MSight

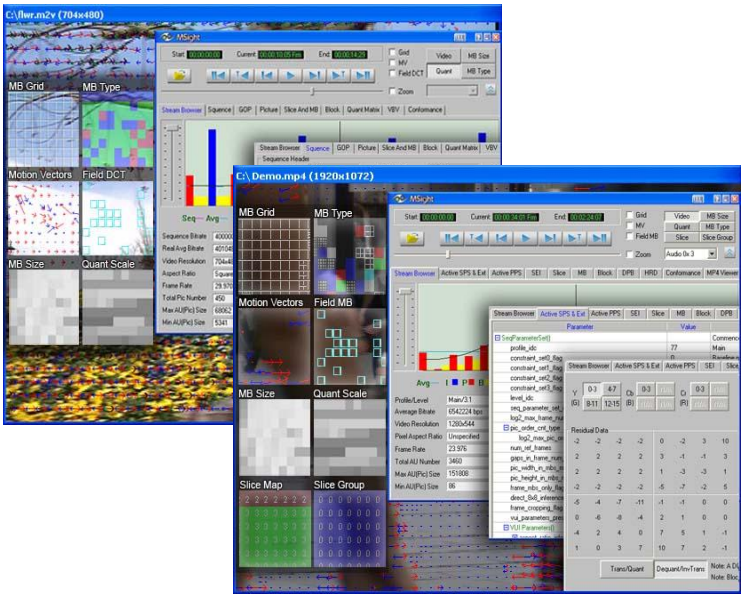
Fully optimized media file analyzer for fixing problems

Delivering powerful and responsive analysis for optimum video

Working with compressed video is challenging enough. There are huge amounts of data, the standards are complex, and the products must be interoperable. Pushing the video quality envelope requires additional complexity, so why not work with tools that give you the advantage?

Msight is a fully optimized file-based media analyzer solution that provides organizations significant and tangible return on investment by quickly identifying problems early. MSight exposes stream statistics that give digital media professionals valuable insight into the behavior of the compression algorithms, thereby accelerating modifications that need to be made. Users can then observe the effects of algorithm adjustments on bitrate and video quality by looking at a set of video stream statistics.

A unique capability of MSight is its ability to run stream comparisons to determine the effectiveness of a stream over another. This allows for efficient optimization of video quality settings and algorithms.



Quick access to stream statistics provides greater effectiveness in improving video quality

Summary

MSight is a media file-based analyzer solution that provides in-depth testing at all levels of encoded data to achieve optimum video quality. The depth of testing and speed at which errors are detected allows organizations to address problems early and minimize cost of errors.

MSight Applications

- Codec development (hardware and software)
- Broadcast (terrestrial and satellite)
- IPTV (Troubleshooting IPTV production workflow)
- DTV
- VOD
- Video Conferencing
- Wireless/Mobile Video
- Content Houses and Digital Media Providers
- Encoder evaluation
- Media test lab

Are you ready to see it all?

MSight's powerful conformance test interface and regression scripting support alleviates the inherent complexities in managing quality control during codec development.

With MSight, users can delve into the lowest level syntax elements of the compression standard, providing unparalleled visibility. As the industry's most optimized analyzer, it's perfectly suited for handling HD content and large volumes of digital media. Its optimized performance allows for rapid processing of hours' worth of video and audio, ensuring problems can be swiftly identified, debugged, and fixed.

MSight's ability to handle larger files with speed and precision makes it a game-changer for quality assurance and debugging of encoder products. This is particularly beneficial when errors occur in larger streams. Additionally, its capabilities make it ideal for checking the long-term bitrate characteristics of encoding algorithms for refinement.

Standard features include testing for a wide range of video compression standards to ensure in-depth bitstream analysis right down to low level syntax.

For Technical Users

- Support for H.264/AVC, , MPEG-4 part 2, MPEG-2, MPEG-4 part 2, SMPTE VC-1
- Support for TS, PS, SS, VOB/E-VOB, MP4/3GP/3GP2/MOV, AVI, ASF/WMV, GXF, VES, AES and Planar YUV
- Faster compliance testing means less time to find problems and verify fixes.
- Quick access to relevant stream statistics provides greater effectiveness in improving video quality.

For Organizations

- Increase workplace productivity.
- Gain competitive edge by delivering leading-edge products with faster time-to-market.
- Maximize productivity of skilled MPEG professionals by providing efficient and time-saving tools.

MSight Specification

File formats	TS, PS, SS, VOB, E-VOB, MP4, AVI, 3GPP, MOV, GXF, ASF / WMV, VES, AES,YUV
Video compression	H.264, MPEG-2, MPEG-4 Part 2, SMPTE VC-1
Audio compression	MPEG-1 / 2, AAC, HE-AAC, SMPTE-302M, LPCM
System tests	TR-101-290, ISO-TS, ISO-PS, T-STD, P-STD
Video tests	Video conformance, VBV, HRD, black, freeze, grey, digibeta artifacts
Audio tests	Silence, clipping, exceeding maximum level (user defined)
Unified conformance test	Centralized testing with HTML report
VOD CEP 2.0 compliance test	Constraints – TS, PID, PES,PSI Video and Audio encoding
Closed Caption and XDS	Decode and display 608 Closed Caption, V-Chip, CGMS-A, title, existence check
Stream Browser	Frame / Field seeking engine with picture distribution graph for streams up to 13 hours long

Supported Formats

H.264/AVC

- Support for all profiles with all levels including Baseline, Main, Extended, High, High 10, High 4:2:2, & High 4:4:4
- Support for all bit-depths from 8-bit to 12-bit and all chroma formats
- Support for Flexible Macroblock Order (FMO), Arbitrary Slice Order (ASO), Data Partitioning, Transform Bypass, Residual Color Transform, 8x8 Transform, Custom Quant Matrix, etc
- Support for High Definition resolutions
- Input Formats:
  - Transport Stream
  - Program Stream
  - MP4/3GP
  - QuickTime(MOV)
  - H.264 Annex B
- Faster than real-time H.264 conformance testing
- HRD buffer model conformance testing
- T-STD & P-STD buffer model conformance testing. Graphical modeling of TBn, MBn, EBn/Bn, & transport rate for T-STD.
- PTS/DTS check against expected values for TS and PS input
- View MP4 file structures, atoms/boxes as well as different descriptors for MP4/MOV input
- Detailed SPS, SPS Extension, & PPS information
- Supplemental Enhancement Information (SEI)
- Detailed Decoded Picture Buffer (DPB) and reference picture list information
- Slice header information
- Macroblock information:
  - Intra/Inter Modes and Partitions
  - Reference Index and Motion Vectors
  - Coded Block Pattern
  - Coding size for MV, mode, quant and residual
- Block information:
  - Transformed and quantized coefficients
  - Dequantized and Inverse transformed coefficients
  - Intra/Inter prediction results (reference data)
- Stream structures and bitrate graph
- Graphical overlay of MV, Field MB, MB size, MB quant, MB type, slice map, slice group

MPEG-2/MPEG-1

- MPEG-2
  - Low Profile with all Levels
  - Main Profile with all Levels
  - 4:2:2-Studio Profile with all Levels
- Support for High Definition resolutions
- Input Formats:
  - Transport Stream
  - Program Stream for MPEG-2 and System Stream for MPEG-1
  - Video Elementary Stream
- Faster than real-time MPEG-1/2 video conformance testing
- Video Buffer Verifier (VBV) conformance testing, including instant bitrate (Rn) check
- T-STD & P-STD buffer model conformance testing. Graphical modeling of TBn, MBn, EBn/Bn, & transport rate for T-STD.
- PTS/DTS check against expected values for TS and PS input
- 3:2 pulldown support in VBV testing and bitrate graph/statistics
- Header information:
  - Sequence
  - GOP
  - Picture (with detailed coding size)
  - Slice
  - Extensions and User Data
- Macroblock information:
  - Modes
  - Motion Vectors
  - Coded Block Pattern
  - Detailed coding size
- Block information – Inspect each block's DCT or IDCT data
- View quant matrix and quant matrix extensions (QME)
- Stream structures and bitrate graph
- Graphical overlay of MV, Field MB, MB size, MB quant, and MB type

MPEG-4/H.263

- Support for Simple Profile and Advanced Simple Profile
- Support for Core, Main, & Advanced Coding Efficiency Profiles that only use the following visual tools:
  - I, P, and B-VOP
  - AC and DC Prediction
  - 4-MV and Unrestricted MV
  - Slice Resynchronization
  - Data Partitioning
  - Reversible VLC
  - Short Header
  - Method 1 and Method 2 Quantization
  - Interlace
  - Global Motion Compensations
  - Quarter-pel Motion Compensation
- H.263 baseline support
- Support for high definition resolutions
- Input Formats:
  - Transport Stream
  - Program Stream
  - MP4/3GP
  - Video Elementary Streams
- Faster than real-time MPEG-4 video conformance testing
- Video Buffer Verifier conformance testing
- T-STD & P-STD buffer model conformance testing. Graphical modeling of TBn, MBn, EBn/Bn, & transport rate for T-STD.
- PTS/DTS check against expected values for TS and PS input
- View MP4 file structures, atoms/boxes as well as different descriptors for MP4/3GP input
- Detailed configuration information
  - Visual Object Sequence
  - Visual Objects
  - Video Object Layer
- Header information:
  - GOV
  - VOP
  - VP
- Macroblock information:
  - Modes
  - Motion Vectors
  - Coded Block Pattern
  - Detailed coding size
- Block information – Inspect each block's DCT or IDCT data
- Stream structures and bitrate graph
- Graphical overlay of MV, Field MB, MB size, MB quant, and MB type

VC-1

- Support for all Profiles (Simple, Main, Advanced) with all Levels
- Support for high definition (HD) resolutions
- Input Formats:
  - Transport Stream
  - Program Stream
  - ASF(WMV3, WVC1)
  - RCV
  - VC-1 Elementary Streams
- Faster than real-time VC -1 conformance testing
- HRD buffer model conformance testing
- Transport stream System Target Decoder (T-STD) model conformance testing with graphical modeling of TBn, MBn, EBn/Bn, and transport rate for TS input
- Program stream System Target Decoder (P-STD) model conformance testing for PS input
- PTS/DTS check against expected values for TS and PS input
- View ASF file structures, stream properties, and descriptions
- Header information: Sequence, Entry, Picture, Slice
- Macroblock information:
  - Modes
  - Motion Vectors
  - Coded Block Pattern
  - Motion comp partition
  - Variable size transform partition
  - Detailed coding size information
- Block information:
  - Inspect each block's transform size
  - Transformed and inverse-transformed data
- Stream structures and bitrate graph
- Graphical overlay of MV, Field MB, MB size, MB quant, MB type, slice map, variable transform partition.