Faster Access, Greater Control

Broadband Forum releases three critical new Technical Reports

(February 25, 2009, London, UK) For the Broadband Forum, 2008 was an active and evolving year. With a new name (formerly DSL Forum), the expanded scope organization diligently focused on driving new specifications that empowered next generation broadband architecture development as well as defining new operations and network management tools to assist service providers in optimizing their existing DSL networks, simplifying their fiber rollouts and moving up the layers to provide more tools to ensure quality and service control.

At year end, three critical pieces of work were finalized, and are now available.

TR-156 Using GPON Access in the Context of TR-101
In April of 2006, "Migration to Ethernet Access Aggregation" TR-101 provided the roadmap for moving from ATM access aggregation to an Ethernet-based architecture that has become a global standard for triple-play deployments for residential and business customers that use DSL as the broadband access technology. However, many of TR-101's architecture specifications are access agnostic, and they are also being widely used today with other access technologies, especially FTTx / PON.

Eagerly awaited "Using GPON Access in the Context of TR-101" Technical Report 156 (TR-156) strengthens the TR-101 requirements as applied to GPON by providing more detailed and specific requirements. In order to reduce operational complexity and maximize equipment interoperability, a subset of the GPON's flexible configuration arrangements are specified here to facilitate the implementation of TR-101's VLAN architecture options. Other parts of this specification enable providers to take full advantage of GPON's abilities, and to ensure a more seamless integration of GPON into traditional broadband networks.

TR-147 Layer 2 Control Mechanism for Broadband Multi-Service Architectures
When deploying value-added services across broadband access networks, special attention regarding Quality of Service and service control is required. This implies a tight coordination between network nodes, notably Access Nodes (e.g. a Digital Subscriber Line Access Multiplexer (DSLAM)) and Broadband Network Gateways (BNG). Coordination between these network nodes could be performed by means of interworking via the management plane. However, this is not always possible because of organizational boundaries between business entities operating the local loop, the aggregation network and the IP network. Further, management networks are usually not designed to transmit management data between the different entities in real time.

Therefore, there is a need for a Layer 2 Control Mechanism that runs directly between a BNG and an Access Node, in order to perform Quality of Service (QoS) related, service-related and subscriber-related operations, using direct device-to-device communication. This allows access link related operations to be performed

within those network elements, while avoiding any impact on the existing management systems.

Just released Technical Report 147 (TR-147) provides a framework for the Layer 2 Control Mechanism and identifies a number of use cases for which this mechanism may be appropriate. It then presents the requirements for the Layer 2 Control Mechanism and the network elements that are need to support it, ensuring tailored quality assessment and delivery.

TR-159 Management Framework for xDSL Bonding

Bonding enables a Service Provider to provide xDSL service over longer loops or to provide higher bandwidths over existing loops, which is an important and potentially economical option for multi-service or IPTV support.

The Broadband Forum's "Management Framework for xDSL Bonding" Technical Report 159 (TR-159) provides a management framework for xDSL bonding specified in:

- ITU-T recommendations G.998.1 (ATM-based multi-pair bonding),
- G.998.2 (Ethernet-based multi-pair bonding) and
- G.998.3 (Multi-pair bonding using time division inverse multiplexing).

The ITU-T Recommendations do not specify the management of bonding. To address this issue, the Broadband Forum provides TR-159, which defines the required managed objects in a protocol independent manner, which means it does not refer to any particular management protocol between the Element Management System (EMS) and the Network Element (NE). The management framework facilitates the deployment of bonded xDSL by enabling bonding to be configured and monitored in a standardized way.

Conclusion

These three important pieces of work set a new bar for broadband architecture standards and flexible network deployment. All three are part of the solution set, the BroadbandSuite 3.0, which provides the necessary tools for better fiber and bonded DSL integration, as well as sophisticated multimedia remote management specifications necessary to keep up with the growing and ever changing digital home. For the full solution set, check out release BroadbandSuite 3.0.

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About the Broadband Forum

The Broadband Forum mission is to develop the full potential of broadband. Focused on home-to-core network and management solutions, our standards empower providers to achieve more with their broadband deployment. Established in 1994 as the ADSL Forum and later as the DSL Forum, the Broadband Forum has seen its work over the past 14 years evolve from addressing physical layer ADSL transport specifications to advanced transport and management specifications for all forms of broadband. The Broadband Forum's formal BroadbandSuite™ Release Program and all technical reports are publicly available at www.broadband-forum.org