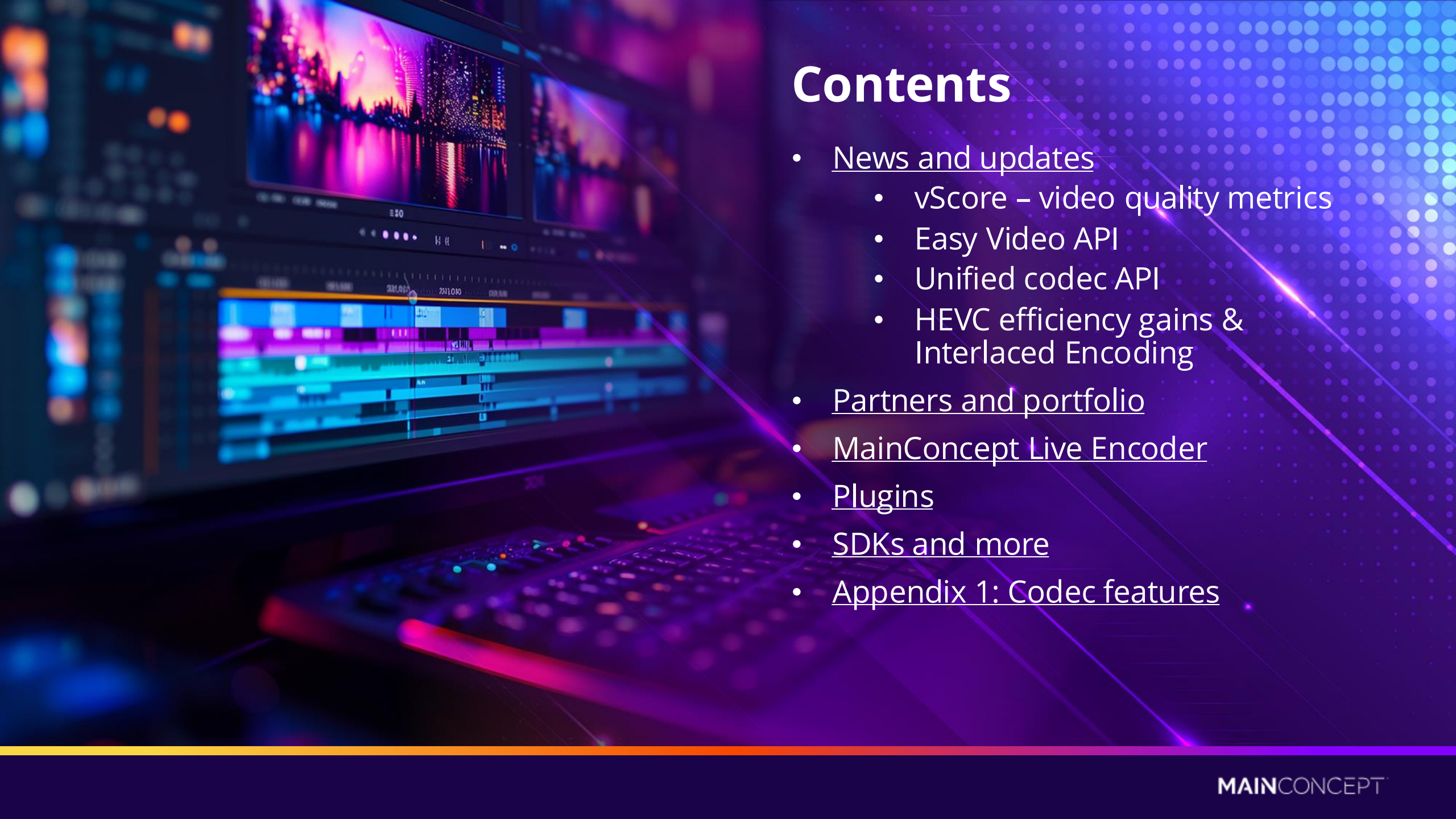


IBC 2025

September 12 – 15, 2025

mainconcept.com



Contents

- News and updates
 - vScore – video quality metrics
 - Easy Video API
 - Unified codec API
 - HEVC efficiency gains & Interlaced Encoding
- Partners and portfolio
- MainConcept Live Encoder
- Plugins
- SDKs and more
- Appendix 1: Codec features

Notable news

vSCORE & VMAF-E

vScore, an integrated video quality analysis suite

Includes PSNR, SSIM, VMAF, VMAF-CUDA and VMAF-E

VMAF-E, built by MainConcept, has 10x faster performance and near-zero latency for VOD and live.

EASY VIDEO API & UNIFIED CODEC API

Easy Video API

- **NVIDIA**: GPU transcoding pipelines and HEVC/AVC encoding support for 4:2:2
- **Qualcomm**: Adreno GPU support for HEVC/AVC decode

Unified API for processing uncompressed video across CPU, GPU, and codecs, and easier codec swapping in multi-format workflows

HEVC BITRATE SAVINGS & INTERLACED ENCODING

MainConcept HEVC continues to show its worth across 4:2:2 and 4:2:0 10-bit

20% bitrate savings compared to x265

Fundamental **CDN cost savings**

Interlaced encoding aligns HEVC with AVC for broadcast workflows

vScore

Smarter video quality analysis, built directly into the encoding workflow

One-step process

Aligns source and output, reducing load and latency.

Unified API

For quality measurement across supported codecs.

VMAF-E

VMAF-CUDA

VMAF

PSNR

SSIM

VMAF-E

Uses AI to deliver live metric without delays or heavy processing.

VMAF-CUDA

GPU-accelerated live metric for NVIDIA GPUs.

For faster, easier **VOD** and **live** video measurement.

VMAF-E

Real-Time, AI-Powered and Live-Ready. Developed by MainConcept.



Expands VMAFs utility beyond VOD and offline media processing



10x improved speed versus VMAF



Performance comparable to PSNR and VMAF-CUDA



Uses AI to estimate the score and optimize utilization

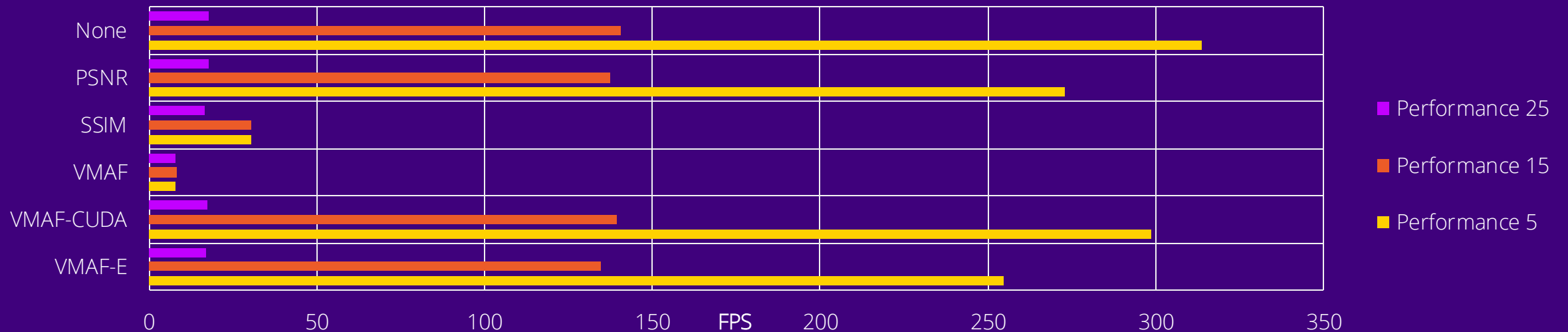


Available for HEVC Encoder SDK. AVC and VC expected later.

vScore Benchmarks

Video Quality Metrics Benchmarks with HEVC/H.265 Video Encoding on Server System

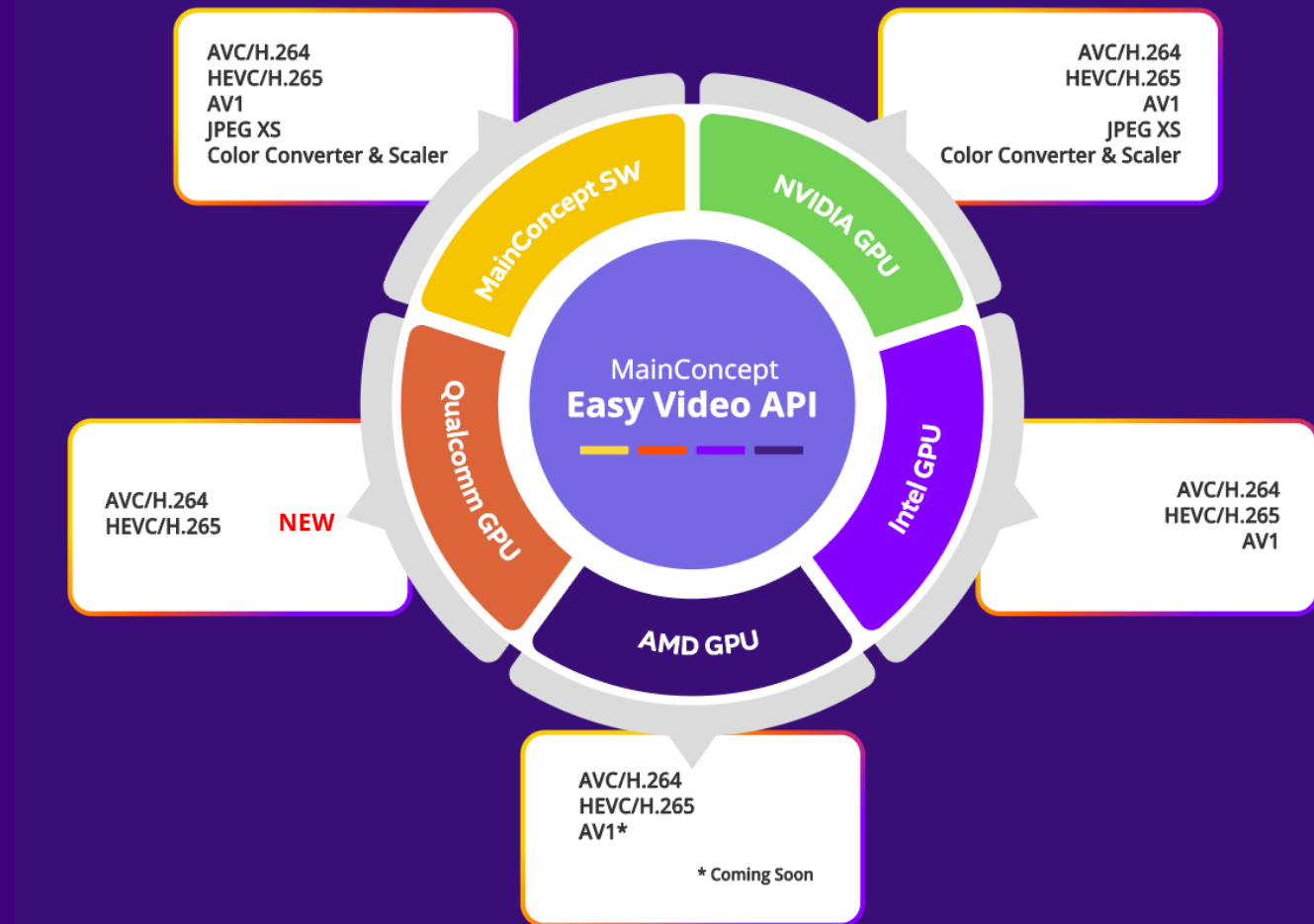
Quality metric	Performance 5		Performance 15		Performance 25		Average % of base-line
	FPS	% of base-line	FPS	% of base-line	FPS	% of base-line	
None (baseline)	313.7	0.0	140.4	0.0	17.8	0.0	0.0
PSNR	273.0	-13.0	137.4	-2.1	17.6	-1.1	-5.4
SSIM	30.5	-90.3	30.6	-78.2	16.6	-7.0	-58.5
VMAF	8.0	-97.5	8.1	-94.3	7.9	-55.6	-82.4
VMAF-CUDA	298.6	-4.8	139.2	-0.9	17.4	-2.5	-2.7
VMAF-E	254.6	-18.9	134.6	-4.1	17.1	-3.8	-8.9



MainConcept EVA

(Easy Video API)

Save up to 80% on
integrations costs



MainConcept EVA

One API that enables software and hardware codecs

Hardware processing

&

Software codecs

AMD intel nvidia Qualcomm

MAINCONCEPT™



Flexible
HW choices



Efficient
energy usage



Software
fallback



Single support
contact

EVA SUPPORTS

AVC/H.264, HEVC/H.265, AV1 and JPEG XS

Plus, MainConcept encoders, decoders, color conversion and scaling

Plus, full GPU-based media processing workflows on NVIDIA hardware

MAINCONCEPT™

EVA Savings

Integration and Maintenance

It costs, on average,
\$150,000 to integrate one
API, and **\$50,000** per year to
maintain it.

How much will
MainConcept EVA
save you?

MainConcept HEVC/H.265 Encoder

Up to 20% more efficient than x265

Save 20% on your CDN,
savings that can far outweigh
the cost of the license

Monthly DATA TRANSFER	Potential Annual SAVINGS
100 TB	\$15,000
1000 TB	\$75,000
5000 TB	\$300,000

[See the benchmarks](#)

Immersive Broadcast

Innovations in OTA & OTT Content Delivery



Traditional & **next-gen broadcast** workflows



Works **on-premise, in-the-cloud** and with **hybrid** workflows



Deployment as **SDKs, applications** or **plugins**

FEATURES

- Contribution & distribution encoding up to 8K60
- Support for today's & future broadcast codecs like MPEG-2, AVC, HEVC, VVC, MPEG-H, E-AC-3, Dolby Atmos and AC-4
- LCEVC enhancement codec with MainConcept AVC, HEVC & VVC base layers for lower cost encoding and reduced bitrates
- Brazil SBTVD TV 2.5 & DTV+ standard compliant
- DVB & ATSC 3.0 ready
- High quality, higher efficiency and reduced bandwidth
- Extended HDR signaling, including Advanced HDR by Technicolor
- Powered by MainConcept EVA for AMD, NVIDIA & Intel QSV hardware encoding & decoding
- MPEG-DASH, Apple HLS, Zixi, SRT, NDI, RTMP, RTSP, HTTP, UDP, etc.
- Close partnerships with OTT and TV broadcast solution providers

APPLICATIONS

- + Live Encoder

FFMPEG PLUGINS

- + AVC Broadcast encoder/decoder
- + HEVC encoder/decoder
- + VVC encoder
- + Dolby Digital Plus encoder/decoder
- + MPEG-H encoder
- + xHE-AAC encoder

SOFTWARE DEVELOPMENT KITS

- + AVC, HEVC & VVC SDKs
- + LCEVC Encoder SDKs
- + Content Creation SDK

MainConcept + LCEVC

Enhancing current and next-gen codecs

MPEG-5
LC=VC



Lower cost encoding and reduced bitrates



Enhances any base codec up to 45% in compression efficiency



Playback even on legacy devices

FEATURES

- Standardized as MPEG-5 Part 2 LCEVC (Low Complexity Enhancement Video Coding)
- Enhancement codec
- Integrated with MainConcept AVC, HEVC and VVC video encoders
- SEI messages carried within base layer or as dual track
- Standards compliant base layer encoded at quarter resolution
- Enhancement layer is typically 15%-20% of the total bitrate
- Supports MPEG-DASH & HLS live streaming
- SBTVD TV 2.5 & DTV+ approved
- Available for Windows and Linux x86

APPLICATIONS

- + Live Encoder

SOFTWARE DEVELOPMENT KITS

- + LCEVC AVC Encoder SDK
- + LCEVC HEVC Encoder SDK
- + LCEVC VVC Encoder SDK

Dolby Digital Plus™ Pro Plugins for FFmpeg

The first FFmpeg plugins certified by Dolby



MainConcept handles the **royalties**



Live and on-demand,
on-prem and in the cloud



Integrates with plugins from
MainConcept & FFmpeg

Dolby Digital Plus Pro Encoding

- AC-3 and E-AC-3 encoding support in FFmpeg
- Officially approved by Dolby
- Output bit rates from 0.032 to 6.144 Mbit/s
- Sample rate 48000 Hz
- Encoding of up to 7.1 audio channels

Dolby Digital Plus Pro Decoding

- AC-3 and E-AC-3 decoding support in FFmpeg
- Officially approved by Dolby
- Sample rates 32000, 44100 or 48000 Hz
- Decoding of up to 7.1 audio channels

PACKAGES

- + Dolby Digital Plus Pro Encoder
- + Dolby Digital Plus Pro Decoder

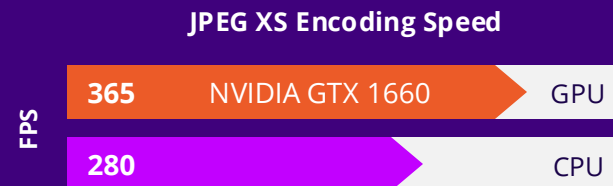
JPEG XS

Interoperable, lightweight image coding for broadcast studios & video networks

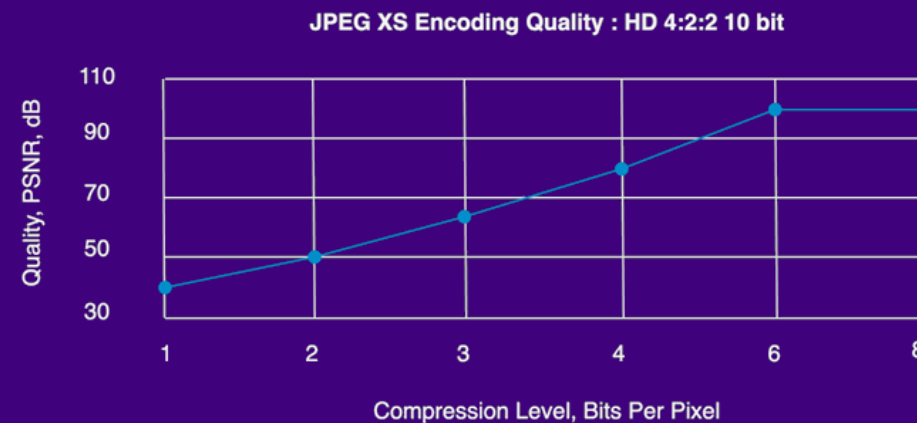
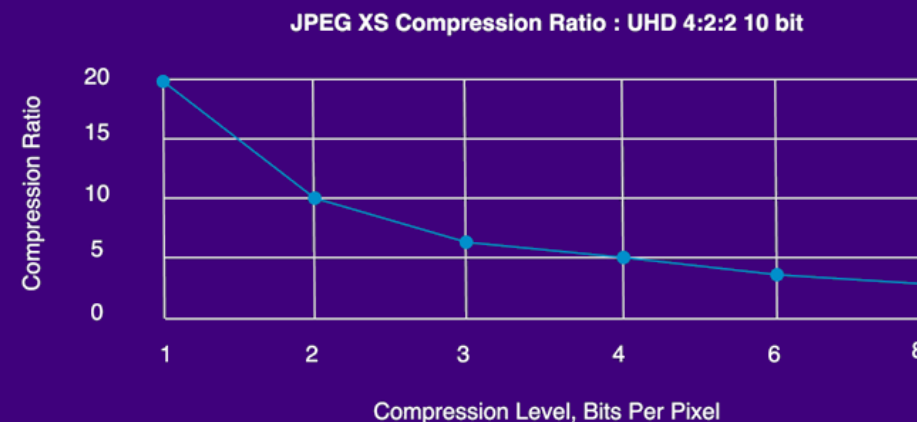


ENCODER & DECODER SDK FEATURES

- CPU with SIMD and GPU accelerated processing powered by NVIDIA
- Visually lossless and lightweight compression format
- Low latency processing
- Intra-frame codec for professional streaming workflows
- RGB/YCbCr (4:4:4, 4:2:2, 4:2:0) and CFA/RAW up to 16-bit
- MPEG-2 TS & MXF multiplexing & demultiplexing
- Suitable for both live and VOD use-cases
- Seamlessly compliant with existing ST 2110 IP frameworks
- Real-time playback
- Available for Windows & Linux x86



FPS Achieved for Encoding HD 4:2:2 10 bit
System: i7-11700K, 16GB, Ubuntu 22.04



Technology Partners



DID YOU KNOW?

MainConcept technology is used to process most of the world's professional video.



Production



Surveillance



Broadcast



Medical



Streaming



Digital Signage



Gaming



Ad-Tech



INGEST

- MP4/ISO BMFF
- MPEG PS/TS/SS
- MXF
- ASF/WMV
- 3GP
- DV/DIF
- F4V
- MJ2
- DCI
- RTP/RTSP
- RTMP
- ICECAST
- MPEG-DASH
- Apple HLS
- SRT
- Zixi
- NDI
- ST 2110*
- AVCHD
- Sony XAVC
- Sony XAVC 2.0/XAVC HS
- Sony XDCAM
- Panasonic DVCPRO
- Panasonic AVC-ULTRA
- Canon XF-HEVC
- IMF RDD-45
- JPEG XS
- DVD
- Blu-ray/Blu-ray UHD



DECODE

- AVC/H.264
- HEVC/H.265
- VVC/H.266
- MPEG-1/2
- JPEG 2000
- JPEG-XS
- DV/DVCPRO 25/50/HD
- Avid DNxHD/DNxHR
- Apple ProRes
- MJPEG
- MPEG-4 Part 2/H.263
- VC-1

- DXVA MPEG-2
- DXVA AVC/H.264
- DXVA HEVC/H.265
- AVC, HEVC Intel QSV
- AVC, HEVC NVIDIA NVDEC
- AVC, HEVC AMD AMF
- AVC, HEVC Adreno
- JPEG XS NVIDIA CUDA

- AAC & HE-AAC
- AMR
- Dolby Digital
- MPEG Audio Layer I-III
- PCM
- WMA



PROCESS

- Color Space Converter
- Color Space Converter (NVIDIA CUDA)
- Framerate Converter
- SCTE-35
- Smart Rendering AVC/H.264
- Smart Rendering MPEG-2

- Audio Converter



ENCODE

- AVC/H.264
- HEVC/H.265
- AV1
- VVC/H.266
- LCEVC/MPEG-5 Part 2
- MPEG-1/2
- JPEG 2000
- JPEG XS
- DV/DVCPRO 25/50/HD
- Avid DNxHD/DNxHR
- MV-HEVC
- MJPEG
- MPEG-4 Part 2/H.263
- VC-1

- AVC, HEVC, AV1 Intel QSV
- HEVC/H.265 GPU Acceleration
- AVC, HEVC, AV1 NVIDIA NVENC
- AVC, HEVC, AV1 * AMD AMF
- AVC, HEVC, AV1 Adreno*
- JPEG XS NVIDIA CUDA

- AAC, HE-AAC, xHE-AAC
- MPEG-H
- AMR
- Dolby Digital
- AC-4*
- DD+JOC (Atmos)*
- MPEG Audio Layer I-III
- PCM
- WMA



FORMAT

- MP4/ISO BMFF
- MP4
- MPEG PS/TS/SS
- MXF
- ASF/WMV
- 3GP
- DV/DIF
- F4V
- MJ2
- DCI
- AVCHD
- Sony XAVC
- Sony XAVC 2.0/XAVC HS*
- Sony XDCAM
- Panasonic DVCPRO
- Panasonic AVC-ULTRA



DELIVER

- MPEG-DASH
- Apple HLS
- CMAF
- SRT
- Zixi
- NDI*
- OTT Live/VOD
- WebDAV
- RTMP/RTMPS
- RTP/RTSP
- UDP
- ST 2110*

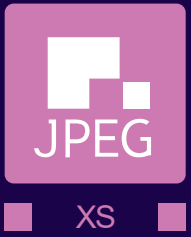


SDKs and more

VVC, HEVC, AVC, LCEVC, MPEG-2, MV-HEVC, JPEG XS, GStreamer

JPEG XS

Interoperable, lightweight image coding for broadcast studios & video networks



Real-time processing
right from the start



Contribution format for
low latency use-cases



Output as **complete image** or
split into packets

FEATURES

- CPU with SIMD and GPU accelerated processing powered by NVIDIA
- Visually lossless and lightweight compression format
- Low latency processing
- Intra-frame codec for professional streaming workflows
- RGB/YCbCr (4:4:4, 4:2:2, 4:2:0) and CFA/RAW up to 16-bit
- MPEG-2 TS & MXF multiplexing & demultiplexing
- Suitable for both live and VoD use-cases
- Seamlessly compliant with existing ST 2110 IP frameworks
- Real-time playback
- Available for Windows & Linux x86

PACKAGES

- + JPEG XS Encoder & Decoder SDK

VVC/H.266

Next-generation 4K and 8K delivery



Real-time right from the start



**Extended resolution at same
bitrate** over existing channels



Ready for **broadcast** and **OTT
distribution**

FEATURES

- Live & VOD 10-bit encoding in up to 8K
- HDR signaling
- SABET multi-layer encoding for OTT
- AutoLive to maintain stable encoding frame rate
- Multi-layer coding for ad tech and sign-language
- MPEG-2 TS & MP4 multiplexing
- MPEG-DASH output & MPD generation
- 4:2:0 10-bit real-time playback
- Multi-layer streaming of 8K, 4K, 1080p
- Wide range of standard & advanced encoder and decoder features

PACKAGES

VVC ENCODER SDK

+ LCEVC VVC Encoder SDK

VVC DECODER SDK

FFMPEG PLUGINS

+ VVC Encoder Plugin for FFmpeg

APPLICATIONS

- + Live Encoder with VVC
- + Live Encoder with LCVC + VVC

HEVC/H.265

Vital cost savings with 20% higher efficiency than x265



Preferred **codec for OTT & Broadcast** workflows



Decode & Encode add-ons
deliver even higher performance



Optimized for low-, adaptive, and high-bitrate **8K quality**

FEATURES

- Significant bitrate savings resulting in up to 20% CDN cost savings compared to open source
- 8K60 Hybrid GPU accelerated 10-bit live video encoding
- Industry-leading codec for professional 4:2:2 10-bit production formats
- HDR decoder with support for HLG/PQ and SDR conversion
- 4:2:2 10-bit encoding & decoding on NVIDIA Blackwell hardware
- Available for x86 and ARM chipsets
- Powered by MainConcept EVA featuring hardware encoding & decoding on AMD, NVIDIA, Qualcomm & Intel QSV
- Canon XF-HEVC, Sony XAVC H/HS, Nikon Z9, Panasonic G5 decoding
- State of the art codec enhancements like SABET, AutoLive or AutoMatch

PACKAGES

HEVC Encoder SDK

- + 4:2:2 support
- + Hybrid GPU acceleration
- + SABET
- + MV-HEVC encoding
- + LCEVC HEVC Encoder

HEVC Decoder SDK

- + WebASM

MV-HEVC

Multi-view content creation for Apple Vision Pro



Real-time processing for the
next-gen VR experience



Extended resolution for
immersive multi-view encoding



Seamless **playback** on the
Apple Vision Pro

FEATURES

- Multi-view HEVC as an extension to the HEVC standard (ISO/IEC 23008-2)
- Fully compliant with Apple HEVC Stereo Video profile of Apple Immersive Video
- Encoding of stereoscopic views of a scene within a single video stream
- Ready-to-use MV-HEVC Main 10 encoding profile
- HDR signaling
- Backward compliance with regular HEVC/H.265 base layer
- MP4 multiplexing
- HLS output & playlist generation
- Cross-platform API for Windows, macOS & Linux for on-premise and cloud deployment

PACKAGES

- + MV-HEVC Encoder SDK

AVC/H.264

The industry-leading codec for professional 4:2:2 10-bit production formats



2x faster than open source¹ & **20% faster** than previous generation²



2-pass encoding & support for **UHD** and **HDR**



AMD, NVIDIA & Intel QSV
hardware encoding & decoding

FEATURES

- Precise bitrate adherence for encoding to on-demand video targets
- Standard compliant encoding & decoding of 4:2:2 10-bit formats in software and on NVIDIA Blackwell hardware
- HDR support for HLG and PQ/HDR-10 encoding
- Unrivalled range of encoding presets
- Professional camera support for Sony XAVC & Panasonic AVC-ULTRA
- Frame-accurate smart rendering for AVC-Intra and other pro formats
- Featuring MainConcept EVA, a single API for software and hardware encoding & decoding (AMD, NVIDIA & Intel, Qualcomm)
- Full encoding profile XAVC XDF-01 for German broadcast production format compliance

PACKAGES

AVC Encoder SDK

- + AVC Broadcast Encoder
- + SVR360²
- + Smart Rendering²
- + LCEVC AVC Encoder

AVC Decoder SDK

- + AVC Broadcast Decoder

1. According to recent encoder test data comparing MainConcept AVC against x264
2. Compared to previous version of MainConcept AVC

MainConcept + LCEVC

Enhancing current and next-gen codecs

MPEG-5
LC=VC



Lower cost encoding and
reduced bitrates



Enhances any base codec up to
45% in compression efficiency



Playback even on **legacy devices**

FEATURES

- Standardized as MPEG-5 Part 2 LCEVC (Low Complexity Enhancement Video Coding)
- Enhancement codec
- Integrated with MainConcept AVC, HEVC and VVC video encoders
- SEI messages carried within base layer or as dual track
- Standards compliant base layer encoded at quarter resolution
- Enhancement layer is typically 15%-20% of the total bitrate
- Supports MPEG-DASH & HLS live streaming
- SBTVD TV 2.5 & DTV+ approved
- Available for Windows and Linux x86

AVAILABLE NOW

- + Live Encoder
- + LCEVC AVC Encoder SDK
- + LCEVC HEVC Encoder SDK
- + LCEVC VVC Encoder SDK

MPEG-2

Fast, flexible and feature-rich



2x faster than the prior generation



Supports **legacy formats** and **frameworks**



2-pass encoding, **4:2:2** **10-bit** support

PRE-CONFIGURED ENCODING PROFILES

- MPEG-2 based digital TV formats like DVB and ATSC
- Professional camcorders like Ikegami GF and Sony XDCAM
- Real-time decoding of consumer, professional & broadcast MPEG-2 formats

STREAM TYPES & FORMATS

- **Elementary Stream:** Generic MPEG-1 and MPEG-2 Elementary Streams
- **Transport Stream:** Blu-ray Disc, HD DVD, DVB, ATSC, ATSC-HI, DVHS, D10 & HD configs
- **Program Stream:** VCD, SVCD, DVD MPEG-1
- **System Stream:** Generic MPEG-1 System Streams
- **MP4:** Sony XDCAM EX
- **MXF:** Sony XDCAM HD, Sony XDCAM IMX, Ikegami GFCAM, D10

PACKAGES

- + MPEG-2 Encoder SDK
- + MPEG-2 Decoder SDK
- + MPEG-2 Smart Rendering SDK

MainConcept on Snapdragon

Use Our Codecs on latest Windows ARM devices powered by Qualcomm



Real-time encoding & decoding performance



Complete set of libraries for **OTT, broadcast & production**



Legacy, present & future **codec support on Windows ARM**

FEATURES

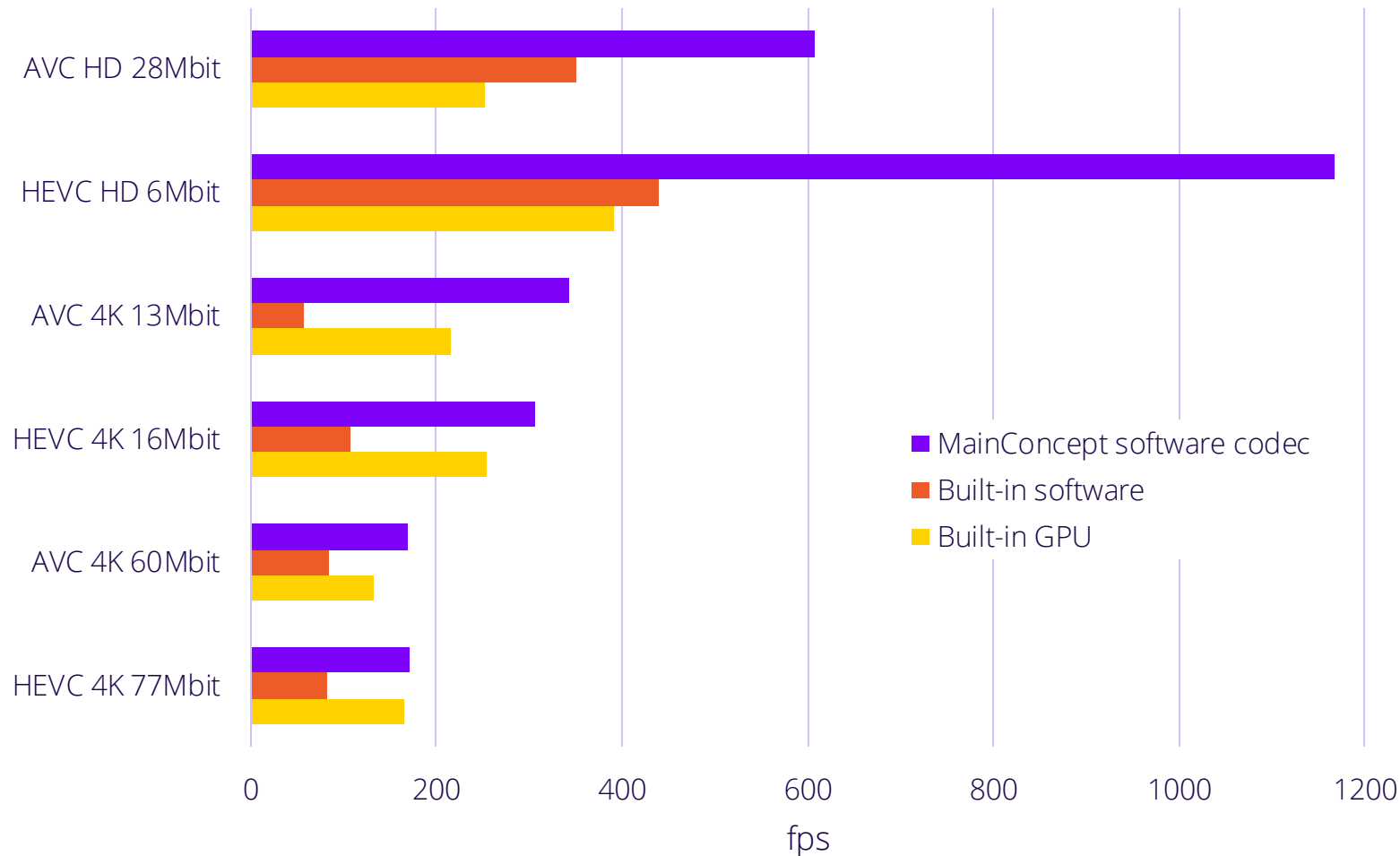
- Deploy MainConcept Codec libraries and related components on Snapdragon powered devices running Windows
- Hardware accelerated AVC/H.264 and HEVC/H.265 video decoding on Snapdragon X Elite hardware with Adreno GPU
- Libraries for broadcast, OTT and professional production workflows
- Optimized for Qualcomm's latest flagship CPU
- Snapdragon X Elite X1E-84-100 clearly outperforms the Altra Ampere and previous generation of ARM-based Microsoft Surface
- Enormous cost savings compared to ARM-based laptops from different vendors
- Significant performance gains compared to laptops with similar ARM-based CPUs from other vendors

PACKAGES

HEVC/H.265 Encoder/Decoder
AVC/H.264 Encoder/Decoder
MPEG-2 Encoder/Decoder
DV/DVCPRO Encoder/Decoder
MPEG-4 Part 2/H.263 Encoder/Decoder
AAC/xHE-AAC Encoder
AAC Decoder
MPEG Audio Encoder/Decoder
Converter & Scaler Pack
File Format
OTT Content Creation
DASH/HLS Demultiplexing/Client
SCTE-35
Network Source/Client

MainConcept on Snapdragon

Consumer Grade Decoding: improved performance on Snapdragon X



2.5x vs. built-in software

2x vs. built-in hardware

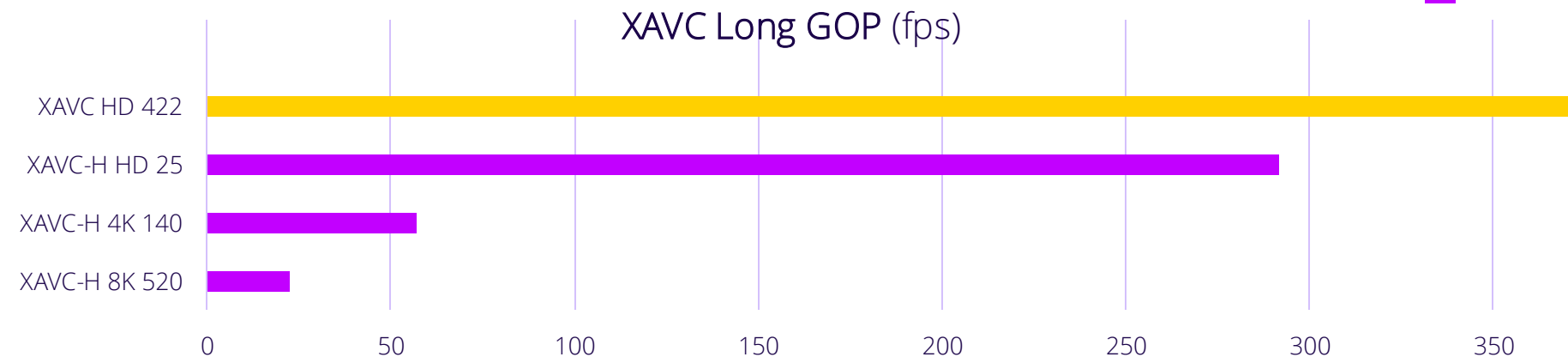
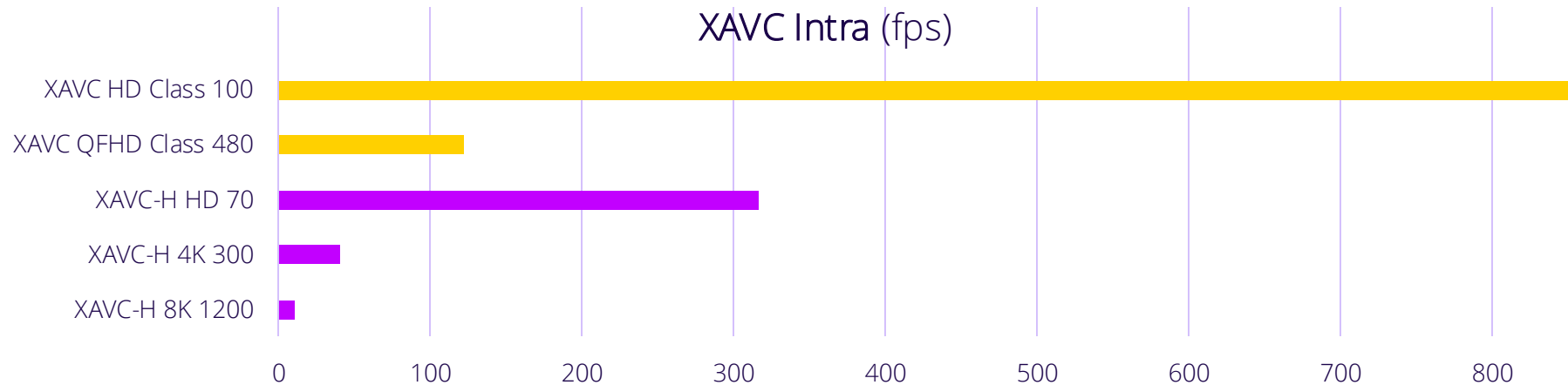
AVC/HEVC 8-bit 420

Hardware:

- Samsung Galaxy Book Edge 960XMB-KB1
- Snapdragon X Elite X1E-84-100, On Board, 16GB
- Windows 11

MainConcept on Snapdragon

The only solution for professional grade media production



Decode over
10
concurrent
HD videos

Sony XAVC 10-bit 422

Hardware:

- Samsung Galaxy Book Edge 960XMB-KB1
- Snapdragon X Elite X1E-84-100, On Board, 16GB
- Windows 11

GStreamer

A complete encoding and transcoding pipeline for OTT and broadcast workflows



Develop & deliver **live** and **on-demand** video content



Deliver content to **any device**



NVIDIA NVENC & Intel Quick Sync Video hardware encoding

BROADCAST DELIVERY

- Closed caption support
- PID for elementary stream
- Program names in SDT tables
- DVB subtitles support
- SCTE-35 messaging

Includes

- + HEVC/H.265 video encoder
- + AVC/H.264 video encoder
- + Fraunhofer AAC and MPEG audio encoders
- + MPEG-2 TS multiplexer

OTT CONTENT CREATION

- CMAF-DASH, MPEG-DASH and Apple HLS
- OTT ladder presets
- Multi-language track
- Intel QSV and NVIDIA NVENC
- Hybrid GPU for HEVC (optional)

Includes

- + HEVC/H.265 video encoder
- + AVC/H.264 video encoder
- + Fraunhofer AAC encoder
- + CMAF/DASH/HLS presets
- + Multiplexers and file generators

PRODUCTION FORMAT CREATION

- Professional production format presets up to 4:2:2 10-bit
- Sony XDCAM and XAVC
- Panasonic P2 AVC-ULTRA & AVC-Intra
- Generic MPEG-2 and AVC/H.264 encoding profiles

Includes

- + MPEG-2 video encoder
- + AVC/H.264 video encoder
- + PCM audio encoder
- + MXF and MP4 multiplexer

MainConcept Live Encoder

Live Encoder

Real-time multi-format video encoding for OTA & OTT workflows in up to 8K 10-bit



All-in-one **Contribution** and **Distribution** live encoder



Deployment via intuitive **web UI** or powerful **REST API**



Works **on-premise, in-the-cloud** and with **hybrid** workflows

FEATURES

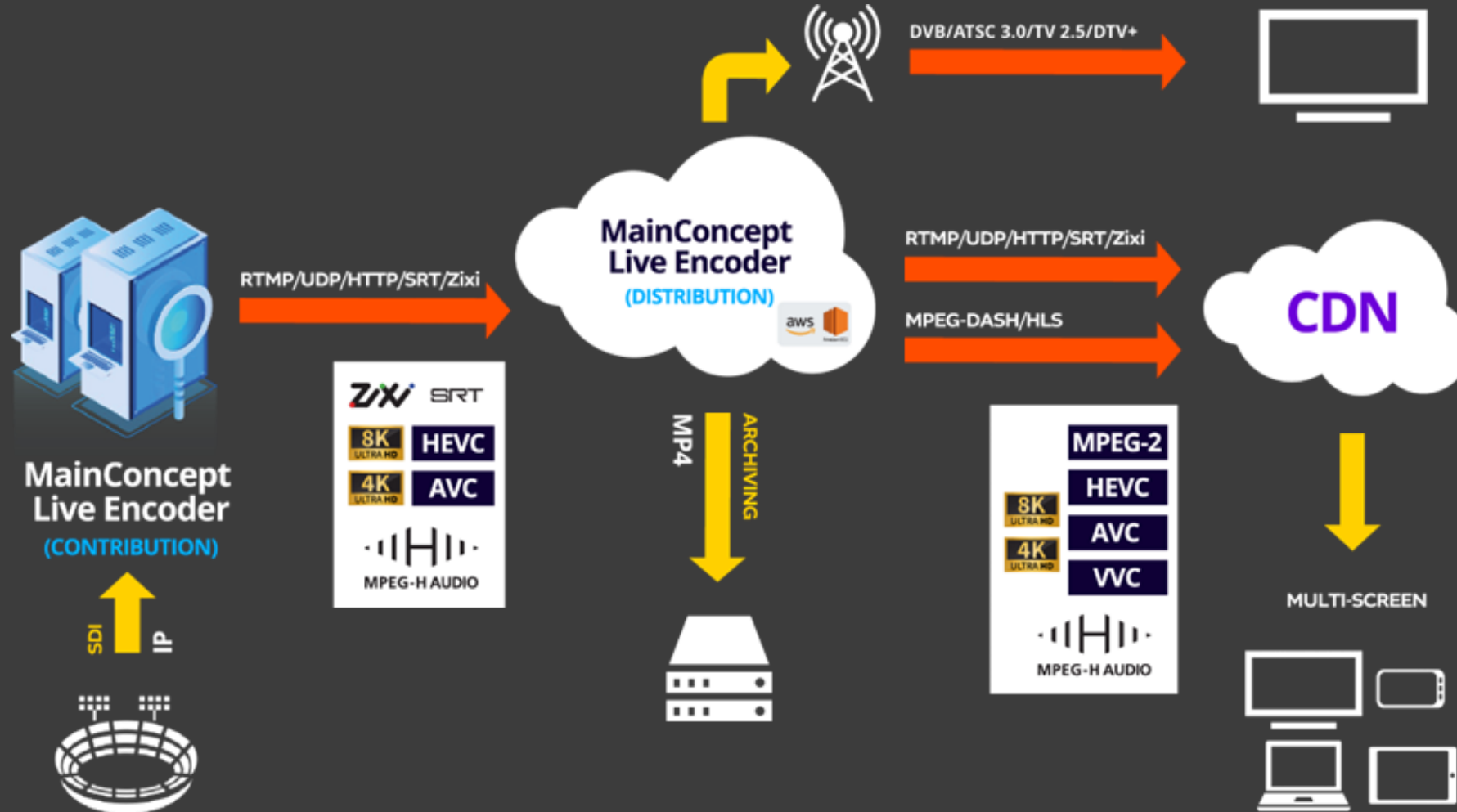
- Common SDI and IP input sources, incl. real-time preview
- Intel & NVIDIA powered AVC & HEVC hardware encoding & decoding
- MPEG-2, AVC, HEVC & VVC software encoding modes plus LCEVC support
- LCEVC enhancement layer carried as SEI message or as dual track
- Dolby certified AC-3 & E-AC-3 decoding on IP ingest
- ATSC 3.0 & DTV+ compliant
- Object-based MPEG-H 3D audio creation
- MPEG-DASH, Apple HLS, Zixi, SRT, RTMP, RTSP, HTTP, etc. output
- TS over UDP/HTTP output, incl. Program / Service Name, ID, Provider support
- Integrated CDN support for Akamai, Amazon CloudFront & WebDAV servers
- Redundancy & failover management
- Available for Windows and Linux

COMING SOON

- + AC-4, DD+JOC (Atmos) encoding
- + Closed caption conversion
- + Integrated DRM support
- + NDI output
- + Accelerated AV1 live encoding
- + CMAF-DASH low latency encoding and packaging
- + ST 2110 ingest & output
- + Full AWS, Google Cloud and Microsoft Azure deployment

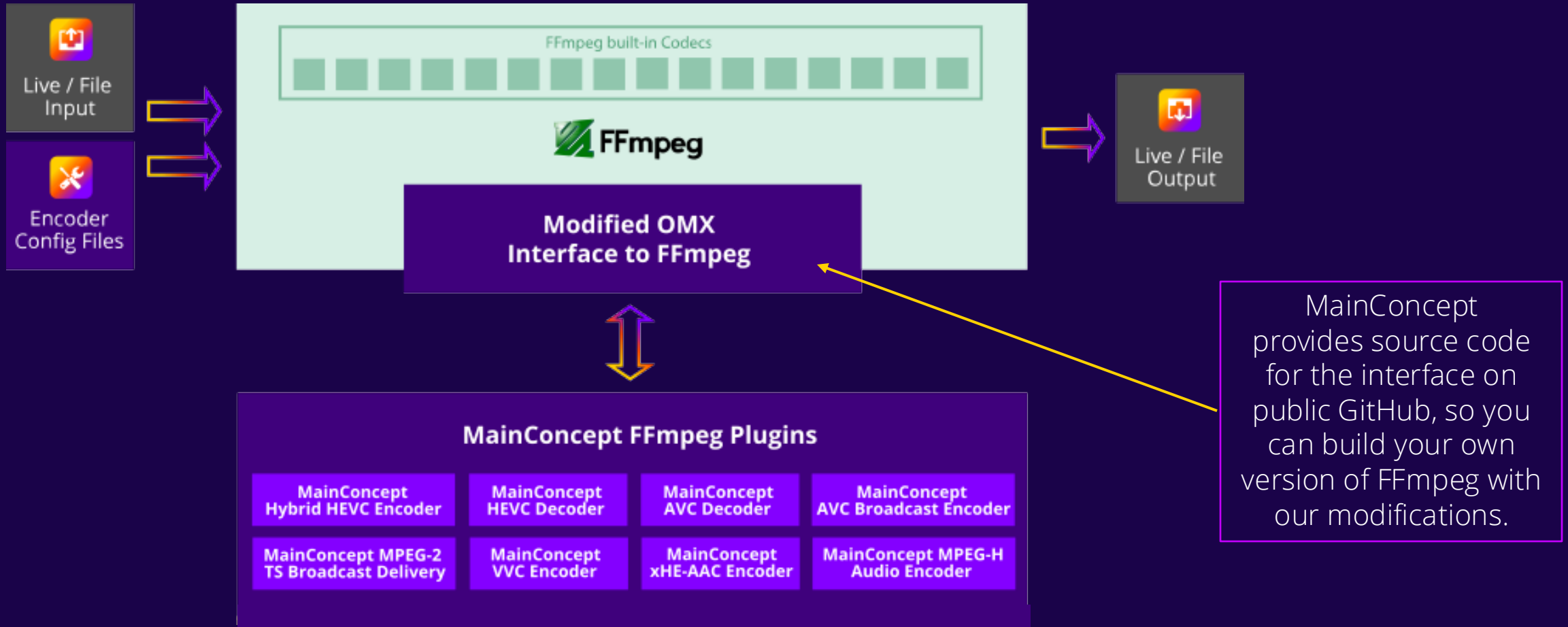
Live Encoder Workflow

Contribution & Distribution Encoding



FFmpeg Plugins

MainConcept FFmpeg Plugins — Architecture



MainConcept FFmpeg Plugins

The world's best codecs available in FFmpeg 4.4, 6.0 & 7.0



Video Encoding

Hybrid HEVC Encoding

- Leading HEVC codec outperforming x265
- MPEG-DASH, HLS, Main, Main 10, 4:2:0, 4:2:2
- GPU-accelerated encoding modes for up to 8K 10-bit live
- Options for Intel Quick Sync Video, AMD AMF & NVIDIA NVENC

MPEG-2 Production Format Encoding

- Use MainConcept's industry leading MPEG-2 software encoder and MXF Multiplexer natively in FFmpeg
- Pre-configured profiles for professional Sony XDCAM HD and XDCAM IMX camcorder content creation
- Ready-to-use encoder presets for Sony XDCAM EX, DVB, ATSC, DVD, HDV, D10, etc.

Video Encoding

AVC Broadcast Encoding

- 4:2:2 10-bit and level 6.2 (8K)
- Verified presets for Sony XAVC & Panasonic P2 AVC-ULTRA
- XAVC XDF-01 production format for German broadcast
- MPEG-DASH & Apple HLS
- Options for Intel Quick Sync Video, AMD AMF & NVIDIA NVENC
- 2-pass encoding for best VOD quality

VVC Encoding

- VVC/H.266, next-generation codec for OTT and Broadcast
- Live and VOD workflows
- VVC/H.266 Main 10 profile, 8-bit and 10-bit, 4:2:0 up to 8K

Video Decoding

HEVC Decoding

- Decode and transcode workflows in superior quality and speed
- Main, Main 10, Main 12, Main 4:2:2 (& 10), Main 4:4:4 10 & 12 profiles
- Interlaced decoding support, including deinterlacing
- Hardware acceleration by AMD AMF, Intel Quick Sync Video & NVIDIA NVDEC

AVC Decoding

- Decode and transcode workflows in superior quality and speed
- Baseline, Main, High, High 4:2:2/4:4:4 profiles, 8-bit/10-bit/12-bit
- Hardware acceleration by AMD AMF, Intel Quick Sync Video & NVIDIA NVDEC

MainConcept FFmpeg Plugins

The world's best codecs available in FFmpeg 4.4, 6.0 & 7.0



AudioProcessing

MPEG-H Encoding

- Integration of Fraunhofer's MPEG-H software encoder in FFmpeg
- Immersive, object-based MPEG-H 3D audio
- Live encoding workflows
- Baseline and Low Complexity Profiles
- Automatic Fallback mode in case of Control Track loss or interruption
- Standard adopted by ATSC, DVB, TTA, SBTVD and ATSC 3.0 (South Korea) TV standards

xHE-AAC Encoding

- Integration of Fraunhofer's xHE-AAC software encoder in FFmpeg
- xHE-AAC, legacy LC AAC, HE-AAC v1 & HE-AAC v2 audio formats
- VOD and live encoding workflows
- Bitrates of 12-500 kb/s for stereo
- Loudness and dynamic range control

AudioProcessing

Dolby Digital Plus Pro Encoding **NEW**

- AC-3 and E-AC-3 encoding support in FFmpeg
- Officially approved by Dolby
- Output bit rates from 0.032 to 6.144 Mbit/s
- Sample rate 48000 Hz
- Encoding of up to 7.1 audio channels

Dolby Digital Plus Pro Decoding **NEW**

- AC-3 and E-AC-3 decoding support in FFmpeg
- Officially approved by Dolby
- Sample rates 32000, 44100 or 48000 Hz
- Decoding of up to 7.1 audio channels

MPEG-2 TS

Broadcast Delivery

- Multiplexing support for broadcast delivery formats
- Ready-to-use multiplexer profiles for ATSC and DVB
- SPTS and MPTS format support
- Up to four video and four audio tracks
- Ready-to-use multiplexer profiles for ATSC and DVB
- AVC/H.264, HEVC/H.265 and MPEG-2 video

Appendix 1

Unique Codec Features

AutoLive Encoding, AutoMatch Encoding, SABET, Proxy Decoding

AutoLive Encoding

Guaranteed stable frame rate and no dropped frames

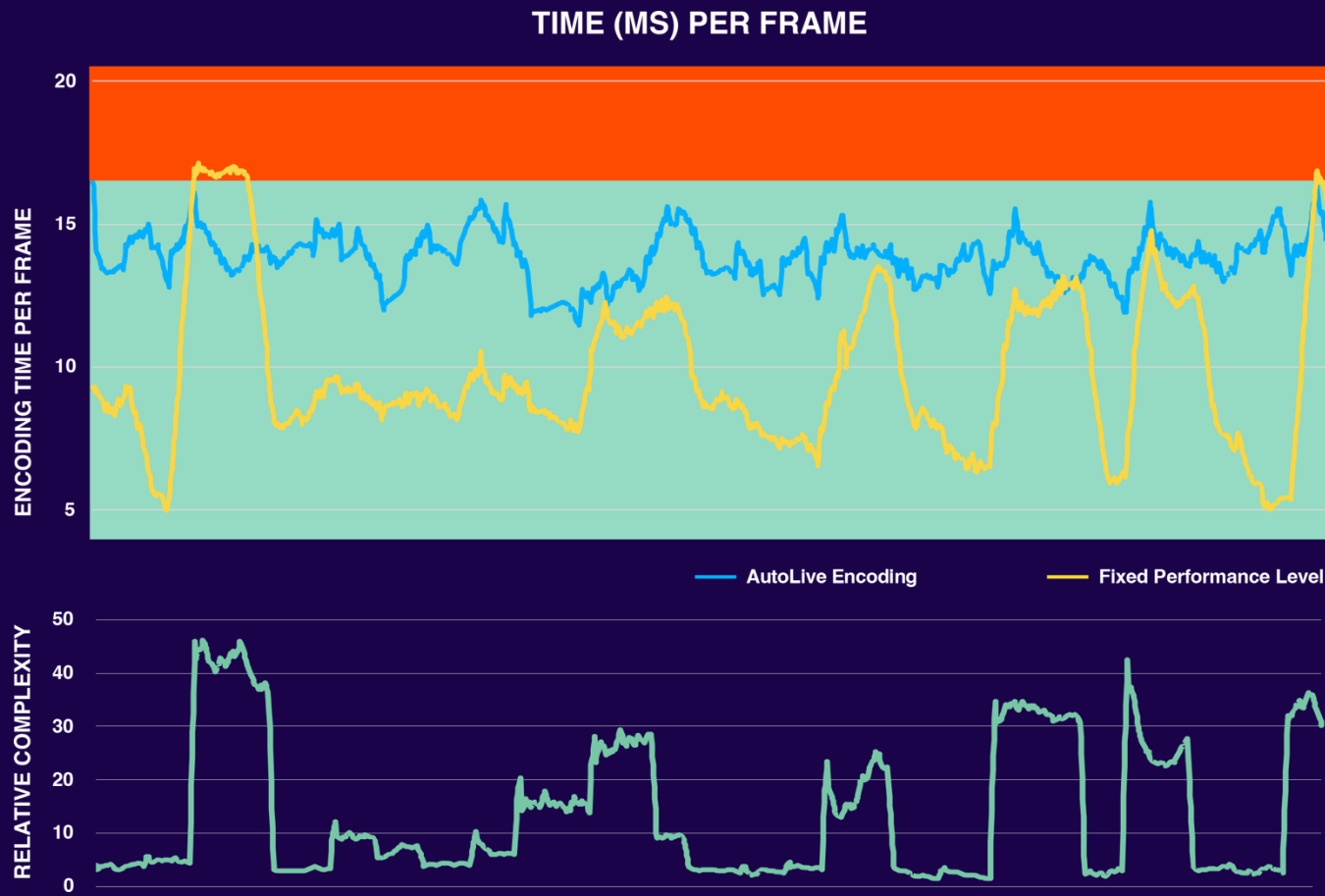


Image complexity changes over time. Complex scenes take more effort to encode. Live encoding **MUST** ensure constant encoding speed.

AutoLive Encoding adjusts the performance level on **EACH FRAME** to ensure constant encoding time as well as boost the quality on simple scenes.

Available for HEVC & VVC

AutoMatch Encoding

Encode identical streams for pre-recorded video

FACT

Content owners have a large library of pre-encoded assets

CHALLENGE

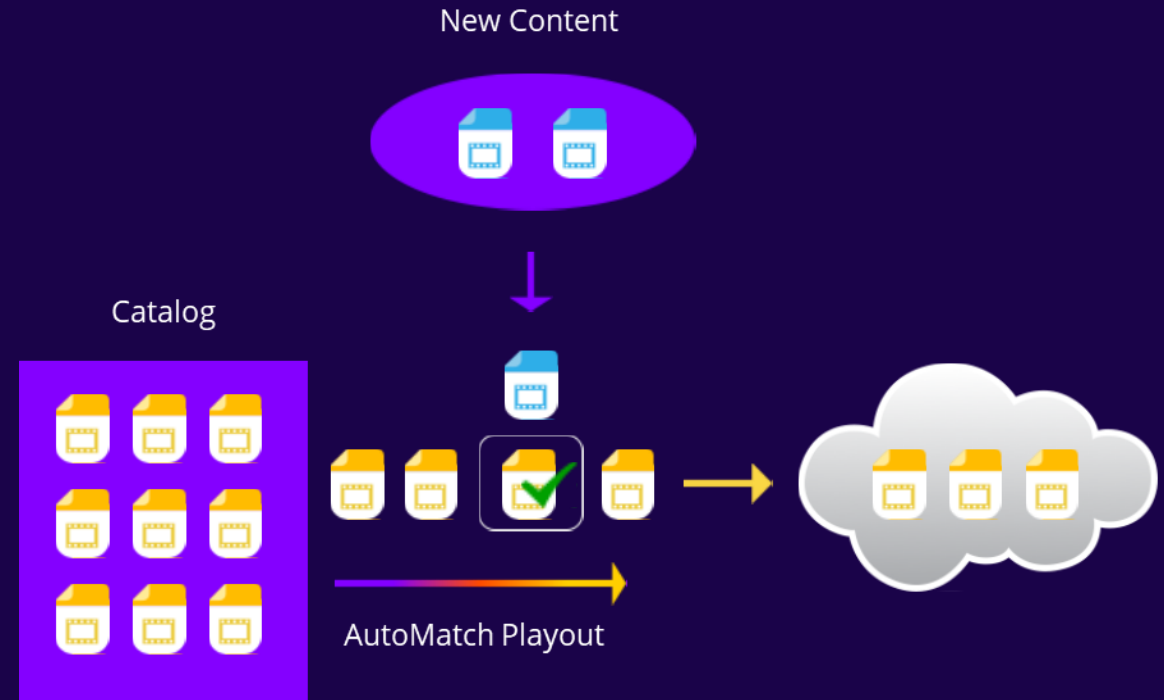
Add new material to it and “mix-and-match” new and old for seamless playback

SOLUTION

Have the encoder match the exact settings of existing material automatically

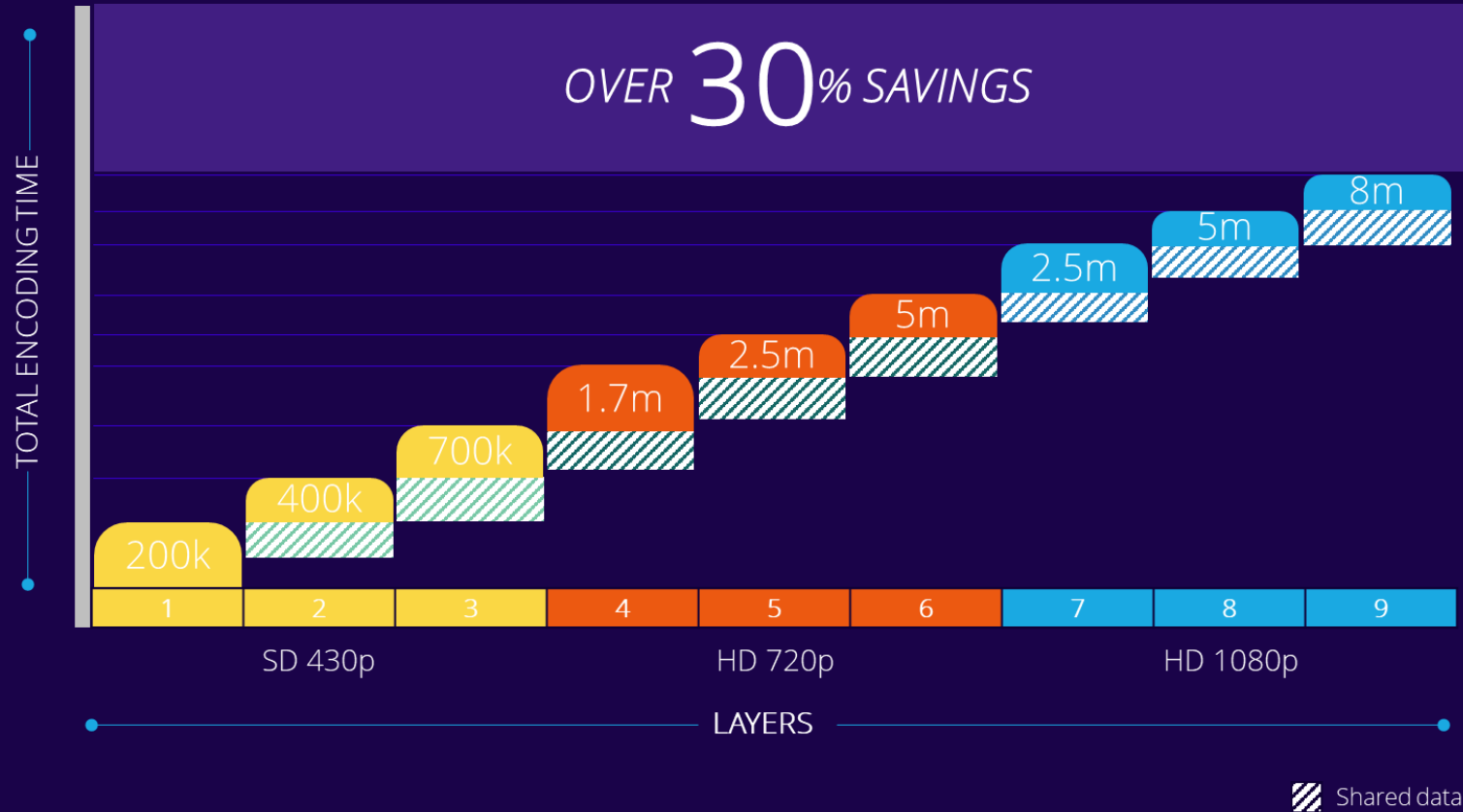
Identical VPS/SPS/PPS

Seamless playback



SABET™

Smart Adaptive Bitrate Encoding Technology



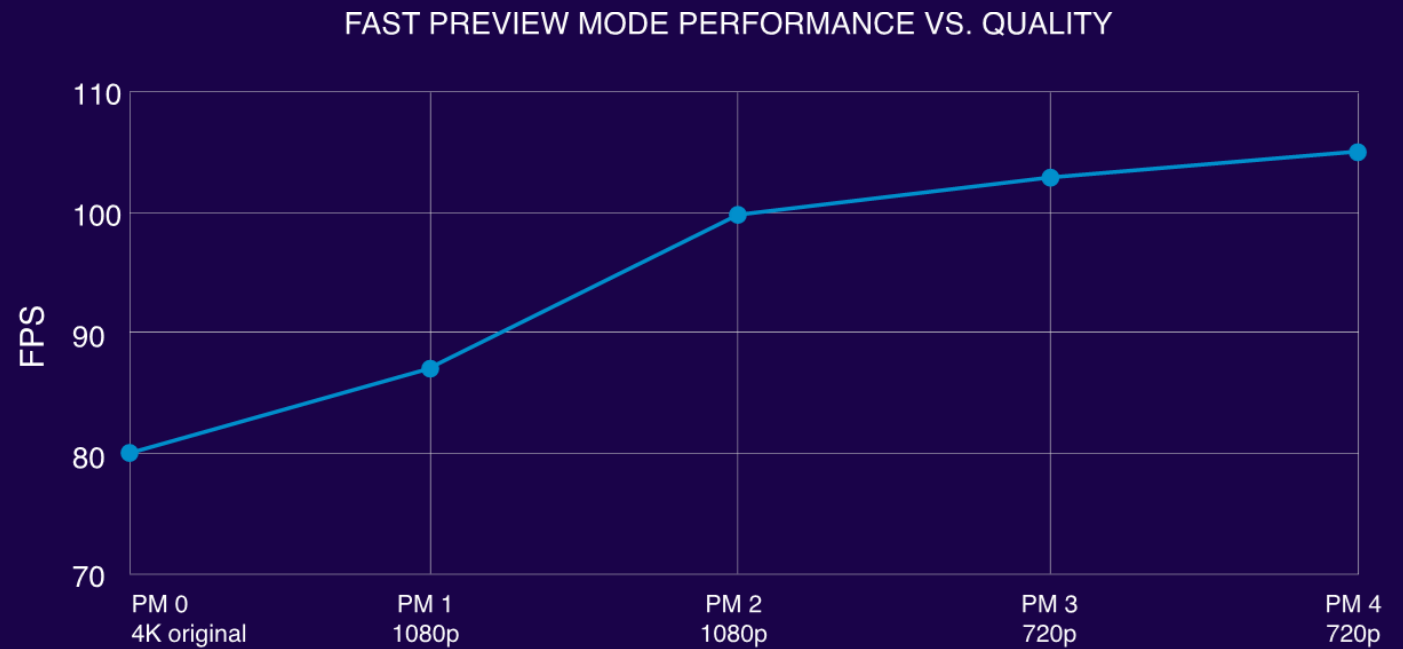
Efficient multi-layer encoding
for OTT streaming

- Full ABR in a single instance
- Shares processing data across up to 12 different profiles
- Significant encoding time reduction
- Available for HEVC & VVC

Proxy Decoding

Accelerated HEVC proxy decoding for fast preview

- Fast decoding of UHD video for lower resolution preview
- Suitable for video editing, monitoring and surveillance workflows
- Compliant with professional HEVC production formats like Sony XAVC HS, Canon XF-HEVC, Nikon Z9, etc.
- Enhanced decoding speed with minimal quality loss
- Decoding modes of 4K content show a performance gain and processing reduction time of over 30%



THANK YOU

More questions?
info@mainconcept.com

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