Výstavba a servis FTTH sítě

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FTTH HIGHLIGHTS
›+100M homes to connect till 2014
›2010-2014 CARG of +58%
›Up to 10% repeated truck rolls

Source: Infonetics 2010
EXFO survey
EXFO : A strategic partner for FTTH

› Present in **80%** of world’s major FTTH deployments
› Present in over **50 countries** deploying FTTH
› **17 years** of OTDR expertise, with the **most recognized line of OTDRs** on the market
› **Market-driven** innovation: **40%** of revenues generated by products on the market two years or less
› Fiber characterization solution that improves fiber deployments efficiency
No. 1 OTDR manufacturer

BUILT SMART

> 40% PORTABLE OTDR MARKET SHARE
50,000 UNITS SOLD WORLDWIDE
16 DIFFERENT MODELS AVAILABLE

Your challenges – We know.
FTTH RISING CHALLENGES

› Massive deployment efforts in a short timeframe with limited resources
› Inconsistent competencies across teams in expertise level of service validation (tier 1/2 technicians) or mix of contractors
› Limited budget expenses and OPEX due to unnecessary truck rolls

Avoid the pitfalls!

› “It’s plug’n play !”
  › NSPs are told there is no need to test
› “We had No problems in trials !”
  › controlled environment, known technicians, field trials with aware clients/employees
› “We don’t know what’s next !”
  › Invest today in deploying healthy networks and be future-proof
Why testing in construction?

› To qualify the outside plant section of the network and document for future references
› To make sure it meets transmission-system requirements (standards)
› To avoid delays and costly repairs when the system is turned-up

Why testing in service activation?

› Power Level Assessment of active components
› Service Activation Reporting
› Ensure Quality of Experience (QoE) and successful turn-ups
Why testing ORL?

- Strong fluctuations in laser output power
- Potential permanent damage to the OLT
- Higher bit-per-error rate (BER) in digital systems
- Distortions in analog video signals

Important:
Measure ORL in the same direction as the transmission of the 1550 nm video signal. ORL is direction dependant.

Testing at 1490nm in FTTx

1490 increases CAPEX and OPEX without ROI

- Very low added-value with 1310/1550 results (CAPEX ++)
- 1625 nm measurement in construction is an added-value when used in template mode for troubleshooting
- 1490nm has lower dynamic range and requires more averaging time (OPEX ++)
What needs to be tested?

› optical power budget (end-to-end loss)
› Optical power levels at ONT
› Connectors cleanliness
› Component insertion loss (IL)
› ORL and reflectance
› Macrobends

Best test methods and practices
Typical topology -- FTTH / FTTB (MDU)

More information available on EXFO’s Expertise Hub

Here is why testing is required!

A real case study from a FTTH service provider in China

In one month, 600 000 home passed in a dense city area

<table>
<thead>
<tr>
<th>Problem types</th>
<th>Qty</th>
<th>Qty12M</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONU failures</td>
<td>119</td>
<td>1428</td>
<td>internal to unit</td>
</tr>
<tr>
<td>OLT failures</td>
<td>50</td>
<td>600</td>
<td>Internal to unit</td>
</tr>
<tr>
<td>ODN failures (fiber related)</td>
<td>4600</td>
<td>55200</td>
<td>ODN failure requires min. one truck roll</td>
</tr>
</tbody>
</table>
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In one month, 600 000 home passed in a dense city area

- **54%** failures on Splices and Connectors characterize properly during construction
- **16%** failures from Splitters importance of testing through the splitter

FOUNDATION OF EXFO’S SOLUTION

**Knowledge**
- Industry’s best test methods and procedures
  - > Over 25 years of field-proven expertise enhancing methods and procedures while deploying to reduce costs of inefficiency

**Tools**
- Innovation: Intelligent and powerful test solutions
  - > The most advanced technology paired with intelligent automation and field-smart design for improved operational efficiency

**Environment**
- Deployment data & assets management services
  - A cloud-based data management environment for field test operations providing better "business intelligence" (KPIs).
A solution serving the entire FTTH network lifecycle

TOOLS

AXS-110 AI-Fiber OTDR
FTB-720 LAN/WAN Access OTDR
FTB-730 PON FTTx/MDU OTDR
FTB-730-IOLM Intelligent Optical Link Mapper
FOT-350 Multifunction Loss Tester
FiberBasix50 Handheld Testers
FIP-400 Fiber Inspection Probe
ConnectorMax Analysis Software
FastReporter Data Post-Processing Software

FTB-730 PON FTTx/MDU OTDR
FTB-730-IOLM Intelligent Optical Link Mapper
LFD-300/BTG-300B FiberFinder Live Fiber Identifier/Tone Generator
FIP-400 Fiber Inspection Probe
ConnectorMax Analysis Software
FastReporter Data Post-Processing Software

Build quality networks!

FTB-1 – 1-slot modular platform

EMPOWERING FRONTLINE TECHNICIANS

› 7-INCH TOUCHSCREEN DISPLAY
› UNIQUE HYBRID-TOUCH CONTROL
› SMALLEST AND LIGHTEST FTTx/10G PLATFORM (33% THINNER)
› UNMATCHED BATTERY LONGEVITY
› OTDR: 8 hours
› 10 Gbit/s Ethernet: 4 hours
Testing from the optical network terminal (ONT) provides an OTDR trace that is easier to interpret.

Testing from the optical line terminal (OLT) will present an OTDR trace with up to 32 or 64 branches combined after the splitter.

A revolution in fiber testing

EXPEDITE THE TRANSITION FROM COPPER TO FIBER TESTING

No training required with self-set device
A revolution in fiber testing

AVOID REPEATED TRUCK ROLLS

With smartest analysis technology and consolidated results—powered by Link-Aware™

OPTIMIZE FIBER DEPLOYMENT

No more trace misinterpretation thanks to prompt diagnosis and clear optical link view
Using a multi-pulse approach, all sections are accurately characterized.

No trace analysis, icons recall the network plans with split ratio associated.
Save time and troubles

Save time where it matters the most: in the field

first analytical software to be integrated into a test instrument

Automatically provides:
- Connector certification against IEC and IPC
- Detailed analysis information
- Full report documentation

How it works

Performs service activation
5x faster
IN THE CLOUD WITH EXFO:

- CENTRALIZE AND AUTOMATE inventory management to provide global visibility
- STORE AND CONSOLIDATE data across the entire company
- CREATE AND CUSTOMIZE reports from collected data

Thank You!
Hands-on session

Český překlad: Děkujeme!
Pojďme na pivo.