

# R&S® VENICE

## Supported File Formats

Supplement



Supplement for the “R&S®VENICE Client Software” user guide (Version 3.1): “R&S®VENICE Supported File Formats”  
Document Version 1.1

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The following abbreviations are used throughout this document: In some cases R&S®VENICE is abbreviated as VENICE and Rohde & Schwarz DVS GmbH is abbreviated as R&S DVS.

## Supported File Formats

The R&S®VENICE Ingest and Production Server supports over 100 graphic and image file formats. Most are made available by a special library. For a list of all these file formats see <http://www.xnview.com/old/en/formats.html>. The tables in the following list most of the file formats that are supported by the R&S DVS software directly. Some are video or audio-only file formats and some are container file formats that contain audio as well as video.

Some of the file formats (especially the uncompressed ones) can be used with a single video channel of the R&S® VENICE server only. A simultaneous processing with a further video channel may lead to drops. Some formats may be only available when special licenses are set. Please contact the R&S DVS service department in case of license issues.



Some of the file formats (especially all uncompressed ones) can be used with a single video channel of the R&S® VENICE server only. A simultaneous processing with a further video channel may lead to drops.

Some formats may be only available when special licenses are set. Please contact the R&S DVS service department in case of license issues.

For further information and e.g. information about restrictions concerning hardware and/or software support of formats see the “R&S®VENICE Client Software” user guide. This list refers to software version 3.1.

The tables in the following contain information about the supported file formats, types, codecs and their specification including audio and proxy file formats. In the left columns you find a listing of rasters. Each raster that is supported by a file format or codec, is indicated by an *x* in the respective table cell. The specification, e.g. *8 bit*, *aiv*, *r/w/rec/playout* gives you further information about a file format or codec and is explained in the following:

- Bit depth (e.g. *8 bit*)
- Whether the file format supports only audio (*audio*), only video (*video*), audio and video (*audio+video*) or audio embedded in video (*aiv*)



The abbreviation *aiv* in the specification means the support of both, audio+video as well as audio embedded in video.

- Whether the file format can be written (*w*), read (*r*), recorded (*rec*) or played out (*playout*)



Read and write (*r* and *w*) operations concern the transform mode in the R&S®VENICE client software. Record and playout (*rec* and *playout*) concern the ingest and the playout mode.



2K rasters are realized with uncompressed file formats that can be selected in the configuration options (see the section “Configuration Options” in the “R&S®VENICE Client Software” user guide).

Please observe that there are hardware limitations regarding the in- and output of 2K, 4:4:4, AVC-Intra and uncompressed video material. On some R&S®VENICE hardware variants the channel number supporting simultaneous in- and output of these contents may differ.



FILE FORMAT:		MXF OP-1a								
TYPE:		AS-11 (DPP)		AVC-Intra			DV Family			
CODEC:		IMX50 50 Mbps	AVC-Intra100 100 Mbps	AVC-Intra50 50 Mbps	AVC-Intra100 100 Mbps	AVC-Intra200 200 Mbps	DV25 25 Mbps	DVCPro25 25 Mbps	DVCPro50 50 Mbps	DVCProHD100 100 Mbps
SPECIFICATION:		8 bit, aiv, r/w/ rec/playout	10 bit, aiv, r/w/ rec/playout	10 bit, aiv, r/w/ rec/playout	10 bit, aiv, r/w/ rec/playout	10 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout
R A S T E R	1	720 x 486i/29.97	x				x	x	x	
	2	720 x 576i/25	x				x	x	x	
	3	1280 x 720p/23.98			x	x	x			
	4	1280 x 720p/24								
	5	1280 x 720p/25			x	x	x			
	6	1280 x 720p/29.97			x	x	x			
	7	1280 x 720p/30								
	8	1280 x 720p/50		x	x	x	x			x
	9	1280 x 720p/59.94		x	x	x	x			x
	10	1280 x 720p/60								
	11	1920 x 1080i/23.98								
	12	1920 x 1080i/24								
	13	1920 x 1080i/25		x	x	x	x			x
	14	1920 x 1080i/29.97		x	x	x	x			x
	15	1920 x 1080i/30								
	16	1920 x 1080p/23.98			x	x	x			
	17	1920 x 1080p/24								
	18	1920 x 1080p/25			x	x	x			
	19	1920 x 1080p/29.97			x	x	x			
	20	1920 x 1080p/30								
	21	1920 x 1080p/47.95								
	22	1920 x 1080p/48								
	23	1920 x 1080p/50		x	x	x	x			
	24	1920 x 1080p/59.94		x	x	x	x			
	25	1920 x 1080p/60								



FILE FORMAT:		MXF OP-1a								
TYPE:		XAVC		XDCAM DV	XDCAM EX	XDCAM IMX 30/40/50	XDCAM HD (RDD 09 compliant)			
CODEC:		XAVC HD Intra class 50 CBG	XAVC HD Intra class 100 CBG	DV25 25 Mbps	MPEG-2 35 Mbps	IMX 30/40/50 Mbps	XDCAM HD 18 Mbps VBR 4:2:0	XDCAM HD 25 Mbps CBR 4:2:0	XDCAM HD 35 Mbps VBR 4:2:0	XDCAM HD 50 Mbps CBR 4:2:2
SPECIFICATION:		10 bit, aiv, r/w/rec/payout	10 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout	8 bit, aiv, r/w/rec/payout
R A S T E R	1	720 x 486i/29.97		x		x				
	2	720 x 576i/25		x		x				
	3	1280 x 720p/23.98								
	4	1280 x 720p/24								
	5	1280 x 720p/25								
	6	1280 x 720p/29.97								
	7	1280 x 720p/30								
	8	1280 x 720p/50		x		x		x	x	x
	9	1280 x 720p/59.94		x				x	x	x
	10	1280 x 720p/60								
	11	1920 x 1080i/23.98						x	x	x
	12	1920 x 1080i/24								
	13	1920 x 1080i/25	x	x		x		x	x	x
	14	1920 x 1080i/29.97	x	x				x	x	x
	15	1920 x 1080i/30								
	16	1920 x 1080p/23.98	x	x				x	x	x
	17	1920 x 1080p/24								
	18	1920 x 1080p/25	x	x		x		x	x	x
	19	1920 x 1080p/29.97	x	x				x	x	x
	20	1920 x 1080p/30								
	21	1920 x 1080p/47.95								
	22	1920 x 1080p/48								
	23	1920 x 1080p/50	x	x						
	24	1920 x 1080p/59.94	x	x						
	25	1920 x 1080p/60								



FILE FORMAT:		MXF OP-Atom										
TYPE:		Avid				P2						
CODEC:		DV25 25 Mbps	DVCPro25 25 Mbps	DVCPro50 50 Mbps	DVCProHD100 100 Mbps	AVC-Intra50 50 Mbps	AVC-Intra100 100 Mbps	AVC-Intra200 200 Mbps	DV25 25 Mbps	DVCPro25 25 Mbps	DVCPro50 50 Mbps	DVCProHD100 100 Mbps
SPECIFICATION:		8 bit, aiv,r/w/ rec/playout	8 bit, aiv,r/w/ rec/playout	8 bit, aiv,r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	10 bit, aiv,r/w/ /rec/playout	10 bit, aiv,r/w/ rec/playout	10 bit, aiv,r/w/ rec/playout	8 bit, aiv,r/w/ rec/playout	8 bit, aiv,r/w/ rec/playout	8 bit, aiv,r/w/ rec/playout	8 bit, aiv,r/w/ rec/playout
R A S T E R	1	720 x 486i/29.97	x	x	x				x	x	x	
	2	720 x 576i/25	x	x	x				x	x	x	
	3	1280 x 720p/23.98					x	x	x			
	4	1280 x 720p/24										
	5	1280 x 720p/25					x	x	x			
	6	1280 x 720p/29.97					x	x	x			
	7	1280 x 720p/30										
	8	1280 x 720p/50				x	x	x	x			x
	9	1280 x 720p/59.94				x	x	x	x			x
	10	1280 x 720p/60										
	11	1920 x 1080i/23.98										
	12	1920 x 1080i/24										
	13	1920 x 1080i/25				x	x	x	x			x
	14	1920 x 1080i/29.97				x	x	x	x			x
	15	1920 x 1080i/30										
	16	1920 x 1080p/23.98					x	x	x			
	17	1920 x 1080p/24										
	18	1920 x 1080p/25					x	x	x			
	19	1920 x 1080p/29.97					x	x	x			
	20	1920 x 1080p/30										
	21	1920 x 1080p/47.95										
	22	1920 x 1080p/48										
	23	1920 x 1080p/50										
	24	1920 x 1080p/59.94										
	25	1920 x 1080p/60										



FILE FORMAT:		MXF OP-1a / MXF OP-Atom											
TYPE:		Avid											
CODEC:		DNxHD (720p)						DNxHD (1080i)					
SPECIFICATION:		8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps
R A S T E R	Identifier	DNxHD 60		DNxHD 90		DNxHD 90x							
	1280 x 720p/23.98	x	58	x	88	x	88						
	1280 x 720p/24	x	58	x	88	x	88						
	1280 x 720p/25	x	60	x	92	x	92						
	Identifier	DNxHD 75		DNxHD 110		DNxHD 110x							
	1280 x 720p/29.97	x	72	x	110	x	110						
	1280 x 720p/30	x	72	x	110	x	110						
	Identifier	DNxHD 115		DNxHD 175		DNxHD 175x							
	1280 x 720p/50	x	175	x	175	x	175						
	Identifier	DNxHD 145		DNxHD 220		DNxHD 220x							
	1280 x 720p/59.94	x	145	x	220	x	220						
	1280 x 720p/60	x	145	x	220	x	220						
	Identifier							DNxHD 120		DNxHD 185		DNxHD 185x	
	1920 x 1080i/23.98							x	116	x	176	x	176
	1920 x 1080i/24							x	116	x	176	x	176
	1920 x 1080i/25							x	121	x	184	x	184
	Identifier							DNxHD 145		DNxHD 220		DNxHD 220x	
	1920 x 1080i/29.97							x	145	x	220	x	220
	1920 x 1080i/30							x	145	x	220	x	220





FILE FORMAT:		MXF OP-1a / MXF OP-Atom							
TYPE:		Avid							
CODEC:		DNxHD (1080p)							
SPECIFICATION:		8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps
R A S T E R	Identifier	DNxHD 36		DNxHD 115		DNxHD 175		DNxHD 175x	
	1920 x 1080p/23.98	x	36	x	116	x	176	x	176
	1920 x 1080p/24	x	36	x	116	x	176	x	176
	Identifier	DNxHD 36		DNxHD 120		DNxHD 185		DNxHD 185x	
	1920 x 1080p/25	x	36	x	121	x	184	x	184
	1920 x 1080p/29.97	x	45	x	145	x	220	x	220
	1920 x 1080p/30	x	45	x	145	x	220	x	220
	1920 x 1080p/48	x	72	x	232	x	352	x	352
	Identifier	DNxHD 75		DNxHD 240		DNxHD 365		DNxHD 365x	
	1920 x 1080p/50	x	75	x	242	x	368	x	368
	Identifier	DNxHD 90		DNxHD 290		DNxHD 440		DNxHD 440x	
	1920 x 1080p/59.94	x	90	x	290	x	440	x	440
	1920 x 1080p/60	x	90	x	290	x	440	x	440



FILE FORMAT:		MOV							
TYPE:		Quicktime							
CODEC:		AVC-Intra50 50 Mbps	AVC-Intra100 100 Mbps	DV25 25 Mbps	DV25 Avid 25 Mbps	DVCPro25 25 Mbps	DVCPro50 50 Mbps	DVCPro50 Avid 50 Mbps	DVCProHD100 100 Mbps
SPECIFICATION:		10 bit, aiv, r/w/ rec/playout	10 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout
R A S T E R	1	720 x 486i/29.97			x	x	x	x	x
	2	720 x 576i/25			x	x	x	x	
	3	1280 x 720p/23.98	x	x					
	4	1280 x 720p/24							
	5	1280 x 720p/25	x	x					
	6	1280 x 720p/29.97	x	x					
	7	1280 x 720p/30							
	8	1280 x 720p/50	x	x					x
	9	1280 x 720p/59.94	x	x					x
	10	1280 x 720p/60							
	11	1920 x 1080i/23.98							
	12	1920 x 1080i/24							
	13	1920 x 1080i/25	x	x					x
	14	1920 x 1080i/29.97	x	x					x
	15	1920 x 1080i/30							
	16	1920 x 1080p/23.98	x	x					
	17	1920 x 1080p/24							
	18	1920 x 1080p/25	x	x					
	19	1920 x 1080p/29.97	x	x					
	20	1920 x 1080p/30							
	21	1920 x 1080p/47.95							
	22	1920 x 1080p/48							
	23	1920 x 1080p/50							
	24	1920 x 1080p/59.94							
	25	1920 x 1080p/60							



FILE FORMAT:		MOV										
TYPE:		Quicktime										
CODEC:		IMX30 30 Mbps	IMX40 40 Mbps	IMX50 50 Mbps	IMX50 Avid 50 Mbps	XDCAM HD 25 Mbps CBR 4:2:0	XDCAM HD 35 Mbps VBR 4:2:0	XDCAM EX 35 Mbps VBR 4:2:0	XDCAM HD 50 Mbps CBR 4:2:2	8 bit UYVY (uncompressed)	10 bit YUV422 (v210) (uncompressed)	
SPECIFICATION:		8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/rec/ playout	10 bit, aiv, r/w/ rec/playout	
R A S T E R	1	720 x 486i/29.97	x	x	x	x					x	x
	2	720 x 576i/25	x	x	x	x					x	x
	3	1280 x 720p/23.98							x	x	x	x
	4	1280 x 720p/24									x	x
	5	1280 x 720p/25							x	x	x	x
	6	1280 x 720p/29.97							x		x	x
	7	1280 x 720p/30									x	x
	8	1280 x 720p/50							x	x	x	x
	9	1280 x 720p/59.94							x	x	x	x
	10	1280 x 720p/60									x	x
	11	1920 x 1080i/23.98									x	x
	12	1920 x 1080i/24									x	x
	13	1920 x 1080i/25					x	x	x	x	x	x
	14	1920 x 1080i/29.97					x	x	x	x	x	x
	15	1920 x 1080i/30									x	x
	16	1920 x 1080p/23.98					x	x	x	x	x	x
	17	1920 x 1080p/24									x	x
	18	1920 x 1080p/25					x	x	x	x	x	x
	19	1920 x 1080p/29.97					x	x	x	x	x	x
	20	1920 x 1080p/30									x	x
	21	1920 x 1080p/47.95										
	22	1920 x 1080p/48										
	23	1920 x 1080p/50										
	24	1920 x 1080p/59.94										
	25	1920 x 1080p/60										



FILE FORMAT:		MOV													
TYPE:		Quicktime													
CODEC:		DNxHD (720p)						DNxHD (1080i)							
SPECIFICATION:		8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps
R A S T E R	Identifier	DNxHD 60		DNxHD 90		DNxHD 90x									
	1280 x 720p/23.98	x	58	x	88	x	88								
	1280 x 720p/24	x	58	x	88	x	88								
	1280 x 720p/25	x	60	x	92	x	92								
	Identifier	DNxHD 75		DNxHD 110		DNxHD 110x									
	1280 x 720p/29.97	x	72	x	110	x	110								
	1280 x 720p/30	x	72	x	110	x	110								
	Identifier							DNxHD 115		DNxHD,Thin		DNxHD 175		DNxHD 175x	
	1920 x 1080i/23.98							x	116	x		x	176	x	176
	1920 x 1080i/24							x	116	x		x	176	x	176
	Identifier							DNxHD 120		DNxHD,Thin		DNxHD 185		DNxHD 185x	
	1920 x 1080i/25							x	121	x		x	184	x	184
	1920 x 1080i/29.97							x	145	x		x	220	x	220
	1920 x 1080i/30							x	145	x		x	220	x	220

FILE FORMAT:		<b>MOV</b>									
TYPE:		<b>Quicktime</b>									
CODEC:		DNxHD (1080p)									
SPECIFICATION:		8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	8 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps
R	Identifier	DNxHD 36		DNxHD 115		DNxHD 175		DNxHD 175x		DNx444	
	1920 x 1080p/23.98	x	36	x	116	x	176	x	176	x	352
A	1920 x 1080p/24	x	36	x	116	x	176	x	176	x	352
S	Identifier	DNxHD 36		DNxHD 120		DNxHD 185		DNxHD 185x		DNx444	
	1920 x 1080p/25	x	36	x	121	x	184	x	184	x	367
E	1920 x 1080p/29.97	x	45	x	145	x	220	x	220	x	440
R	1920 x 1080p/30	x	45	x	145	x	220	x	220	x	440

**NOTICE**

**System Limitations**

Please observe that there are hardware limitations regarding the in- and output of content in **DNx444**. On a R&S®VENICE 2U (incl. all options in four-channel variant) the in- and output is limited to a maximum of 2 video channels. On a R&S®VENICE 4U (incl. all options in four-channel variant) the in- and output is possible on all four video channels.



FILE FORMAT:		MOV										
TYPE:		Quicktime										
CODEC:		ProRes 422 (Proxy)		ProRes 422 (LT)		ProRes 422		ProRes 422 ( HQ)		ProRes 4444		
SPECIFICATION:		10 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps	10 bit, aiv, r/w/ rec/payout	Mbps	16 bit, aiv, r/w/ rec/payout	Mbps	
R A S T E R	1	720 x 486i/29.97	x	12	x	29	x	42	x	63	x	94
	2	720 x 576i/25	x	12	x	28	x	41	x	61	x	92
	3	1280 x 720p/23.98	x	18	x	41	x	59	x	88	x	132
	4	1280 x 720p/24	x	18	x	41	x	59	x	88	x	132
	5	1280 x 720p/25	x	19	x	42	x	61	x	92	x	138
	6	1280 x 720p/29.97	x	23	x	51	x	73	x	110	x	165
	7	1280 x 720p/30	x	23	x	51	x	73	x	110	x	165
	8	1280 x 720p/50	x	38	x	84	x	122	x	184	x	275
	9	1280 x 720p/59.94	x	45	x	101	x	147	x	220	x	330
	10	1280 x 720p/60	x	45	x	101	x	147	x	220	x	330
	11	1920 x 1080i/23.98	x	36	x	82	x	117	x	176	x	264
	12	1920 x 1080i/24	x	36	x	82	x	117	x	176	x	264
	13	1920 x 1080i/25	x	38	x	85	x	122	x	184	x	275
	14	1920 x 1080i/29.97	x	45	x	102	x	147	x	220	x	330
	15	1920 x 1080i/30	x	45	x	102	x	147	x	220	x	330
	16	1920 x 1080p/23.98	x	36	x	82	x	117	x	176	x	264
	17	1920 x 1080p/24	x	36	x	82	x	117	x	176	x	264
	18	1920 x 1080p/25	x	38	x	85	x	122	x	184	x	275
	19	1920 x 1080p/29.97	x	45	x	102	x	147	x	220	x	330
	20	1920 x 1080p/30	x	45	x	102	x	147	x	220	x	330
	21	1920 x 1080p/47.95										
	22	1920 x 1080p/48										
	23	1920 x 1080p/50	x	76	x	170	x	245	x	367		
	24	1920 x 1080p/59.94										
	25	1920 x 1080p/60										

FILE FORMAT:		MPEG-2	MPEG-4	
TYPE:		MPEG-2	(H.264)	
CODEC:				
SPECIFICATION:		8 bit, aiv, r/w/ rec/playout	8 and 10 bit (depending on profile setting), aiv, r/w/ rec/playout	
R A S T E R	1	720 x 486i/29.97	x	x
	2	720 x 576i/25	x	x
	3	1280 x 720p/23.98	x	x
	4	1280 x 720p/24	x	x
	5	1280 x 720p/25	x	x
	6	1280 x 720p/29.97	x	x
	7	1280 x 720p/30	x	x
	8	1280 x 720p/50		x
	9	1280 x 720p/59.94		x
	10	1280 x 720p/60		x
	11	1920 x 1080i/23.98	x	x
	12	1920 x 1080i/24	x	x
	13	1920 x 1080i/25	x	x
	14	1920 x 1080i/29.97	x	x
	15	1920 x 1080i/30	x	x
	16	1920 x 1080p/23.98	x	x
	17	1920 x 1080p/24	x	x
	18	1920 x 1080p/25	x	x
	19	1920 x 1080p/29.97	x	x
	20	1920 x 1080p/30	x	x
	21	1920 x 1080p/47.95		
	22	1920 x 1080p/48		
	23	1920 x 1080p/50		
	24	1920 x 1080p/59.94		
	25	1920 x 1080p/60		

**MPEG-2 and MPEG-4:**

The R&S®VENICE client software offers you the possibility to configure the MPEG-2 and MPEG-4 (i.e. H.264) settings in the configuration menu of the software. There you can set the profiles, levels and bit rates. The bit depth depends on the set profile and level.

For MPEG-2 the following profiles can be set:

- High Profile
- Main Profile
- Simple Profile
- 4:2:2 Profile

Furthermore, you can set levels High Level, High Level 1440, Main Level and Low Profile.

For MPEG-4 the following profiles can be set:

- Baseline Profile
- Main Profile
- High Profile
- High10 Profile
- High422 Profile

Furthermore, you can set levels 3.0, 3.1, 3.2 and 4.0.

The respective rasters have to be set in the configuration options in the video channel tab (see "R&S®VENICE Client Software" user guide). Please consider that R&S®VENICE may not support all rasters in all combinations of profiles, levels, bit rates, etc. of the MPEG-2 and MPEG-4 formats in the configuration menu. The raster support for MPEG-2 and MPEG-4 as indicated in the table to the left, is a general information and cannot be applied to all file format settings. Please note, if a raster set in the configuration options does not fit to the profile/level setting in the configuration menu, drops may occur when performing the operation with R&S®VENICE.



FILE FORMAT:		GXF						BMP	CINEON	DPX <sup>1,2</sup>
TYPE:										
CODEC:		DV25 25 Mbps	DVCPro25 25 Mbps	DVCPro50 50 Mbps	DVCProHD100 100 Mbps	MPEG-2 12 Mbps VBR 4:2:0	MPEG-2 40 Mbps VBR 4:2:0			
SPECIFICATION:		8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, video, r/w/ rec/playout	10 bit, video, r/w/ rec/playout	8/10/12/16 bit, video, r/w/ rec/playout
R A S T E R	1	720 x 486i/29.97	x	x	x		x		x	x
	2	720 x 576i/25	x	x	x		x		x	x
	3	1280 x 720p/23.98							x	x
	4	1280 x 720p/24							x	x
	5	1280 x 720p/25							x	x
	6	1280 x 720p/29.97							x	x
	7	1280 x 720p/30							x	x
	8	1280 x 720p/50				x		x	x	x
	9	1280 x 720p/59.94				x		x	x	x
	10	1280 x 720p/60							x	x
	11	1920 x 1080i/23.98							x	x
	12	1920 x 1080i/24							x	x
	13	1920 x 1080i/25				x		x	x	x
	14	1920 x 1080i/29.97				x		x	x	x
	15	1920 x 1080i/30							x	x
	16	1920 x 1080p/23.98						x	x	x
	17	1920 x 1080p/24						x	x	x
	18	1920 x 1080p/25						x	x	x
	19	1920 x 1080p/29.97						x	x	x
	20	1920 x 1080p/30							x	x
	21	1920 x 1080p/47.95							x	x
	22	1920 x 1080p/48							x	x
	23	1920 x 1080p/50							x	x
	24	1920 x 1080p/59.94							x	x
	25	1920 x 1080p/60							x	x

- 1 R&S DVS saves files of this format by default in big-endian byte order. However, for a playout both formats (little- and big-endian byte order) are supported.
- 2 Regarding the file type: V2 is the DPX file format according to SMPTE 268M-2003, the remaining (V1) are SMPTE 268M-1994. 'b.e.' stands for big endian, 'l.e.' for little endian.





FILE FORMAT:		DV-DIF				JPEG	LXF <sup>3</sup>	TGA (Targa)	TIFF <sup>4</sup>	YUV8/10/16
TYPE:		DV								
CODEC:		DV25 25 Mbps	DVCPro25 25 Mbps	DVCPro50 50 Mbps	DVCProHD100 100 Mbps					
SPECIFICATION:		8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, aiv, r/w/ rec/playout	8 bit, video, r/ payout	8 bit, video, r/ payout	8 bit, video, r/w/ rec/playout	8/12/16 bit, video, r/w/ rec/playout	8 <sup>5</sup> /10/16 <sup>6</sup> bit, video, r/w/ rec/playout
R A S T E R	1	720 x 486i/29.97	x	x	x		x	x	x	x
	2	720 x 576i/25	x	x	x		x	x	x	x
	3	1280 x 720p/23.98					x	x	x	x
	4	1280 x 720p/24					x	x	x	x
	5	1280 x 720p/25					x	x	x	x
	6	1280 x 720p/29.97					x	x	x	x
	7	1280 x 720p/30					x	x	x	x
	8	1280 x 720p/50				x	x	x	x	x
	9	1280 x 720p/59.94				x	x	x	x	x
	10	1280 x 720p/60					x	x	x	x
	11	1920 x 1080i/23.98					x	x	x	x
	12	1920 x 1080i/24					x	x	x	x
	13	1920 x 1080i/25				x	x	x	x	x
	14	1920 x 1080i/29.97				x	x	x	x	x
	15	1920 x 1080i/30					x	x	x	x
	16	1920 x 1080p/23.98					x	x	x	x
	17	1920 x 1080p/24					x	x	x	x
	18	1920 x 1080p/25					x	x	x	x
	19	1920 x 1080p/29.97					x	x	x	x
	20	1920 x 1080p/30					x	x	x	x
	21	1920 x 1080p/47.95					x	x	x	x
	22	1920 x 1080p/48					x	x	x	x
	23	1920 x 1080p/50					x	x	x	x
	24	1920 x 1080p/59.94					x	x	x	x
	25	1920 x 1080p/60					x	x	x	x

3 From software version 3.2 and upwards.

4 No LZW compression.

5 8 bit YUV422: 8 bit per component, 16 bit average per pixel.

6 16 bit YUV422: 16 bit per component, 32 bit average per pixel.



The file formats **BMP, CINEON, DPX, JPEG, LXF, TGA (Targa), TIFF, YUV8/10/16** support further rasters beyond the ones listed in the tables above. Supported rasters are:

- 2048 x 1080p/23.98
- 2048 x 1080p/24
- 2048 x 1080p/25
- 2048 x 1080p/29.97
- 2048 x 1080p/30
- 2048 x 1080p/48
- 2048 x 1080p/50
- 2048 x 1080p/59.94
- 2048 x 1080p/60
- 2048 x 1556p/23.98
- 2048 x 1556p/24
- 2048 x 1556p/25

**NOTICE**
**System Limitations**

Not all combinations of file formats listed in the tables above may be possible. The duration of ingesting and transforming QuickTime files is limited.

Please heed the following limitations for QuickTime files:

For QuickTime files containing audio (audio only as well as video + audio) the maximum duration for ingesting and transforming these files is 12:00:00:00 hours.

For QuickTime files containing video only the maximum duration for ingesting and transforming these files is 24:00:00:00 hours. Ingesting and transforming other file formats is limited to 24:00:00:00 hours as well. This concerns the following frame rates:

- 23.976 fps
- 24 fps
- 25 fps
- 30 fps
- 48 fps
- 50 fps
- 60 fps

For ingesting or transforming other frame rates different limitations apply as in the following:

- for 29.97 fps the maximum duration is 19:00:00:00 hours
- for 47.952 fps the maximum duration is 12:00:00:00 hours
- for 59.94 fps the maximum duration is 09:00:00:00 hours

Please note that disregarding the restrictions concerning the combination of file formats or the limitations concerning the QuickTime files may lead to performance losses or malfunctions of the respective channel(s).



R&S®VENICE supports embedded closed caption information stored in QuickTime by Apple. It records embedded CEA-708 information from the incoming SDI signal in digital SD and HD.

When writing QuickTime files (ingest or transform) the following closed caption data are preserved in the order:

1. CEA-708 ANC (digital)
2. CEA-608 ANC (digital)
3. 608 VBI (analog, NTSC only)

whereas the first type found is written into the files. By default it is a QuickTime CEA-708 track ('c708').

Furthermore, closed captions are stored in MXF OP-1a files as defined in the SMPTE 436M standard and in GXF files as well. The closed captions are preserved while head and tail cutting. Then they can be played out to SDI again.

A closed caption track will only be added to QuickTime files if valid closed caption data is detected on the first frame of the provided input or if writing of such a track has been enforced in the channel configuration menu of the R&S®VENICE software (menu settings **Quicktime**, check box **Force closed caption track** activated).

Disabling the writing of closed caption data or forcing the writing of CEA-608 (first field only) in QuickTime is possible when setting the respective value in the server configuration file. Please contact the R&S DVS service department in case of request.

Recording of EIA-608 information in SD is not supported.

If transcoding one file format into another file format, the closed caption information could be lost.

## Audio-only File Formats

The following uncompressed audio-only file formats are supported by the R&S DVS software:

Format Name	Default Extension	Description
AIF AIFF	*.aif *.aiff	Audio interchange format. Platform-independent file format for sound. Capable of storing multiple mono or stereo channels.
BWF	*.rf64 *.wav	Broadcast wave format. Platform-independent file format for sound. Extension of the Wave format capable of storing multiple mono or stereo channels together with metadata and enabling file sizes of more than 4 GB.
Wave	*.wav	File format for digital audio (waveform) data under Windows. Capable of storing multiple mono or stereo channels.

## Proxy File Formats

The following proxy file formats are supported by the R&S DVS software:

PROXY FILE FORMAT:		MPEG-1	MPEG-2	MPEG-2 video only (.m2v)	MPEG-4 AVC (.mp4) - Baseline	MPEG-4 AVC (.mp4) - Main	MPEG-4 AVC (.mts)	MPEG-4 AVC (.mxf) -AFN 100
R A S T E R	1 640 x 360	x	x	x	x	x	x	x
	2 640 x 480	x	x	x	x	x	x	x