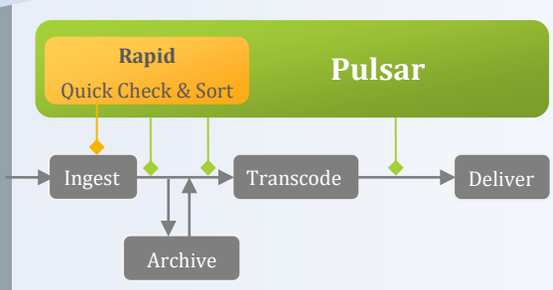
Content quality verification need not give you headaches any more

Pulsar makes it incredibly simple.

Pulsar
Automated Content Verifier

Broadcast
Post Production
Archiving
IPTV/Cable
OTT



Quick verification of large content volumes
Achieve more with same resources
Automate detection of issues like blockiness and loudness

Industry's fastest & most flexible Automated QC for Rapid checking, sorting and in-depth verification

- 6x real-time HD Analysis
- HDR analysis (10/10+/Dolby Vision)
- JPEG-2000 processing
- IMF analysis
- 4K analysis
- Image sequence
- HLS/DASH analysis for OTT content
- Audio Language Identification
- Harding PSE Analysis for HDR & SDR content
- Monitor, Re-prioritise, Pause, Resume and Cancel jobs
- Hot folders (General, Live, Virtual)
- XML/PDF reports with thumbnails
- Cloud storage Support
- Web-services APIs for integration
- Configurable parameter checks

Need for automation along with usage of 4K, IMF, HDR and other technologies to improve user experience and workflow efficiency is becoming common. This is giving rise to additional content validation requirements.

Pulsar helps you ensure consistent content quality and simplifies technological and operational challenges associated with file based QC. You can now perform integrated QC across content types and stages in your workflow, reducing dependency on specialized skills and using existing resources more efficiently.

Fastest - Each Pulsar Professional unit can verify up to four simultaneous files and one HD file can be analyzed at an unmatched speed of 6x faster than real-time.

Best ROI - Pulsar license price includes support for all common Video/Audio codecs as well as the ability to use up to 32 cores (for Pulsar Professional). Pulsar provides more value at lower cost.

Versatile – With support for broadcast and adaptive bit rate formats along with capability to perform Rapid checking, sorting and in-depth QC, Pulsar is the most versatile Automated QC solution.

Ease of Use - Pulsar's intuitive interface allows fast operations, including the ability to add, re-order streams in the queue, and review results from the analysis. Reports show stream information, as well as green, yellow or red title bar for each stream. Frame shot along with time-code is available for error locations.

Factory templates – Pulsar comes equipped with ready-made templates for many common delivery specifications such as Amazon Prime, Netflix, iTunes and DPP.

4K Ready – With support for various resolutions, formats and colour spaces, Pulsar is ready for checking your 4K assets.

Flexible and Scalable - Each seat of Pulsar includes the complete analysis engine, as well as the ability to interface with other instances of Pulsar, allowing you to set-up a daisy-chain environment for as many simultaneous files as you need.

JPEG-2000 – Support for processing JPEG-2000 with option of Fast JPEG-2000 allowing quick processing.

IMF – Detailed analysis of IMF packages using CPL. Pulsar allows package integrity checks, cross checks and audio/video baseband checks based on the composition list.

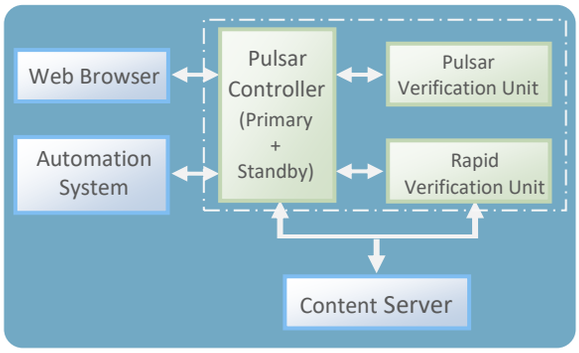
HDR – HDR metadata reporting and analysis (HDR 10/10+/Dolby Vision). Pulsar also allows cross-checking of HDR metadata against actual video.

Adaptive Bitrate Content Analysis – Simple, Integrated analysis & reporting for formats such as DASH, HLS and Smooth Streaming. Pulsar works directly on manifest files within local/SAN storage or at HTTP URL.

Automatic Correction – Automatic correction of loudness levels along with a range of correction capabilities at container level.

High Availability – Pulsar can be installed with redundancy so that a standby Pulsar unit can automatically take over in case of hardware failure, ensuring 24x7 operations.

Rapid – Rule based rapid checking and sorting of content. Rapid can be used at stages that don't require in-depth QC to significantly reduce human intervention and to boost the overall throughput of your workflow.



Pulsar

Automated Content Verifier

PULSAR EDITIONS

Pay-Per-Use (PPU)
- Up to 4 cores
- Single file analysis
- Pay by usage

Basic
- Up to 4 cores
- Single file analysis
- No Clustering

Standard
- Up to 8 cores
- Single file analysis
- No Clustering
- Adaptive Bitrate
- API

Professional
- Up to 32 cores
- Four files analysis
- Clustering
- Adaptive Bitrate
- API
- Failover redundancy

- In-depth Verification, Rapid QC and Sorting
- Loudness measurement & correction (Incl. Speech Gated)
- Browser based interface
- Dynamic Template configuration
- User-defined templates (General, Smart & Adaptive)
- Netflix, DPP, Amazon & ARD-ZDF compliance
- Quarantine or pass jobs by moving, deleting or renaming files under test
- Multi-User system
- Wide conformance & quality checks
- Wide format support – Broadcast, New Media & Adaptive Bitrate
- Controller Redundancy – automatic take-over in

Formats

Container	**MXF, GXF, LXF, MOV, MP4, 3GPP, MPEG-2 TS, MPEG-2 PS, FLV, WMV, AVI, Matrox AVI, WAV, BWF, AIFF, DPX, JP2, TIFF, Smooth Streaming, HLS, MPEG-DASH, IMF, DCP (encrypted and unencrypted), AS-02, AS-11, Elementary**
Video	H.265, H.264 (incl. AVC-Intra 50/100 and SONY XAVC), MPEG-2 (incl. D10, XDCAM, HDCAM, IMX-30/50), VC-1, DV (incl. DVCPro25, DVCPro50, DVCPro100/HD), Avid DNxHD (VC-3), Avid DNxHR, Apple ProRes 422 (HQ, SD, LT, Proxy), ProRes 4444, Canopus HQ/HQX, JPEG-2000, Uncompressed (RGB, YUV)
Audio	LPCM, AES3, AC3 (DD), SMPTE 302M, E-AC3 (DD+), MPEG-1/2, AAC, HE-AAC, WMA (Standard & Pro), Dolby-E, Audio stems, Dolby Atmos (ADM BWF, IMF IAB, DCP IAB)
HDR	HDR-10, HDR-10+,HLG, Dolby Vision

Verification Checks

General	**Compliance, Factory templates - Netflix, DPP, Amazon prime, ARD-ZDF, Loudness (R128, CALM, OP-59, ARIB), iTunes & CableLabs**
Track Layout	**Video Property:** Black Frames, Color Bars, Freeze Frames, Slate **Audio Property:** Mute, Test Tone, Silence
IMF/DCP	CPL based analysis, Package validation, CPL cross checks, CPL checks, PKL cross checks, OPL checks, Assetmap check, IMSC checks, Sidecar checks, Netflix Photon validation
ABR	Playlist cross checks. Segment cross checks, Profile cross checks, Encrypted Packages
Video Parameters	Codec, Video Format, Color space, Chroma Format, Color Matrix, Color Primaries, Transfer Characteristics, Scan Mode, Duration, Frame Rate, Resolution, Display/Pixel Aspect Ratio, GOP Length, GOP Type, Field Order, Frame Sizes, Buffer Size, Bitrate (CBR/VBR), Profile/Level, Entropy Coding, Reference Pictures, MBAFF, Timecode Discontinuity, Timecode frame drop, 2020 Color Space, Progression Order, Wavelet Transform
Video Quality	Black Frames, Blockiness, Brightness, Cadence, Chroma Hits, Chroma Line, Clipping, Colored Frames, Color Bars, Color Gamut, Combing, Credit Roll, Camera Dead Pixels, Digital Hits, Field Dominance, Flash Frames, Freeze Frames, Luma/Chroma levels, Cadence, Half/Full lines, Bar Artefacts, Letter/Pillar Box, Framing Issue, Photosensitive epilepsy (Harding), Low Video Level, Low Black Level, FBI Warning Card, URL detection, Postal stamp, Slate detection, Media offline, QR Code
HDR Parameters	HDR Formats, Reporting of HDR10, HDR10+, and Dolby Vision metadata **Static Metadata:** Verify (display color primaries, mastering display luminance, content light level) **Dynamic Metadata:** Compliance, Validate HDR10+ metadata (MaxSCL, Average Max RGB, Distribution values, Tone-mapping information, Targeted system display maximum luminance), Validate Dolby Vision metadata (Metadata version, shot must not contain <0,0,0> in level 1 metadata, Detect duplicate dynamic metadata, Crosscheck canvas aspect ratio, Crosscheck Video track information, Crosscheck (Calculated/metadata) Image aspect ratio
Reference Based Analysis	Time Alignment, Ref-Q, SSIM, PSNR
Audio	Codec, Sampling Frequency, Quantization Bits, Channels, Bitrate (CBR/VBR), Drops, Silence, Mute, Test Tone, Loudness (R128, CALM, AGCOM, ARIB, Speech Gated), Loudness Range, Dialnorm, Sample Peak, True Peak, Dual Mono, Clipping, EAS tone, Phase Mismatch, LFE Validation, Language ID, Mosquito Tone, Quasi Peak, Dolby Atmos rendering Validation , Endianness Check, Speech Presence, Audio Level
Container	Conformance, Format, File Size, Media Info metadata dump, File name validation, MD5, SHA1 Hash, No of streams, Incorrect extension, Selective track analysis **MXF:** AS-11 descriptive metadata, Version, Operational pattern, Timecode presence/track count/mode/start value/source, Index table presence/location/completeness/correctness, Origin parameters, KLV alignment grid/fill elements, Partitions validity/Status/Completeness/Instance count/Index table presence/Essence presence/Max length, Essence wrapping/external check/referencing/partition strategy, Audio track numbers/element size/channel count/configurations, Descriptive metadata presence/scheme, Run-in sequence, Random index pack, Segmentation track, File package count, Index edit rate, Index duration, Audio/Video sample rate, Audio/Video stream type, Audio/Video edit rate, Video line map, Stored width, Stored height, Display width, Display height, Aspect ratio, Component depth, Horizontal sub-sampling, Vertical sub-sampling, System item presence, Block Align, Channel status mode, Fixed channel status data, Stored F2 offset, Display F2 offset, Sampled X/Y offset, Display X/Y offset, Identical GOP indicator, Edit unit byte count, Slice count, Dark metadata, Timecode frame drop, Audio locked/unlocked status, Audio ref level, Sampling rate, Quantization bits, Average bytes per second, Index start position, Single index location, Single essence location, Forward index direction, Image start/end offset, Color siting, Padding bits, Black ref level, White ref level, Color range, Constant B picture flag, Single sequence, Low delay **Transport Streams:** SCTE35, Program count, PCR Jitter, Packet Length, PID Usage, PIDs, PID Bitrate, Packet Intervals, PAT checks, PMT checks, Stream checks, PES checks, Language Metadata Verification **QuickTime:** Checks and correction for PASP, FIEL, GAMA, CLAP, COLR. Channel Configuration, Track properties, Movie properties, Language Metadata Verification, Check disabled tracks, Check multiple codec entries, Check Timecode properties
Cross Checks	**Video-Container:** Width, Height, Frame rate, Aspect ratio, Bitrate, Profile/Level, Scan mode, Field order, Chroma format, GOP type, GOP length, B-pictures, Low delay, Duration, Component depth **Audio-Container:** Sampling frequency, Bit depth, Channels, Bitrate, Duration **Audio-Video:** Duration in meta-data, Actual duration
Correction	Loudness correction for PCM and MPEG-1 L2 audio, QuickTime meta-data
Meta-data	Closed Captions (608/708) presence/conformance/format/location, Line 21 VBI Caption Decode, AFD, Bar, V-Chip, Teletext,

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