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Supplement on the use of DSL based systems in next generation networks

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Supplement 6 to Y-series Recommendations - ITU-T Y.2000-series: Supplement on the use of DSL based systems in next generation networks

Summary

This Supplement describes how the set of specifications developed by the DSL Forum may be used in the context of next generation networks.

Keywords

Next Generation Networks (NGNs),

Digital Subscriber Line (DSL),

Internetwork Protocol (IP),

Broadband Remote Access Server (BRAS),

DSL Forum.

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1. Scope

The scope of this Supplement is to describe the application of DSL Forum specifications in Next Generation Networks (NGNs) which involve a DSL-based access network. The DSL technology itself is outside the scope of this Supplement but is assumed as the underlying transport network to support Next Generation Network architectures. This Supplement is concerned with the architecture(s) superimposed over DSL transport to provide IP-based services and related applications for Next Generation Networks.

2. References

The following ITU-T Recommendations and other references contain provisions that, through references in this text, constitute provisions of this Supplement. At the time of publication, all the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Supplement are therefore encouraged to investigate the possibility of consulting the most recent editions of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

[ITU-T Y.2012] Recommendation ITU-T Y.2012 (2006), Functional requirements and architecture of the NGN.

[ITU-T Y.2014] Recommendation ITU-T Y.2014 (2008), Network attachment control functions in NGN.

[DSLF TR-058] DSL Forum TR-058, Multi-Service Architecture and Framework Requirements.

[DSLF TR-059] DSL Forum TR-059, DSL Evolution – Architecture Requirements for Support of QoS-enabled IP Services.

[DSLF TR-064] DSL Forum TR-064, LAN-Side DSL CPE Configuration.

[DSLF TR-069] DSL Forum TR-069, CPE WAN Management Protocol, Issue 1 Amendment 2.

[DSLF TR-092] DSL Forum TR-092, Broadband Remote Access Server Requirements.

[DSLF TR-094] DSL Forum TR-094, Multi-Service Delivery Framework for Home Networks.

[DSLF TR-098] DSL Forum TR-098, Gateway Device Version 1.1 Data Model for TR-069, Amendment 1.

[DSLF TR-101] DSL Forum TR-101, Migration to Ethernet-Based DSL Aggregation

[DSLF TR-102] DSL Forum TR-102, Service Interface Requirements for TR-058 Architectures.

[DSLF TR-104] DSLHome™ TR-104 Provisioning Parameters for VoIP CPE

DSLF TR-106] DSLHome™ TR-106 Data Model Template for TR-069 Enabled Devices, Amendment 1[DSLF TR-111] DSLHome™ TR-111, Applying TR-069 to Remote Management of Home Networking Devices

[DSLF TR-124] DSL Forum TR-124, Functional Requirements for Broadband Residential Gateway Devices.

[DSLF TR-133] DSL Forum TR-133, TR-064 Extensions for Service Differentiation

[DSLF TR-135] DSL Forum TR-135 Data Model for TR-069 Enabled ST

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[DSLF TR-140] DSL Forum TR-069 Data Model for Storage Service Enabled Devices

[DSLF TR-141] DSL Forum TR-141 Protocol Independent Management Model for Access Nodes Supporting TR-101 [DSLF TR-144] DSL Forum TR-144, Broadband Multi-service Architecture & Framework Requirements.

3. Terms and definitions

No new terms are defined in this Supplement.

4. Abbreviations

This Supplement uses the following abbreviations.

ACS Auto-Configuration Server

Agg Aggregator

ABG-FE Access Border Gateway Functional Entity

AN-FE Access Node Functional Entity

AR-FE Access Relay Functional Entity

ASP Application Service Provider

ATM Asynchronous Transfer Mode

BRAS Broadband Remote Access Server

CPE Customer Premise Equipment

CWMP CPE WAN Management Protocols

DAVIC Digital Audio Visual Council

DCP Device Control Protocol

DSCP Diff-serv Code Point

DSL Digital Subscriber Line

DSLF DSL Forum

EN-FE Edge Node Functional Entity

FE Functional Entity

GPON Gigabit-capable Passive Optical Networks

HTTP HyperText Transfer Protocol

IETF Internet Engineering Task Force

IEEE Institute of Electrical and Electronics Engineers

EMS Element Management System

IMS IP Multimedia Subsytem

IP Internet Protocol

ISP Internet Service Provider

LAC L2TP Accees Concentrator

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LAN	Local Area Network
L2TP	Layer 2 tunneling protocol
L2TS	Layer 2 tunneling server
MPLS	Multiprotocol Label Switching
NAPT	Network Address and Port Translation
NMS	Network Management System
NSP	Network Service Provider
PE	Provider Edge
PHY	Physical Media
PPP	Point to point protocol
PPPoA	PPP over ATM
PPPoE	PPP over Ethernet
QoS	Quality of Service
RAN	Regional/Access Network
RFC	Request for Comment (IETF document)
RG	Routing Gateway (sometimes also known as Residential Gateway)
RPC	Remote Procedure Call
SSL	Secure Sockets layer
SMS	Subscriber Management System
SOAP	Simple Object Access Protocol
TCP	Transmission Control Protocol
TLS	Transport Layer Security
TR	(DSL Forum) Technical Report
UPnP	Universal Plug and Play
UDA	UPnP Device Architecture
VLAN	Virtual LAN
VoD	Video on Demand
VoIP	Voice over IP
VPN	Virtual Private Network
WAN	Wide Area Network

5. Reference point configuration architecture

The reference points identified in the DSLF in TR-144 [DSLF TR-144] are shown in Figure 1 below.

The W, V, U and T reference points correspond to their traditional ITU-T usage. The A10 reference point corresponds to the usage in DAVIC [b-DAVIC 1.4.1].

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