

Cerify® - Automated Quality Control of File-based Video

CYSW Data Sheet

Job ID	Name	Job Status	Progress	MediaSet	Profile	Priority	File Size	Creator	Status	Creation Time	Start Time	End Time	Channel	Copy	
1	1 HDV	Complete	100%	HDV	HDV	High	137MB	topho	Active	2008-02-05 02:10:03	2008-02-05 02:12:39	2008-02-05 02:12:39			
2	1 Commercials	Complete	100%	Commercials	Commercials	Medium	31.1MB	admin	Active	2007-11-08 14:58:21	2007-11-08 14:58:49	2007-11-08 14:59:33			
3	1 Movies	Complete	100%	Movies	Movies	Low	39.4MB	admin	Active	2007-11-08 14:58:42	2007-11-08 15:02:15	2007-11-08 15:03:16			
4	1 News	Complete	100%	News	News	Medium	4	31.8MB	admin	Active	2007-11-08 14:58:58	2007-11-08 14:59:19	2007-11-08 15:00:15		
5	1 Sports	Complete	100%	Sports	Sports	Medium	2	31.8MB	admin	Active	2007-11-08 14:59:29	2007-11-08 15:00:09	2007-11-08 15:01:00		
6	Andrea	Complete	100%	Andrea Video	Andrea Video	High	3	545MB	admin	Active	2008-05-19 14:58:50	2008-05-19 15:00:09	2008-05-27 16:37:56		
7	Copy of 001_MG2_MVTFast	Complete	100%	TestMVF_MG2	MG2_MVF_Prof	High	4	328MB	admin	Active	2008-11-20 14:58:51	2008-11-20 15:04:09	2008-11-20 15:04:09		
8	Copy of 02 Commercials	Complete	100%	Commercials_v5	Commercials	Medium	2	31.1MB	admin	Active	2008-03-09 08:58:02	2008-03-09 08:59:04	2008-03-09 08:59:04		
9	JOB001	Complete	100%	M00001	PROF001	High	1	114MB	admin	Active	2008-02-05 05:52:11	2008-02-05 05:52:11	2008-02-05 05:52:23		
10	TalkSports_2008-06-17 05:51:04	Complete	100%	MPEG2-TS MPEG2	MPEG2-TS MPEG1 Audio	Medium	2	173MB	slave	Active	2008-06-17 05:51:04	2008-06-17 05:51:04	2008-06-17 05:57:53		

Formats

- Format – All Frame Sizes, Bit Rates, and Resolutions for SD/HD and Mixed Workflows
- Container – MPEG TS/PS, MXF, GXF, MP4, QuickTime, ASF (Windows Media), 3GPP
- Video – MPEG-2 (IMX, XDCAM), H.264/AVC, MPEG-4, H.263, VC-1/WMV, DV/DVCPPro25/50/100/HD, Apple ProRes 422/422(HQ)/422(Proxy)/422(LT)/444*1
- Audio – MPEG-1/2, AAC, HE AAC, PCM (AES, BWF, AIFF, WAV), DV, WMA, Dolby D / AC-3, Dolby E

Features & Benefits

- Provides Exception-based Technical Compliance to Enable the QC Teams to Focus only on the Problem Content and the Subjective Requirements
- Performs Consistent and Thorough Checks of Incoming Video Files against User-defined Templates
- Integrates with Video Servers
- Logs Errors, Informs Automation Systems, plus Programmable Actions such as E-mail User Alert, Quarantine and Move Files
- XML-based Templates to Reduce Ingest Rejection due to Noncompliance
- Web-based Multiuser Interface
- Flexible Windows Software-only Solution
- All the Test Features of the Cerify 200 Market-leading Auto-QC Product
- CeriTalk** API for Integration with Automation and Asset Management Systems

Tests Include

- Encoding Errors, Syntax Errors, Format, Bit Rate, Quantization, Frame Rate, GOP Length, Aspect Ratio, Color Format, Buffer Analysis, File Size, Correct PID, CableLabs VoD Compliance, Number of Video and Audio Streams, Number of Audio Channels
- Video Playtime, Signal Levels, Gamut, Luminance, Chrominance, Black Frame Detection, Video Quality (Blockiness), Freeze Frame Detection, Field Order
- Audio Playtime, Peak and Minimum Levels, Audio Loss, Clipping, Silence, Mute, Test Tones

Applications

- Broadcasters – For checking audio and video after encoding, at ingest, after editing, after transcoding, and before playout for terrestrial, satellite, cable, internet, and video-on-demand content
- Archiving – For checking integrity before and after archiving
- Content Providers – For checking post production and aggregated content has been correctly encoded and conforms to the required quality and format

With Cerify You Can Ensure that Your Content is Ready for Delivery

Quality control of file-based video that may be ingested from different sources and encoded at different bit rates, formats, and compression standards for SD/HD, VOD, and IPTV delivery presents considerable operational challenges. File-based video must be quality checked for:

- Correct Encoding Syntax:** At the digital level the audio and video must be correctly encoded without errors in accordance with the compression standard, so that it plays out correctly at the customer's STB/playout device
- Correct Encoding Parameters:** The audio and video bit rates, GOP structure, video color-space, color depth, frame size, frame rate, aspect ratio, and quantization levels must be correct
- Correct Baseband and Quality Levels:** The analog parameters of signal levels, luma, chroma, gamut, and quality levels of black frames, video quality (blockiness), loss of audio, audio clipping, and video and audio playtime

*1 There are no syntax checks for the ProRes codecs.

Data Sheet

Manual inspection can playout, watch, and listen but is subjective and cannot look inside the encoding to check that the correct syntax and parameters have been used.

Cerify solves these problems, and can be easily integrated with Automation and Asset Management systems using the **CerifyTalk** API.

Cerify SW is the functionally equivalent software version of the CYC200, the world's 1st and leading automated system for checking/verifying file-based video content prior to delivery or use.

The XML-based test templates can be exchanged between Cerify systems, and applied as the definition of the required test standards between suppliers and broadcasters to establish Service-level Agreements and reduce costly churn (rework of content).

The Cerify Developer Community (CDC) of companies working together on integrated solutions is expanding rapidly and is featured on the Tektronix website.

User Interface

Easy-to-use web browser interface shows job status results at top level as red light / green light

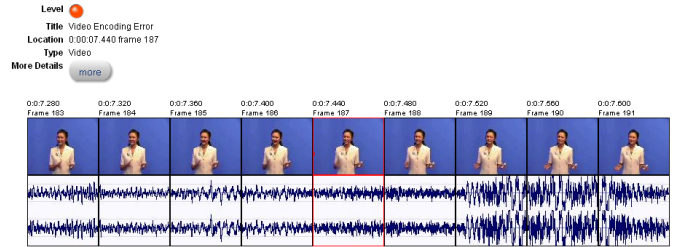
Result	Filename	Size	Status	Progress	Start Time	Poster Frame
●	ftp://cerifycontroller/content/news/airport_interview.ts	8.45MB	Complete	100%	2006-06-16 13:08:09.0	
●	ftp://cerifycontroller/content/news/beijing_weather_girl.ts	8.03MB	Complete	100%	2006-06-16 13:08:10.0	
●	ftp://cerifycontroller/content/news/live_report.ts	8.47MB	Complete	100%	2006-06-16 13:08:33.0	
●	ftp://cerifycontroller/content/news/news360.ts	7.88MB	Complete	100%	2006-06-16 13:08:34.0	

Click to get job details

Col	Result	Name	Job Status	Progress	MediaSet	Profile	Priority	Est	Est Size	Creator	Status	Creation Time	Start Time	End Time	Channel	Copy
✓	✓	0 HDV	Complete	100%	HDV	HDV	High	1	137MB	toshio	Active	2006-02-05 02:10:03	2006-02-05 02:12:00	02:12:00		
✗	✗	1 Commercial	Complete	100%	Commercials	Commercials	Medium	2	31.1MB	admin	Active	2007-11-08 14:58:21	2007-11-08 14:59:33	2007-11-08 14:59:33		
✗	✗	1 Movies	Complete	100%	Movies	Movies	Low	3	39.4MB	admin	Active	2007-11-08 14:58:42	2007-11-08 15:03:15	2007-11-08 15:03:15		
✗	✗	1 News	Complete	100%	News	News	Medium	4	31.3MB	admin	Active	2007-11-08 14:58:58	2007-11-08 15:00:15	2007-11-08 15:00:15		
✗	✗	1 Sports	Complete	100%	Sports	Sports	Medium	2	31.8MB	admin	Active	2007-11-08 14:59:25	2007-11-08 15:01:00	2007-11-08 15:01:00		
✓	✓	Andrea	Complete	100%	Andrea	Andrea Video	High	3	5455MB	admin	Active	2006-05-19 21:05:51	2006-05-19 21:06:02	2006-05-27 16:37:56		
✓	✓	Copy of 001_MG5_MQ7Test	Complete	100%	Test00F_MG5	MG5_MQ7_Prof	High	4	328MB	admin	Active	2008-11-20 14:38:51	2008-11-20 14:38:59	2008-11-20 15:24:09		
✓	✓	Copy of 02 Commercial	Complete	100%	Commercials_05	Commercials	Medium	2	31.1MB	admin	Active	2008-03-09 09:08:02	2008-03-09 09:08:02	2008-03-09 09:08:04		
✓	✓	JOB001	Complete	100%	M50001	PROF001	High	1	114MB	admin	Active	2006-02-06 05:52:11	2006-02-06 05:52:11	2006-02-06 05:52:53		
✗	✗	Talk_Sports_2006-06-17 05:51:04	Complete	100%	MPEG2-TS MPEG2	MPEG2-TS MPEG2 MPEG1 Audio	Medium	2	173MB	steve	Active	2006-06-17 05:51:04	2006-06-17 05:57:52	2006-06-17 05:57:52		

Cerify 6.0.0.94 © 2008 Tektronix

Click to get details of stream errors



Report by job, type, date range, file name, etc.

Microsoft Internet Explorer

Address: http://192.168.200.10/content/news

Filename: airport_interview.ts

Path: ftp://192.168.200.10/content/news

Level	Type	Location	Title	Details
error	video	0:00:00:080 Frame 3	Invalid Code (alert ID 22015)	In an in-loop, C_coeff[100] must be 15. Here it is set to 2. Stream position: 0x70 (dec: 128), bit 3. Bitstream context: [MSQPCCSGLIMR9L2]
error	video	0:00:06:200 Frame 156	DCT coefficient index out of bounds (alert ID 22100)	Inter-block DCT coefficient index out of bounds (66 == 64). Stream position: 0x24763 (dec: 3077807), bit 3. Bitstream context: [MSQPCCSGLIMR9L2]
error	video	0:00:06:200 Frame 156	Bad slice order (alert ID 22210)	Restricted slice structure is in effect, yet the first macroblock of the current slice (n=31, slice=31) does not immediately follow the last macroblock of the preceding slice (n=2, slice=30). Stream position: 0x24763 (dec: 3077807), bit 7. Bitstream context: [MSQPCCSGLIMR9L2]
error	video	0:00:06:200 Frame 156	Bad VLC for macroblock_address_increment (alert ID 22100)	Invalid VLC for macroblock_address_increment encountered bit pattern '00000010101'. This does not match any valid code value. Stream position: 0x24763 (dec: 3077807), bit 7. Bitstream context: [MSQPCCSGLIMR9L2]
error	video	0:00:06:200 Frame 156	Bad slice order (alert ID 22210)	Restricted slice structure is in effect, yet the first macroblock of the current slice (n=32, slice=32) does not immediately follow the last macroblock of the preceding slice (n=31, slice=31). Stream position: 0x24763 (dec: 3077807), bit 7. Bitstream context: [MSQPCCSGLIMR9L2]
error	video	0:00:06:840 Frame 172	Bad slice order (alert ID 22210)	Slices must be combined within a single row of macroblocks. The current macroblock (n=0, slice=32) belongs to a slice from a previous row. Stream position: 0x248755 (dec: 3442517), bit 0. Bitstream context: [MSQPCCSGLIMR9L2]
error	video	0:00:06:840 Frame 172	Bad slice order (alert ID 22210)	Slices must occur in raster scan order and not overlap. However the current macroblock with index 810 (n=0, slice=18) occurs earlier in raster scan order than the previously decoded macroblock with index 810 (n=0, slice=18). Stream position: 0x248755 (dec: 3442517), bit 7. Bitstream context: [MSQPCCSGLIMR9L2]

Filename: beijing_weather_girl.ts

Path: ftp://192.168.200.10/content/news

Level	Type	Location	Title	Details
error	video	0:00:07:440 frame 187	Bad slice order (alert ID 22210)	Restricted slice structure is in effect, yet the first macroblock of the current slice (n=0, slice=23) does not immediately follow the last macroblock of the preceding slice (n=23, slice=22). Stream position: 0x31185 (dec: 3740037), bit 0. Bitstream context: [MSQPCCSGLIMR9L2]

Job Details

Job Name: Movies MPEG-2 04-01-05

Done

See and Solve test results

- Alert traffic lights
- Test summary for each file in "Job"
- Details for each file within the "Job"
- Video thumbnails and audio waveform shown in frames surrounding the alert
- Thumbnail of erroneous frame
- Alerts for each error within the file
- Details of a specific error alert

Characteristics

Standards Supported

Format – All frame sizes, bit rates, and resolutions for SD/HD and mixed workflows.

Container – MPEG TS/PS, MXF, GXF, MP4, QuickTime, ASF, 3GPP.

Video – MPEG-2 (IMX, XDCAM), H.264/AVC, MPEG-4, H.263, VC-1/WMV, DV/DVCPPro25/50/100/HD, Apple ProRes 422/422(HQ)/422(Proxy)/422(LT)/444.

Audio – MPEG-1/2, AAC, HE AAC, PCM (AES, BWF, AIFF, WAV), DV, WMA, Dolby D / AC-3, Dolby E.

Test Templates and Levels are User-controlled and Include:

- Container-level Transport System Tests
 - Correct Standard and Integrity
 - File size, Bit Rate, Playtime, Number of Video and Audio Streams in Transport Container
 - Packet Size, CableLabs VOD Compliance
 - Signalling of Close Captions, Teletext
- Video Tests
 - Correct Encoding Standard, Profile, and Syntax Checks for Encoding Errors
 - GOP Structure, Quantization, Frame Rate, Bit Rate, Frame Size, Interlaced/Progressive, Aspect Ratio
 - Baseband Tests including Gamut Levels, Luma, Chroma, Signal Levels, Letterbox/Pillarbox, Playtime
 - Color Depth, Color Format (4:2:0, 4:2:2), Copyright
 - Black Frames (Lead in, lead out, and during the video), Video Quality (Blockiness), Frozen Frames, Field Order
- Audio Tests
 - Correct Encoding Standard, Profile, Syntax Checks for Encoding Errors
 - Sample Rate, Bit Rate, Playtime
 - Number of Channels, Peak and Minimum Signal Levels on Each Channel
 - Audio Silence (Lead in, lead out, and during the video), Clipping, Mute, Test Tones
- Action Templates and Reporting
 - Copy or Move File on Success or Error
 - E-mail Alerts with Test Reports
 - Web-based On-screen Job Reports and Detailed Drill-down to Error Details
 - Text/HTML Query Reports of All Files in the Database with Full File Details and Error Reports
- **CeriTalk** Automation API
- Multiple User Templates and Profiles can be set up for Different Content Types and Sources
- XML-based Templates can be Imported and Exported
- Automatic Reprocessing of a File, if there is a Change in the Last Modified Time or the Size of the File

System Requirements

For a single channel of Cerify, the minimum requirements are the following, additional memory may be required to support a greater number of channels:

- Windows XP, Vista, 7, Server 2003, or Server 2008
- Processor Speed – 3 GHz
- Memory – 2 GB RAM
- Ports – USB and Ethernet
- Hard Drive – 20 GB available

Ordering Information

Product	Option	Description
CYSW		Cerify single channel software licence for MPEG-2, MPEG-4, H.263 (Baseline), H.264/AVC, VC-1, and DV options
CYSW	CH	An additional single channel software licence for MPEG-2, MPEG-4, H.263 (Baseline), H.264/AVC, VC-1, and DV options. Up to three of these may be used with a single CYSW
CYSW	CHX	An additional single channel software license for MPEG-2, MPEG-4, H.263 (Baseline), H.264/AVC, VC-1, and DV options. For use with more than three CH channels per single CYSW seat
CYSW	ProRes	ProRes Codec
CYSW-SWS		One year of software updates and technical phone support per install of Cerify CYSW



Product(s) are manufactured in ISO registered facilities.



Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

Contact Tektronix:

- ASEAN / Australasia** (65) 6356 3900
- Austria** +41 52 675 3777
- Balkans, Israel, South Africa and other ISE Countries** +41 52 675 3777
- Belgium** 07 81 60166
- Brazil** +55 (11) 3759-7627
- Canada** 1 (800) 661-5625
- Central East Europe, Ukraine, and the Baltics** +41 52 675 3777
- Central Europe & Greece** +41 52 675 3777
- Denmark** +45 80 88 1401
- Finland** +41 52 675 3777
- France** +33 (0) 1 69 86 81 81
- Germany** +49 (221) 94 77 400
- Hong Kong** (852) 2585-6688
- India** (91) 80-42922600
- Italy** +39 (02) 25086 1
- Japan** 81 (3) 6714-3010
- Luxembourg** +44 (0) 1344 392400
- Mexico, Central/South America & Caribbean** 52 (55) 54247900
- Middle East, Asia, and North Africa** +41 52 675 3777
- The Netherlands** 090 02 021797
- Norway** 800 16098
- People's Republic of China** 86 (10) 6235 1230
- Poland** +41 52 675 3777
- Portugal** 80 08 12370
- Republic of Korea** 82 (2) 6917-5000
- Russia & CIS** +7 (495) 7484900
- South Africa** +27 11 206 8360
- Spain** (+34) 901 988 054
- Sweden** 020 08 80371
- Switzerland** +41 52 675 3777
- Taiwan** 886 (2) 2722-9622
- United Kingdom & Ireland** +44 (0) 1344 392400
- USA** 1 (800) 426-2200

For other areas contact Tektronix, Inc at: 1 (503) 627-7111

Updated 5 August 2009

For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com



Copyright © Tektronix, Inc. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks, or registered trademarks of their respective companies.

01 Feb 2010

2AW-23489-2

