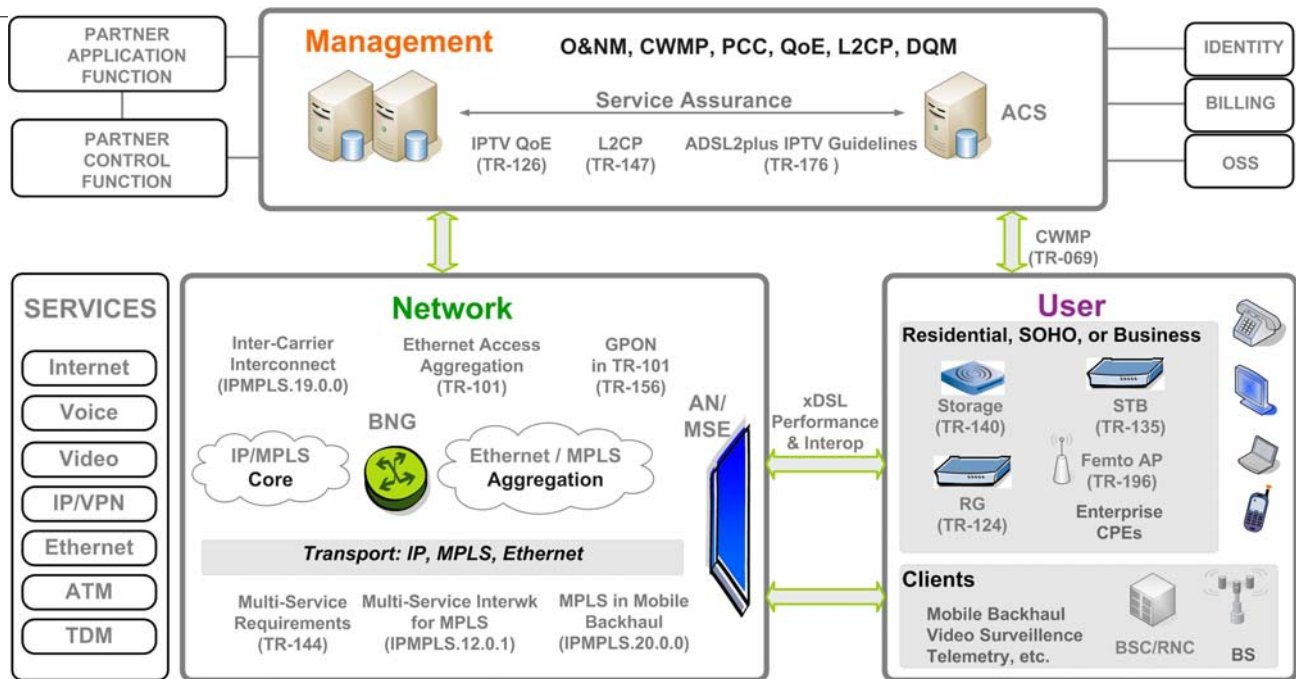


BroadbandSuite™ Solution Series—IPTV



Delivering IPTV Service

IPTV represents a tremendous opportunity for service providers to deliver a truly personalized service experience to their subscribers. However, to be successful in this highly competitive environment, service providers must create an end-to-end architecture that supports high bandwidth, multi-cast group management, dynamic policy-driven resource control, subscriber management, and home networking as well as empower continuous monitoring and assurance of the subscriber's quality of experience.

Service providers face many challenges which include managing the growing number of video related devices as well as the growing number of video streams being delivered by diverse networks while ensuring quality of service (QoS).

Through its BroadbandSuite, the Broadband Forum addresses these important requirements, defining a robust architecture that spans from the home to the access and aggregation network and includes an intelligent control plane to orchestrate the successful delivery of IPTV.

These efforts address the following key areas:

- Access Bandwidth** – New broadband standards (ADSL2plus/VDSL2), DSL bonding, and PON solutions
- Multicast and VLAN Management** – IGMP group management and support for multiple VLAN models
- Admission Control and QoS**– Real-time topology and bandwidth awareness, providing the ability to dynamically reallocate resources to support IPTV service request; ensuring bandwidth and QoS characteristics
- Home Networking** – Automated device recognition, provisioning, remote management and self diagnostics
- Quality of Experience** – Measuring/Monitoring the subscriber experience, providing integrated feedback loop for real-time corrections

The following page details how the Forum's work provides access, network management, policy control and digital home support.

The BroadbandSuite

BroadbandManagement

BroadbandManagement addresses network management and the policy control options that assure the successful delivery of resource intensive and quality sensitive services. The successful delivery of IPTV requires the dynamic control of network and application resources.

With new ADSL2plus profiles for IPTV (**TR-176**) and ability to configure multicast filters (**TR-147**), strides are being made in the areas of network provisioning and control. Another important piece of work in this area is **WT-134** which is developing a policy control framework for successful real-time application delivery.

BroadbandNetwork

BroadbandNetwork defines both specifications for transport agnostic network architectures, which deliver inherent quality, scalability, resiliency and interworking capabilities, and introduces enhanced speeds and migration from ATM based access aggregation to IP Ethernet. The Forum supports new speed options with interoperability test suites, such as **TR-100** "ADSL2/2plus Performance Test Plan" and the pending VDSL2 function and performance test plans.

BroadbandNetwork specifications drive interoperability of equipment and empower the rapid evolution of the network to speeds that enable successful delivery.

TR-101 "Migration to Ethernet Access Aggregation" offers the roadmap a more IP-centric architecture,

Admission Control—Real-time evaluation of the initial session request to reserve bandwidth for the duration of the session

Quality of Service—Ensures that IPTV sessions are guaranteed the correct network session parameters to provide a quality experience for the subscriber

Dynamic Resource Control—Empowers dynamic and automated provisioning of network resources based on the defined business and network policies, ensuring that the most valuable sessions receive adequate resources

and addresses. New **TR-156** couples Ethernet Access aggregation with PON making for an even stronger network:

Multi-service Enabled Architecture – Supporting multiple VLAN models, multicast group management, and various business models

End-to-End QoS Enabled Architecture – Supporting multiple QoS models – Traffic shaping at BNG, DiffServ, IP Precedence marking, as well as hierarchical scheduling on the BNG

Network Provisioning and Management – Providing robust subscriber identity models and defined operations, administration and maintenance (OAM) capabilities

BroadbandUser-Home

BroadbandUser sets the standard for remote management of CPE in the home. Focused on simplifying installation and supporting the variety of new multimedia devices coming online, these specifications allow the service provider to better manage home networks and IPTV efficiently.

Common Set of CPE Capabilities— Ensuring devices thrive across various service providers' networks

Automated Device Activation and Remote Management— Simplifying service delivery and support process

Device Interoperability— Securing ease of ACS to CPE communication

Dynamic Infrastructure— Providing stable high-quality monitored IPTV transmission into the home.

Specific to IPTV requirements;

- **TR-069** "CPE WAN Management Protocol" provides the framework for management of the set top box (STB).
- **TR-135** "Data Model for a TR-069 Enabled Set Top Box", the Auto-configuration Server (ACS) is able to have real-time configuration and monitoring of the STB status and statistics.
- **TR-140** "Data model for Storage Devices" also is important as it applies to personal video recorder (PVR) video storage.

With the ACS alert to any potential problems and having access to detailed statistics and high-level metrics, IPTV quality of service is ensured.