

# Format SDK

## Components for streaming and file formats

MainConcept SDK components for multiplexing and demultiplexing supporting most broadcast formats for streaming and file.



In order to correctly playback your content on screens and devices, ingest in a broadcast environment, or exchange files for post-processing and delivery, the video and audio streams need to be interleaved in one coherent container. This process is called multiplexing, and later on the file needs to be demultiplexed, i.e. the streams need to be extracted from the container again.

Multiplexing and de-multiplexing of complex audio/video streams from different sources into a single transport/program stream for video production or broadcast requires a solution that delivers the highest possible quality with strict adherence to format standards. MainConcept's format components found in many of our codec products fit the bill, providing highly efficient and compatible muxing/de-muxing for nearly every popular format.

The MainConcept Multiplexers and Demultiplexers offer strict adherence to format standards allowing a high degree of compliance with software and hardware players, mobile devices, cell phones, game consoles, professional and consumer cameras, etc.

Some of these containers can carry more than one audio or video stream. Sometimes even metadata will be included that way. Muxing can be done in either Streaming or File mode. In Streaming mode the audio and video input comes from the audio and video encoders, whereas in File mode the input comes from existing disk files.

Not each container format can be used with every codec, so please check the Video pages, which Muxers and Demuxers component is included in what Codec Package.

- **Supported Stream Types:** Elementary Stream, MPEG-2 Transport Streams, MPEG-2 Program Streams, MPEG-1 System Streams, MP4, MXF, 3GP, DMF, MKV, AVI, ASF, F4V, DV, MJ2
- **Supported Media & Devices:** VCD / SVCD / DVD, MICROMV, HDV HD1/2, HDTV, CableLabs, Sony XDCAM DV (DVCAM), Sony XDCAM HD, Sony XDCAM IMX, Sony XDCAM EX, Sony XDCAM Proxy, Sony XAVC compliant, Ikegami GFCAM, Blu-ray Disc / HD DVD, DVB, ATSC / ATSC-HI, DVHS, D10, AVCHD, Panasonic P2 DVCPRO, Panasonic P2 AVC-Intra Class 50/100, AVC-Ultra (AVC-I Class 200), Panasonic AVCCAM, Digital TV, 1Seg, Sony NXCAM, Sony PSP / PS3 / PS4, Apple iPad / iPhone / iPod, Apple TV, Adobe Flash (F4V), HTML5, Microsoft Silverlight, Ultra HD / UHD TV, Windows Media, Digital Cinema 2K / 4K, DivX Plus HD, DivX QMobile, Mobile, Home Theater, 720p HD, 1080p HD, Intel Indeo,

## MAINCONCEPT MXF FORMATS SUPPORT

Manufacturer	Type	Decoding / Demuxing	Encoding / Muxing	Codec	Container
SONY	XDCAM EX	Yes	Yes	MPEG-2	MP4
SONY	XDCAM DV (DVCAM)	Yes	Yes	DV 25	MXF OP-1a
SONY	IMX	Yes	Yes	MPEG-2 D10	MXF OP-1a
SONY	XDCAM HD	Yes	Yes	MPEG-2	MXF OP-1a
SONY	XAVC-Intra	Yes	Yes	AVC-Intra HD CBG, AVC-Intra 4k CBG/ VBR	MXF OP-1a
SONY	XAVC-LongGOP	Yes	Yes	AVC-LongGOP HD, 4K	MXF OP-1a
SONY	XAVC-S Intra	Yes	(soon)	AVC Intra HD VBR	MP4
SONY	XAVC-S LongGOP	Yes	(soon)	AVC Intra LongGOP HD, 4K	MP4
PANASONIC	P2 DVCPRO	Yes	Yes	DVCPRO 25/50/100	MXF OP-Atom
PANASONIC	P2 AVC-Intra	Yes	Yes	AVC-Intra class 50/100/200	MXF OP-Atom
PANSONIC	P2 AVC-LongGOP	Yes	Yes	AVC LongGOP G6/ G12/G25/G50	MXF OP-1b
CANON	XF	Yes	No	MPEG-2	MXF OP-1b
IKEGAMI	GFCAM	Yes	No	MPEG-2	MXF OP-Atom
JVC	ProHD	Yes	Yes	MPEG-2	MP4
JVC	ProHD MXF	Yes	No	MPEG-2	MXF
DIGITAL CINEMA	SMPTE 429 / InterOp	Yes	Yes / No	JPEG2000	MXF OP-Atom

**MORE INFORMATION:**  
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## MAINCONCEPT MXF FORMATS SUPPORT (CONTINUED)

Manufacturer	Type	Decoding / Demuxing	Encoding / Muxing	Codec	Container
AVID	DNxHD/HR	Yes	No	DNxHD (VC3 derivate)	MXF OP-Atom
GENERIC MXF AS USED IN POST PRODUCTION	OP-1a, OP-1b, OP-Atom	Yes	Yes	DV/DVCPRO (SMPTE 383) MPEG-2 (SMPTE-381-2) AVC-Intra (RP2027, SMPTE 381-3) AVC-LongGOP (RP2027, SMPTE 381-3) JPEG2000 (SMPTE422) VC3 (SMPTE 2019-4)	MXF OP-1a
SONY	IMX	Yes	Yes	MPEG-2 D10	MXF OP-1a

## LICENSEABLE PRODUCTS

The MainConcept Multiplexer and Demultiplexer components are not licensed separately but are included in related Video Encoder and Decoder SDKs. Please have a look at the corresponding datasheets if the audio components are included in the package you are looking for.

## COMPONENTS AND PRODUCTS

Components	Included in Licenseable Products
MPEG Multiplexer / Demultiplexer	<ul style="list-style-type: none"> <li>- HEVC/H.265 Encoder Package</li> <li>- HEVC/H.265 Decoder Package</li> <li>- MPEG-1/2 Encoder Package</li> <li>- MPEG-1/2 Decoder Package</li> <li>- AVC/H.264 Encoder Package</li> <li>- AVC/H.264 Decoder Package</li> <li>- AVC/H.264 Encoder Package Broadcast</li> <li>- AVC/H.264 Decoder Package Broadcast</li> <li>- VC-1 Encoder Package</li> <li>- VC-1 Decoder Package</li> </ul>
MXF MULTIPLEXER / DEMULTIPLEXER	<ul style="list-style-type: none"> <li>- MPEG-1/2 Encoder Package</li> <li>- MPEG-1/2 Decoder Package</li> <li>- AVC/H.264 Encoder Package Broadcast</li> <li>- AVC/H.264 Decoder Package Broadcast</li> <li>- DVCPRO 25/50 Encoder Package</li> <li>- DVCPRO 25/50 Decoder Package</li> <li>- DVCPRO HD Encoder Package</li> <li>- DVCPRO HD Decoder Package</li> <li>- VC-3 Encoder Package</li> <li>- VC-3 Decoder Package</li> <li>- JPEG2000 Encoder Package</li> <li>- JPEG2000 Decoder Package</li> </ul>

## COMPONENTS AND PRODUCTS (CONTINUED)

Components	Included in Licenseable Products
MP4 MULTIPLEXER / DEMULTIPLEXER	<ul style="list-style-type: none"><li>- HEVC/H.265 Encoder Package</li><li>- HEVC/H.265 Decoder Package</li><li>- MPEG-1/2 Encoder Package</li><li>- MPEG-1/2 Decoder Package</li><li>- AVC/H.264 Encoder Package</li><li>- AVC/H.264 Decoder Package</li><li>- AVC/H.264 Encoder Package Broadcast</li><li>- AVC/H.264 Decoder Package Broadcast</li><li>- MPEG-4 Part 2 / H.263 Encoder Package</li><li>- MPEG-4 Part 2 / H.263 Decoder Package</li><li>- JPEG2000 Encoder Package</li><li>- JPEG2000 Decoder Package</li></ul>
ASF Multiplexer / Demultiplexer (LL)	<ul style="list-style-type: none"><li>- VC-1 Encoder Package</li><li>- VC-1 Decoder Package</li></ul>
DV Multiplexer / Demultiplexer	<ul style="list-style-type: none"><li>- DV/DVCPRO 25 Encoder Package</li><li>- DV/DVCPRO 25 Decoder Package</li><li>- DVCPRO 25/50 Encoder Package</li><li>- DVCPRO 25/50 Decoder Package</li><li>- DVCPRO HD Encoder Package</li><li>- DVCPRO HD Decoder Package</li></ul>
DMF Multiplexer / Demultiplexer	<ul style="list-style-type: none"><li>- DivX Encoder Package</li><li>- DivX Decoder Package</li></ul>