

ORION®

24x7 Confidence Monitoring of Linear/IP Video

Headends and video service providers today deal with a large amount of complex content. Programs may be re-encoded, transcoded, and multiplexed. These transformations can adversely affect the content integrity and user experience.

Keeping these diverse complexities and challenges in mind, Interra's ORION® provides an edge as the only enterprise-class software solution that offers a simple, yet powerful approach to content monitoring. ORION performs critical monitoring functions in a single, integrated platform that is comprehensive, efficient, and easily scalable for hundreds of programs.

Enabling Superior QoS and QoE



ORION effortlessly monitors streaming content scaling single to multiple monitoring units / sites across different geographical locations. ORION Central Manager provides real-time consolidated views and long term reports for enterprise-wide centralized monitoring.

ORION has a rich and customizable web-based interface enabling remote monitoring, thereby providing extreme flexibility and on-the-go decision-making. ORION offers other significant features like error detection, video quality analysis, alerts, reporting, thumbnails, and trend analysis.

Key Features

- **In-depth monitoring and compliance checks**

- CableLabs checks
- MPEG-2 transport streams over IP / ASI
- ATSC, DVB and ISDB compliance
- TR 101 290 and ATSC A/78 compliance
- PCR Overall Jitter check for PCR analysis
- Analyze SI/PSI/PSIP Tables on Private PIDs
- Video and audio conformance checks
- Monitor SRT and RIST contribution feeds
- Video Metadata checks for Frame rate and Picture Scanning Type
- Logo Detection, Dropout and position change checks
- DVB subtitles, Closed Captions, Teletext, XDS, and Text Services
- SMPTE 2022-2 standard for IP Conformance
- Service Availability monitoring and reporting
- Wallboard Mosaic View
- Round-robin monitoring mode

- **Monitoring QoS/QoE/MOS**

- **Video quality checks**

- Freeze frames, black frames, blockiness, blocky distortion

- **Audio quality checks**

- Loudness compliance (ITU, EBU and CALM), silence and audio levels
- True Peak
- Stereo Pair Absence
- Jitter Noise
- Audio Clipping

- **Ad Insertion Monitoring**

- SCTE35 Compliance checks
- Logging and Inspection of SCTE35 Cue Markers and Avails
- SCTE-104 Ad Markers monitoring

- **Encoder Boundary Point Monitoring**

- Advanced EBP monitoring for aligned EBPs across ABR Feeds
- Multi Bitrate Transport Stream (MBTS) monitoring using IDR-PTS

- **SDI signal monitoring**

- SDI over BNC
- SDI over IP (ST-2110)

- **Well-managed recordings**

- Manual and automatic recording of signals (TS or PCAP) based on customizable triggers
- Continuous / chunked recording of a specified time or file size
- Reason-specified manual recording

- **Alarms, alerts and reporting**

- Audio Alarms
- Highly configurable and easy to set up alarms/alerts (including SNMP/Email)
- Custom alerting actions, such as Slack, HTTP Push, Microsoft Teams
- Rich, highly configurable reports for real-time and logged data
- Real-time graph and timeline for analyzing alerts and trends
- Historical reports for PCR Measurements
- XML export of Closed Captions, EBP and IGMP information
- Exportable Ad-Insertion Monitoring Reports with Cue details and Video Thumbnails
- Exportable Ad Marker reports in XLS and PDF formats
- Customizable Notification Scheme for System Level Alerts
- Integrated with VEGA analyzer for offline debugging

- **REST APIs support**

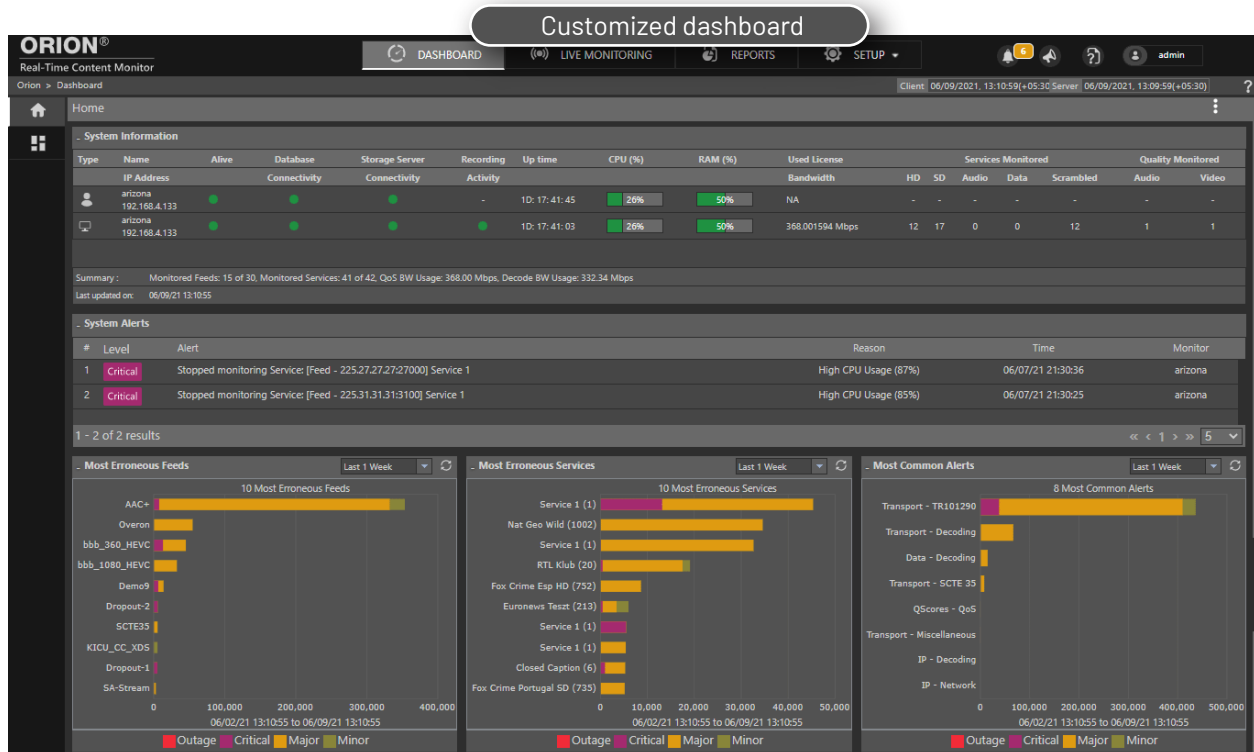
- APIs for Setup and Configuration
- APIs for controlling Monitoring operations
- APIs for Alert reports in XML, PDF and CSV format
- APIs for fetching Bitrate, Loudness, PIAT, RTP Loss, Jitter, FEC Packet Recovery stats in XML and CSV formats
- APIs for fetching Closed Captions, SCTE-35, EBP and IGMP data in XML format

- **Role-based access**

- **Dark and light theme based UI for better user experience**

Benefits

- **Enterprise level solution**
 - Support for 10 Gbps monitoring with fiber and copper connectivity
 - Easy deployment and expansion using standard IT hardware
 - Supports Linux operating system
 - Seamlessly deploys in virtual/cloud-based environment
 - Authentication/authorization using LDAP
 - Centralized Probe Management
- **Comprehensive monitoring**
 - MPEG-2 TS monitoring, closed captions, audio/video quality, and Ad insertion with SCTE-35 triggers
 - ST2110 Monitoring including support for ST-2110-10/20/30/31/40, PTP, Redundancy and NMOS Integration
- **Established quality checks**
 - Leverages QC and standards compliance of our leading BATON and VEGA products
- **HEVC 4K support**
 - Monitors HEVC streams in different resolutions including 4K
 - Assesses QoE
- **Digital program insertion and compliance checks**
 - Monitor and log every SCTE-35 message
 - Record Ad insertions for visual inspection
 - Check inserted ads for audio/video quality
 - View syntax details and time-accurate thumbnails of SCTE-35 cue messages
 - Trigger service recording around SCTE 35 SPLICE OUT and SPLICE IN events



Created For

- Broadcasters, Cable Networks
- Telco Operators
- Encoder/Decoder Manufacturers
- System Developers
- Streaming Media Providers
- End-to-end DTV Solution Providers
- Cable and Satellite Headends

Formats & Protocols Support

Interface

IP (v4), ASI, SDI, SDI over IP (ST-2110), VLAN 802.1Q

Protocols

MPEG-2 Transport, DVB, ISDB, and ATSC compliance

Audio Formats

MPEG-1/MPEG-2 Audio, AAC/AAC+ (HE-AAC) Audio, Dolby AC-3, EAC-3 Audio, AES3 Audio, SMPTE 302M

Video Formats

SD/HD/UHD/4K Video, HEVC, H.264/MPEG-4 Part 10 (AVC), MPEG-2 Video

Embedded Data

Closed Captioning (EIA-608, EIA-708, SCTE-20, DIVICOM, NADBS, VANC (SMPTE 2038), Text Services), DVB Subtitle, Teletext, SCTE-27, SCTE-35, XDS, SCTE 104

Network Transmission Protocol

UDP/RTP, Multicast (IGMP v1/2/3), HRTMP, SRT/RIST



ORION[®] 2110 Probe

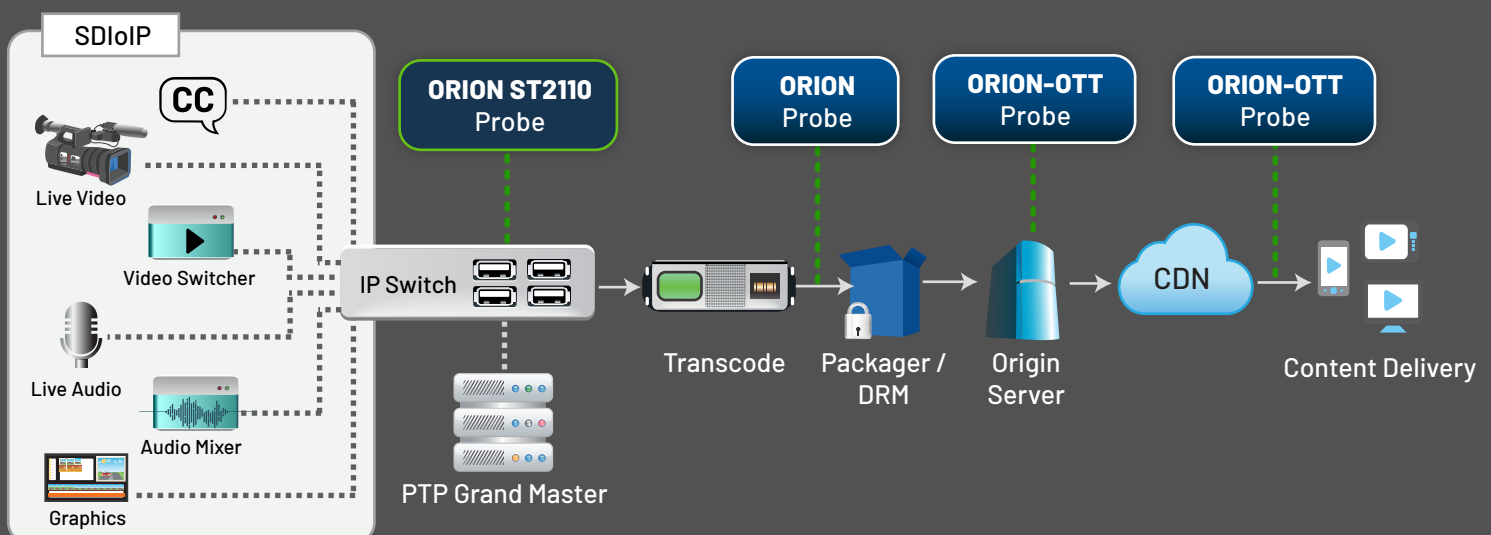
For SDI-over-IP based Media Workflows

The need for seamless interoperability, lower costs with standard IT infrastructure and greater flexibility in transmission of video, especially 4K/8K HDR content, has significantly urged broadcasters to transition from traditional SDI infrastructure to IP based Video Networks. IP networks offer more agility, stability and flexibility required for building the next-generation video production and distribution facilities.

SMPTE ST 2110 Professional Media Over Managed IP Networks suite streamlines the shift to Video over IP. Encapsulating a wide range of protocols - from PTP clocks to High Bitrate Uncompressed or Compressed Video transmission over IP, ST2110 is accompanied with its own set of intricacies and operational challenges.

Interra Systems' ORION 2110 Probe is a powerful solution to deal with the diverse complexities and challenges of the SDIoIP environments. The ORION 2110 Probe offers comprehensive QoS/QoE monitoring of ST 2110 essence streams, including ST 2110 main and redundancy signals and NMOS integration.

ORION 2110 Probe – for SDI-over-IP based Media Workflows

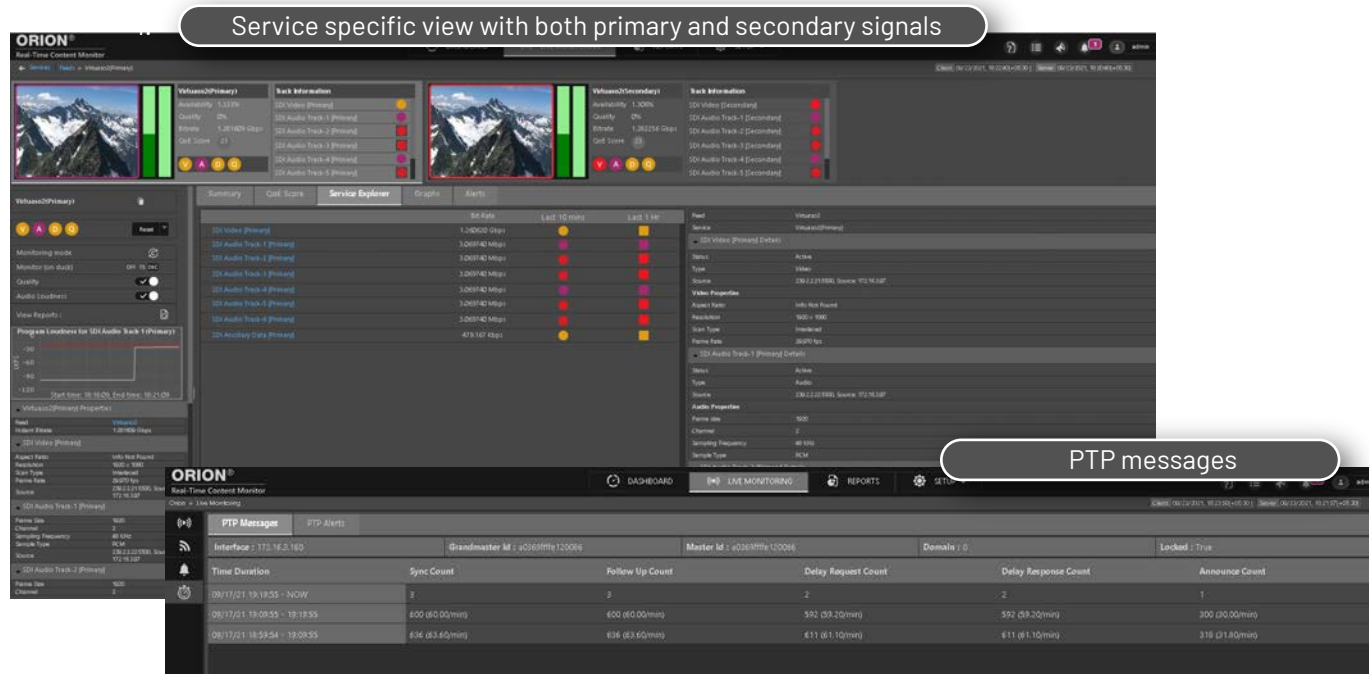


SMPTE ST-2110 Suite Standards Support

- **ST-2110-10** - System architecture and synchronization. Synchronization is based on SMPTE 2059
- **ST-2110-20** - Uncompressed video transport, based on SMPTE 2022-6
- **ST-2110-30** - Audio transport, based on AES67
- **ST-2110-31** - Transport of AES3 formatted audio
- **ST-2110-40** - Transport of ancillary data

Key Features & Benefits

- Detect issues quickly throughout the video workflow
- Monitor ST-2110 essence streams for both QoS and QoE
- Perform metadata monitoring for Closed Captions, Teletext, and Timecodes
- Monitor PTP (Precision Time Protocol) messages for all the Ethernet Network Interfaces
- Monitor both primary and secondary streams simultaneously
- Monitor up to 100Gbps bandwidth (each for main and redundancy), on 16 HT core machine using single NIC
- Monitor video, audio, and ANC streams for various checks, such as Black frames, Freeze frames, Blockiness, Loudness, Level, Silence, Closed Captions, Ancillary Time Code, Teletext OP-47 Data etc.
- Supports NMOS APIs
- Ensure seamless integration with third-party software using rich set of REST APIs
- Easily deploy on standard IT hardware



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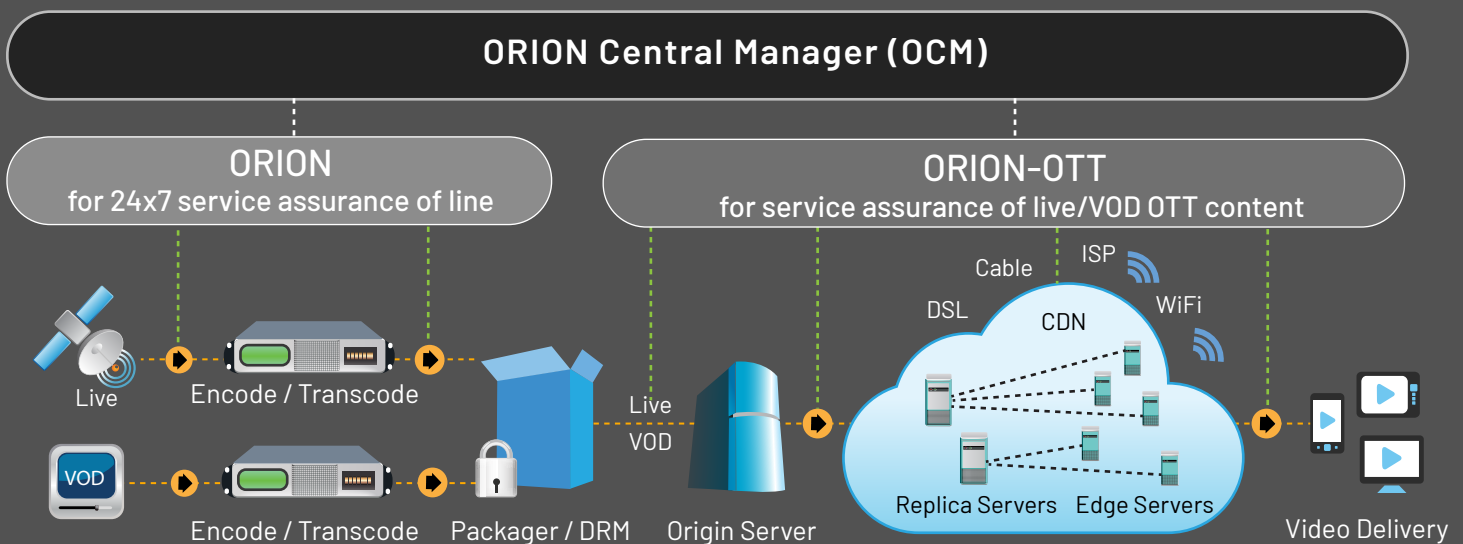


ORION[®] Central Manager

Centralized Enterprise-wide Monitoring

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Highlights

- Live Confidence Monitoring for your end-to-end streaming workflows
- A unique solution providing real-time view and QoS/QoE status for each service from multiple ORION and ORION-OTT monitors, irrespective of the location
- Quick isolation of faults with correlated alerts across all monitoring points
- Drill down to probe-level views for in-depth monitoring information
- Get useful insights with performance trending and executive reports

Key Features

- **Real-time status of all channels across the network**
 - Provides a real-time view of linear and OTT services, enabling you to adopt a proactive approach to service monitoring and improve the quality of your OTT offerings
- **Channel Mosaic View with live thumbnails for confidence monitoring**
 - Live thumbnail view with penalty box monitoring
- **Geo-map based monitoring views**
 - Provides bird's-eye view in the form of realistic geographical maps
- **Historical reports and diagnostics**
 - Provides rich visual trending with meaningful insights
 - Exportable Reports for Channel Performance and Alert trending' report in .xlsx format
- Daily and Monthly Channel Availability and Quality Reports with detailed Outage analytics
- Schedule tasks to export various reports
- Bookmark reports for easy access
- Acknowledge alerts by adding comments, resolution, root cause
- **Comprehensive centralized Probe management**
 - Centralized management of all the probes being monitored
- **REST APIs for third-party integrations**
- **Supports Linux OS**
 - Seamlessly deploys in both, on-premises and cloud setups
- **Dark and Light theme based UI for better user experience**



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