

EXFO Vision

VIDEO MONITORING



Feature(s) of this product is/are protected by one or more of US patents 7,840,670; 7,933,329; 8,306,063 and 8,576,909.

Provides 24/7, end-to-end network visibility of service quality from the headend to the set-top box.

KEY FEATURES

Manage infrastructure and service quality throughout the service lifecycle

Monitor all video-over-IP services including IPTV and over-the-top (OTT) streaming services

Oversee the infrastructure to ensure the underlying network is performing well

Monitor television-delivery networks 24/7 (cable, IPTV, satellite, OTT)

Analyze IP, MPEG, ASI and RF (satellite, cable, terrestrial)

Pinpoint faults fast across the complete system for rapid isolation and repair

Use alarms with customizable thresholds to proactively identify and fix issues

View a virtual video wall showing thumbnails of video services in an ordinary browser

Monitor end-to-end, from the headend satellite feed through the network to the customer premises

Track performance using video-specific metrics, not just network delivery metrics

Generate custom reports for executive, sales, finance, engineering and other groups

Scale to large national and international service networks

QUALITY VIDEO DELIVERY

Trends indicate that very soon more than 80% of global consumer IP network traffic will be video (live TV, video on demand, Internet video and peer-to-peer). Virtually all of this video will be delivered using Internet protocol (IP) for part or all of the journey. This presents significant potential problems, since loss and delay are inherent in IP networks and video is extremely sensitive to even minor delays. Consumers simply won't tolerate poor-quality video without considering switching service providers and/or video services. To reduce customer churn, service providers must closely monitor their network performance and be able to address issues very rapidly. Especially as providers bundle video with voice, data and even mobile services, they are turning to EXFO Service Assurance to keep their service quality and their customer satisfaction at the highest levels.

COMPLETE LIFECYCLE

EXFO provides the industry's most advanced, scalable video-over-IP solution throughout the service lifecycle. Installation and turn-up tools ensure that you get off to a solid start, including a monitoring solution that ensures a quality video service is being received before transmitting across the network to your customers. Operational monitoring provides key performance indicators (KPIs) 24/7 and troubleshooting tools help keep the system running smoothly. Tracking performance over time provides trend data that helps identify key issues and trouble spots for more proactive operational procedures.

MULTICAST NETWORK INFRASTRUCTURE

Service quality depends on infrastructure quality. With EXFO Service Assurance, you can proactively test the infrastructure to actively test the user experience. A variety of tests are available to actively test HD and SD program servers and receivers, as well as subscribe to actual multicast programming from network servers. You can test transport quality (packet loss, latency, jitter) from many points in your network to assure a uniform quality video service throughout your infrastructure. With EXFO Service Assurance, you lay the foundation for a solid multicast video distribution network and identify quality problems before they affect subscribers.

TELEVISION DELIVERY

Whether your system is cable, IPTV, satellite or OTT, you can rely on EXFO Service Assurance to ensure high quality delivery. Actively test your service with proactive monitoring to detect outages and expose variability of performance over time. Continuously monitor your network end-to-end, from satellite feeds into the headend through the network to the home. Alarms will instantly notify you of issues and isolate the problem areas so that you can resolve them rapidly. You can monitor both RF and IP in a single tool, so that satellite feeds, network delivery and cable access are all integrated. You can track RF signal, IP delivery, MPEG video characteristics and thumbnail images from multiple points and multiple domains—all in a single interface. Industry standard ETR 101 290 metrics provide high visibility into MPEG quality while lower layer KPIs help isolate network issues. A virtual video wall lets you view thumbnails for many channels on a web browser for a fraction of the cost of a traditional video wall. Customer premise monitoring can even provide 24/7 visibility at the edge of the network, reducing truck rolls and costly OPEX.

OVER-THE-TOP VIDEO

Subscribers are demanding Internet-delivered video to connected TVs, PCs, gaming systems, tablets, and other screened devices, often called over-the-top (OTT) video. EXFO Service Assurance provides OTT service assurance as part of its integrated EXFO Vision solution. Monitoring content from key locations, you can measure overall and target-based availability metrics. EXFO Service Assurance provides the ability to correlate availability and performance to network performance. Actively monitoring OTT services with EXFO's simultaneous all-profile testing provides valuable data to both operations and engineering for OTT services. OTT service assurance that currently supports Apple HLS, Microsoft Smooth Streaming, Adobe HDS and MPEG-DASH can also be managed as part of an integrated EXFO Vision solution.

FULL SUITE OF USER-FRIENDLY TOOLS

EXFO Service Assurance solutions provide a range of user applications and views, from real-time dashboards to business intelligence trend analysis. For day-to-day operations and engineering, EXFO Vision dashboards provide a wealth of information end-to-end, from satellite feed RF quality to virtual video wall in a browser to home user metrics. For executive and engineering reporting, EXFO Vision reports can provide short, medium and long-range views into historical trends. You can customize reports for a range of customer, operations, engineering and financial applications. Also, external KPI interfaces are available for existing OSS/BSS systems to extract key metrics minute by minute or as desired by the service provider.

CONTINUOUS END-TO-END MONITORING OF LIVE VIDEO STREAMS

EXFO Vision Live Monitoring provides 24/7, end-to-end network visibility into service quality by monitoring and analyzing live video streams at critical locations within the delivery network. This includes headends, regional hubs, local video serving offices and even inside individual end-user homes. Strategically deployed EXFO Verifiers monitor video streams for user-impacting impairments in the video content as well as network-introduced impairments during transmission to the set-top box (STB), thus allowing providers to effectively segment their networks and pinpoint where problems are occurring.

UNIQUE AND INTUITIVE MONITORING TOOLS

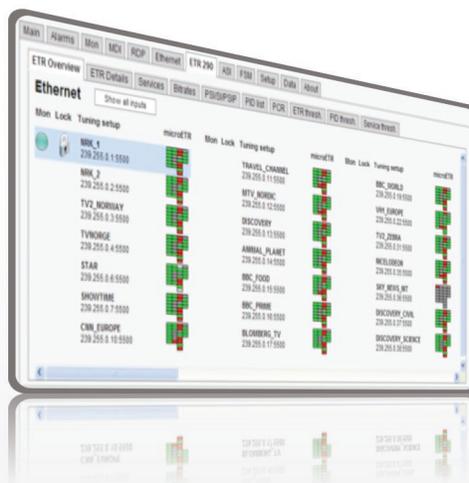
The EXFO Vision dashboard alerts operations staff to degradations and outages quickly and reports current video quality and service performance indicators as well as the number of programs and locations affected. With the patented MediaWindow™, historical measurements can be easily accessed for meaningful visualisation of media flow in an IP network. With one look, the complete picture for one or more streams during the past four days is clearly portrayed and the vital parameters (packet loss, packet jitter, etc.) are monitored continuously for full network control. When troubleshooting a problem that has previously occurred, the dashboard provides a historical, point-in-time view for any time period.

EXFO Vision's unique and highly scalable system maps display current status for all system locations and programs across the entire network. At a glance, staff can identify failing programs and locations to quickly assess the extent of a problem. Selecting a location provides details for all failing and warning key performance indicators (KPIs). To further isolate problem impacts, providers can visually highlight all of the upstream and downstream locations from which the site receives or distributes content.

Additionally, with custom reporting capabilities, providers can graphically compare performance of individual programs and locations by comparing more than 40 collected quality metrics.

FOR OPERATIONAL AND PRODUCTION NETWORKS

Unlike lab or some pre-deployment tools, EXFO Vision is designed for large-scale, live IP video deployments. EXFO Service Assurance provides crucial operational features such as one-touch EXFO Verifier deployment, carrier-class scalability, remote management, centralized configuration, data storage and advanced analytics and reporting.



RETURN DATA PATH AND ETR 290 ANALYSIS

To reduce the amount of expensive monitoring equipment deployed at regional video hubs, EXFO Vision offers support for return data path (RDP) functionality. RDP relaying functionality enables the user to select any monitored stream and forward it as an IP stream to the desktop or other location for detailed inspection.

The ETSI ETR 290 software performs full analysis on Ethernet, ASI, QPSK, QAM and COFDM signals according to the industry standard TR 101 290 specification. Many new checks were added to the analysis engine to complement and extend the TR 101 290 specification, providing operators with unparalleled input signal visibility. The verifiers can detect and trigger alarms for many of the common errors that would normally go unnoticed by conventional monitoring systems.

SPECIFICATIONS

Monitoring

- › Monitoring of hundreds of IPTV, OTT, and RF streams
- › MPEG-2 transport streams and real-time transport protocol (RTP) encapsulation support
- › OTT monitoring support for HLS, MPEG-DASH, MSS, and HDS
- › MPEG-2, MPEG-4 (H.264/AC), HEVC (H.265)
- › QPSK/QAM/COFDM signal support
- › ETSI TR 101-290—Level 1, 2 and 3 parameters
- › Full support for encrypted and unencrypted streams
- › More than 40 network and video quality KPIs and key quality indicators (KQIs) including:
 - › Packet loss—lost, late, out of order, loss periods, inter-loss periods
 - › MPEG errors

Visualization

- › Full system coverage dashboard and reporting engine
- › Views per channel, per location
- › Real-time and point-in-time display
- › Live geographical map display of monitoring points and alert status
- › Support for multiple tiered architectures
- › Optional integration with EXFO's advanced analytics and business intelligence engine

Alerts

- › Per stream, program, location performance objectives
- › Threshold functions including minimum, maximum, average, count, percentage
- › Real-time alert panel, SNMP traps

EXFO SERVICE ASSURANCE

EXFO Service Assurance is a global provider of converged service assurance solutions that allow the world's largest service providers and enterprises to offer reliable and high-quality experiences in voice, video, data and mobile services to their customers, partners and employees. The company brings a proven heritage of IP expertise unique to the service assurance marketplace, and collaborates closely with its customers and partners to assure the delivery of any IP-based service, over any network, to any endpoint.

EXFO Service Assurance's seamlessly integrated hardware and software products are converged service assurance solutions that proactively monitor IP service and application quality. Network operators use these products to guarantee the successful launch and ongoing, profitable operation of their video and various other IP services.

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