

# SelenioFlex File

## File-to-File Transcoding

SelenioFlex™ File media processing solutions seamlessly blend transcoding and workflow capabilities, supporting a comprehensive range of formats with superior quality for applications from post production and archive to multiscreen distribution. As broadcasters and media companies look to streamline operations and maximize their resources and content assets across a variety of platforms, the distributed processing flexibility inherent in a SelenioFlex File solution is a definite advantage. Offering cloud-like reconfiguration capabilities within a system, or across geographically disparate facilities, SelenioFlex File allows resources to be grouped, scheduled and managed virtually for optimal efficiency and control. For the ultimate in future-proofing, an investment in SelenioFlex File file-based software solutions ensures adaptability to changing workflow requirements, license updates and technology advances.

## Benefits

- **Reduce your watch folders:** Automated decision-making detects source properties and metadata to adapt your workflow accordingly, minimizing the number of watch folders you need
- **Repackage without recompressing:** With microservices-based engines, you can repackage (rewrap or transmux) media between many container formats without recompressing the video or audio. Repackaging without re-encoding preserves quality and maximizes efficiency.
- **Adapt continuously:** Content and metadata are continuously analyzed on a frame-by-frame or sample-by-sample basis, enabling processing to automatically adjust to changing characteristics even within a single source file (such as mixed audio types, mixed AFD aspect ratio management codes and more)

## Features

- Software-only product that can be installed on standard server/blade systems (optional host systems available)
- Network distributed file-based transcoding and transmuxing, supporting various file formats on input, including QuickTime ProRes, MXF, GXF, TS, and more
- Support for various SD, HD and 4K/UHD output file formats including HEVC, H.264, Microsoft Smooth Streaming, HTTP Live Streaming (HLS), MPEG DASH, MXF, GXF, MPEG-2 Transport Streams, Dolby Digital Plus, WAVE, PCM, AAC, and more
- Support for various media manipulation functionalities (e.g., scaling, deinterlacing, video mixing/overlays, graphic overlays, metadata manipulation, subtitle overlays)
- Can be installed as a stand-alone, workstation software application

## Applications

- **Manage your audio levels:** Even beyond regulatory requirements in various countries, ensuring consistent perceived audio levels provides a more enjoyable experience for your audience, increasing their engagement. Loudness correction options from companies such as Dolby are available for Zenium-based engines, offering compliance with ATSC A/85 (U.S. CALM act), EBU R128, and ITU-R BS.1770-2 specifications, and more.
- **Convert your captions:** Our microservices-based engines further expand our robust Closed Caption capabilities (which already includes advanced features like creating CEA-708 captions from 608-only sources) with expanded SMPTE Timed Text support per SMPTE RP2052 and CEA8 Closed Caption parsing, pass-through and retiming for frame rate conversion (in addition to our existing similar CEA-608 capabilities).
- **Take control of your workflows:** The included Workflow Designer lets you visually design exactly the workflows you need, from basic video and audio processing to complex, multi-stage workflows. You can combine core functions and workflow steps in your preferred order – unencumbered by typical pre-defined, linear structures – while the ability to ‘probe’ data and preview results at any point of the workflow eases testing and refinement.

- **Manage rich metadata:** All of the data available in the input source (such as timecode, captions and metadata) is accessible and maintained throughout your workflow. Available data sources are visible during workflow design and testing, and any metadata or source properties – not just a limited selection of common types – can be used to configure tasks, trigger automated decision-making or be transformed for output.
- **Upgrade more easily:** The flexible, component-based architecture and dynamic, repository-based deployment model make it easy to upgrade without interrupting operations and to update individual features, functions and engines while leaving others unmodified (e.g., upgrading to a new HEVC or H.264 encoder version while keeping MPEG-2 as-is; or taking advantage of enhancements on select projects while leaving others untouched). This significantly streamlines upgrades and gives you far more control – ideal for scenarios such as when your clients ‘certify’ your outputs based on specific versions.
- **Deploy flexibly:** The deployment dynamics also include floating licenses, letting you purchase and provision microservices-based engine and component (features such as codecs) licenses based on how many you need to run concurrently, without locking them to specific host systems. Licenses – even on a feature-by-feature basis – can be redeployed onto different systems across your enterprise automatically based on project demands, and can be managed across multiple distributed locations from a single centralized server. Adding new features or more engines is as simple as updating your central license package.
- **Group processes into stages:** One of the powerful efficiencies is that various steps in a workflow graph may be processed simultaneously in parallel. For scenarios in which you want groups of these processes to be serialized (e.g., if you want an entire output file to have been generated before delivering it to external recipients and notifying them by email) you can combine multiple graphs into multi-stage workflows, in which each graph stage is completed in its entirety before moving on to the next.
- **Mix-and-match best-of-breed technologies:** The flexible architecture and rapidly expanding ecosystem of third-party technology partners let you ‘mix and match’ components from ourselves and our partners to create the optimal workflows for your needs. From alternative codec implementations to partner offerings like automated inline Quality Control, the choices are in your hands.

## Specifications

*Specifications and designs are subject to change without notice*

### SelenioFlex File – Format & Feature Reference

A choice of engine configurations for SelenioFlex File lets you choose the combination of formats and features best suited to your needs. Web Engines include most online and web formats, and meet the majority of processing needs. Studio Engines include professional formats for editing, archive, and broadcast.

All Zenium-based engines and bundles support the rich workflow capabilities of the Zenium platform (such as adaptive, automated decision-making) plus the latest advanced processing capabilities.

#### Zenium Engines

I = included, O = optional

	WEB	STUDIO
<b>INPUT VIDEO FORMATS (DECODERS)</b>		
Apple® ProRes <sup>1</sup>	I	I
AVC (H.264; 8-bit/10-bit)	I	I
Avid® DNxHD (in QuickTime® MOV) <sup>1</sup>	I	I
Avid DNxHD (in MXF)	I	I
Closed Caption / Timed Text file (SCC, SMPTE-TT)	I	I
DVCPPro / DVCPProHD	I	I
JPEG2000	I	I
MPEG-1	I	I
MPEG-2 (up to 67% Profile and High Level; including variants such as XDCAM, XDCAM HD, XDCAM IMX, CableLabs® and D10) <sup>2</sup>	I	I
QuickTime <sup>3</sup>	I	I

<b>INPUT VIDEO FORMATS (DECODERS)</b>		
Windows® Media Video (WMV)		
<b>INPUT AUDIO FORMATS (DECODERS)</b>		
AAC		
AES (SMPTE 331M and 302M, AES3-2003)		
Dolby® Digital (AC3)		
Dolby Digital Plus (up to 5.1)		
Dolby-E		
MPEG Layer 2		
WAV/PCM		
Windows Media Audio (WMA)		
<b>INPUT CONTAINER FORMATS (DEMULTIPLEXERS) <sup>4</sup></b>		
Adobe® Flash® (F4V)		
AVI (Uncompressed 8-bit/10-bit, DirectShow)		
GXF		
MPEG-2 Program Stream		
MPEG-2 Transport Stream		
MPEG-4 (MP4)		
MXF		
QuickTime (MOV, media & reference files)		
Windows Media/ASF		
<b>OUTPUT VIDEO FORMATS (ENCODERS)</b>		
AVC (H.264 with x264 codec; 8-bit; up to High Profile, Level 5.2)		
Windows Media Video (WMV)		
Avid DNxHD		
Image sequences		
MPEG-2 (up to 67% Profile and High Level; including variants such as XDCAM, XDCAM HD, XDCAM IMX, CableLabs® and D10) and MPEG-1	O	
AVC-Intra (Panasonic®)		

<b>OUTPUT VIDEO FORMATS (ENCODERS)</b>		
DVCPPro / DVCPProHD	O	O
Apple ProRes 67% (HQ, LT, Proxy)		I
<b>OUTPUT AUDIO FORMATS (ENCODERS)</b>		
AAC (AAC-LC, AAC-HE, and AAC-HEv2; up to 5.1)	I	I
Dolby Digital (AC3) and Dolby Digital Plus (up to 7.1)	I	I
MP3	I	I
Windows Media Audio (WMA)	I	I
AES (SMPTE 331M and 302M, AES3-2003; up to 7.1)		I
MPEG Layer 2		I
WAV/PCM (including Broadcast WAV, up to 7.1)		I
<b>OUTPUT CONTAINER FORMATS (MULTIPLEXORS/PACKAGERS) <sup>4</sup></b>		
Adobe Flash (F4V)	I	I
HTTP Live Streaming (HLS, e.g. iOS devices)	I	I
Microsoft IIS Smooth Streaming	I	I
MPEG-DASH	I	I
MPEG-4 (MP4/M4V)	I	I
Windows Media/ASF	I	I
AVI (Uncompressed 8-bit/10-bit)		I
GXF		I
MPEG-2 Transport Stream	I	I
MXF (including OP1a, XDCAM and AS02)		I
DPP (including AS11 support; also requires MXF output option, sold separately)	O	O
QuickTime (MOV)	I	I
<b>ADDITIONAL OUTPUTS AND PROCESSING</b>		
Dolby Loudness Correction with Dialog Intelligence™	I	I
CEA-608 to CEA-708 Closed Caption translation (708 creation from 608-only sources)	I	I

ADDITIONAL OUTPUTS AND PROCESSING		
CEA-608/CEA-708 Closed Caption retiming (for frame rate conversion)		
CEA-608/CEA-708 Closed Caption pass-through		
SCC Closed Caption file		
SMPTE Timed Text (from source CEA-608 per SMPTE RP2052; including DFXP file creation)		
SRT Subtitle file		
SDI ancillary data (SMPTE 291M) creation		
Microsoft PlayReady protection for Smooth Streaming content with support for third-party providers (including Irdeto and generic PlayReady interfaces)		
HLS encryption with support for third-party providers (including Motorola SecureMedia® Encryptonite ONE™ HLSI)		
LTC Timecode encoding		
VITC Timecode encoding		
Zenium Studio deinterlacer (including Inverse Telecine with advanced cadence detection; up to 16-bit processing)		
Zenium Studio scaler (multiple methods including Lanczos; up to 16-bit processing)		
Video mixer (including graphic, video, text and timecode overlay)		

1. Supported via free third-party decoders from Apple or Avid.

2. Additional container modules (e.g. MXF) may be required for complete input/output of some listed targets.

3. Supports QuickTime system filters (not included).

4. Container (wrapper) support. Additional modules may be required for encoding or decoding the media essence within the container.

5. Powered by OpenCube technology.

## Ordering Information

SOFTWARE		
SFX-FILE-MANAGER	SelenioFlex File manager	
SFX-FILE-XEN-WEB	SelenioFlex File Zenium engine – web bundle	
SFX-FILE-XEN-STUD	SelenioFlex File Zenium engine – studio bundle	
SFX-FILE-XEN-DSGN	Additional Zenium designer for SelenioFlex File	
SFX-FILE-BKP	SelenioFlex File manager backup	
SFX-FILE-XEN-UPG	Upgrade SelenioFlex File Zenium engine – web bundle to studio bundle	

SOFTWARE		
SFX-FILE-XEN-AS11	AS11 multiplexer option for SelenioFlex File Zenium engines	
SFX-FILE-XEN-DVC	DVCPro video encoder option for SelenioFlex File Zenium engines	
SFX-FILE-SA-WEB	SelenioFlex File Zenium engine stand-alone – web bundle	
SFX-FILE-SA-STUD	SelenioFlex File Zenium engine stand-alone – studio bundle	
SFX-FILE-TACHYON	Cinnafilm Tachyon plugin for SelenioFlex File Zenium engines	
SFX-FILE-INSYNC-FF	InSync FrameFormer standards conversion plugin for SelenioFlex File Zenium Engines	
OPTIONAL HARDWARE		
SFX-FILE-HSRV-G10	SelenioFlex File manager host system	
SFX-FILE-ESRV-G10	SelenioFlex File engine host system	