

Digimetrics Aurora

**Automated, No-Reference,
File-Based QC.**

Add Trust To Your Files

Trust means that your files from ingest, transcode, archive or capture meet your expectations:

- Metadata is correct (against your expectations and metadata/stream integrity is intact)
- Distribution/Broadcast constraints are met
- Video and Audio Quality is acceptable

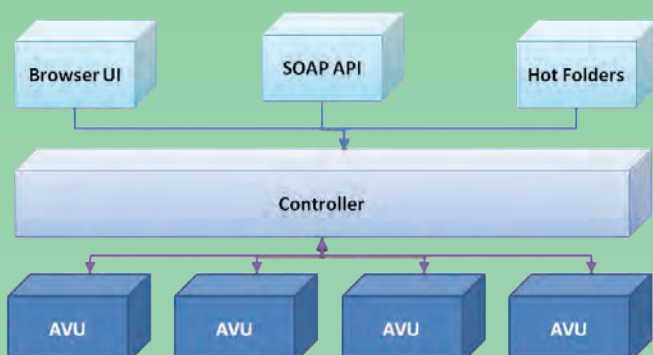
Aurora is the one production-capable QC tool today which provides this level of trust by *ensuring your files are exactly what you expect*.

The most **Complete Metadata QC** tools available, with metadata tests available specific to:

- **Container Tests** – Transport Stream, Program Stream, GXF and MXF (exclusive single-pass analysis)
- **Codec Tests**– MPEG-2, H.264 AVC, MVC, VC-1, Dolby AC-3, Dolby E
- **Ancillary Data Tests** – CEA-608, CEA-708, SCTE20, ATSC53, SCTE35 and DVB Subtitles
- **Broadcast and Distribution Constraints** – NTSC, PAL, ATSC (A/53, A/85), DVB-T (TR 101-290), ISDB-T (ARIB B10), Cable-Labs TV (SCTE54), CableLabs VOD (SCTE-VOD-CEP2.0-I03), XDCAM (RDD-9), AS-02 (AMWA), DVD and Blu-ray.
- **User-defined Limits** – container metadata (including checking for specific codec and ancillary data); video stream metadata (including time, size and color information); audio stream metadata (including Dolby metadata). If it exists in the metadata, Aurora likely already allows you to build a test around it.

Supports Your Workflow Today - designed for automated workflows from the start, all Aurora process are built around our web-services API (a WSDL-based SOAP API), allowing for easy integration into any workflow, whether in-house or off-the-shelf. Includes native hot folder monitoring, making you instantly productive from day one. E-mail notifications are also built-in to notify users upon completion of their files.

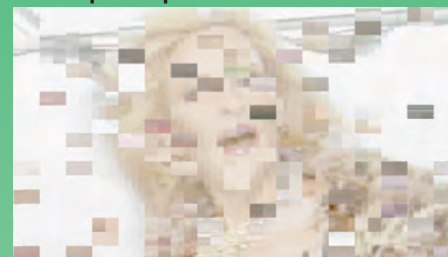
Cross Platform - built on a Windows service back-end, the Aurora APIs and user interface are all web-based, allowing rollout on Windows, Mac OS or Linux based architectures.



Quality Algorithms are focused on delivering frames that contain artifacts your eye can see and your ear can hear, rather than false positives



- **Unique 3-level Macroblocking analysis** – specifically built to avoid false positives; allows you to set limits on the simple test of detecting visible macroblock edges, but then gives you the ability to really find where those edges will actually cause the user to see or report a problem.



- **First of its' kind Tape Hit Detection** – invented and designed by Digimetrics with the ability to detect RF drop outs during tape ingest, including common issues of intermittent block-based line artifacts, shiny spots, mosaic patterns, partial line drop outs and field-based chroma loss.

- **Photo-sensitive epilepsy/Flashing test** – designed specifically to be compliant to the published Harding guidelines required for use by OFCOM in Rule 2.12 and NAB Japan.



Made for Speed

- SD files can process 2x to 5x faster than real-time, while HD content can process at real-time or faster.
- GPU accelerated quality testing allows you to use the power of nVidia's CUDA technology to run QC much faster than possible on the CPU alone.

Expandable - start with the ability to verify as few or as many files simultaneously as your needs call for. There are no minimums and no maximums for the number of verification units (VU) that can be run with Aurora.

Designed to produce **Easy To Read Reports** with actionable information

- Report based on XML and displayed either as HTML or PDF, gives a first page view of everything that is contained in the file and everything that is wrong with the file (with the ability to drill down and see specific frame by frame information on error locations)
- Unique visual representation for non-visual errors – audio waveform and luma histogram are shown to help understand those specific tests
- Information available to automate your entire workflow – since the report is XML based, with common test index and error location information, the results of any test can be used to automate a transcoder process to fix that error. Examples include cropping out letterboxing, removing bars and tones and correcting loudness metadata.
- Show as much or as little information as needed - designed to show everything about your file on the first page of the report, and allow you to choose how much detail you want to see about the errors. Contains a collapsible summary of errors/warnings, detailed error location and recap of template tests.

Status : Completed, with Errors		Input Parameter	
Started: 2010-12-15 08:32:22		Container : \Vdm-files\Streams\Waddin_trailer_ATT.ts	
Ended: 2010-12-15 08:32:59		Template Used : Quality Test	
Job Duration: 00:00:37			
Container - MPEG-TS			
Stream Essence Count : 2		Timecode Essence : First Frame at 09:50:38.881	
Stream Storage : Embedded		Runtime : 00:01:35.744	
File Size : 24.35 MB (25,534,160 bytes)		Subtitle Essence : Not Present	
Total Size : 24.35 MB (25,534,160 bytes)			
Stream 0 (PID 0x0020) - H.264 / AVC / MPEG-4 AVC / MPEG-4 part 10 - Video			
Frame Count : 2866		Frame Resolution: 528 x 480	
Timecode : Not present		Display Resolution : 528 x 480	
Runtime : 00:01:35.645		Display Aspect Ratio : 4:3	
Interlaced Mode : Progressive		Pixel Aspect Ratio : 1.21	
Scan Order: Not Present		AFD: Not Present	
Cadence : Unknown		Frame Rate : 29.970	
Color Space : YUV		Bit Rate : 1.899 Mbps (VBR)	
Chroma Profile : 4:2:0		Profile/Level : Main / L3.0	
Color Depth : 8		Buffer Size : Not Present	
GOP Type : Closed		Luma Histogram :	
GOP Min/Max : 48 / 48			
Quantization (Avg) : 24			
Quantization (Min/Max) : 10 / 41			
Stream 1 (PID 0x0021) - MP2 (MPEG audio layer 2) - Audio			
Frame Count : 3985		Sample Rate: 48000	
Timecode : Not present		Bit Rate: 128.000 Kbps (CBR)	
Runtime: 00:01:35.640			
Bit Depth: 16 bit			
Number of Channels: 2			
Language ID: None			
Analysis Results			
Template Used - Quality Test			
4 Unique Errors (133 Instances)			
0 Unique Warnings (0 Instances)			
0 Unique Information (0 Instances)			
Item ID : 4001.001 (Macroblocking Artifacts Level1) [Hide Details]			
Instances : 79			
Rule Type : Video Quality Check:			
Blockiness exceeds maximum value of 0.010 specified in the template			Stream - 0 (PID - 0x0100) - DV (Digital Video) Start at 01:00:21.399 GOP 534 Frame index 535 Continues for 1 Frames Ends at 01:00:21.440 GOP 535 Frame index 536
Item ID : 6001 (Audio Clipping Detection) [Hide Details]			
Instances : 25			
Rule Type : Audio Quality Parameters			
Audio clipping detected			Stream - 1 (PID - 0x0001) - MP3 (MPEG audio layer 3) - Ch. 1 Start at 00:00:00.078 Frame index 5 Continues for 0 Frames Ends at 00:00:00.078 Frame index 5

ImportExportSelect

Defaults

Stream Summary

Syntax Checks

Container Parameters

Video Parameters

Video Quality

Audio Parameters

Audio Quality

Distribution & Broadcast

System Specific Tests

Macroblocking Artifacts Level1

Level 1 % of frame with detectable macroblock edges

Add with DefaultsAdd and Override Defaults

Macroblocking Artifacts Level2

Level 2 - Level 1 occurs AND more than macroblocks with visible edges are touching

Add with DefaultsAdd and Override Defaults

Macroblocking Artifacts Level3

Level 3 - Level 1 and 2 occurs AND the errors occur within x title-safe boundary (width x height)

Add with DefaultsAdd and Override Defaults

Consecutive Frames

Constant Color Frames

Add with DefaultsAdd and Override Defaults

Consecutive Frames

Freeze Frames

Add with DefaultsAdd and Override Defaults

SaveSave AsDelete

101 - Calculate Stream Summary

102 - Quick Scan

3004 - Aspect Ratio

3005 - Frame Rate

4002 - Consecutive Frames

Template Defaults

Pre Roll 00 : 00 : 00 . 000

Post Roll 00 : 00 : 00 . 000

Spot Check NoSpotCheck

Simple to Setup

- Aurora installs on Windows 7 or Server 2008 R2 with as few as three clicks in under 20 minutes in most cases. No pre-requisites, IT configuration or post-deployment changes necessary.
- Our new template editor makes designing test templates simple in an easy-to-understand layout.
- Test templates can be designed in one location and deployed to multiple locations via XML import/export functionality.

We Never Stop Research & Development - our customers tell us that we listen to their needs and bring changes to the product that meet those needs. We plan for 3 major releases per year, with inter-band releases available at any point in-between, allowing for that special tweak or change necessary to make Aurora function in your workflow.

Our pre- and post- sales Support is the Best in the Industry - Take a demonstration and you'll see immediately why our customers always rave about the support they receive. Customers have direct access to individuals empowered to fix problems and commit to changes, rather than an impersonal call center (and our support engineers know your name). Available 24 hours a day during the business week with offices on both sides of the globe.

Full Codec & Container Support

Video Codecs - H.264/AVC, MPEG-2, VC-1, H.264/MVC, AVC Intra, IMX 30/40/50 (D10), Apple ProRes, Avid DNxHD, Cineform, DV, DVCPro 25/50/100, JPEG2000, Motion JPEG, Flash VP-6/7, Baseband RGB/YUV/HUFF, H.263/+ , MPEG-4 Pt. 2

Audio Codecs - PCM (WAV/BWF/AES), AC-3/Dolby Digital, EAC-3/Dolby Digital Plus, MLP/Dolby TrueHD, Dolby E, AAC, HE-AAC, DTS, DTS-HD/Master Audio, MPEG-1, MPEG-2/L-1,2,3, AIFF, WMA Standard, WMA Pro

Containers - Transport, Program, MXF, MOV, AVI, FLV, WMV/ASF, MP4, 3GPP, GXF, LXF (Referenced essence for MXF and MOV)

Wide Range of Metadata and Quality Tests

	Standard	Professional
SyntaxTests		
Codecs (MPEG-2, AVC, VC-1, AC-3, Dolby E)	x	x
Containers (Transport, Program Stream, GXF, MXF)	x	x
Ancillary Data (CEA/608/708, ATSC53, SCTE20, SCTE35)		x
ContainerMetadata		
Stream Sum Bit Rate	x	x
File Size	x	x
Compare A/V Stream Lengths	x	x
Compare Container Metadata to Stream	x	x
Check for Specific PID Values	x	x
Check for Specific Codecs in Use	x	x
Check for Specific Ancillary Data	x	x
Video Metadata		
Video Length	x	x
Display Resolution	x	x
Display Aspect Ratio	x	x
Frame Rate	x	x
Frame Horizontal Size	x	x
Frame Vertical Size	x	x
Profile/Level	x	x
Video Stream Bit Rate	x	x
Buffer Size (from coded value)	x	x
Interlaced Mode	x	x
GOP Length	x	x
GOP closed/open		x
CBR check	x	x
Quantization	x	x
Pulsing Check (quant. diff. of I and P/B)		x
Consecutive I, B, P or SKIP pic length		x
Color Space	x	x
Chroma Profile	x	x
Luma & Chroma Values	x	x
AFD (specific values and change detection)		x
CGMS-A		x
TV/MPAA Rating		x
GOP Structure		x
Pixel Aspect Ratio		x
Crushed Black Detection		x
Super White Detection		x
Anamorphic Content Detection (using pixel aspect ratio)		x
Detect Chroma Drop in a Field		x
Color Gamut Legality		x

	Standard	Professional
Video Quality		
Macroblocking Artifact Detection (Unique 3 Level Testing)	x	x - GPU Accelerated
Consecutive Frames (Black/ Constant Color/ Freeze)	x	x
Flashing Detection (Harding Compliant)		x
Interlace Artifact & Field Order Detection		x - GPU Accelerated
Edge Detection		x
Probability of Blur Detection		April 2011 - GPU Accel.
Black Bar Detection (w/ correct aspect ratio report)		x
Telecine Pulldown Detection	x	x
Aspect Ratio Changes		x
Color Bar Pattern Detection		x
Tape Hit Detection (Alternate Lines, Shiny Spot, Mosaic)		x - GPU Accelerated
Black Line Detection		x
Audio Metadata		
Audio playtime	x	x
Audio # of Channels	x	x
Audio Stream Bit Rate	x	x
Audio Language	x	x
Dolby Metadata Values		x
Dolby Metadata Change Detection		x
Dolby E Guard Band Alignment		April 2011
Audio Quality		
Audio Clipping		x
Dropouts/ Silence Detection	x	x
Audio Loudness (Instantaneous in dB)		x
Audio Loudness (Moving average in BS.1770 LKFS)		x
Compare Actual Loudness to Metadata/ Dialnorm		April 2011
Test Tone Detection		x
Audio Channel Phase Detection		x
Audio Snap/Click/Pop Detection		x
Distribution/Broadcast Restrictions		
DVD constraints	x	x
BD constraints (primary or secondary video)	x	x
BD constraints for MVC 3D Video	x	x
CableLabs TV constraints (SCTE54)		x
CableLabs VOD constraints (SCTE -VOD-CEP-2.0-103)		x
NTSC Broadcast Video		x
PAL Broadcast Video		x
ATSC Broadcast Video & Audio (A/53 & A/85)		x
DVB-T Broadcast Video (TR 101 290)		x
ISDB-T Broadcast Video (ARIB B-10)		x

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