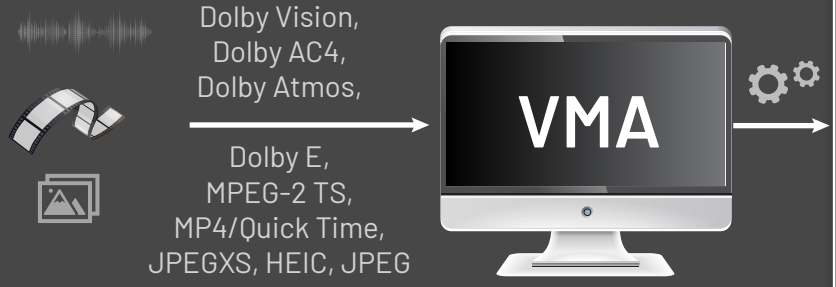
interra systems

VEGA Media Analyzer

In-depth Media Analyzers

VEGA is an industry leading media analysis platform for debugging, verification of standards compliance, and interoperability testing of encoded streams. VEGA enables navigation down to the deepest levels of a media file to generate error reports and analysis.This significantly reduces R&D and QA time in delivering standards-compliant video. VEGA supports all popular video compression and container standards and includes features such as video comparison and quality checks. These features help deliver high-quality media.

VEGA Usage Model



- *Frame by frame analysis, error identification and reports for audio video elementary streams*
- *Analysis of the stream structure through syntax elements from the high level to the block level*
- *Powerful reporting of overflow/underflow in TSTD and CPB model*
- *Analysis of information from the high level to the block level graphically like bitrate, frame distribution, compression ratio, QP etc.*
- *Detailed analysis of statistics at different levels like stream, sequence, NAL, frame etc.*
- *PCR inaccuracy and intervals, PCR drift rate, PCR frequency offset analysis*
- *Integrated player to test bitrate switching and video quality errors*

analyze | debug | refine | optimize

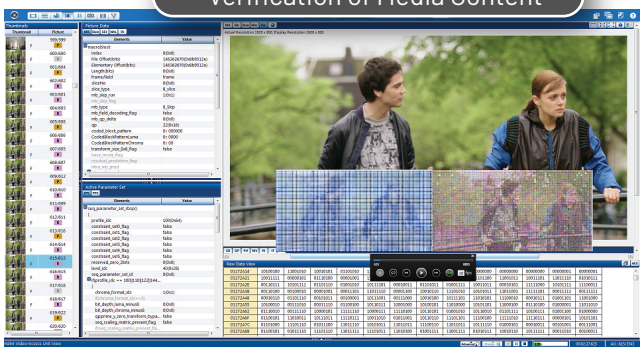
Advantages

- Accurate, in-depth video analysis assures standards compliance & interoperability
- Comprehensive format support: Apple ProRes, AV1, HEVC, H.264, MMT, HLS, MXF, VP9, VP8, VVC, VC1, MPEG-2, MPEG-DASH, JPEG-2K, ISM, PCAP, Dolby Vision, Dolby AC4, HEIF/HEIC , Dolby Atmos, ATSC 3.0, Dolby E, DTS Audio
- Cost-effective, PC-based software with multi-core support
- Fast performance improves operational, R&D & QA efficiency
- Value-added tools enable video comparisons, video quality checks, buffer analysis and debugging
- Regular updates and aggressive product roadmap anticipates next generation requirements, meeting customer needs
- Encoding comparison, encoding regression tests, STB compatibility
- Responsive support team available 24X7 worldwide

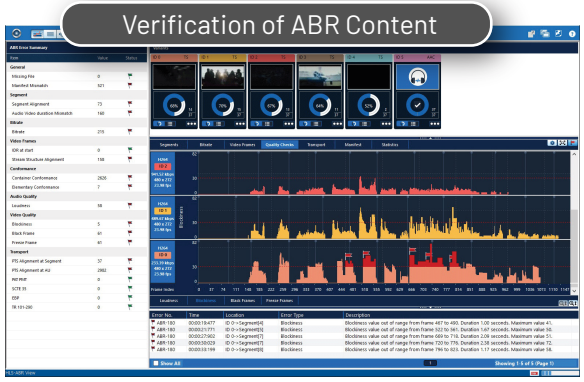
Key Features

- Comprehensive, easy to navigate visuals, high level picture information down to feature thumbnail structure
- Frame by frame navigation down to the smallest block partitions of Frame
- Conformance violations at all levels to enable accurate examination of media standards
- Summary information for all levels - stream summary, sequence summary, Block (NAL / OBU.etc) summary, picture summary and more
- Analytical graphs for bird's-eye view of the stream: Bitrate, frame distribution, compression ratio, QP, DPB occupancy, prediction data and transform data
- Overlay of Slices, Tiles, Blocks over the picture
- Quick examination of coded bits, prediction data, motion vectors, QP, interpolation and reference index over the picture
- Detailed display of syntax elements at header and data levels
- DPB and reference picture information
- Quad Tree view for both HEVC and VP9 which displays the block splitting
- Display pixel values and pictures at every stage of decoding
- Graphical representation of in loop filter process
- Graphical representation of Intra prediction p rocess
- Visualization of Closed Caption data
- Support for detailed residue view for HEVC and H264 streams
- Efficient and high-performance analysis - multi-core support
- Support for SCC (Screen Content Coding) Extension in HEVC video
- Support for Frext Streams (4:2:2, 4:4:4)
- Provides a microscopic view into MPEG-2 transport streams
- PCR inaccuracy and intervals, PCR drift rate, PCR frequency offset and PTS/DTS analysis
- Strong ABR content validation with respect to the manifest file and ability to report the minutest violations
- Compliance to media standards
- Verification of encoded streams' bit rates
- Detailed verification of chunks alignment based on the following:
  - Timing of encoded frame rate in elementary streams
  - Chunks play time
  - Stream structure
  - PTS/DTS encoded in TS
  - IDR alignment at start of chunks
- Verification of video and audio quality checks, such as blockiness, black frames, freeze frames, loudness, silence and CALM specification checks
- Play and switch between different Variants
- Analysis of QP variations across different bit rate streams
- Analysis of frame size and compression ratio variation

Verification of Media Content



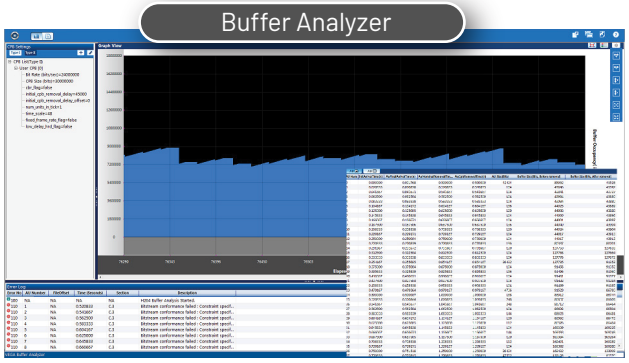
Verification of ABR Content



Utilities

Buffer Analyzer

- Analyzes Coded Picture Buffer (CPB) and T-STD Buffer Model
- Conformance violation as per standard
- Rich Buffer analysis report for easy debugging

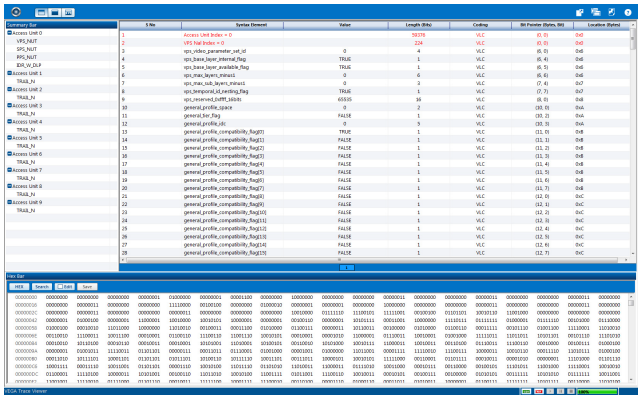


YUV Quality Viewer

- Evaluate video quality matrices such as PSNR, RMSE and SSIM
- Evaluate pixel level comparisons
- Play reference, comparison and residual video
- Compare multiple YUVs

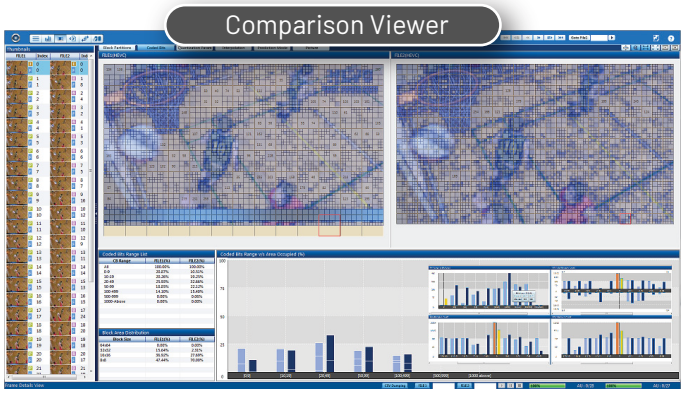
Trace Viewer

- Examine various syntax elements in detail e.g. syntax element name, offset and value. The elements are linked with the Hex View



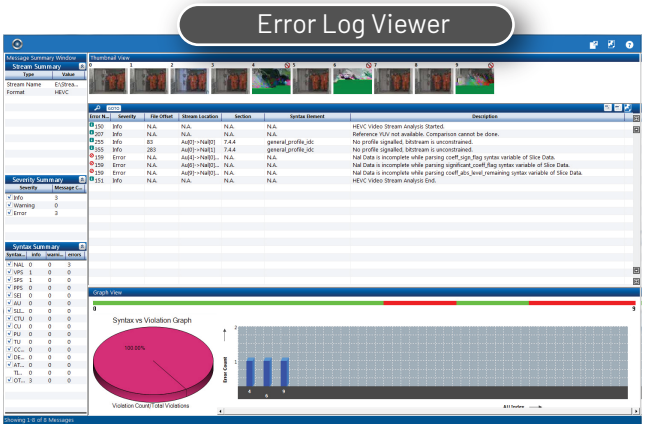
File Info

- Quickly identify the high-level information about the stream



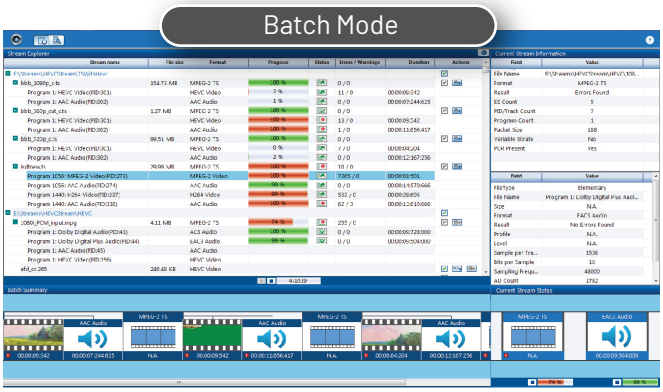
Comparison Viewer
(HEVC/H264/VP9 vs HEVC/H264/VP9)

- Encoding comparison - bit rate, QP data, buffer occupancy, motion vectors and more
- Quality comparison - contrast, blockiness, pixelation, and blurriness



Error Log Viewer

- Examine, search, and filter error messages and dump the errors in XML or PDF file



Batch Mode

- Used to analyze multiple files simultaneously in GUI

Standard Support

Video Streams - Apple ProRes, AV1, H.264, HEVC, JPEG-2K, MPEG-2 TS, WebM, VVC, VP8, VP9, MPEG-DASH, Apple HLS, ISM, Dolby Vision, AVS and AVSPlus Video, AVI

Audio Streams - AAC, AC-3, EAC3, LPCM G.711 (A Law/Mu Law Audio), G.722 (ADPCM Audio), MP3, ALS Audio, AES3 Audio, FLAC, Vorbis, Dolby AC4, Dolby Atmos, Dolby E, DTS Audio

System Streams - MMT, MXF, Transport / Program, MP4, MPEG-2, WebM, MKV, PCAP, TLV-MMT, HEIF/HEIC container

ABR Streams - MPEG-DASH, HTTP Live Streaming (HLS), Microsoft Smooth Streaming (ISM), OGG

Line 21 formats - EIA 608, EIA 708, AFD, XDS, SCTE-608, DIVICOM-608, CMAF Constraints

Other Formats - HDR-BT2020, HDR10, DVB Subtitle, ATSC 3.0 checks, TELETEXT, JPEG, JPEG-XS, HEIF, GIF

Conformance Checks - TR101290 checks, Cable Labs 3.0, ARIB STD-B1 Annex C, ARIB TR-B14 Profile C, and HbbTV checks

Interra Systems, Inc.
1601 S. De Anza Boulevard, Suite 212, Cupertino, CA 95014
Phone: +1 408 579 2000 | Email: vega_info@interrasystems.com
www.interrasystems.com