Bring to light your fiber-based access network

Service providers are increasingly implementing fiber as part of their access networks for delivering the next generation of broadband services. Access networks are becoming mixtures of multiple deployment models, which may include fiber-to-the-node (FTTN), fiber-to-the-distribution-point (FTTdp), fiber-to-the-basement (FTTB) and fiber-to-the-home (FTTH) architectures. Service providers gain flexibility by being able to choose for each area, neighborhood or even building the most suitable combination of fiber and copper. But this flexibility leads to complexity in the network, and introduces new challenges for optimizing service delivery.

To address these complexities, service providers need management software to address the challenges of deploying and operating a multi-platform FTTx network. Such software must abstract the underlying technology and hardware, so that providers have a unified view of the delivered services.

ASSIA’s Optical Networks Expresse (ON-Expresse) extends the Expresse product family by adding support for Gigabit Passive Optical Network (GPON) technology and by providing functionality that simplifies the operation of a fiber-based access network. With ON-Expresse, ASSIA offers a unified software-defined solution applicable to any deployment model, with open interfaces for seamless integration with Operations Support Systems, or with other tools used by Customer Care, Network Operations, Marketing or Field Force departments. ON-Expresse extends ASSIA’s expertise and knowledge gained from managing and improving the performance of 80 million DSLs to the growing domain of fiber-based networks.

First-Time-Right Service Activation

ON-Expresse enables real-time verification of a newly activated service to confirm correct installation. Service providers report that the majority of faults appearing in passive optical networks can be traced to installation flaws such as connector contamination. ON-Expresse analysis of both operational and throughput data reveals any lingering faults that must be addressed by the installer.

In addition, ON-Expresse confirms that installer actions to activate a new service do not inadvertently cause disruption on neighboring services. By verifying both the new service and the existing neighboring services, installers are assured that there is no accidental disturbance of the optical network that may create service issues.

FIGURE 1. ON-Expresse Architecture
These real-time verification functions of ON-Expresse ensure an installation process that guarantees the highest quality of service, and prevents repeated dispatches. For the service provider, this means lower deployment costs and a consistently superior customer experience.

Unified Customer Care Recommendations and Technician Guidance

ON-Expresse delivers expert recommendations to customer care agents to reduce call-time, minimize false dispatches, and improve the customer experience. Agents can immediately identify access issues, and respond based on the type and location of the issues, for example, categorizing an issue as a network or home equipment fault, or identifying the offending network segment (see next figure).

Proactive Monitoring

ON-Expresse provides a consistent view across the access network and the delivered consumer services. Proactive network monitoring gives users of the system a full view of the network. This includes a complete characterization of all lines in terms of historical and current quality of service, and identification of faults either of the active equipment or of the passive elements. Notifications are made available to network operations or other systems, with triggering criteria that are entirely configurable by the service provider. For example, it is possible to send an alarm to a maintenance team when an excessive number of lines connected to a specific piece of equipment experience service degradation or disruption (see figure below); or to report the detection of non-approved Optical Network Terminals (ONTs).

Proactive monitoring by ON-Expresse also delivers valuable traffic data revealing the customers’ usage patterns. Service upsell recommendations are produced based on the observed patterns and in accordance with rules set by the service provider. Marketing efforts can use these recommendations for targeted campaigns with high conversion rates.

Capacity Management

ON-Expresse analyzes traffic and congestion periods to report emerging capacity issues in the shared optical distribution network (see next figure). Congestion trends are available to guide decisions for targeted network upgrades, such as reducing the split ratio in certain locations, or overlaying a next-generation PON system.