ETSI TS 103 311-3 V1.1.1 (2017-02)

Integrated broadband cable telecommunication networks (CABLE); Fourth Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems; Part 3: MAC and Upper Layer Protocols Interface; DOCSIS® 3.1

Reference
DTS/CABLE-00017-3

Keywords
access, broadband, cable, DOCSIS, IPcable,
modem, multimedia

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

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Integrated broadband cable telecommunication networks (CABLE).

The present document is part 3 of a multi-part deliverable. Full details of the entire series can be found in part 1 [54].

DOCSIS® is a registered Trade Mark of Cable Television Laboratories, Inc., and is used in the present document with permission.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

The present document is part 3 of a multi-part deliverable that define the fourth generation of high-speed data-over_cable systems, commonly referred to as the DOCSIS® 3.1 specifications. This specification was developed for the benefit of the cable industry, and includes contributions by operators and vendors from North and South America, Europe, and Asia.

This generation of the DOCSIS® specifications builds upon the previous generations of DOCSIS® specifications (commonly referred to as the DOCSIS® 3.0 and earlier specifications), leveraging the existing Media Access Control (MAC) and Physical (PHY) layers, but with the addition of a new PHY layer designed to improve spectral efficiency and provide better scaling for larger bandwidths (and appropriate updates to the MAC and management layers to support the new PHY layer). It includes backward compatibility for the existing PHY layers in order to enable a seamless migration to the new technology.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] Cable Television Laboratories, Inc. (CableLabs®) CL-SP-CANN-DHCP-Reg-I10-130808: "CableLabs' DHCP Options Registry", August 8, 2013.

[2] Cable Television Laboratories, Inc. CM-SP-DEPI-I08-100611: "Downstream External PHY Interface Specification", June 11, 2010.

[3] ETSI EN 302 878-3: "Access, Terminals, Transmission and Multiplexing (ATTM); Third Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems; Part 3: Downstream Radio Frequency Interface; DOCSIS 3.0".

[4] Cable Television Laboratories, Inc. CM-SP-DSG-I24-130808: "DOCSIS Set-top Gateway (DSG) Interface Specification", August 8, 2013.

[5] Cable Televisions Laboratories, Inc. CM-SP-DTI-I05-081209: "DOCSIS Timing Interface Specification", December 9, 2008.

[6] Cable Television Laboratories, Inc. CM-SP-eDOCSIS-I27-140403: "eDOCSIS™ Specification", April 3, 2014.

[7] ETSI ES 203 385: "CABLE; DOCSIS® Layer 2 Virtual Private Networking".

[8] ETSI EN 302 878-4: "Access, Terminals, Transmission and Multiplexing (ATTM); Third Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems; Part 4: MAC and Upper Layer Protocols; DOCSIS 3.0".

[9] Cable Television Laboratories, Inc. CM-SP-OSSIv2.0-C01-081104: "DOCSIS 2.0 - Operations Support System Interface Specification", November 4, 2008.

[10] Cable Television Laboratories, Inc. CM-SP-OSSIv3.0-I23-140403: "DOCSIS 3.0 - Operations Support System Interface Specification", April 3, 2014.