

STREAMPROBE

IPTV

QoS & QoE monitoring throughout the entire video delivery chain

STREAMPROBE SOLUTION PROVIDES A CENTRALIZED OVERVIEW OF THE **SERVICE AVAILABILITY AND VIDEO QUALITY THROUGHOUT ALL THE STRATEGIC STAGES OF THE MEDIA PROCESSING & DELIVERY FLOW, BY 24/7 MONITORING**. IDEAL FOR ALL **TV SERVICE PROVIDERS & NETWORK OPERATORS** – LINEAR BROADCAST TV, IPTV, CABLE TV, SATELLITE TV, OTT, VOD, NPVR – **TRANSPORT CONTRIBUTION & DISTRIBUTION** AND **SERVICE PLATFORM PROVIDERS**, LOOKING TO **ENSURE THE BEST END-USER QUALITY OF EXPERIENCE ALL WHILE OPTIMIZING OPEX**.



APPLICATIONS

- **Service oriented** end-to-end **Availability (QoS)** and **Quality (QoE)** assurance
- **Increase uptime** by detecting issues before your customers do
By 24/7 real-time supervision & alerting
- **Optimize OPEX** daily operation & maintenance
Drill down analysis, on-error proof recording
- **Quality Reports** generation for **SLA commitments**
- **Compliance** 24/7 recording
- **Secure Ad Insertion revenues** by 24/7 control of all SCTE-35 triggers

QoS - Service Availability & Integrity

- Full **MPEG-2 TS** monitoring (SPTS/MPTS)
- **IP transport** issues detection (RTP, FEC)
- **ETSI TR 101 290** compliance (priority 1, 2, 3, MDI)
- TS structure: **PSI/SI, service(s), bitrates**

Live Thumbnail Mosaic Wall

- **All services view at-a-glance** on a thumbnail wall, real-time update
- **Highly customisable per user**: grouping, audio levels, subtitles, penalty box
- **Monitoring by exception**: display only faulty services – penalty box
- **MacroService view**: track Service Quality in several monitoring points throughout the delivery chain
- **Live service streaming** over low bandwidth links (service compression)

Confidence monitoring - visual video check

- **Live service streaming** over **low bandwidth links** (transcoding)
- GUI display, with **3rd party dashboard integration/display** capabilities

Ad Insertion monitoring

- Make sure the **Ad Inserter receives and can use the triggers**: triggers presence, integrity and timing
- **Prevent video defects on the Ad Inserted stream** by checking the splice point quality/integrity: IDR frames, PTS accuracy
- Make sure the **triggers point the correct frame** and **prove the Ad Insertion**: splice point thumbnails, frames analysis for automatic detection of change of scenery, video recording

HighBitrate monitoring capacity

StreamProbe IPTV: up to 3Gbps of services monitored in // per Appliance (COTS, AWS, VM): full monitoring features (QoS, QoE, Video Streaming, Recording, SCTE-35, CAS, HEVC/4K)

StreamProbe IPTV HighBitrate: up to 10Gbps (1000 services) monitored in // per Appliance (COTS): QoS, QoE, SCTE-35, CAS monitoring features

BENEFITS

- **One single comprehensive & easy to use web GUI** to manage a wide variety of Streams & Services
Studio, contribution, encoding, packaging, live/VOD, ad insertion, multiplexing, broadcast transport signalling...
Ready for future Services diversification
Fast training of operational teams to work with a single tool
- All Services Quality view at-a-glance: **Live Thumbnail Mosaic Wall**
- Powerful NBI/API for 3rd Party **NMS integration for Orchestration**
- **Pay as you grow** with flexible licensing & deployment architecture
HighDensity full SW solution installed on-prem bare-metal / virtualized, cloud AWS

QoE - Service Audio/Video Quality

- Full content monitoring
- **Audio & Video defect** detection: freeze, black screen, silence
- **Subtitles** DVB and Teletext: decoding and display
- Video display: thumbnails & video streaming

Recording

- **24/7 compliance recording**
- **Proof recording on-error** on fault detection
- **Schedule recordings** at predefined date – event recording
- **Easy access** to all recordings directly via the **web GUI**

Control Access monitoring

- Check the scrambling information EMM/ECM: presence, repetition, bitrates
- **FTA <-> scrambled transition monitoring**: transition timing alarms with detailed graphical display

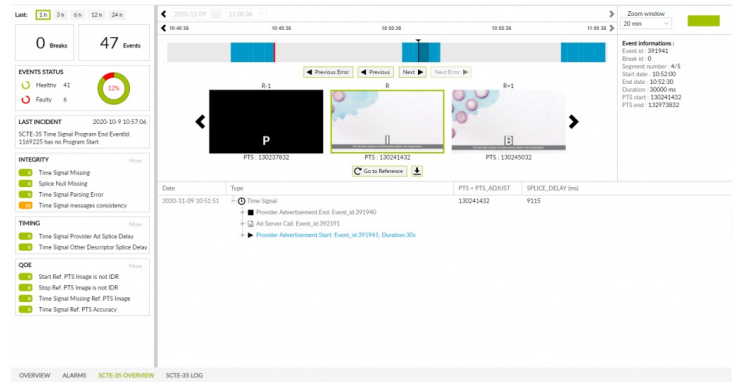
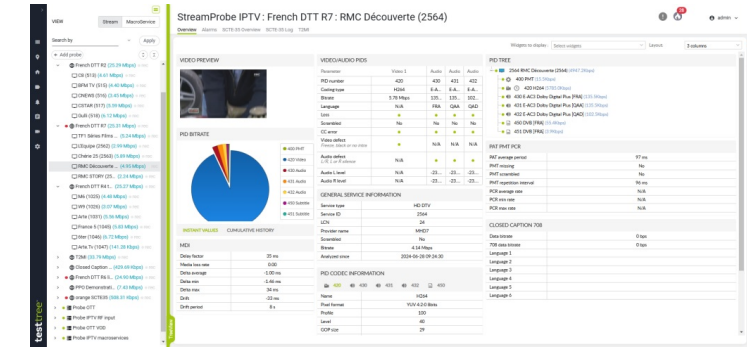
System Integration & NBI

- **Configurable alarming thresholds**: general, daily and weekly alarm profiles **configurable per service**
- NMS integration: **SNMPv2** support for alarm traps
- Monitoring information available via an **open API** (HTTP/JSON API)
- **Service thumbnails & video streaming** capability for **3rd party dashboard** display

Product of the Year NAB Show 2019



StreamProbe has proudly won the NAB Show 2019 Product of the Year award



MONITORING FEATURES

<p>QoS - Service Availability & Integrity check</p>	<p>MPEG-2 TS (SPTS/MPTS) ETSI TR 101 290 Priority 1, 2, 3 FEC support (packets recovered/lost), IP jitter MDI: Delay Factor, Media Loss Rate, Delta (min, max, average), Drift & Period Drift PSI/SI repetition rates, scrambling Bitrates: TS, service & service components, PSI/SI</p>
<p>QoE - Service Audio/Video Quality</p>	<p>Video defect detection: freeze, black screen, missing Intra frame Video encoding information: type, pixel format, profile, level, GOP structure and size, image count and weight, width, height, aspect ratio, frame rate and type, VB delay Audio defect detection: silence, level too low/high Audio encoding information: type, channel number and layout, sample rate and format Subtitles DVB and Teletext: decoding and display Formats: MPEG-1 audio, MPEG-2 audio/video, AAC, HE-AAC, HE-AACv2, AC3 Dolby Digital, EAC-3 Dolby Digital Plus, SD & HD MPEG-4 AVC/H264, 4K HEVC/H265</p>
<p>Thumbnail Mosaic view</p>	<p>All services view at-a-glance on a thumbnail wall, real-time update Highly customisable per user: grouping, audio levels, subtitles, penalty box Monitoring by exception: display only faulty services – penalty box MacroService view: track service quality in several monitoring points throughout the delivery chain Live service streaming over low bandwidth links (service compression)</p>
<p>Recording*</p>	<p>24/7 compliancy recording with predefined history depth On-error recording on fault detection Scheduled recording at predefined date & time Access the recordings directly via the GUI Preview of the recorded video Download capability (full or partial) Associated alarms timeline Storage capacity to dimension depending per project *temporary limitations for IPTV HighBitrate mode deployment: recording limited to 10 services</p>
<p>Confidence monitoring</p>	<p>Live service streaming over low bandwidth links (transcoding) 300kbps by default, possibility to configure the target bitrate, video resolution, audio PID GUI display or 3rd party dashboard integration display</p>
<p>CAS monitoring</p>	<p>EMM/ECM presence, repetition, bitrates; configurable alarm thresholds FTA <-> scrambled transition monitoring: transition timing alarms with detailed graphical display</p>
<p>Ad Insertion monitoring*</p>	<p>Based on SCTE-35 TimeSignal and SpliceInsert Triggers presence, integrity and timing check, log export Reference Frame QoE: IDR and PTS check Splice point thumbnails extraction (50 images around the splice point) and frame analysis for automatic detection of change of scenery Splice point video recording (before & after the splice point) Configurable alarm thresholds *temporary limitation for IPTV HighBitrate mode deployment: SCTE-35 splice thumbnails extraction limited to ~15 Services</p>
<p>System Integration & NBI</p>	<p>Configurable alarming thresholds: general, daily and weekly alarm profiles configurable per service Alarm log history CSV export SNMPv2 support for alarm traps Monitoring information available via an open API (HTTP/JSON API) Service thumbnails can be retrieved via API call – for 3rd party dashboard display Video streaming capability for 3rd party dashboard display</p>

TECHNICAL CHARACTERISTICS

<p>SW Appliance solution: custom Linux based custom OS</p>
<p>Bare-metal, VM (ESXi >v6.0, KVM), AWS cloud</p>
<p>PCLE modules can be recommended for RF signal demodulation: DVB-T/T2, DVB-S/S2, DVB-C (I.83 A,B,C) - for StreamProbe IPTV</p>
<p>Maximum Appliance monitoring capacity: 10Gbps for StreamProbe IPTV (HighBitrate mode, 3Gbps for legacy mode)</p>
<p>Performance CPU, RAM, HDD depending on the bitrate capacity to monitor</p>

RF INPUT SUPPORT FOR STREAMPROBE IPTV

DVB-T/T2 DVB-C/C2	DVB RF acquisition board PCIe: TBS6209 8 RF channels per board TBS6205 4 RF channels per board
DVB-T/T2 DVB-C/C2 with descrambling	DVB RF acquisition board PCIe TBS62905E 2 RF channels & 2 DVB-CI CAM slots
DVB-S/S	DVB RF acquisition board PCIe: TBS6909 8 RF channels per board TBS6904 4 RF channels per board
DVB-S/S with descrambling	DVB RF acquisition board PCIe TBS6910 2 RF channels & 2 DVB-CI CAM slots

ORDERING_CODES

StreamProbe IPTV	Video QoS & QoE Monitoring for IPTV – Linear Multicast
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options

Bitrate (Mbps, Gbps) : Define the bitrate capacity to monitor
SW Pack ACCESS : Full QoS & QoE: ETR 101 290 monitor, Audio & Video Quality check, Mosaic overall Service Quality
SW Pack PERFORMANCE : Operational Add-ons: ETR 101 290 monitor, Audio & Video Quality check, Mosaic overall Service Quality, Recording, Video Streaming
SW Pack ULTIMATE : Additional Services: ETR 101 290 monitor, Audio & Video Quality check, Mosaic overall Service Quality, Recording, Video Streaming, 4K HEVC monitor, Ad Insertion monitor SCTE-35, CAS Scrambling <-> FTA transitions

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