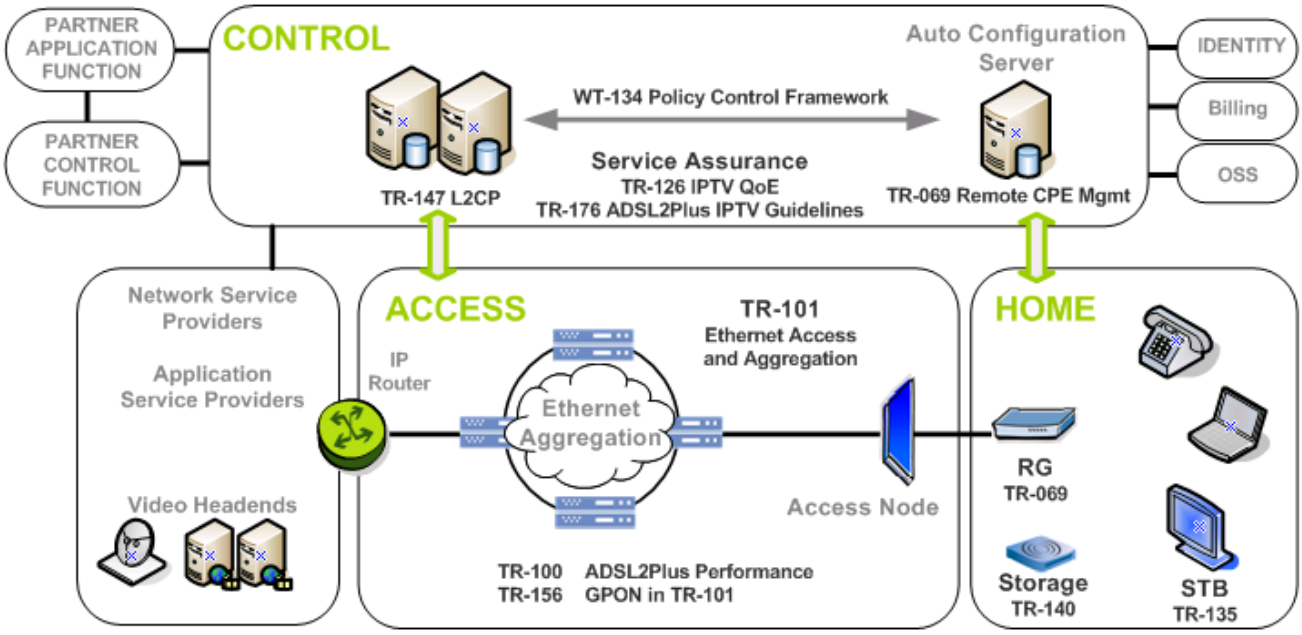
BroadbandSuite™
Solution Set– Fiber Integration



Hybrid Networks– extending broadband opportunities to more people

Over the last 15 years, the Broadband Forum forged industry best practices and standards that moved DSL into the #1 broadband spot in the world. Maturing from defining basic physical layer transport parameters to optimizing multimedia service delivery across broadband, the Forum's work continues to evolve and to be aligned with real world broadband development and service provider requirements. As service providers looked for new ways to get broadband out to their customers, as well as support the bandwidth requirements of the emerging multimedia homes, fiber deployment took root.

Yet there are many issues to address when you bring a new access technology into the provider's network;

- How to integrate fiber deployments into the overall network plan?
- How to keep the network design simple and efficient as the traditional DSL network?
- How to utilize the same management platform across all access channels?

Today, the Broadband Forum's latest release, BroadbandSuite 3.0 includes access agnostic remote management specifications, new GPON network solutions and PON device data models, improving providers ability to deploy hybrid networks and manage the digital home efficiently regardless of broadband transportation means.

BroadbandAccess –Fiber specifications

Technical Report 101 (TR-101) set the standard years ago for migration off ATM access aggregation networks to IP Ethernet access aggregation, creating a more responsive network architecture. With the addition of GPON, it was important to build on the existing architecture and integrate fiber into an overall architecture that was uniform and efficient. Technical Report 156 (TR-156) does just that– extending the TR-101 oriented architecture to GPON fiber access systems.

ACCESS R3.0	HOME R3.0	CONTROL R3.0
TR-156 : Extending TR-101 to GPON fiber access systems	TR-135 : Residential Data Model for a TR-069 Enabled Set Top Box	TR-117 : Broadband Trouble Reporting
	TR-140 : Data Model for a TR-069 Enabled Storage Device	TR-141 : Protocol Independent Management Model for TR-101 Compliant Access Node
	TR-142 : Framework for use of TR-069 with PON Access	TR-147 : Layer 2 Control Mechanism
	TR-143 : CPE Throughput Performance Test Mechanism	TR-159 : Management Framework for xDSL Bonding
	TR-107 : Internet Gateway Device Data Model version 2 (includes bonded DSL)	TR-176 : ADSL2plus Profiles for IPTV
	TR-106v2 (PD-154) : XML Data Model Descriptions and Object Library	TR-169 : EMS-NMS Functional Reqs for Access Nodes Supporting for TR-101

Figure 2: BroadbandSuite 3.0– (Released 2008)

BroadbandHome- Fiber specifications

Technical Report 69 (TR-069), “CPE WAN Management Protocol” is an industry defacto standard for the remote management of the digital home. It provides the framework and procedures for Auto-configuration Servers (ACS) to remotely detect new devices coming online in the home, provision them remotely, and update and manage those devices automatically. Though designed originally with DSL in mind, the protocol is actually access-agnostic, and provides the same management capabilities regardless of whether it is DSL, fiber or other access methods.

Built to work with TR-069, Technical Report 142 (TR-142) “Framework for use of TR-069 with PON access” provides the data model for working with PON devices in the digital home. This means that new PON devices can be plugged in and recognized remotely by the ACS and provisioned for maximum efficiency.

With these powerful technical reports in the service providers’ tool kit, many challenges of fiber integration are addressed, ensuring provider’s resources can be effectively deployed and managed. With a uniform architecture and management protocol, the advanced speed of fiber provides all the benefits necessary to ensure the multimedia home is well served and that all the IPTV potential can be met.