Supported codecs and format of their CodecPrivate blocks

Video (MEDIATYPE_Video)

CodecID	CodecPrivate format	DirectShow mediatype format		
`V_MS/VFW/FOURCC` Avi compatibility, any VfW codec can be stored in Matroska using this mode	BITMAPINFOHEADER structure followed by opaque codec init data	Subtype	FOURCCMap(dwCompression)	
		Format	VideoInfo/VideoInfo2	
		CodecPrivate is copied verbatim to the format block starting at the bmiHeader member of VIDEOINFOHEADER/VIDEOINFOHEADER2		
`V_REAL/RVxy` RealVideo, xx is the codec version (two decimal digits)	Opaque codec init data	Subtype	FOURCCMap('R','V',x,y)	
		Format	VideoInfo/VideoInfo2	
		CodecPrivate is appended to VIDEOINFOHEADER/VIDEOINFOHEADER2		
`V_MPEG1` ISO/IEC 11172-2	MPEG-1 sequence header extracted from elementary stream, the stream itself does not contain any sequence/gop headers anymore	Subtype:	MPEG1Payload	
		Format:	MPEGVideo	
		CodecPrivate is copied to the format block starting at bSequenceHeader member of MPEG1VIDEOINFO		
`V_MPEG2` ISO/IEC 13818-2	MPEG-2 sequence header extracted from elementary stream, the stream itself does not contain any sequence/gop headers anymore	Subtype	MPEG2_VIDEO	
		Format	MPEG2Video	
		CodecPrivate is copied to the format block starting at dwSequence header member of MPEG2VIDEOINFO		
`V_THEORA` Theora video codec	Xiph-lace-encoded sizes of two initial theora packets followed by three packets. Size of the last packet is calculated from the total CodecPrivate size	Subtype	FOURCCMap('THEO')	
		Format	MPEG2Video	
		Three big-endian 16-bit words with packet sizes followed by the packets themselves are stored starting at dwSequenceHeader member of MPEG2VIDEOINFO		
`V_SNOW`	Opaque codec init data	Subtype	FOURCCMap('SNOW')	
		Format	MPEG2Video	
		CodecPrivate is copied to the format block starting at dwSequence header member of MPEG2VIDEOINFO		
`V_MPEG4/ISO/ASP` MPEG-4 part 2, ISO/IEC 14496-2	MPEG-4 headers up to the first VOP, the stream itself contains only VOPs and no headers	Subtype	FOURCCMap('MP4V')	
		Format	MPEG2Video	
		CodecPrivate is copied to the format block starting at dwSequence header member of MPEG2VIDEOINFO		
`V_MPEG4/ISO/AVC` MPEG-4 part 10, ISO/IEC 14496-10	The following structure is stored in CodecPrivate	Subtype	FOURCCMap('AVC1')	

Structure stored in CodecPrivate for V_MPEG4/ISO/AVC:

Size (bits)	Contents
8	Reserved
8	Profile
8	Reserved
8	Level
6	Reserved
2	Size of NALU length minus 1
3	Reserved
5	Number of Sequence Parameter Sets
?	Sequence Parameter Sets, each is prefixed with a two byte big-endian size field
8	Number of Picture Parameter Sets
?	Picture Parameter Sets, each is prefixed with a two byte big-endian size field

Format: MPEG2Video

dwProfile = CodecPrivate.Profile;
dwLevel = CodecPrivate.Level;
dwFlags = CodecPrivate.NALUSizeLength + 1;
SPSs and PPSs are concatenated and stored at dwSequenceHeader, without SPS and PPS counts

Audio (MEDIATYPE_Audio)

CodecID	CodecPrivate format	DirectShow mediatype format	
`A_AC3` Dolby AC3	None	Subtype	FOURCCMap(0x2000)
		Format	WaveFormatEx
`A_MPEG/L3` MPEG-1 Layer 3, ISO/IEC 11172-3	None	Subtype	FOURCCMap(0x0055)
		Format	WaveFormatEx

`A_MPEG/L2,`
`A_MPEG/L1`
MPEG-1 Layers 1,2,
ISO/IEC 11172-3
	None	Subtype	FOURCCMap(0x0050)

		Format	WaveFormatEx
`A_DTS` DTS	None	Subtype	FOURCCMap(0x2001)
		Format	WaveFormatEx
`A_PCM/INT/LIT` Uncompressed PCM, integer, little endian	None	Subtype	FOURCCMap(0x0001)
		Format	WaveFormatEx
`A_PCM/FLOAT/IEEE` Uncompressed PCM, float, little endian	None	Subtype	FOURCCMap(0x0003)
		Format	WaveFormatEx
`A_TTA1` True Audio lossless audio codec	Opaque codec init data	Subtype	FOURCCMap(0x77a1)
		Format	WaveFormatEx
		CodecPrivate is appended to WAVEFORMATEX	
`A_WAVPACK4` Wavpack lossless audio codec	Opaque codec init data. Wavpack headers are stripped down both in CodecPrivate and in actual blocks. See Matroska website for details of wavpack storage.	Subtype	FOURCCMap(0x5756), WavpackHybrid {B8CBBAD8-AA1A-4cea-B95E-730041A55EF0}
		Format	WaveFormatEx
		CodecPrivate is appended to WAVEFORMATEX. When both lossy and correction data are muxed into the same track, correction data is stored in BlockAdditional Matroska elements and is sent in DirectShow samples with Stream ID set to 1 in sample properties.	
`A_VORBIS` Vorbis audio codec	Xiph-lace-encoded sizes of two initial vorbis packets followed by three packets. Size of the last packet is calculated from the total CodecPrivate size	Subtype	Vorbis2 {8D2FD10B-5841-4a6b-8905-588FEC1ADED9}
		Format	VorbisFormat2 {B36E107F-A938-4387-93C7-55E966757473}

		struct VORBISFORMAT2 {
		    DWORD Channels;
		    DWORD SamplesPerSec;
		    DWORD BitsPerSample;
		    DWORD HeaderSize[3]; // Sizes of three init packets
		};
		Init packets are appended to the structure	

`A_FLAC` Flac lossless audio codec	Opaque codec init data	Subtype	FLAC_FRAMED {1541C5C0-CDDF-477d-BC0A-86F8AE7F8354}
		Format	WaveFormatEx
		wFormatTag = 0xf1ac; CodecPrivate is appended to WAVEFORMATEX	
`A_REAL/xyzt` RealAudio, xyzt are four characters specifying codec	Opaque codec init data	Subtype	FOURCCMap(xyzt)
		Format	WaveFormatEx
		wFormatTag xyzt 0x2002 14_4 0x2003 28_8 0x2004 COOK 0x0130 SIPR 0x0270 ATRC CodecPrivate is appended to WAVEFORMATEX	
`A_AAC` MPEG-4 part 3, ISO/IEC 14496-3	Opaque codec init data	Subtype	FOURCCMap(0x00ff)
		Format	WaveFormatEx
		CodecPrivate is appended to WAVEFORMATEX	

`A_AAC/MAIN [/SBR]`
`[/LC] [/SSR]`
`[/LTP]`
MPEG-4 part 3,
ISO/IEC 14496-3
	None	Subtype	FOURCCMap(0x00ff)

		Format	WaveFormatEx
		This an obsolete version of AAC codec ID, should not be used in new files. Two or five codec init bytes are reconstructed from CodecID.	
`A_MS/ACM` Avi compatibility, any ACM codec can be stored in Matroska using this mode	WAVEFORMATEX structure followed by opaque codec init data	Subtype	FORUCCMap(wFormatTag)
		Format	WaveFormatEx
		CodecPrivate is copied verbatim to the format block	

Subtitles

(MEDIATYPE_Subtitle {E487EB08-6B26-4be9-9DD3-993434D313FD})

CodecID	CodecPrivate format	DirectShow mediatype format	
`S_TEXT/ASCII` Plain text subtitles in system default character encoding	None	Subtype	NULL
		Format	None
		Type is set to MEDIATYPE_Text for this codecID	
`S_TEXT/UTF8` Plain text subtitles in UTF-8 encoding	None	Subtype	UTF8 {87C0B230-03A8-4fdf-8010-B27A5848200D}
		Format	SubtitleInfo {A33D2F7D-96BC-4337-B23B-A8B9FBC295E9}

		struct SUBTITLEINFO {
		　　　　DWORD dwOffset; // size of the structure/pointer to codec init data
		　　　　CHAR IsoLang[4]; // three letter lang code + terminating zero
		　　　　WCHAR TrackName[256]; // 256 bytes ought to be enough for everyone
		};	

`S_TEXT/SSA` SubStation Alpha subtitles in UTF-8 encoding	[ScriptInfo], [V4 Styles] sections from SSA script followed by [Events] section name and the first line of [Events] section	Subtype	SSA {3020560F-255A-4ddc-806E-6C5CC6DCD70A}
		Format	SubtitleInfo
		CodecPrivate is appended to SUBTITLEINFO	
`S_TEXT/ASS` Advanced SubStation subtitles in UTF-8 encoding	[ScriptInfo], [V4 Styles] sections from ASS script followed by [Events] section name and the first line of [Events] section	Subtype	ASS {326444F7-686F-47ff-A4B2-C8C96307B4C2}
		Format	SubtitleInfo
		CodecPrivate is appended to SUBTITLEINFO	
`S_TEXT/USF`	XML fragment containing styles	Subtype	USF {B753B29A-0A96-45be-985F-68351D9CAB90}
		Format	SubtitleInfo
		CodecPrivate is appended to SUBTITLEINFO	
`S_VOBSUB`	Contents of the VSRip .idx file up to and including the "custom colors:" line, with comments and empty lines removed	Subtype	VOBSUB {F7239E31-9599-4e43-8DD5-FBAF75CF37F1}
		Format	SubtitleInfo
		CodecPrivate is appended to SUBTITLEINFO	