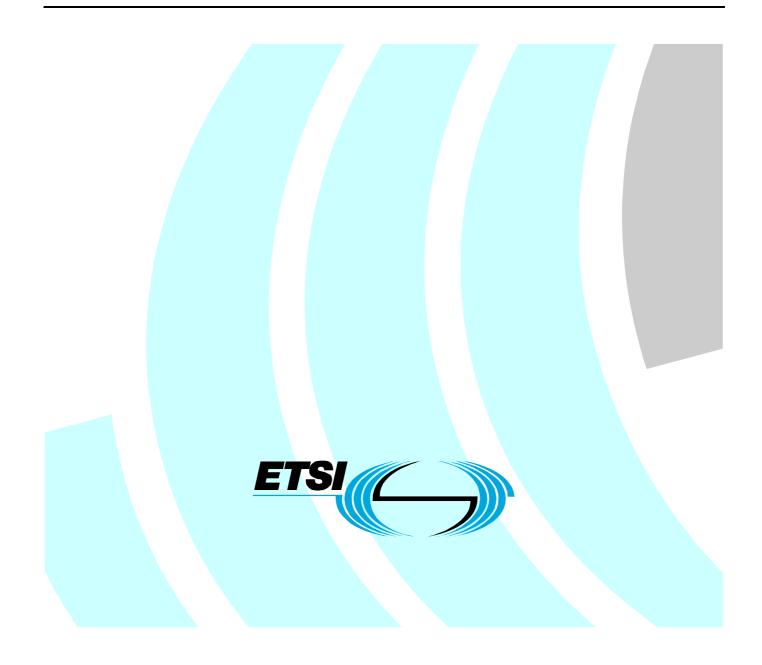# ETSI TS 183 065 V2.0.0 (2008-02)

Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Customer Network Gateway Configuration Function; e3 Interface based upon CWMP

Reference

DTS/TISPAN-03138-NGN-R2

Keywords

gateway, management, network, remote

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00   Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

Introduction

e3 interface based upon CWMP

This clause provides an introduction to CWMP protocol, as specified by DSL Forum, and a high-level description of how the protocol is applicable for the e_3 interface specification.

CWMP is an HTTP-based protocol, defined by DSL Forum with TR-069 Technical Report [1], that provides the remote management functionalities for performing provisioning and OAM tasks over managed devices of the Customer Premises Network (CPN). In TR-069, these devices are generically referenced as Customer Premises Equipment (CPE) devices: a CPE may correspond to the CNG (or Internet Gateway Device, as in TR-069) or a CND connected to the CNG, i.e. any kind of device behaving as Terminal Equipment.

The CWMP protocol defines a set of base communication functionalities and procedures to perform the following remote management tasks on managed devices: configuration management (including software upgrade), fault management, performance management, security management.

The TR-069 remote management architecture, as defined by DSL Forum with other technical reports, provides also the definition of TR-069 data models of CWMP-managed devices, such as the Internet Gateway Device data model (TR-098,[2]), the VoIP terminal data model (TR-104,[3]), the generic TR-069 device data model (TR-106,[4]), and the IPTV ST B data model (TR-135 [5]).

CPEs are managed via CWMP by a Remote Management System (RMS), or Auto Configuration Server (ACS) as referenced in TR-069 [1]. In the manager-agent paradigm, the RMS/ACS provides the CWMP manager function, while the CPE is required to provide the CWMP agent function. The functions provided by a CWMP-based RMS implement the remote management functional entity required for the CNGCF: therefore CWMP is a protocol for implementing the e_3 interface.

CWMP allows the RMS to manage also CND devices connected to the CNG, in two different ways:

- a CND may be proxied by the CNG, i.e. the CND is indirectly managed by the RMS: in this case, the CNG exposes via CWMP the functionalities needed to remotely manage the CND, that is directly controlled by the CNG via other communication protocols on the e_3' interface;

- a CND may be directly managed via CWMP: in this case, the CND is required to provide the CWMP agent function for direct communication with the RMS; in case the CNG provides the NAPT function, CWMP defines a STUN-based mechanism for the RMS to contact the CND, while the CND is required to provide a STUN-client function.

Taking into account the previous two possible applications of CWMP for the e_3 interface, such a CWMP-manager entity provides a generic Customer Premises Network Configuration Function (CPNCF).

1 Scope

The present document provides the ETSI TISPAN endorsement of DSL Forum TR-069 "CPE WAN Management Protocol" (CWMP) in line with the requirements of TISPAN NGN for the specification of the e₃ interface.

2 References

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2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

[1]   DSL Forum Technical Report TR-069: "CPE WAN management Protocol".

[2]   DSL Forum Technical Report TR-098 Amendment 1: "Internet Gateway Device Data Model for TR-069", November 2006.

[3]   DSL Forum Technical Report TR-104: "Provisioning Parameters for VoIP CPE", September 2005.

[4]   DSL Forum Technical Report TR-106 Amendment 1: "Data Model Template for TR-069-Enabled Devices", November 2006.

[5]   DSL Forum Technical Report TR-135: "Data model for a TR-069 enabled STB", December 2007.

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACS	Auto-Configuration Server
CND	Customer Network Device
CNG	Customer Network Gateway
CNGCF	Customer Network Gateway Configuration Function
CPN	Customer Premises Network
CPNCF	Customer Premises Network Configuration Function
CPE	Customer Premises Equipment
CWMP	CPE WAN Management Protocol
DHCP	Dynamic Host Configuration Protocol
IMS	IP Multimedia Subsystem
IPTV	IP TeleVision
LAN	Local Area Network
NAPT	Network Address and Port Translation
OAM	Operation Administration Maintenance
RMS	Remote Management System
STB	Set Top Box
STUN	Simple Traversal of UDP through NAT
VoIP	Voice over IP
WAN	Wide Area Network

Endorsement notice

All elements of TR-069 [1] apply.

History

Document history		
V1.1.1	February 2008	Publication