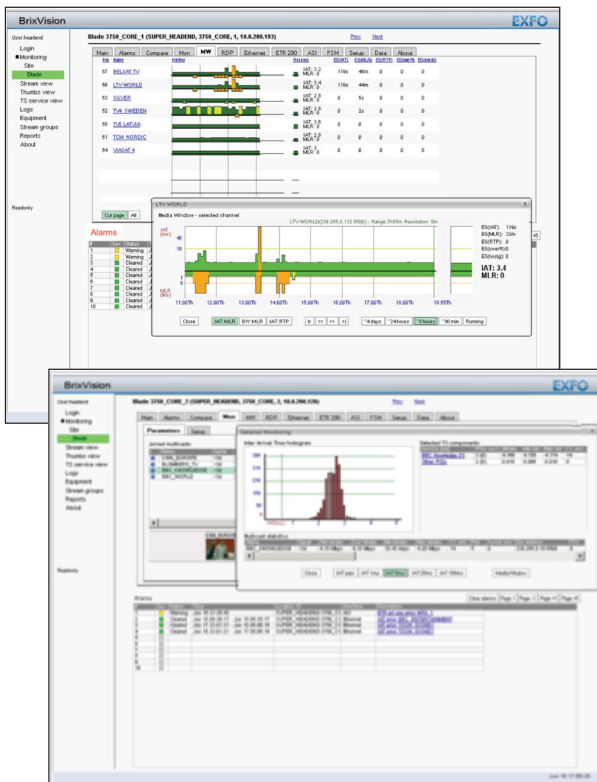# BrixVision

CONVERGED SERVICE ASSURANCE

- Continuous monitoring of live video streams to safeguard content quality
- Reporting engine for generating historical report and quality of experience (QoE) reports
- Flexible alarm aggregation and filtering, reducing alarm storms and unnecessary alarms
- Per program drill-down views
- Pinpoint faults fast–view the complete system in terms of transport streams and services
- Full IP and MPEG video quality analysis
- Sophisticated thresholds with automatic alerts to proactively identify and fix issues
- Element-level control of all verifiers
- Relative measurements with multiple relation points
- Monitoring and analysis of QPSK/QAM/COFDM signals for satellite, cable and terrestrial networks
- Microtimeline™ view of the last 96 hours of operation
- Thumbnail and metadata view with the BV2080V Content Extractor
- Hierarchical equipment view
- Highly scalable for large national and international service providers

Next-Generation Network Assessment

Continuous Monitoring of Live Video Streams

BrixVision Live Monitoring provides 24/7, in-network visibility into service quality by monitoring and analyzing live video streams at critical locations within the delivery network. This includes head-ends, regional hubs, local video serving offices and even inside individual end-user homes. Strategically deployed Brix 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.

BrixVision: End-to-End IPTV Service Assurance

The BrixVision family of end-to-end IPTV service assurance solutions enables service providers to verify the quality of their IPTV services from the head-end to the STB. One of the key advantages of BrixVision is its ability to quickly identify the location and the root cause of any video impairment.

Deployed in conjunction with head-end or in-network live monitoring, BrixVision's home monitoring system provides immediate visibility into the QoE at any subscriber location. This unique and inexpensive solution allows providers to directly correlate user quality of experience with detailed in-network metrics. With a correlated performance view, providers can easily assess the scope of subscriber-impacting degradations and quickly find and fix problems.

Full Lifecycle Support

EXFO's unique IP video service assurance solution goes beyond simple live monitoring of the video network. With a comprehensive portfolio of handheld, portable and rackmount verifiers, as well as its triple-play integrated BrixWorx system, EXFO offers a complete lifecycle video solution from service turn up to monitoring and troubleshooting. This includes active testing, live monitoring, historical analysis and full correlation of all data collected by any of the devices, whether fixed or portable—all in one integrated platform.

Unique and Intuitive Monitoring Tools

The BrixVision 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.
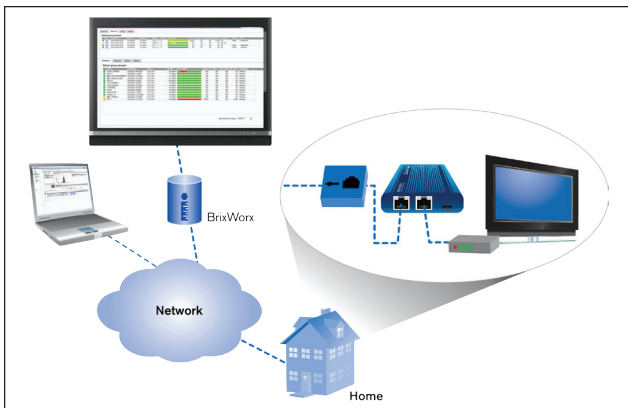
BrixVision's unique and highly scalable system maps display current status for all system locations and programs across the entire network. At a glance, staff can identify failing programs and locations to quickly assess the extent of a problem. Selecting a location provides details for all failing and 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 pre-deployment tools, BrixVision is designed for large-scale, live IP video deployments. Based on the BrixWorx centralized correlation and analysis software engine, BrixVision provides crucial operational features such as one-touch Brix Verifier deployment, carrier-class scalability, remote management, centralized configuration, data storage and advanced analytics and reporting.

The Brix System enables providers to consolidate point products into a single, cost-effective, multiservice assurance platform. Leveraging the open architecture of BrixWorx, providers can seamlessly integrate BrixVision with a wide variety of third-party provisioning, fault management and trouble-ticketing systems to improve operational efficiencies, validate performance and quality levels, and continually ensure the overall success of an IPTV service.

Home Monitoring

Home networking environments are becoming more complex and with this complexity IP video service providers are finding it increasingly more difficult to identify whether the problems experienced are due to the home infrastructure or the network. By placing a number of inexpensive, customer-installed Home Verifiers in end-users' homes, BrixVision can provide QoE measurement data from multicasts received by the end-customers. Measurements are automatically displayed in the graphical user interface of the centrally located BrixVision.

By comparing data from the Home Verifier with measurements from the upstream IP verifiers, it is possible to determine whether possible impairments experienced by the end users are caused by errors in the distribution network or if signal problems are due to the end-customer's own home network. The result is a unique service assurance solution that extends through the last mile to the customer premises without requiring expensive truck rolls.

Return Data Path and ETR 290 Analysis

To reduce the amount of expensive monitoring equipment deployed at regional video hubs, BrixVision 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 central play-out location for descrambling/decoding and detailed inspection.

The ETSI ETR 290 software performs full analysis on Ethernet, ASI, 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/thousands* of broadcast and on-demand streams
- MPEG-2 transport streams and real-time transport protocol (RTP) encapsulation support
- MPEG-2, MPEG-4 (H.264/AVC)
- 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
  - Media quality index (MQI)–percentage of renderable video

Depending on selected Verifier model

Visualization

- Full system coverage dashboard and reporting engine
- Views per channel, per location
- Real-time and point-in-time display
- Support for multiple tiered architectures
- Optional integration with BrixView 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, collectively called the Brix System, are converged service assurance solutions that proactively monitor IP service and application quality. Network operators use the Brix System to guarantee the successful launch and ongoing, profitable operation of their various IP services.