MOBILE BACKHAUL LIFECYCLE TESTING AND MONITORING SOLUTION

Standard APIs

OSS

BrixNGN

Cell Site

Backhaul Network

MSC

24/7 In-Service Monitoring (Availability, Loss, Delay, Delay Variation)

On-Demand Service Performance Test (In-Service or Out-of-Service)

EXFO/Connect
EtherSAM

a unique solution for complete network assessment

› Real-time testing: on demand/automated
› Seamless integration into any OSS system
› Completely based on industry standards
› Scalable solution to thousands of test points
› Advanced reporting
› Remote troubleshooting
› 4G/LTE-ready
› Minimized OPEX and CAPEX
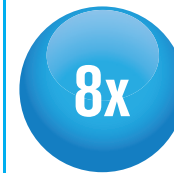
8x Faster deployment

100% First time right

20% Reduced MTTR

FIP-400
Fiber Inspection Probe

FTB-860
10 Mbit/s to 10 Gbit/s Ethernet Test Set

FTB-200
Compact Multiservice Field Platform

BV10
Performance Endpoint

BV-110
Multifunctional CPE and Cell Site Service Assurance Verifier

BV-3100
In-Network Multifunction Service Assurance Verifier

BrixNGN
Ethernet Performance Monitoring

EXFO | Assessing Next-Gen Networks

CONSTRUCTION

Objectives
› Characterize physical link
  › Tower raise (singlemode and multimode)
  › Backhaul
› Ensure loss budget is in range (splice, connectors)
› Locate and fix problems (macrobends, dirty or bad connectors, bad splice)

How
› Inspect and analyze connectors with video probe
› Link loss and return loss measurements with OTDR and/or OLTS

Key Concerns
› Do it right the first time (if physical layer is not well tested, it affects the rest of the steps)
› Put tower in service as fast as possible

EXFO Solution—Key Benefits
› Ease of use, one start button
› Reduced test time with FastTest/FastTrace: OPEX reduction

Technician
FIP-400
FIP-400
Backhaul Network

TURN-UP AND BURN-IN

Objectives
› Verify backhaul connection configuration and performance
› Validate circuit and service performance against SLA

How
› Perform EtherSAM (ITU-T Y.1564) or RFC 2544 from RTU-310 to handheld or performance endpoint
  › Using the handheld (instead of loopback device) at the tower will provide bidirectional results
  › Optional: If in-service burn-in is required, perform 24-hour burn-in via Ethernet OAM
› Test results automatically saved: service birth certificate

Key Concerns
› Minimize technician intervention and truck rolls
› Put tower in service as fast as possible
› Proof of quality with all SLA parameters

EXFO Solution—Key Benefits
› Combination of BV-3100 and BV10 allows for complete remote turn-up with zero truck rolls
› EtherSAM: complete validation of SLA with a single test allowing 8x faster deployment using standards-based method
› When testing to handhelds: providing highest level of confidence with bidirectional results for all services and all KPIs
› Automatic results logging in database with birth certificate for future benchmarking

Backhaul Network
Technician

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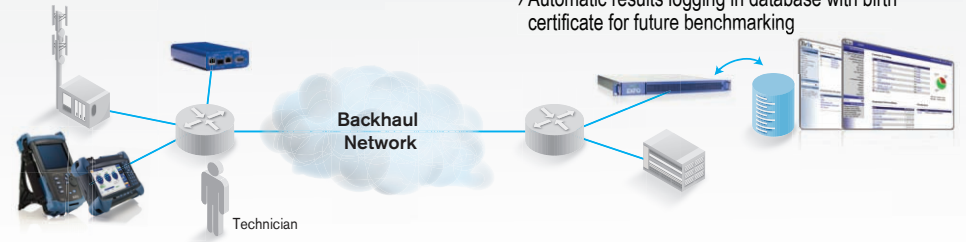
1 **CONSTRUCTION**   2 **SERVICE TURN-UP AND BURN-IN**   3 **SERVICE MONITORING**   4 **SERVICE TROUBLESHOOTING**

SERVICE MONITORING

Objectives
› 24/7 performance monitoring of live network/services
› Network trend information

How
› Metrics gathered via OAM-compliant Ethernet devices (IEEE 802.1ag and ITU-T Y.1731)
› Alerts/alarms to report service degradations and initiate the service troubleshooting process
› Aggregation and analysis of KPIs for historical and near-real-time reports

Key Concerns
› Detection of issues before end customers
› Historical data and network trends
› Integration with OSS and other systems (e.g., billing)

EXFO Solution—Key Benefits
› Fully standards-based leveraging OAM standards (IEEE 802.1ag and ITU-T Y.1731) and TWAMP
› Unique BV10 providing low-cost PEP for network-wide visibility
› Advanced user-specific reporting

Backhaul Network
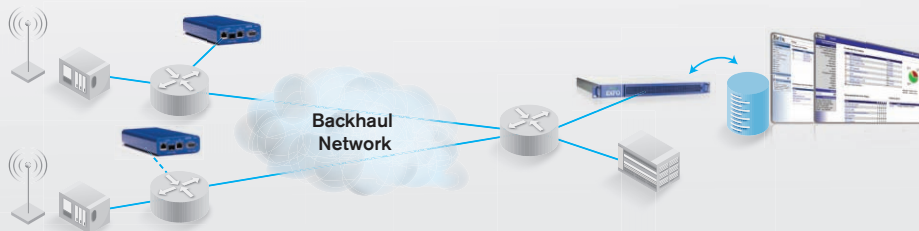
TROUBLESHOOTING

Objectives
› Detect and locate issue/failure
› Determine cause of issue/failure

How
› Perform on-demand OAM test to confirm issue
› Perform RFC 2544 or EtherSAM (ITU-T Y.1564) test to PEP. If handheld is used, bidirectional results are available (Dual Test Set)
› If required, use additional troubleshooting tools to determine cause of issue:
  › Packet capturing and decoding
  › Advanced filtering

Key Concerns
› Minimize time to determine source of issue
› Eliminate or minimize truck roll

EXFO Solution—Key Benefits
› Combination of BV-3100 and BV10 allows for complete remote troubleshooting with zero truck roll
› EtherSAM: Troubleshooting of complete of SLA with a single test

Backhaul Network
Technician