VISUAL AND INSTRUMENTAL MONITORING OF TELEVISION AND RADIO SIGNALS

TELESCREEN 8.0

TeleSCREEN allows various audio and video content producers, as well as network or OTT operators to improve the quality of TV services by visual and instrumental monitoring of the quality of TV and radio broadcasting at every stage of signal delivery.

Monitoring the quality of the whole range of TV services

TeleSCREEN allows you to perform automatic monitoring of all modern video and audio signals: from content development and preparation for delivery of services to the customer. TeleSCREEN is optimized for different tasks and may be used both as part of TV studios or Head-end stations and network of the operator ensuring control over the delivery of signals to subscribers.

Easily scaled, comprehensive approach

TeleSCREEN is easily scaled; the capacity of each system may be expanded as and when necessary, which provides for optimization of investments. System capabilities and multiple versions allow applying an integrated approach to the monitoring of TV broadcasting and increase the number of monitoring points as the network grows.

Supports a wide set of input interfaces

TeleSCREEN system is capable of performing simultaneous analysis of a wide range of professional video and audio (SD/HD/DualLink HD/3G-SDI, DVB-ASI, IP, AES/EBU) signals, including analogue (PAL, SECAM, NTSC, FM/AM) and digital RF signals (DVB-T/T2, -S/S2, -C/C2) used in distribution network.

Input data analysis

Due to integrated instrumental signal analyzer, TeleSCREEN allows not only detecting problems and informing on their occurrence, but also determining causes of occurrence thus ensuring rapid troubleshooting.

Alerts and logging

The system alarms on the occurrence of problems in input streams using audio and visual alerts, as well as providing for distribution of such information to the external systems in the form of SNMP Trap or Syslog messages. TeleSCREEN system supports SNMPv2 standard (SNMP Get) for querying measured parameters as well, as modern high speed integration interface on base HTTP/JSON technology with guaranty of data delivering.

Display and recording of input signals

Display of services is carried out on several display devices simultaneously (including, LCD panels or monitors). Input signals may be recorded automatically, which ensures the recording of the situation and subsequent offline analysis.

Audio loudness measurement

TeleSCREEN analyzes and displays integral audio loudness (ITU-R BS.1770) for all audio tracks, and makes automatic loudness adjustments using volume correction devices ensuring higher quality of TV broadcasting.

Monitors the quality of Internet (OTT) protocols

CCTV monitoring of remote equipment installations using IP video cameras

System is controlled with provided management software, and also by the multi-functional control keyboard. The system also provides for remote control and visual monitoring

TECHNICAL DATA

Number of channels supported by a single processing device: – standard definition (SD) – high definition (HD) – radio services	**Standard HW module:** Up to 90 services (MPEG-2, TS) Up to 20 services (MPEG-4.10, TS) Up to 256 radio services **High performance module:** upon request
Operational mode	Static (Fixed configuration) Scanning (Dynamic loop configuration changing)
Video formats	MPEG-1 (ISO/IEC 11172-1) MPEG-2 (ISO/IEC 13818-1) MPEG-4.2 (ISO/IEC 14496-2) MPEG-4.10 (H.264, ISO/IEC 14496-10) HEVC (ITU-T H.265, ISO/IEC 23008-2)
Audio formats	MPEG-1 Layer II (ISO 11172-3) Dolby Digital (AC-3) AAC (ISO 14496-3)
Transport containers	MPEG-2 TS (ISO/IEC 13818-1), MPTS or SPTS T2-MI (ETSI TS 102 773, EN 302 755) RTP/RTSP (RFC 1889, 2326, 3550)
Session Protocols	RTSP (RFC 2326, 3550) HLS (IETF Internet-Draft)
Input interfaces	Up to 8 1000Base-TX (ETSI TS 102 034) Up to 40 DVB-ASI (ETSI EN 50083-9) Up to 40 SD-SDI (SMPTE-259M, 10 bit, 270 Mbit/s) Up to 20 HD-SDI (SMPTE-292M,10 bit, 1,5 Gbit/s) Up to 16 3G-SDI (SMPTE-372M, 424M) / up to 4 6G-/12G-SDI (SMPTE ST-2081, ST-2082) Up to 10 HDMI (v1.4) Up to 128 AES/EBU (24 bit/192 kHz) ports Up to 5 DVB-T/T2 (ETSI EN 300 744, 302 755) Up to 10 DVB-S/S2 (ETSI EN 300 421, EN302-307, EN301-210) Up to 60 DVB-C (ETSI EN 300 429 Annex A/B/C) / up to 5 DVB-C2 (ETSI EN 302 769) Up to 7 Analog RF (PAL, SECAM, NTSC, FM/AM) / up to 64 CVBS
Output video interface	DVI-D; HDMI v1.3, v1.4; DisplayPort
Output audio interface	3,5" mini jack, stereo, unbalanced S/PDIF, DVI-D, HDMI, DisplayPort
Control of external devices	Switching matrix, Bulk descramblers

MONITORING AND ANALYSIS

IP network	MDI:DF, MDI:MLR, MLT15/24, MLS, Multicast Rate
DVB network (-T/T2, -S/S2, -C/C2)	Reception status, RF Level, MER, PER, BER*, Demodulation status, Modulation type, FEC Code rate, SNR*, Error counts* Constellations and main parameter diagrams
Transport containers	Missing input stream/No sync; Missing PIDs Transport stream errors (ETSI TR 101 290) T2-MI stream errors (DVB A136, A14-1)
Video	Still/frozen video (tunable thresholds) Video artefacts detection (tunable thresholds) Video decoding errors*
Audio	Low audio level (tunable thresholds), clipping detection Audio decoding errors*
Metadata	SCTE 104 detection (SD/HD/Dual Link/3G-SDI), SCTE 35 detection (MPEG-2 TS) Teletext, subtitles (SDI (ETSI EN 300 706), MPEG-2 TS (ETSI EN 300 472))
Session Protocols	Session Errors, No data, Data stream errors, Sync Errors
External notifications	SNMP Get/Trap (RFC 1155, 1212, 1213, 1157) Syslog (RFC 3164) HTTP/JSON
Receiving and showing external device traps (IRDs, coders, external stream analyzers, etc.)	SNMP Trap (RFC 3411-3418, STD0062)
Remote visual monitoring	Multiviewer output streaming (HTTP, H.264/HEVC (H.265))
Transport Stream recording (MPEG-2 TS)	Manual mode Automatic mode (by error detection)

LOUDNESS MEASUREMENT AND MANAGEMENT (optional license)

Integral loudness level of each audio track	Each audio track (ITU-R BS.1770-4, 2015) True Peak measurement (tunable level meter, event analyzer)
Adjustments to the volume of each audio track	Each audio track (ITU-R BS.1770-4, 2015)
External audio correction equipment support	Supported

VIDEO RECORDING (optional license)

Recording Modes	Up to 20 HD-SDI / up to 40 SD-SDI / up to 40 Analog (with MPEG-2/-4/HEVC compression) Up to 128 AES/EBU (without compression) Up to 64 SPTS/MPTS (raw data) Automatic loop recording (tunable parameters), Manual recording

* Availability of the above parameters depends on the type of input interface used.

TELETOR

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