT for DASH **DVB-Subtitles**: SMPTE-TT for DASH
Multi audio	Multiple audio streams per output for HLS, Smooth Streaming and DASH
Content protection	Microsoft PlayReady DRM support for HLS/TS, Smooth Streaming and DASH Apple Segment for HLS/TS FairPlay support for HLS/TS and HLS/CMAF Widevine, PlayReady support in CTR mode DASH Widevine and PlayReady support in CBC mode for DASH