# Extended Technical Metadata Acquisition and Usage

*Technology Presentation*

*June 2026*



## VideoQ Productivity Tools and Media Ambit ™


VQPT is a suite of software modules
for advanced video processing workflow

videoq.com/vqpt.html

videoq.com

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# Table of Contents

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# 1. Why Extended Technical Metadata?

1. Why it matters:

   **E**xtended **T**echnical **M**etadata (ETM) are important because they give modern AV content the details needed to stay **searchable**, **playable**, **governed**, and **portable** across many systems. Without that information, platforms are forced to **guess** how to process, transcode, deliver, or archive media, which increases errors and manual work.

2. For AV content:

   AV libraries often contain thousands or millions of files, so richer metadata makes **discovery** and **retrieval** much faster and more accurate. ETM also support **preservation** by capturing enough technical detail to migrate content over time without losing usability or quality.

3. For broadcasters and media teams:

   **Standards** such as EBUCore, PBCore, and MPEG-7 exist specifically because AV content needs more precise description than generic file metadata can provide.

4. For cloud platforms:

   Cloud media systems depend on metadata to **route content** through ingestion, storage, transformation, delivery, and governance pipelines. ETM improve **interoperability**, which is critical when content moves across DAMs, MAMs, transcoding services, AI tagging systems, and distribution platforms.

Bottom line: VideoQ ETM turn media from “just files” into **managed assets** that systems and people can **trust**.

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# 2. VideoQ Philosophy of Extended Technical Metadata

1. A modern AI-driven environment depends on **fully automated modular tools**, with a smaller team of human operators or supervisors focused on final quality checks and exceptional cases. These operators should have access to intuitive software tools and clear visual indicators that surface all key parameters quickly and at a glance.
2. Automatically generated **E**xtended **T**echnical **M**etadata (ETM) and **reports** are essential and should cover video and audio level profiles, video spatial and temporal activity, integrated loudness, and other critical parameters. These insights not only help maintain exceptional AV content quality, but also create unique signature datasets for content identification and processing optimization.
3. The VideoQ **VQPT** (**V**ideo**Q** **P**roductivity **T**ools) modules generate machine-readable **JSON reports**, including timeline profiles, enabling fast, reliable automated content identification and efficient indexing of large numbers of media files. *See Appendix slides for real data derived examples*.

VideoQ tools handle various types of **files** and **streams**, on premises and in the cloud.

They use **ffmpeg** libraries and support all common **containers**, **codecs** and **protocols**,

such as: MP4, MOV, J2K, OGG, AC3, EAC3, AVC, HEVC, AV1, VP9, TCP, UDP, SRT, etc.

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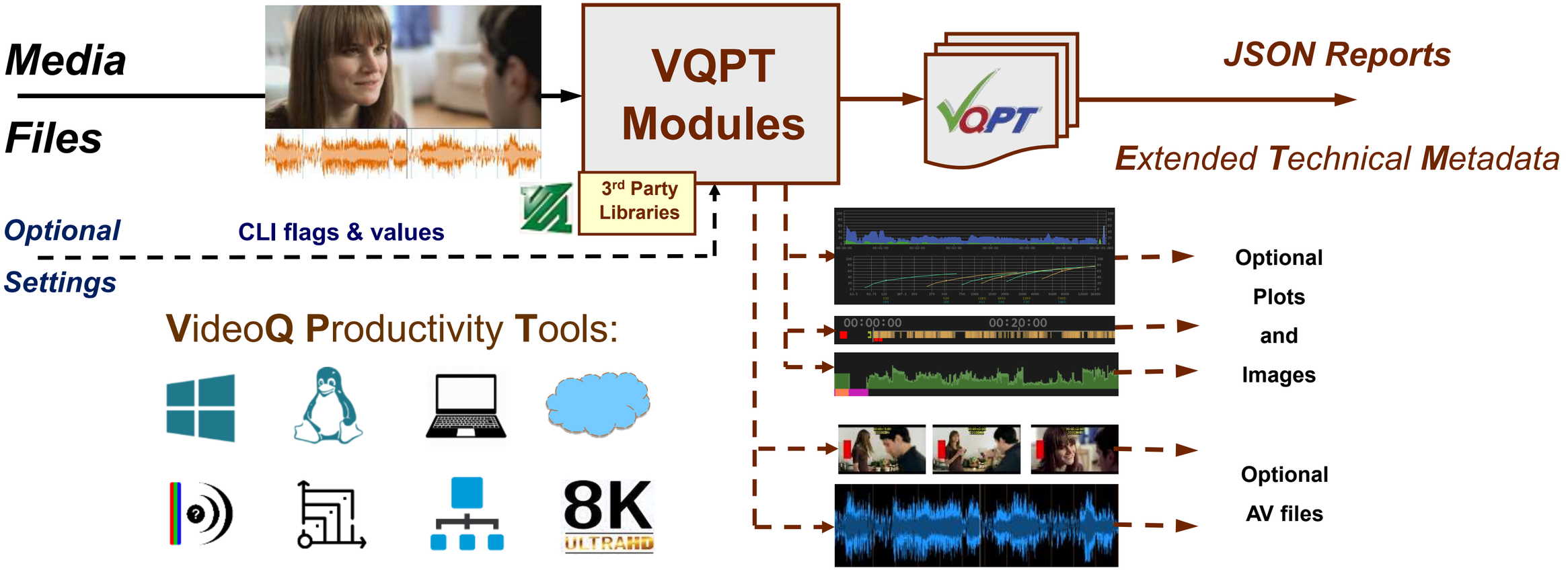
# 3. VideoQ Productivity Tools

**VQPT** is a suite of portable Windows/Linux CLI programs for on premises and cloud computing.

It can be used for production, post-production and distribution applications.

The program modules can be purchased and used separately or grouped for typical applications.




Learn more about **VQPT** suite:

# 4. About Media Ambits

## What it is:

- [ *me·dia am·bit* ] noun: Technical and semantic **metadata** about moving images, sounds, and timed text; **embedded** in files or **externally centralized**.
- Sentence example: Their system uses media ambits to automate ingest and delivery.
- Variations: Video Ambit, HDR Ambit, Audio Ambit, Timed Text Ambit, etc.

## Ambit's Role for AI-based, Automated and Automation-Assisted Workflows:

- AI-based and robot-assisted human decision-making **tools**.
- Robots-learning-from-people (Machine Learning) **tools**.
- **Ambits repositories** and **machine services** optimized for automation, web services, and workflows.
- Automated and manual control of **optimized** video and audio processing/conversion
- Automated and manual **quality assurance** and **quality control** tools
- Measure, annotate and automatically **modify** files to match **target ambits**.
- **Notify** machines, people and dashboards in **automated workflows**.

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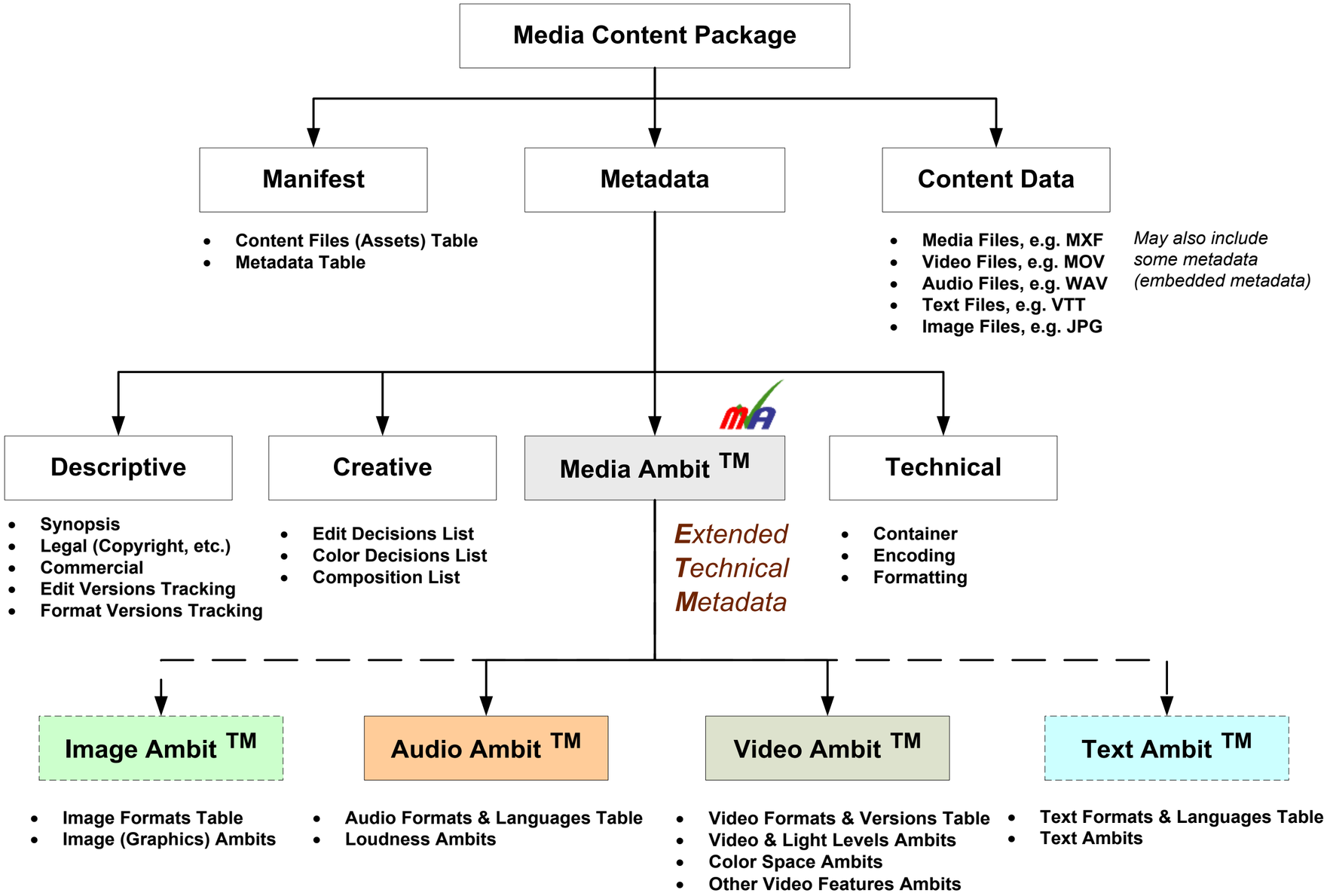
# 5. Media Ambit and Media Package Data Structure



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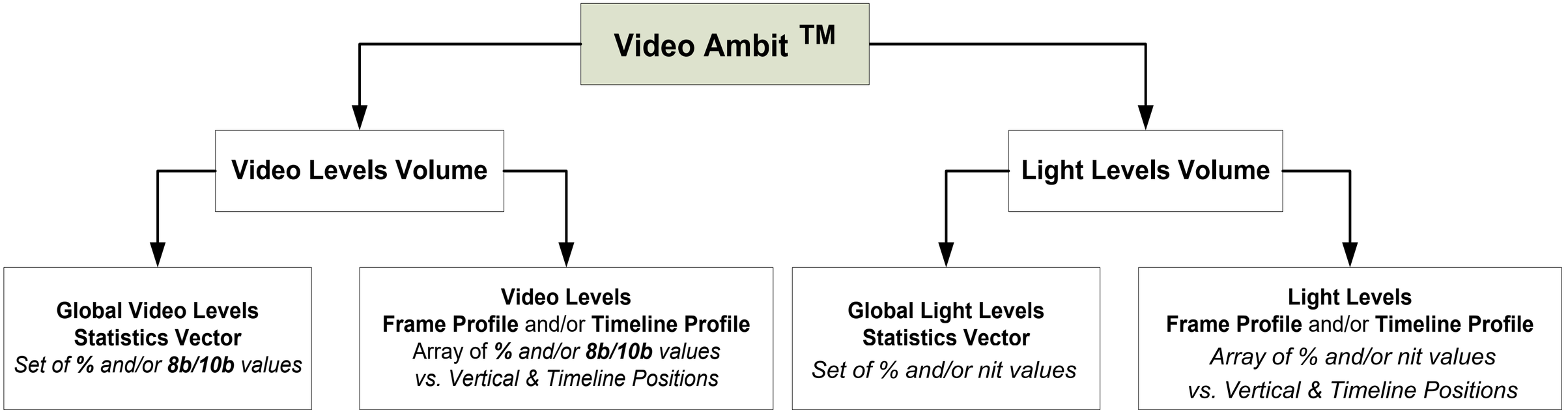
# 6. Video Ambit Data Structure Example




**Video Levels** in % are calculated by offsetting Video Levels by **Nominal Black** value and division by the specified **Nominal Range** of the corresponding **Channel**.

**Model nit** = **Video Levels** to **Light Level** Model output.
Standard Conversion Models: **SDR**, **HDR-PQ**, **HDR-HLG**

Examples of Video Ambit individual parameters:

- **F**rame **A**verage **L**ight **L**evel = **FALL**
- **FALL T**imeline **P**rofile = **FALLTLP**
- **G**lobal **M**ax **L**ight **L**evel = **GMLL**
- **F**rame **A**verage **Y L**evel = **FAYL**
- **L**ine **U**pper **M L**evel **F**rame **P**rofile = **LUMLFP**

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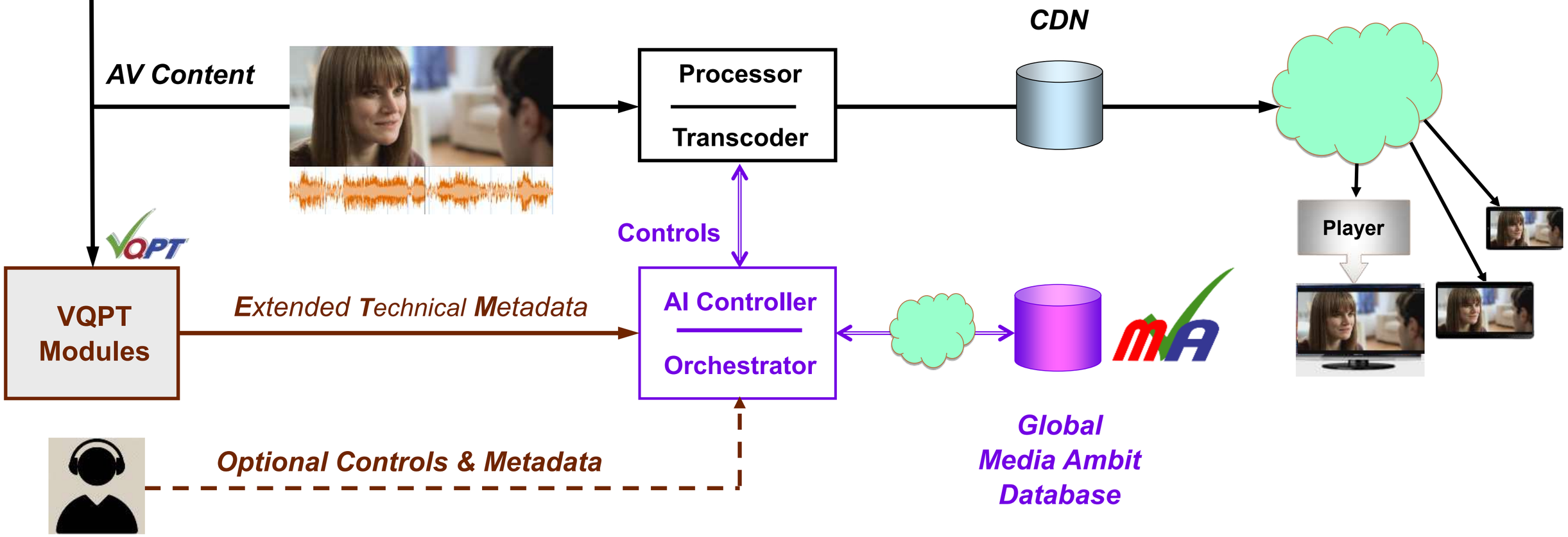
# 7. Extended Technical Metadata and AI-based Engines

- **Generative AI**
- **Studio**
- **Live Feed**

Extended Technical Metadata facilitate AI-based metadata ***auto-tagging*** and content ***indexing***.
The ETM provide for faster and easier ***identification*** of content versions (see next slides for examples).
They also provide for the ***optimization*** of the AV content re-versioning, re-purposing, processing and delivery.
Storing ETM together with other technical and non-technical metadata in the Global Media Ambit **Database** significantly increases the **commercial value** of both the **original** and **processed** content.



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# 8. About VideoQ

## Customers & Partners


## Company History

- Founded in 2005
- Formed by an Engineering Awards winning team sharing between them decades of global video technology.
- VideoQ is a renown player in calibration and benchmarking of Video Processors, Transcoders and Displays, providing tools and technologies instantly revealing artifacts, problems and deficiencies, thus raising the bar in productivity and video quality experience.
- VideoQ products and services cover all aspects of video processing and quality assurance - from visual picture quality estimation and quality control to fully automated processing, utilizing advanced VideoQ algorithms and robotic video quality analyzers, including latest UHD and HDR developments.

## Operations

- Headquarters in CA, USA
- Software developers in Silicon Valley and worldwide
- Distributors and partners in several countries
- Sales & support offices in USA, UK

# A1. Appendix

# More Info and Examples


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# A2. VQPLA Picture Levels Analyzer

**SDR** file analyzed. **Well balanced full contrast video.** Plot below shows measured **FALL** and **CLL** Timeline Profiles.
VQPLA detected 92 sharp edit cut segments, very short Fade-In edit at start, and Fade-Out at the end.
Average Color is warm **reddish-yellowish Gray**, Floor LL = **0**, LL histogram is **spread over the valid range**.

**Frame Average Light Level (FALL)**

**Frame Max Light Level (CLL)**

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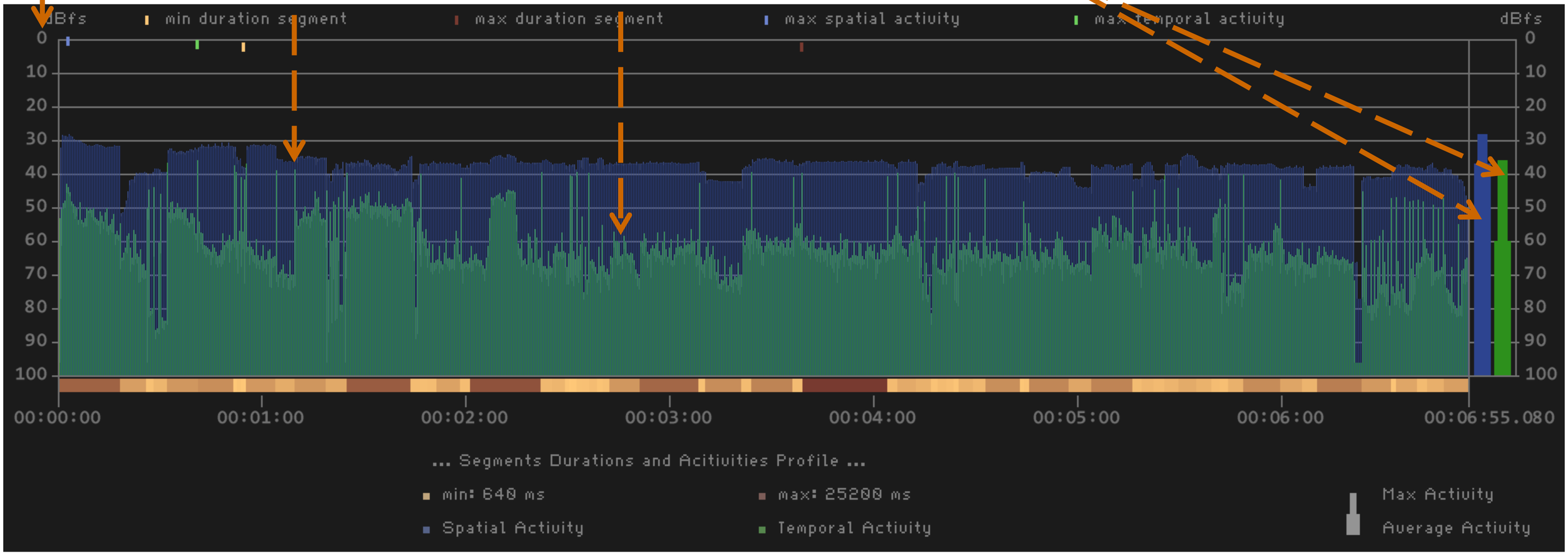
# A3. VQTSF Transcoding Segments Finder

File duration: 6min 55s. ***74 segments found***, segment durations from 0.64s to 25.2s (***regular broadcast content***).
*Measured **Activity** profiles are of **medium** strength, so we can expect relatively **good quality** at relatively **low bitrates**.*

**Activity, %** **Intra-frame Activity** (Static Details) **Inter-frame Activity** (Dynamic Details) **Activities Statistics Bargraphs**



# A4. VQBLA Bitrate Ladder Analyzer

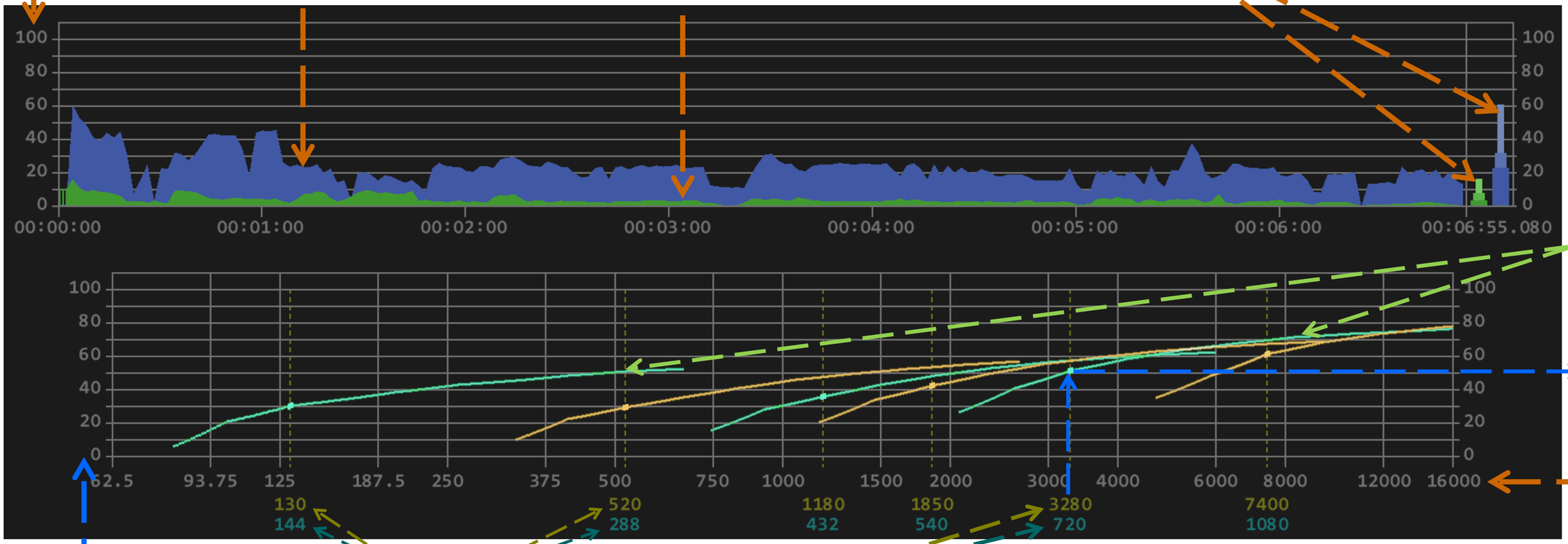
**Activity, %**

**Intra-frame Activity**
(Static Details)

**Inter-frame Activity**
(Dynamic Details)

**Activities Statistics Bargraphs**

Checking common **Frame Heights**:
**144, 288, 432, 540, 720, 1080**




Set of **Quality Curves** for given set of **Frame Heights**

**Quality Score**

**Bitrate, kbps**

**Video Quality Score 0 .. 100**

**Bitrate Ladder** Items:
**Critical Bitrates, kbps**
vs. Frame Heights

Find **Critical Bitrate**, kbps and **Quality Score** for this **Frame Height**

*Encoding at bitrates **below** the **critical threshold** results in compression artifacts, usually described as "noticeable and annoying," while at bitrates **above** the **critical threshold** they are described as "noticeable, but not annoying."*

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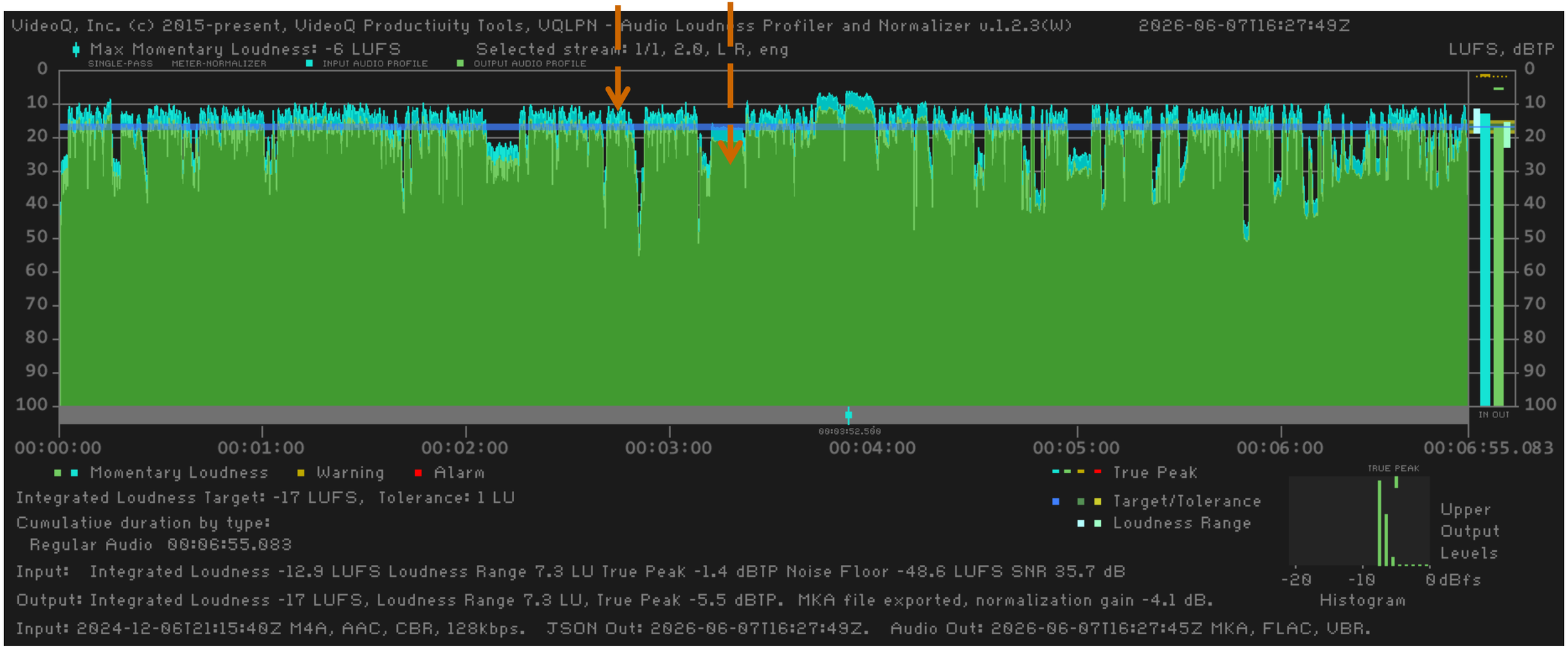
# A5. VQLPN Loudness Profiler and Normalizer

- **Input Integrated Loudness** is **high**: **IL** = **-12.9 LUFS** (*much higher than -17 LUFS target*), probably legacy content
- **Input True Peak** value is **relatively high: -1.4 dBTP**
- **Input Loudness Range 7.3 LU** and **SNR 35.7 dB** are **good**
- **Output Upper Levels Histogram** shows no **Clipping Distortions**.

***Conclusion**: Source clip is definitely **too loud** for direct broadcasting/webcasting, but **it can be normalized** to all common **IL targets** without significant issues.*

**Momentary Loudness (ML) Timeline Profiles**: **Input** **Output**



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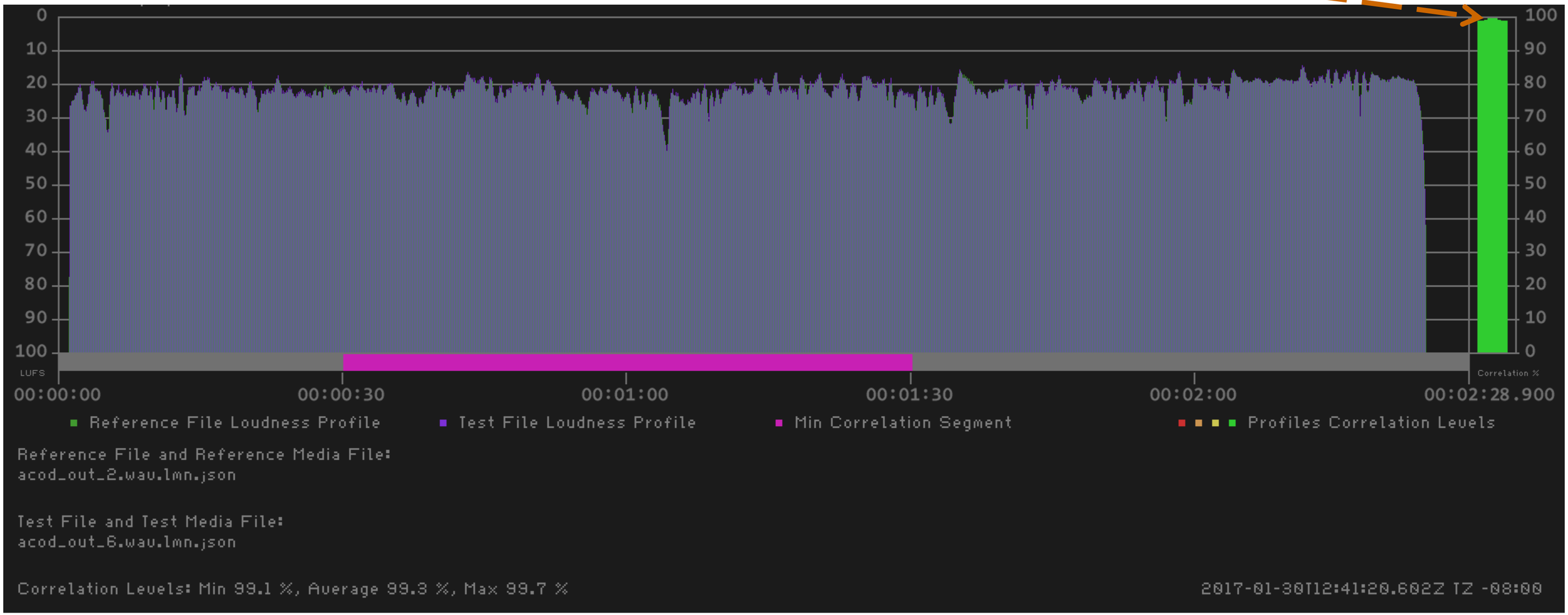
# A6. VQLPC Loudness Profiles Correlator 1

Two inputs are two different versions (2.0 and 5.1) of the **same audio track**:
**correlation is very high** – about 100%



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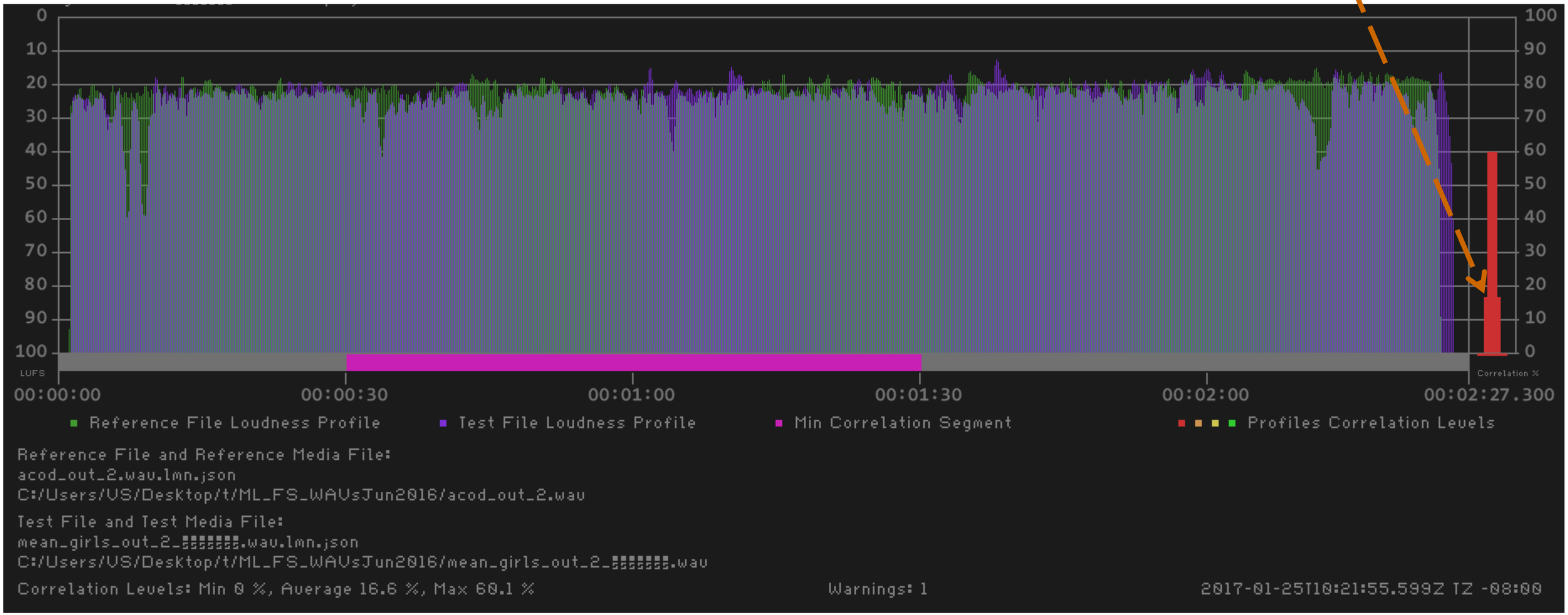
# A7. VQLPC Loudness Profiles Correlator 2

Two inputs are in fact **two different audio tracks**
Loudness profiles and durations may look similar, but actual **average correlation value is very low**



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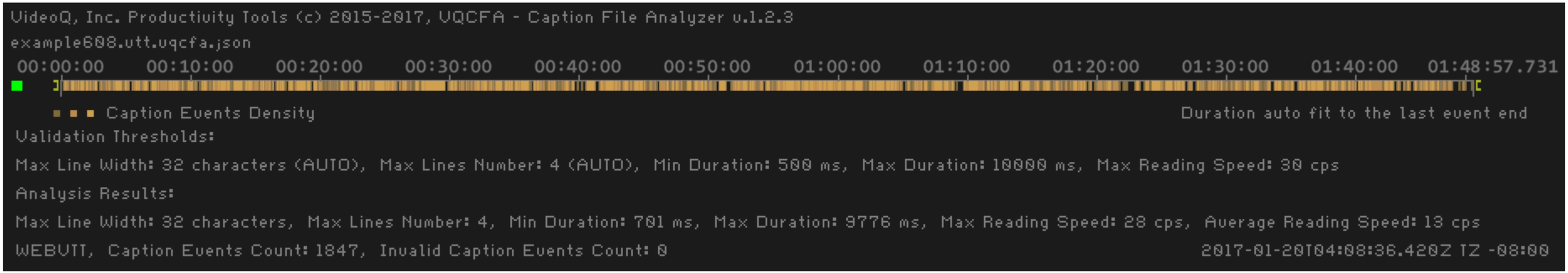
# A8. VQCFA Captions Files Analyzer

Normal Caption Events – **No problems found**




Multiple Caption Events are **Out of Specs:**

*Reading Speed, Min Duration, Max Duration,*
*Overlapping Events, Max Lines Number, Max Chars Per Line*