



# REALTIME MEDIA PLATFORM

—  
REALTIME MONITORING,  
MULTIVIEWING & ANALYTICS SOLUTION

Reduce workflow  
complexity

Enable agility,  
flexibility and change

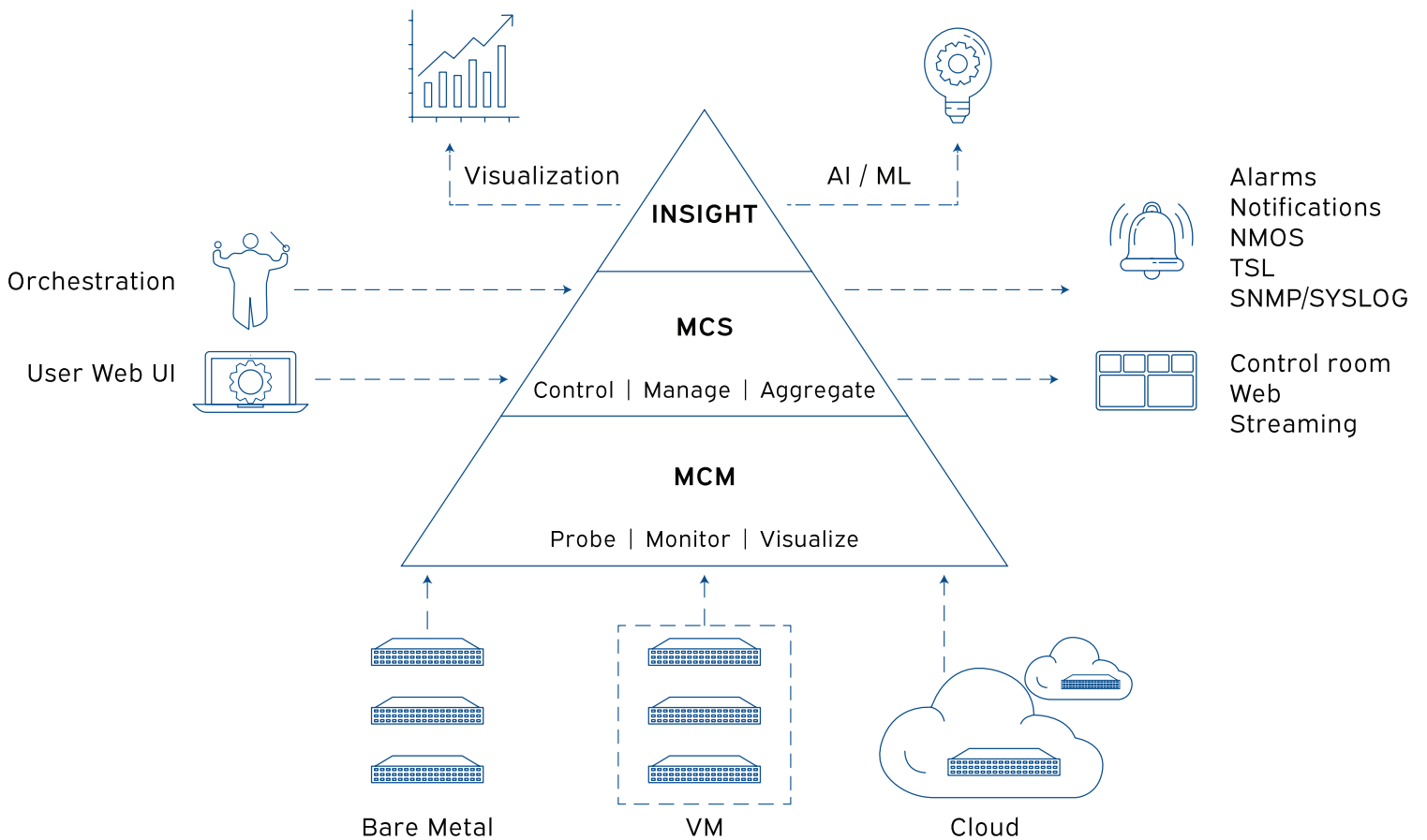
Align your workflow  
to your business

# Overview

Gain complete, realtime visibility into every aspect of your IP media workflows with the TAG Realtime Media Platform. This powerful, all-software solution enables you to monitor, visualize, and analyze your video, audio, metadata, and transmission, ensuring your audience consistently experiences flawless, high-quality content. TAG provides the insights needed to streamline operations, enhance efficiency, and facilitate smarter,

data-driven decisions. TAG offers unparalleled format support across live production, playout, and delivery, with an open, advanced API for seamless integration and customization. Whether your environment is on-premises, cloud-based, or hybrid, TAG adapts to your needs, delivering a comprehensive solution that gives you full control over your IP media operations.

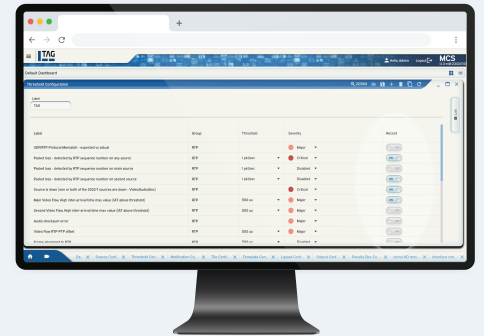
# Platform Structure



# Feature Highlights

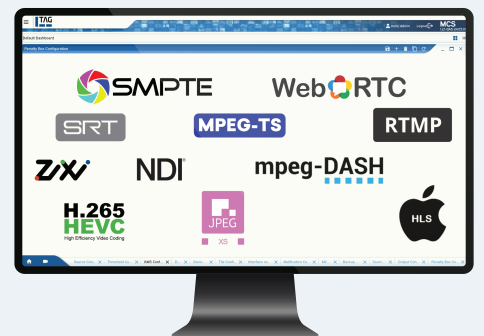
## Deep Probing & Monitoring

Over **500 probing parameters** across critical layers of the workflow, including video, audio, subtitles, metadata, transport, codec, and SCTE triggers. This ensures real-time monitoring of every aspect of your workflow. Realtime alarming provides immediate, actionable alerts, helping users quickly identify and resolve root causes, instead of relying on generic performance metrics or ambiguous diagnostic data. This minimizes downtime and improves operational efficiency.

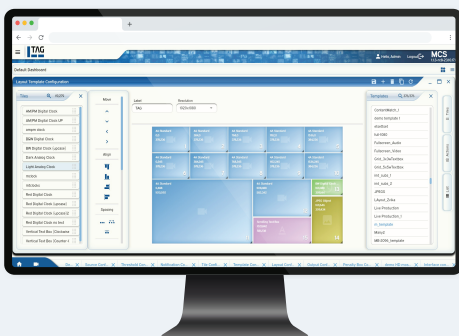


**Content Matching** uses unique fingerprinting algorithms to track and match content across transmission paths, regardless of bitrates or resolutions. It ensures signal integrity by accurately validating content against the reference point, measuring key factors like latency and A/V sync. This enables automated, smarter monitoring, ensuring broadcasters stay ahead of potential issues across their entire media workflow.

**Multi-format Support** The platform supports all current widely available broadcast formats and codecs, including both uncompressed and compressed formats. This ensures full compatibility across diverse media workflows, whether for live production, playout, or OTT delivery. With support for a range of resolutions from SD to UHD, and varying frame rates and audio/video codecs, the platform provides comprehensive coverage for all media monitoring needs. As new formats and codecs emerge in the market, TAG evolves to integrate them, ensuring that your media operations stay current and adaptable across all platforms and delivery methods.

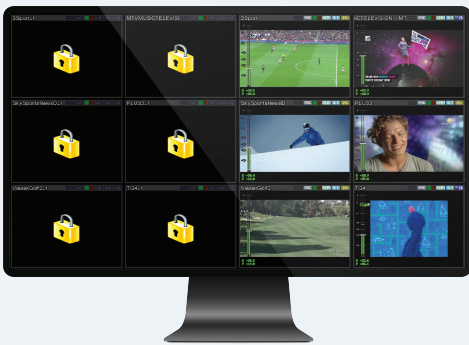


## Realtime Visualization



**TAG Multiviewing** allows operators to monitor multiple video streams simultaneously with customizable mosaic displays tailored to their workflow. It supports real-time updates, enabling quick identification of issues across streams, and adapts to fit any broadcast need—whether monitoring a few or many streams. The **Layout & Tile Editor** provides full control over how video feeds are arranged, allowing operators to create custom tile configurations for different streams. The layout editor enables users to design personalized screen layouts, ensuring efficient monitoring that fits their specific operational needs.

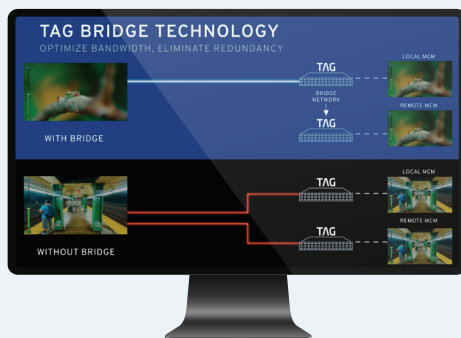
**QC Station** provides realtime monitoring across key video and audio metrics, including video quality (blocking, artifacts), audio loudness (EBU R-128, ITU-1770), and subtitle accuracy. It integrates waveform, vector-scope, and CIE Chromaticity Diagram visualizations, allowing operators to track luminance, chrominance, and color volume. These tools enable efficient monitoring of video and audio quality, ensuring signal integrity in both live and post-production workflows. QC Station consolidates data into a single actionable view, empowering engineers to resolve issues quickly and maintain high-quality standards.



**Realtime Decryption** enables the monitoring and multiviewing of encrypted content without compromising security. This allows operators to seamlessly integrate protected streams into their normal workflow, tracking and resolving issues across both encrypted and unencrypted content. By preserving the integrity of the original media, this capability ensures secure access to all streams for analysis, helping maintain operational efficiency.

## Scale & Performance

**Penalty Box** simplifies monitoring by displaying only streams with detected issues, allowing operators to focus on critical problems. This monitoring by exception feature helps save screen real estate and reduce the need for constant attention, while still monitoring all streams in the background. It enhances operational efficiency by ensuring operators stay focused only on the streams that require immediate intervention.



**TAG Bridge** enables scalable monitoring by connecting multiple MCS and MCM instances, expanding the platform's reach without adding complexity. It efficiently scales tiles for final mosaic layouts and delivers signals to multiple destinations, optimizing bandwidth and reducing redundancy. By leveraging data gravity, it ensures signals are monitored where they reside, saving compute and network resources. The Bridge integrates seamlessly with the MCS for orchestration and MCM for routing, providing an efficient, flexible solution for large-scale workflows.

**Adaptive Monitoring** optimizes resource usage by adjusting monitoring intervals based on channel priority. High-priority channels are continuously monitored, while lower-priority channels are checked less frequently. If an issue is detected, monitoring is automatically adjusted to full attention, ensuring that problems are addressed promptly without compromising CPU efficiency.





# TAG Solution Specifications

## Monitoring

- ▶ **Uncompressed:** ST 2022-6, ST 2110 with AMWA NMOS IS-04, IS-05, IS-06
- ▶ **Video codecs:** MPEG2, H.264 (MPEG4), H.265 (HEVC), JPEG2000, JPEG XS, NDI
- ▶ **Resolutions:** Up to 4K UHD
- ▶ **Frame rates:** 2397, 24, 25, 50, 5994, 60
- ▶ **Audio codecs:** PCM, AES 67, MPEG2, HE-AAC, A52, AAC (AC3, E-AC3, AC-4), Dolby E, Dolby Atmos
- ▶ **Metadata:** AFD, HDR, SCTE 35/104, subtitles, captions
- ▶ **Transport:** MP2TS ST 2022-2 and ST 2022-3, RTP, RTMP push and pull, CDI (AWS), unicast and multicast, ZIXI, SRT, WebRTC
- ▶ **Failover:** ST 2022-7 seamless switching on uncompressed and TS
- ▶ **OTT:** HLS, LL-HLS, MPEG-DASH, LL-DASH, MSS, CMAF
- ▶ Automatic source input scanning
- ▶ Monitoring of all variants in OTT ladder
- ▶ **Encryption:** Verimatrix, Huawei; KMS: Supports methods, including CPIX, Axinom, Kaltura UDRM, buyDRM, more)
- ▶ **Simulcrypt, AES-128-CBC:** (Verimatrix, Irdeto, MPEG-TS DVB-BISS-2)
- ▶ **Subtitling:** DVB, ID3 subtitles, Closed Caption, CEA-708, WebVTT
- ▶ **Multi-language support:** Up to 16 PIDs
- ▶ **Latency Measurement:** Precise latency measurement using Content Matching Technology (CMT)

## Probing

- ▶ Over 500 probing parameters;
- ▶ **Pragmatic Alarming:** actionable events, not vague metrics
- ▶ **ETSI TR 101 290** priority 1, 2, 3
- ▶ **Video:** freeze/black/macroblock detection
- ▶ **Video Quality:** Structural Similarity Index Measure (SSIM)
- ▶ **Audio** loudness per EBU R-128, ITU-T770, ATSC A/8
- ▶ **Configurable Notifications:** email, SNMP, Syslog, Kafka, Redis, API, Logstash
- ▶ Source template profile-matching for compliance
- ▶ **Monitoring Flexibility:**
  - Adaptive monitoring (automated, 3 levels)
  - Monitoring by Exception
- ▶ **Logging:** external NAS/syslog
- ▶ Forensic source record to file on error with continuous pre-record for TS and OTT sources
- ▶ SCTE 104 | 35 message monitoring, logging; XML & Binary

## Multiviewer

- ▶ Multiviewer with ultra-low latency realtime monitoring and headless operation
- ▶ Up to 100 inputs (tiles) per mosaic output
- ▶ Up to 16 independent mosaic outputs/server per MCM instance
- ▶ Up to 32 independently assignable audio pairs per mosaic TS output
- ▶ Full-customizable sized tiles per mosaic
- ▶ Side-by-side split-screen visualization
- ▶ **Mosaic background:** from video or image
- ▶ Audio tracks per tile: 16 | UMDs per tile: 8
- ▶ Custom tile layout configurations
- ▶ **Output resolutions:** SD, HD, UHD
- ▶ **Output:** simultaneous uncompressed, compressed (TS) and HLS/DASH with audio
- ▶ Unicast and multicast output
- ▶ On-screen clocks and count up/down timers
- ▶ Tallies and UMD (TSL protocol, TAG API)
- ▶ Streamed JPEG thumbnails for each input
- ▶ Carousel and Penalty Box modes

## Platform

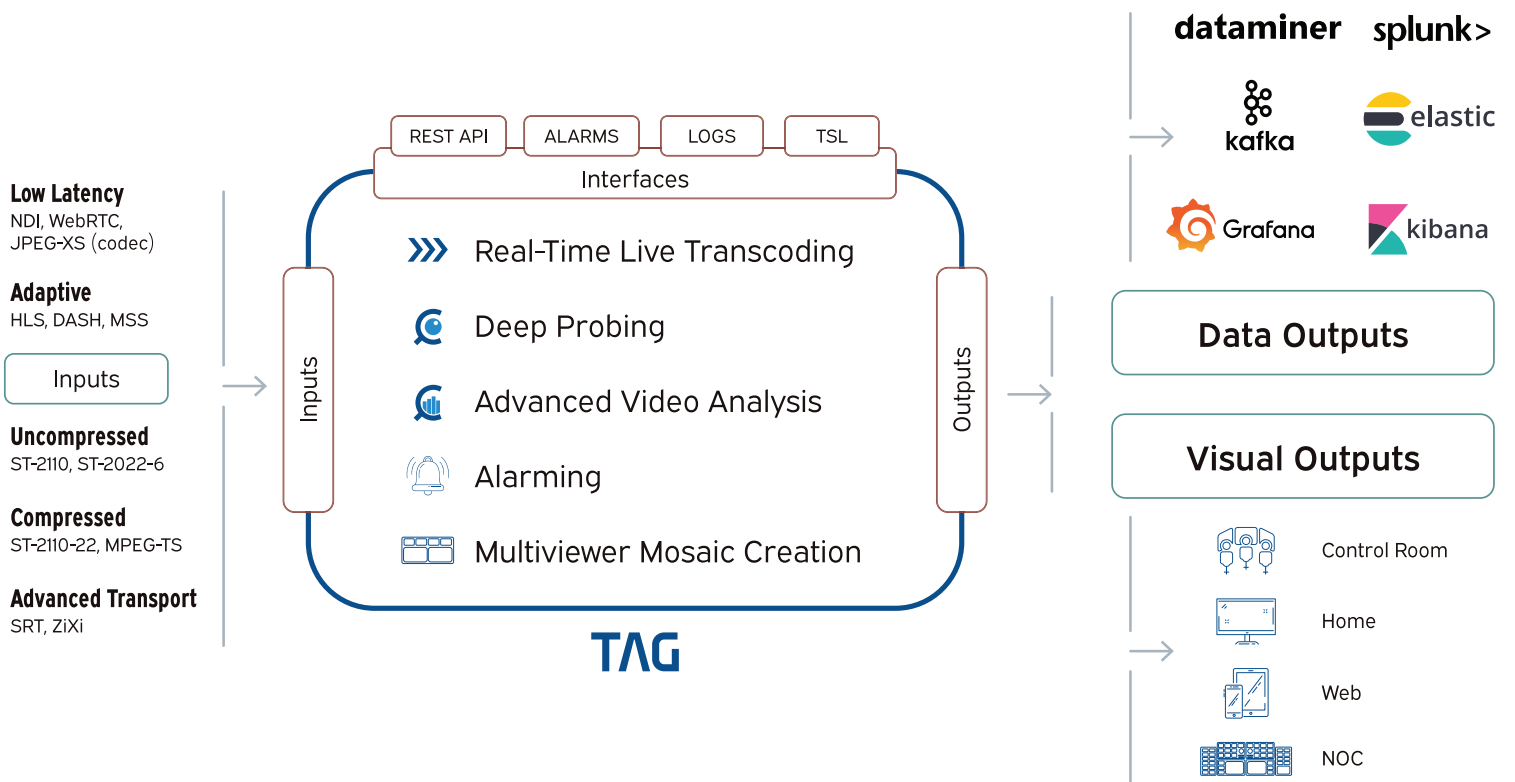
- ▶ **Topology:** dedicated COTS hardware, VM and cloud (AWS, Azure, Oracle, Tencent, GCP, Alibaba)
- ▶ **Server:** dual Intel Xeon or AMD EPYC CPU
- ▶ **GPU:** not required
- ▶ **Storage:** none required
- ▶ **Network:** Mellanox C5/C6 series for uncompressed SMPTE ST 2022-6; -7 / ST 2110 inputs
- ▶ **OS:** Linux Ubuntu/Rocky
- ▶ **VM:** VmWare ESXi 6/6.5, KVM
- ▶ **AWS:** c4, c5, c5n, c5dn, m6i instance types
- ▶ **Full JSON API** integration of all capabilities
- ▶ TAG MCS system manager option
- ▶ **Network capacity:** up to 4x 100GB ports / server
- ▶ **Input capacity:** up to 96 HD uncompressed sources per server
- ▶ **Scaling:** server stacking, TAG Bridge and MCS to enable large-scale systems
- ▶ PTP and NTP time synchronization
- ▶ Web-based configuration
- ▶ Role-based user management
- ▶ **Single Product for All Applications:** Includes all formats and can be used anywhere (ZF)



### ISO 27001 Certification:

The platform is ISO 27001 certified, ensuring that it meets the highest standards for information security management. This certification assures customers that their sensitive data is protected through rigorous risk management processes and compliance with best practices in cybersecurity.

# Platform Overview



## ZERO FRICTION<sup>®</sup>

Zero Friction<sup>®</sup> streamlines media scaling. A single platform license unlocks all TAG functions- probing, monitoring, multiviewing, processing, decryption, and more- across all IP media workflows, eliminating silos and complexities. Share licenses seamlessly across events, teams, and facilities,

maximizing resource utilization. Choose between CapEx or OpEx models to align with your business needs. Deploy and migrate effortlessly across on-prem, cloud, or hybrid environments. Pricing is transparent, with costs based only on video source inputs- no hidden fees for additional workflows or scaling.

This approach simplifies operations, allowing you to focus on content without the complexity of tool and licensing management. Zero Friction maximizes resource efficiency, simplifies workflows, and ensures seamless scaling for agile media operations.