

Hawkeye Distributed IPTV Monitoring System

One Glance Tells All
Real-Time Fault Segment Determination
Root Cause Analysis Remote Troubleshooting
Comparison, Trending, Statistical Report
Multi-level Authority Control
Scalabic, Consolidated and Cost-Effective



Features Highlight

- Provide Multi-Channel/Multi-Points Matrix View and display each point's status to rapidly isolate impaired network segment
- Provide Geographical view of the network topology in a real-time updating display
- Provide Network Traffic Trending analysis for each Point.
- Web-based User Interface
- Support to Integrated with SMS, E-Mail or Alarm system
- Real Time Monitor and Alarm
- Remote troubleshooting
- On-AIR Content Validation
- Variety of Comparison, Trending, Statistical Reports
- Channel grouping functionality
- Multi-level Authority control
- Two Layer thresholds Setting
- Support SNMP protocol

One Glance Tells All

How many channels do you need to manage? Stressing your eyes by staring the TV wall for hours? We provides a complete solution -Hawkeye Distributed System- for new-generation IPTV network system. Hawkeye Distributed System monitors all IPTV channels and displays every channel's status within a single screen in real time. Just a split second glance at the "One-Glance-Tells-All" Summary page, user readily spots any tell-tale alarms without scrolling or searching through hundreds of channels being monitored. It conveniently integrates SMS, Email, Alarm lights, or SNMP system notifying user/s automatically on all IPTV channels abnormalities with prompt alarm/s anytime and anywhere promoting operational productivity without compromising need for immediate rectification actions to be taken.

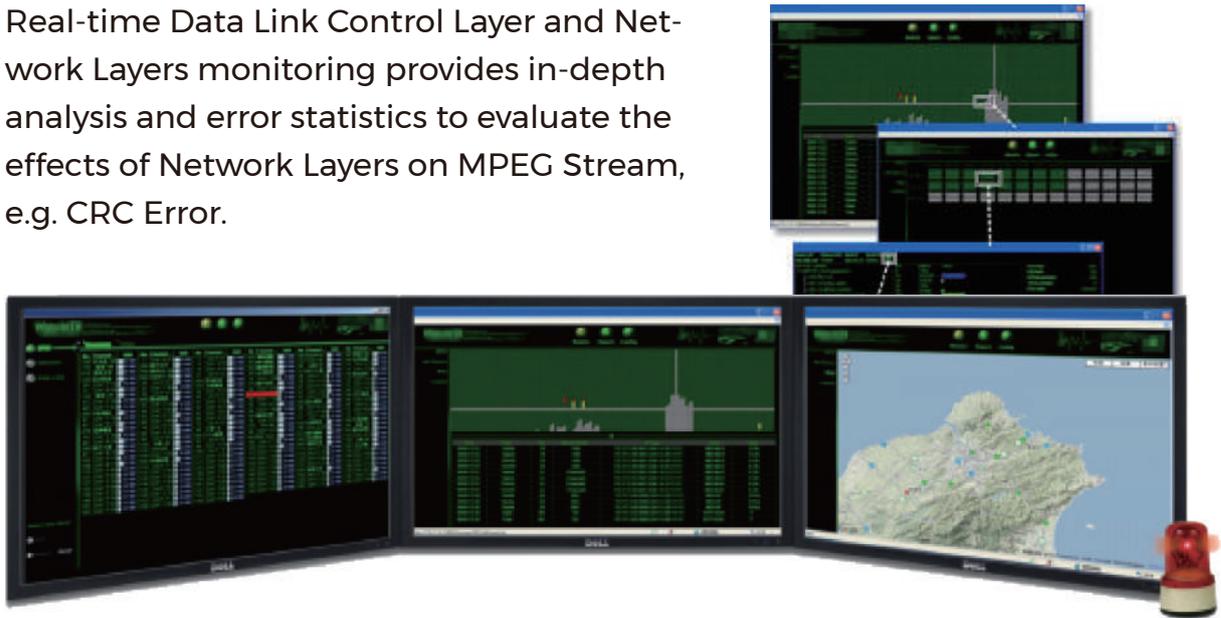
Root Cause Analysis & Remote Troubleshooting

User may readily sort any measured parameter's values on real-time screen by different VLAN ID, MPLS Label, ToS, or IP Address. Tracks down root cause of the IPTV network problem/s by sorting certain parameters selectively. For example, if all problematic streams point to similar Source IP or within the same VLAN, user can take corrective actions by tracing root cause rapidly. Unprecedented unique features like Per-Stream L3/L4 checksum checking function analyzes not only covers MPEG Layers, but also intelligently checks IP network traffic transport layers.

Moreover, Hawkeye Distributed System provides in-depth analysis of each stream (channel) including PCR Jitter, Packet Loss, Throughput, and TR101-290 related parameters.

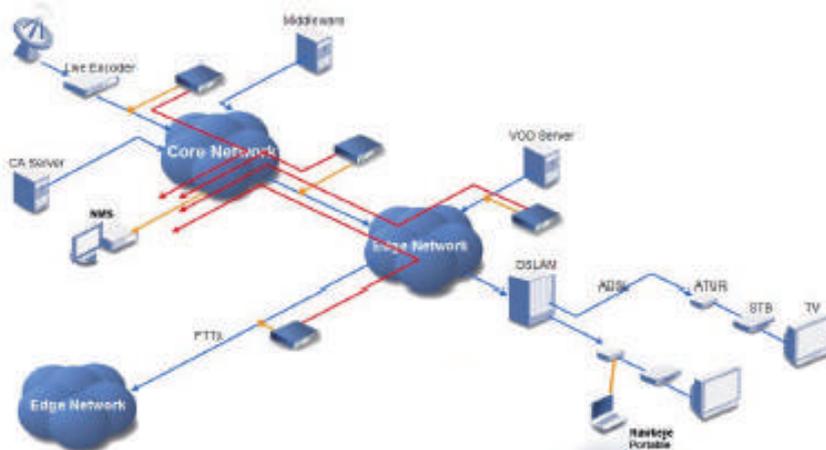
With exclusive real-time re-directing technology, remote subscriber's video can be played simultaneously on the monitoring screen to achieve subscriber 's experience at the engineer 's convenient location, e.g. while servicing complaint calls. This function supports both Multicast and Unicast streams.

Real-time Data Link Control Layer and Network Layers monitoring provides in-depth analysis and error statistics to evaluate the effects of Network Layers on MPEG Stream, e.g. CRC Error.



Real-Time Fault Segment Determination

IPTV network streams flow through many nodes: In general, service providers encode videos and forward video streams to Core Network, then video streams are forwarded to Edge Network and finally through xDSL or FTTx technology, IPTV services are delivered to subscribers. Video streams flow through GSR, Switches, and DSLAM. Excellent signal at Head End, does not readily mean that signal will be as good at other nodes. Hawkeye Distributed System provides exclusive channel monitoring and monitored dots matrix graphically representation. The matrix displays all monitored channels (abbreviated by colored dots) and their status all within a single screen ensuring not a single channel is missed regardless of hundreds to even thousands of channels need to be monitored attentively.



Expert Analyzer

Hawkeye Portable is an expert analysis software, designed for IPTV system maintenance. Hawkeye Portable can be installed on Notebook providing comprehensive in-depth analysis including STB simulator, Channel Scan, MPEG Analysis, and RTSP/IGMP Protocol Analysis. To further analyze IPTV network system, Hawkeye Portable can be integrated with Hawkeye Distributed System to help network expert to analyze entire IPTV network system.

Comparison, Trending, Statistical Reports

Hawkeye Distributed System provides a variety of reports. Monthly / Weekly / Daily / Hourly Statistical Reports are easily generated with some clicks on the mouse only, and can be saved as PDF format.

- Generation of comparison report of the same stream flowing through different probes to rapidly troubleshoot problem.
- Provide point (probe) measured results and IPTV network layer measurement to judge whether IPTV service problem caused by Network Layer.
- Provide the Worst Streams, Worst Points Statistics Reports to rapidly find out system problem
- Customizable corporate logo banner design to tailor customer's requirement and display own companies image.
- User is able to set "Exception" to avoid wrong statistic results because of maintenance or probe testing.



Multi-level Authority Control

Hawkeye Distributed System provides different authentication levels (Guest, User, and Manager) for different users. For example, authentication level – manager has the authority to configure system, view monitor and generate reports, yet authentication level – guest has only the authority to view Monitor unit. Besides, specific channel group can be assigned to specify users to be in charge.

Scalable, Consolidated and Cost-Effective

Hawkeye Distributed System provides flexible applications for network configuration. At first, customer purchases only one unit to monitor IPTV network. As the number of subscriber increases, customer may expand coverage by acquiring additional add-on units.

Hawkeye is scalable to fit customer’s requirement, and it is also cost-effective for custom to deploy network infrastructure.

Features Highlight

- MPEG-2 TS over UDP or RTP/UDP
- HD/SD Support(H.264 & MPEG-2)
- Monitor up to 512 streams simultaneously & scalable
- MOS-V Measurement
- MDI measurement (RFC-4445)
- RTP Layer measurement (RFC-3357)
- TR101 290 compliant and support parameter threshold setting
- Support Single Program Transport Stream(SPTS) and Multi Program Transport Stream(MPTS)
- Support Multicast and Unicast Streams
- Both IGMPv2 & IGMPv3 Support
- Supports maximum UDP segment size(up to 32k byte, regardless of LIFO or FIFO stack) as used by Alcatel-Lucent*1 OVS system
- Supports X-bit RTP header extension as used by Microsoft*1 IPTV system
- Support Byte-swap RTP header as used by UTstarcom*1 IPTV system
- Per-Stream VLAN ID with Priority analysis
- Per-Stream MPLS Label with CoS analysis
- Per-Stream Layer3/4 checksum Error check

- | Per-PID throughput statistic
- | PSI Table re-construction and analysis
- | PSI and PCR rate measurement
- | PES header decode
- | PCR Jitter measurement with Time slot
- | 1GB Capture buffer, Trigger capture capability
- | Network/Data link layer information:
 - | Bandwidth Utilization
 - | CRC Error Frame
 - | Over/undersize Frame
 - | Layer 3/4 checksum Error
 - | Jabber Frame
 - | Fragment
 - | Fame Size Distribution

*1 Alcatel-Lucent, Microsoft and UTstarcom are trademarks or registered trademarks of their respective companies.

