MAINCONCEPT MPEG-2 SDK

Efficient codec technology for established workflow and distribution formats

MainConcept MPEG-2 SDK enables applications to use well-established workflow and distribution formats with guaranteed interoperability and format compliance. Whether the application will create production formats like XDCAM or be on the distribution edge for DVD and Blu-ray, the encoder offers tailored presets with guaranteed format compliance. For XDCAM workflows requiring 4:2:2 chroma sampling, MainConcept's libraries are designed for efficient CPU-usage and best-in-class scalability on modern CPU architectures.

OPTIMAL DENSITY

Broadcast applications using XDCAM-based video material are expected to scale almost linearly on multi-core CPU environments. As more channels are needed, performance of a single channel will not decrease. With highly customized CPU and thread management, MainConcept's MPEG-2 Encoder can be assigned to dedicated CPUs and threads, so multiple processes can run simultaneously.

MORE THAN JUST VIDEO

Included in the MPEG-2 SDKs, MainConcept offers multiplexing components for MXF and MP4-based formats (XDCAM, XDCAM EX), as well as MPEG-2 Transport and Program Stream for DVD and Blu-ray format compliance. Audio can be compressed and decompressed in a multitude of ways, from MPEG Audio (Layer 2) to PCM audio. The decoder SDK also offers the ability to handle MPEG-Audio Layer 3 (aka MP3).

RENDER SMARTLY

Editing a GOP-based format like MPEG-2 can be challenging. MainConcept Smart Rendering for MPEG-2* provides an alternative. It analyzes the requested edit, only re-encoding the minimum required number of frames, restoring a valid GOP structure, but leaving the rest of the material intact. This not only helps reduce generation artifacts due to decoding and re-encoding, but also drastically increases processing performance for quick and efficient video editing.

*Available as an add-on to MPEG-2 Encoder and Decoder SDKs

PRESERVING THE MPEG-2 LEGACY

RELIABLE WORKFLOW FORMATS

Full compliance with established, time-tested workflow formats in broadcast production: XDCAM HD, IMX and XDCAM EX.

ENCODING FOR OPTICAL MEDIA

If Blu-ray or DVD encoding is required, MainConcept's MPEG-2 SDK offers encoding features compliant with authoring tools for optical media.

LEGACY FORMATS

Encoding and decoding of MPEG-1 System and Elementary streams is fully supported.

OPTIMAL SCALABILITY

Allows encoding of many streams simultaneously on multi-core and NUMA-based systems. Granular control over CPU utilization is provided through the API. Speed gain compared to previous versions 2x.

FEATURES AT A GLANCE

- MPEG-2 (ISO/IEC 13818-2) and MPEG-1 (ISO/IEC 11172-2) stream encoding and decoding
- 4:2:0 and 4:2:2 Chroma sampling
- MPEG-2 Transport Stream, Program Stream as well as MPEG-1 System Stream packaging
- MXF and MP4 wrapping for XDCAM-based formats

SYSTEM REQUIREMENTS

- Microsoft Windows10 (64-bit, x86 and ARM)
- Apple macOS 10.11 and newer (64-bit x86), macOS 11 and newer (M1)
- Linux Ubuntu 14.04 LTS, CentOS 7.9 (64-bit, x86), Ubuntu 18.04 (64-bit, ARM)

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PACKAGES

MPEG-2 Encoder SDK
Video Encoding for DVD, Blu-ray, DVB and ATSC broadcast applications and XDCAM.

MPEG-2 Decoder SDK
Video Decoding for DVD, Blu-ray, DVB and ATSC broadcast applications and XDCAM.

MPEG-2 Smart Rendering SDK
Optional add-on providing functionality for frame-accurate editing, cutting and smart copy to speed up conversion of MPEG-2 source content.

STREAM TYPES/FORMATS/ETC.

Elementary Stream: Generic MPEG-1 and MPEG-2

Transport Stream: Blu-ray Disc, HD DVD, DVB, ATSC, ATSCHI, DVHS, D10, HDV HD1, HDV HD2, HDTV

Program Stream: VCD, SVCD, DVD

MPEG-1 System Stream

MP4: Sony XDCAM EX

MXF: Sony XDCAM HD, Sony XDCAM IMX, Ikegami GFCAM, D10

ENCODER FEATURES

- MPEG-2 (ISO/IEC 13818-2) and MPEG-1 (ISO/IEC 11172-2) stream encoding
- Supported Profiles: Simple, Main, High and 4:2:2
- Supported Levels: Low, Main, High and High 1440
- Single & 2-pass encoding
- Chroma quantization matrices (4:2:2 chroma format)
- Quantization matrix extension (ISO/IEC 13818-2: 6.2.3.2, 6.3.11)
- MPEG-2 Smart Rendering functionality for editing, cutting and smart copy at any frame position (optional)

DECODER FEATURES

- MPEG-2 (ISO/IEC 13818-2) and MPEG-1 (ISO/IEC 11172-2) stream decoding
- DXVA GPU Hardware acceleration support
- Closed Captions
- High Profile @ High Level—Supports all MPEG-2 profiles/levels, excluding scalability extensions
- Software deinterlacing
- ATSC Stream Decoding—Supports 18 ATSC formats

ABOUT MAINCONCEPT

Since 1993, MainConcept has provided best-of-breed video/audio codec solutions that fuel creativity and business globally for professional video production, multimedia, broadcast, digital signage, gaming, medical and security industries. Our SDKs, transcoding applications and plugins are used across industry verticals to meet an ever-expanding list of use cases. With world-class engineering, exquisite attention to detail, and best-in-class support and professional services, we are constantly innovating to deliver you the simplicity you need with the customer experience you deserve. MainConcept codecs are engineered to surpass the challenges of even the most demanding use cases and are used by organizations such as Adobe, Dalet, Nikon, Intel, MAGIX, Playbox, Soliton, Cinnafilm and Endeavor Streaming.