BATON®

Enterprise-class Automated File-based QC

Interra Systems' BATON is the leading enterprise-class QC solution used globally by broadcasters, OTT, post production houses, IPTV and archiving companies working with file-based media. BATON is the trusted choice for all their file-based QC needs with its comprehensive quality checks, scalability, support for a wide range of media formats, and an intuitive web-based interface.

Why BATON

Hybrid QC Solution
BATON's unified hybrid QC platform implements organizational QC policy to support a combination of automated and manual QC checks. The result is a well integrated and efficient broadcast workflow

Video Ad Serving Template (VAST) Support
BATON is the industry's first QC solution to support VAST protocol, a universal XML specification for serving digital video ads to players, with an extensive feature set and support for comprehensive quality checks

Unmatched 4K Content Verification Speed
BATON offers comprehensive quality checks optimized for performance

Cloud QC Enabled
BATON works seamlessly with popular cloud computing infrastructure services

Reliable QC with Comprehensive Quality Checks
BATON provides the most comprehensive checks covering standards compliance, regulatory checks and baseband checks in the industry, including PSE/flashiness checks

Scalability and High Availability
BATON's scalable architecture lets users expand the BATON farm as their QC needs grow. BATON's high availability ensures that the system continues in the enterprise environment even if one of the hardware components is down

Wide Integrations
BATON provides the most comprehensive integrations with media servers, transcoders, MAM, archiving and workflow solutions through its easy to use web-services based APIs

Manual QC
BATON supports Manual QC to manually perform quality checks on content

Pre-configured Multiple Delivery Formats
BATON ensures ease of deployment with pre-configured testplans for DPP, Netflix, CableLabs and a full list of delivery standards

Multi-Segement ABR Transcoding
BATON performs ABR specific checks on large volumes of VOD files, encoded at different bit rates, to ensure that the prepared content meets service provider and end-user quality expectations

Efficient Pre/Post-QC Workflow with Smart Folders
BATON provides a set of rich content aware, rules-based, pre/post-QC filters for efficient content verification workflows

Multi-lingual Reporting
BATON provides the most comprehensive and completely configurable reporting in multiple formats to suit your operational needs. Reporting languages include English, Chinese, Portuguese, Spanish and French, among others

Extensive Subtitles and Closed Caption (CC) Data Verification and Audio Language Detection
BATON supports a host of subtitle and CC formats, both embedded and stand-alone. Verification includes dropouts, standards compliance, profane word detection, and many others. BATON can also perform multi-language checks of audio tracks

Loudness Detection and Correction

BATON detects loudness issues in compliance with standards including CALM, EBU and others, and provides options for loudness correction

Rich Set of Multi-severity Checks

BATON's unique multi-severity checks provide the ability to grade errors and configure actions based on the severity of the problem
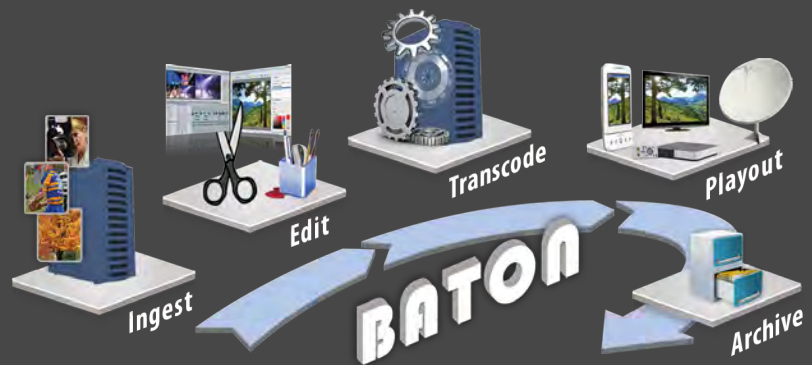
Auto-scaling

BATON offers auto-scaling functionality, both in the cloud and on-premise to scale up/down dynamically to meet growing QC requirements

ICS — BATON

Available as an on-demand content verification service over the cloud

Improves Efficiencies Across Content Lifecycle

BATON Key Features

- A comprehensive ML/AI enabled QC solution, available for Windows
- Hybrid QC platform with a combination of automated & manual QC checks on content
- Supports SD, HD, UHD, 4K Mixed workflows
- Intuitive, simplified and a very user-friendly Web-based user interface
- Extensive time code related checks including start TC / discontinuity / GOP / LTC, VITC and more
- Built-in Test Plans for various Standards and Workflows such as DPP, iTunes, Netflix, Cable Labs, ARD_ZDF, Ingest, Playout and more
- First QC system to support VAST formatted ads
- Supports S3, Spectrum, Avid Interplay, Google Cloud Servers, HTTP Server and Dropbox
- Efficient integration with media servers, transcoders, MAM archiving and workflow solutions through its easy to use web-services based APIs

- Supports audio language detection for 25 languages
- Scalable architecture for expansion of the BATON set up as QC needs grow
- Available as a subscription-based service for automated QC of file-based content
- Rich reporting features:
  - Multi-language reports in HTML, XML, PDF and Excel
  - Reports based on analytics, timeline, content structure and thumbnails
  - Incremental reports of tasks in progress
  - Compact reports to analyze verification summary
  - Options to comment, tag, rate and compare reports
  - Configurable e-mail, HTTP alerts including SNMP
- Supports user management & access control
- Comprehensive solution for task scheduling & monitoring
- Support for SOAP, XML-RPC, and REST APIs
- Equipped with BATON diagnostic tool, which gives bird's eye view of BATON's performance

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BATON Checks Support

Container Checks
Content layout, Slates, Closed Caption, Duration, File size, Audio/Video duration mismatch, Compare System to elementary metadata, Timecode checks, Teletext, Packet size, Ancillary data, Number of audio/video streams, Synchronization

Compliance Checks
DPP compliance, Digital Cinema compliance, IMF compliance, CableLabs VOD compliance, ARD_ZDF_HDF compliance, AS02 / AS03 / AS10 / AS11 compliance, TR101 290, ARIB specifications, DPI compliance

Video Checks
HDR Quality checks incl. SMPTE 2084 EOTF, lightness level (MaxFALL and MaxCLL), ST 2086, and ITU-R BT. 2020 compliance etc., Frame rate, Bit rate, Frame size, Aspect ratio, Duration, Resolution, Video format, Picture scanning type, AFD, GOP, Color format, Quantization parameter, Blockiness, Blurriness, Moiré pattern, Mosquito noise, Pixelation, Ringing artifact, Telecine/ cadence analysis, Combing errors, Field dominance, Field order, Duplicate frames, Freeze frames, Motion jerk, Ofcom- compliant Flash/PSE (Flashy Video), PSE (Flashiness detection in HDR content), Action safe area, Black bars, Black frames, Blank frames, Color bars, Color banding, Credits, Ghosting artifact, Image presence, Shot transition, Color gamut, Upconversion, Luma/Chroma levels (IRE/millivolts/pixel values), Video noise, Chroma change, Defective pixels, Halfline blanking, Video dropout, Brightness, Contrast, White point, 3D experience, Image tilting, Burnt-in text detection, VBI Lines detection, Flicker, Logo detection, Offline media, Pattern noise, Black and white frames, Sawtooth artifact, Digital ghosting artifact, Scratch artifact, De-interlaced jerk, Flicker, Frame jump, Compression score, Aliasing, Pulldown judder, Solarization, Half flash, Pulsing noise, Composite signal level, Progressive segmented frame(PsF), Frame jump, Content complexity, Missing subtitle, Age rating, Lead-in/Lead-out credits

Audio Checks
Kantar BVS watermark, Audio language detection, Audio level (Min, max, avg), Dialnorm, Level mismatch, Loudness compliance (ITU, EBU, CALM Act, OP59, ARIB) (BS.1770-1, -2,-3), PPM meter, Silence, Crackle, Background noise, Colored noise, High frequency noise, Jitter noise, Line Pattern noise, Transient noise, Overmodulation noise, Echo, Wow & Flutter, Audio Impulsive noise, Nielsen & Cinavia watermark, Click and pop, Clipping, Audio dropout, EAS tones, Misplaced channels, Phase detection, Stereo pair detection,Test tones, DPLM, Bitdepth upconversion detection, Repetitive pattern detection, Spectral aliasing detection, Audio impulse noise, Teletrax watermark, Basic alignment of speech with captions detection, Reverb, Beep, Multi reel audio click noise, Low pass filter

Data Checks
Subtitle analysis and language detection, Burnt-in text detection and analysis, Closed Captions, DPI messages. Display duration, Character count, Spell check, IMSC1 profile validation, Character code table, Subtitle position, Caption/Subtitle aignment, Dropout, Display duration, 608/708 Specific checks, XDS checks

Content Classification Checks
Explicit, Health advisory products, General scene classification, Violence, Keyword detection, Strong language detection

Note:
Some of the checks and codecs listed above are not part of the base package and need to be purchased separately

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Container Checks
MXF (All OP, OP-Atom), MP4, 3GPP, AAF, QuickTime (incl. reference files), MPEG-2 Transport (ATSC, DVB), MPEG-2 Program/DVD VOB, GXF, LXF, ASF, AVI, Matroska, VAST, Encrypted DCP, WebM, P2 Package, Dolby Vision Metadata

ABR Formats
Apple HLS, MPEG DASH, Microsoft Smooth Streaming (ISM)

Video Codecs
HEVC/H.265, H.264 (incl. AVC-Intra 100/50, Sony XAVC), MPEG-2 (incl. IMX30/50, XDCAM, D10), DV (25/50/100), VC-1, MJPEG2000, MPEG-4, MPEG-4 SStP, MVC, Frame sequential H.264, DNxHD (VC-3), Apple ProRES, Cineform, PhotoJPEG, MPEG-A, MJPEG-B, RGB, Uncompressed YUV, Canopus HQ and HQX, J2C, DPX, Avid Meridien, Apple Intermediate codec, Compressed JFIF, RED, DNxHR, SonyRAW (F55/F65), ARRIRAW, AVS, M101, EXR

Audio Codecs
Dolby AC-3, Dolby Digital Plus, Dolby-E, MPEG Audio, Dolby Atmos, MPEG 2.5, MP3, BWF, AAC, AAC Plus, AES3, LPCM, ADPCM, AIFF, WAV, WMA (Standard & Professional), DV Audio, DTS Audio, Vorbis, Dolby Atmos encapsulated as ADM BWF

DRM Support
Widevine, FairPlay, PlayReady

Image Formats
JPEG, GIF, TIFF, Targa, Kodak Cineon, PSD, PNG, DNG, JPF

Text Formats
CEA-608, CEA-708, Line 21, Timed Text / DFXP, SCC, STL, SMI, SRT, WebVTT, SMPTE 2052, SSA/ASS, IMSC1 Subtitles, iTunes Subtitle, CineCanvas, IMSC1, DCDM Subtitle format, EBU-TT, ARIB subtitles

24x7 Post Sales Support
BATON's renowned technical support is available anytime to ensure users are always up and running.

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BATON®+

Consistent Quality Across the Enterprise

Interra Systems' BATON+ is an add-on tool in the BATON® suite that works across multiple BATON installations and provides new functionalities over the core file-based QC functions provided by BATON: Workflow QC, Data Analytics, Custom Reports, and Management Console.

BATON+ leverages workflow definitions to ensure consistency of QC results across the content life cycle. BATON+ offers extensive QC trend analysis across multiple BATON installations to improve workflow efficiency. Moreover, it acts as a centralized console for synchronizing asset details from different BATON installations.

Workflow QC

BATON+ lets users define workflows to represent the stages through which media content flows in a facility. By defining workflows, BATON+ users can ensure metadata consistency, propagate creative intent, and compare QC reports in different ways across content lineage.

QC Data Analysis

BATON+ includes highly efficient analytic tool that seamlessly integrates with multiple BATON installations, captures the QC data, and offers a visual representation of the data analysis results in the form of reports and graphs. This enables users to effectively track trends and anomalies in the media content.

Custom Reports

BATON[+] supports rich set of vendor reports that provides trends and statistics in graphical and tabular formats for a particular vendor for a given duration. Along with reports, support added for report templates to customize layout and content of reports. BATON[+] facilitates its users to compare the trends and statistics for different vendors or different duration.

BATON Central Management Console

With the BATON Central Management Console, users have a consolidated view of QC planning related information from different BATON installations. With the console, users can also ensure consistency across BATON installations by publishing the information from one BATON system to another.
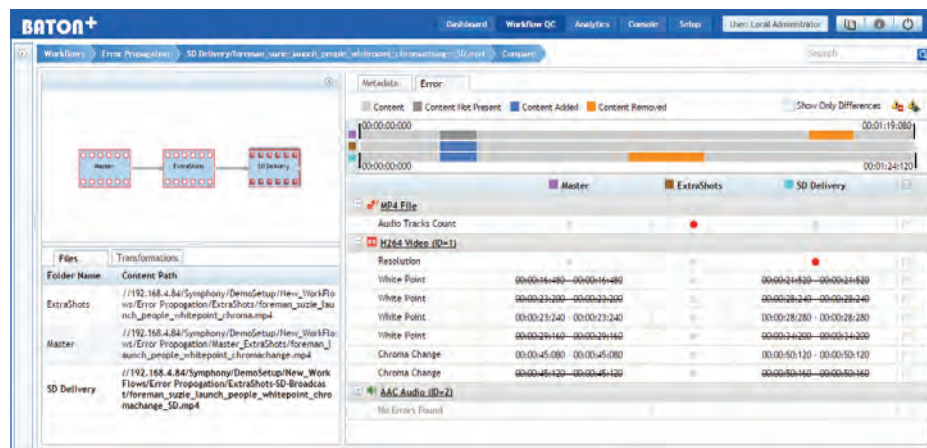
Key Features

- Acts as a repository for QC planning-related information and QC data for different BATON installations
- Syncs with multiple BATON installations to fetch QC data on a regular basis
- Syncs the BATON Test Plans automatically from the registered locations
- Automates QC data analysis for tracking of trends, patterns, and anomalies
- Exhibits the utilization of BATON resources for optimum performance
- Creates time-based reports to analyze daily, weekly and monthly QC data
- Allows users to export the statistics in PDF and Excel formats
- Email or save the reports to a location as per defined schedule
- Enables users to manage different BATON installations from a single point using the Central Management Console

- Lets users create folder-based workflows that define the life cycle of content with respect to their physical location
- Offers the ability to define metadata consistency rules over different stages in a workflow
- Provides complete content lineage information
- Propagates changes to the QC report reflecting creative intent across the lineage
- Provides richer QC report comparison options in the form of timelines
- Provides support to create rich set of custom reports using report templates
- Compares the Result Statistics and Metadata Statistics for different BATON Servers
- Compares the Performance statistics for different Resolutions, Formats and Test Plans across BATON Servers
- Lets users to publish data and settings across BATON installations using the console, ensuring consistency across multiple installations

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Workflow QC

BATON+ lets users define folder-based workflows to perform content-centric QC. As content passes through different stages in the workflow, different versions of same content are created. While each version undergoes QC in BATON at different points in the workflow, there is a need to look at all the QC reports for same content at different stages in a holistic manner. Using BATON+ workflows, users can analyze content at different stages, thereby aligning QC results with the content life cycle. With workflows, the files that are verified in BATON are connected together using lineage information provided by fingerprinting or name matching solution.

Workflow QC provides ways to add lineage-based checks on metadata, perform automatic review of reports, and compare reports along the content lineage. Reports reviewed by BATON+ are also available with BATON for further processing.

QC Data Analytis

BATON+ provides comprehensive view of the QC landscape using time-based, graphical, and tabular reports. BATON+ lets users examine and analyze the metadata statistics grouped under different sections, such as container, video, audio, reported error count, and more. Users can analyze the statistics on different criterion, such as test plans, content location, smart folder, and so on. In addition to metadata, users can also examine task statistics to get the complete picture of the QC activity and QC data from a central location. BATON+ provides a refined search facility wherein users can perform QC search and also configure relations between the specified search criteria.
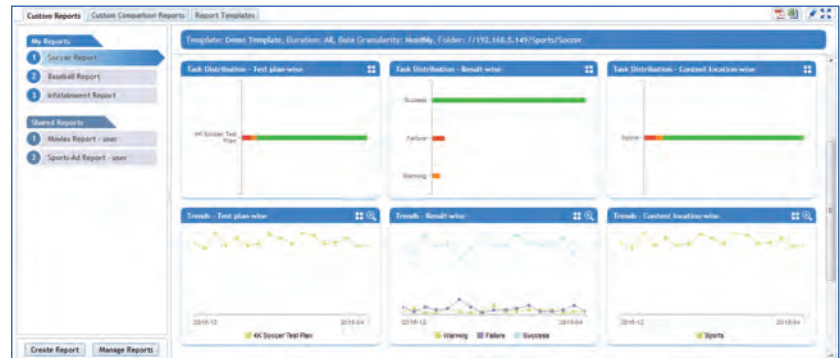
The search results can be exported in PDF and Excel format to share them with other users or perform offline analysis. These reports can also be sent by email or saved to specified locations as per user defined schedule. Moreover, BATON+ also allows users to analyze core utilization and task queues for optimum performance using graphs and statistics.

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Custom Reports

BATON⁺ provides a rich set of custom reports that helps the users to analyze trends and statistics of different vendors. The reports feature enables users to compare trends and statistics for different vendors or different duration.

Additionally, BATON⁺ provides a set of built-in report templates and provision to create new templates for quick customization of custom reports and custom comparison reports in terms of content and layout. BATON⁺ facilitates its users to import, export, and share report templates, as and when required.

Customizable Dashboard

BATON⁺ provides a configurable dashboard with a user interface that supports the addition and deletion of any number of dashlets, as required. The dashboard enables the analysis of various trends and patterns, such as format distribution and error related distribution of QC data. The charts, tables, and timelines in the dashboard display the most used elements of the enterprise QC data.

BATON⁺ provides the capability of drill-down graphs, which helps users to look into the specific details of an error. Further, for the user defined filters, BATON⁺ also facilitates users to create a dashboard quickly using the set of predefined dashboard templates.

Cetralized BATON Management

With the BATON Central Management Console, users have a consolidated view of QC planning related information from different BATON installations. This includes test plans, alerts, smart folders, content locations, checkers, user accounts, BATON settings, and license status. With the console, users can also ensure consistency across BATON installations by publishing the information from one BATON system to another. This helps in reducing the setup time for a newly-installed BATON server. Additionally, Test Plans get synchronized automatically from the registered locations. The user can easily keep track of the deleted BATON resources for each BATON⁺ resource. Alerts generated by the BATON installation are also displayed in BATON⁺, enabling quicker actions. The console also facilitates license updates of one or more BATON installations.

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BATON® Content Corrector

Automating Content Correction in BATON File-based QC

BATON Content Corrector (BCC) addresses the need to correct content verified by BATON. BCC enables its users to get a list of content QCed by BATON, correct errors, and schedule the content for QC by BATON once again. In addition, corrected content can be played in BATON Media Player (BMP) to analyze the corrections done.

BCC is easy to use and install software that syncs up with the BATON system in the environment to access the BATON task list. BCC is also optimized to take advantage of multi-core systems to maximize content processing.

High Level Features

- Correct media files verified by BATON
- Save corrected media files - files can be re-transcoded or saved as uncompressed media
- View verification report for any task
- Verify corrected media files again in BATON
- Compare the erroneous and corrected media files
- Play erroneous and corrected file, using BATON Media Player
- Correct the Channel Layout and Dolby E Guard Band
- Correct RGB Color Gamut & Video Signal Levels errors
- Export Correction report in PDF format
- Inplace correction supported for uncompressed audio formats
- Comprehensive support for loudness correction
- Support for all loudness standards: ITU, CALM Act, EBU R128, ARIB
- Integrated with DPLM (Dolby Technology)
- Integration with multiple content locations

Errors Corrected

- Video Correction
  - RGB Color Gamut
  - Video Signal Level
  - PSE Correction
  - Black Frame Removal

- Loudness Correction
  - Audio Loudness
    - Program/Average Loudness
      - True Peak
      - AC3 Dialogue Normalization
      - Mismatch in Audio Tracks

- Loudness Correction Mechanism
- Misc. Correction Options
  - Misplaced Channels
  - Dolby-E Guard Band
- Metadata Correction Options

Streams and Formats Supported

Container Formats: MXF, LXF, GXF, AVI, ASF, MP4, MXF Reference Files, QuickTime Reference Files, MPEG-2 Program, MPEG-2 Transport, Canopus HQ, HLS, Encrypted HLS, REDCODE RAW(.R3D)

Uncompressed Audio Codecs: ADPCM, LPCM, BWF, AIFF, WAV, AES3

Compressed Audio Codecs: AAC Audio (MPEG-4 Audio), AC3 (Dolby Digital), Dolby-E, WMA, MPEG Audio

Video Codecs: DPX, DV, H.264, J2C, MPEG2, MPEG-4, Cineform, ProRes DNxHD, Motion JPEG 2000, MPEG-4 SStP, Sony RAW, Kodak Cineon
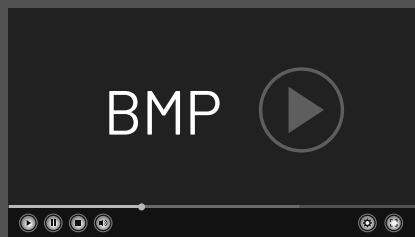
Packages: DCP (Digital Cinema Package), CPL (Composition Playlist Format), ISM (Smooth Streaming), Related Audio Video Files, AS-02 AAF (Advanced Authoring Format), MPEG DASH, Related Elementary Audio Video Files
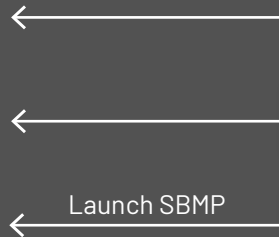
BMP

Powerful Industry Grade Media Player

Interra Systems' BMP is a powerful, feature-rich media player for media professionals to play, inspect, and verify audio-video content. BMP supports the widest range of formats and it can easily be integrated with broadcast workflows at any stage for in-depth examination of media, while facilitating collaboration across multiple teams and projects. The visual and technical information provided by BMP ensures that content looks and plays exactly the way it was intended. Supporting SDI playout, and a wide range of audio, video, elementary and container formats, along with extensive support for closed captions and subtitle formats, BMP offers video professionals one of the most comprehensive media players on the market. BMP is offered both as a standalone media player and as an integrated part of BATON®.

BMP ▶		
	←	Avid Interplay Location
	←	Shared Location
	← Launch SBMP	MAM Workflow

Register the content location

Key Features

- BMP has an intuitive interface to playback media files
- User interface available in Chinese, Japanese, Spanish and Portuguese languages
- Supports SDI playout options using AJA / BlackMagic
- Supports a wide range of audio, video elementary, container, closed captions, and subtitles formats

- Playback from different content locations: Local, UNC, FTP, Amazon S3, Avid interplay, Google Cloud, Storage (GCS), Azure Blob storage, HTTP server etc.
- A feature-rich media player supporting a variety of operations like:
  - Create, save and load playlists to play files one by one
  - Play in slow motion, control play duration, and more

- Check attributes of audio and video tracks
- Play, pause, rewind, fast forward, go to timecode, jog and shuttle, move to next/previous frame and so on
- Display audio waveform, loudness meter and audio level meter
- Monitor the color intensity and range during playback using RGB Parade, Vector Scope and Histogram in UI

- Mark-in Mark-out feature to mark the specific sections and play them later for review
- Consecutive and loop playback of marked-in and marked-out portions across different files in the playlist
- Playback of Growing MXF files

Streams and Formats Supported

Container Formats: LXF, MXF, GXF, AVI, MP4, MXF, MOV, MPEG-2 Transport, MPEG-2 Program, ASF, REDCODE RAW(.R3D), DV, DCP, WebM, MKV, VP9 video codec in WebM/ MKV containers

Packages: CPL (Composition Playlist Format), ISM (Smooth Streaming), DCP (Digital Cinema Package), Related Audio Video Files, AAF (Advanced Authoring Format), MPEG DASH and Fragmented MPEG DASH, Apple Fairplay, HSS, HLS, Spanned P2 clips, SONY XDCAM, Supplemental IMF package, Supplemental IMF package
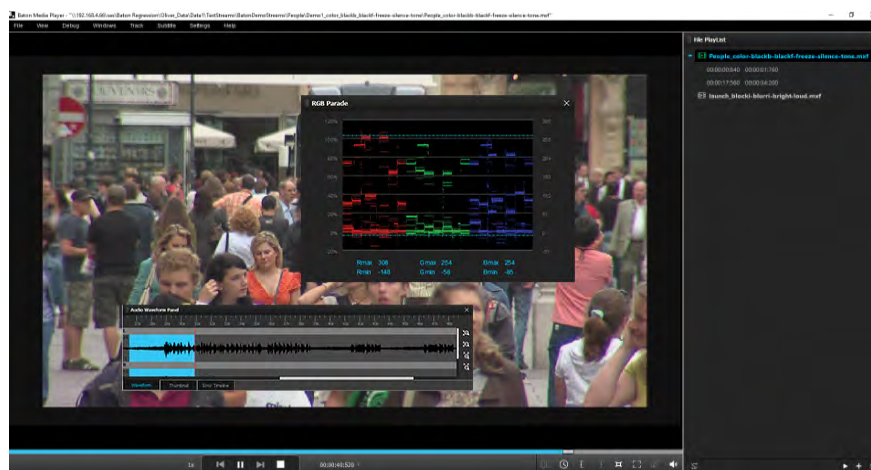
Video Codecs: Kodak Cineon (.cin), TARGA, TIFF, DPX Video, MPEG-1, MPEG-2, AVC, JPEG2000, QuickTime, DV Video, Cineform, DNxHD, MPEG-4, Uncompressed RGB, VC1 Video (Advanced Profile), Uncompressed YUV (Support extended for Y42B fourcc code), J2C, HEVC (CC in HEVC), Canopus HQ, MPEG-4 SStP, Sony RAW, Sony X-OCN and RED2 video codec, M101 codec

Audio Codecs: LPCM, AC3, Dolby E, AES3, AAC, MPEG-Audio, WMA Audio, MP3, Vorbis, FLAC audio codec

Elementary Formats: H.264, MPEG-2 Video, WAV, AAC, AC3, HEVC

Closed Captioning Formats: EIA-608 and EIA-708 CC data in MXF, Quantel Closed Caption data in MXF, GXF, LXF formats and in MPEG2 and H.264 User data, Divicom 608, SCTE-20 608 CC data in MPEG-2 Video

Subtitle Formats: CineCanvas in DCP, STL, WebVTT, WebVTT inside HLS, SRT, SAMI, Scenarist SCC, TTML, TTML-DFXP, TTML-SMPTE2052, ASS, iTunes, CineCanvas, VBI lines, IMSC1 present in MXF, ARIB

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