SLOVENSKI STANDARD
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Integrirana širokopasovna kabelska telekomunikacijska omrežja (CABLE) - Četrta generacija prenosnih sistemov za storitve interaktivne kabelske televizije - IP-kabelski modemi - 1. del: Splošno - DOCSISÂ® 3.1

Integrated broadband cable telecommunication networks (CABLE) - Fourth generation transmission systems for interactive cable television services - IP cable modems - Part 1: General - DOCSISÂ® 3.1

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Foreword

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

The present document is part 1 of a multi-part deliverable covering the fourth generation transmission systems for interactive cable television services - IP cable modems, as identified below:

Part 1: **"General; DOCSIS® 3.1";**

Part 2: "Physical layer; DOCSIS® 3.1 [ANSI/SCTE 220-1 2016]";

Part 3: "MAC and upper layer protocols interface; DOCSIS® 3.1 [ANSI/SCTE 220-2 2016]";

Part 4: "Cable modem operations support system interface; DOCSIS® 3.1 [ANSI/SCTE 220-3 2016]";

Part 5: "Converged cable access platform operations support system interface; DOCSIS® 3.1 [ANSI/SCTE 220-4 2016]";

Part 6: "Security; DOCSIS® 3.1 [ANSI/SCTE 220-5 2016]".

This multi-part deliverable is based on the CableLabs DOCSIS® set of specifications and endorses the corresponding ANSI/SCTE Standards standardized in the United States by SCTE. Table 1 indicates for the specifications in this multi-part deliverable the endorsed ANSI/SCTE Standard and the corresponding CableLabs DOCSIS® specifications.

Table 1

ETSI Standards	ANSI/SCTE Standards	CableLabs DOCSIS® Specifications
ETSI ES 203 311-1	None	None
ETSI ES 203 311-2 [1]	ANSI/SCTE 220-1 2016	CM-SP-PHYv3.1-I08-151210
ETSI ES 203 311-3 [2]	ANSI/SCTE 220-2 2016	CM-SP-MULPIv3.1-I08-151210
ETSI ES 203 311-4 [3]	ANSI/SCTE 220-3 2016	CM-SP-CM-OSSIv3.1-I06-151210
ETSI ES 203 311-5 [4]	ANSI/SCTE 220-4 2016	CM-SP-CCAP-OSSIv3.1-I06-151210
ETSI ES 203 311-6 [5]	ANSI/SCTE 220-5 2016	CM-SP-SECv3.1-I05-151210

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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 of a series of specifications that defines the fourth generation of high-speed data-over-cable systems, commonly referred to as the DOCSIS 3.1 specifications. The standard 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/.

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

[1] ETSI ES 203 311-2: "Integrated broadband cable telecommunication networks (CABLE); Fourth generation transmission systems for interactive cable television services - IP cable modems; Part 2: Physical layer; DOCSIS® 3.1 [ANSI/SCTE 220-1 2016]".

[2] ETSI ES 203 311-3: "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 [ANSI/SCTE 220-2 2016]".

[3] ETSI ES 203 311-4: "Integrated broadband cable telecommunication networks (CABLE); Fourth generation transmission systems for interactive cable television services - IP cable modems; Part 4: Cable modem operations support system interface; DOCSIS® 3.1 [ANSI/SCTE 220-3 2016]".

[4] ETSI ES 203 311-5: "Integrated broadband cable telecommunication networks (CABLE); Fourth generation transmission systems for interactive cable television services - IP cable modems; Part 5: Converged cable access platform operations support system interface; DOCSIS® 3.1 [ANSI/SCTE 220-4 2016]".

[5] ETSI ES 203 311-6: "Integrated broadband cable telecommunication networks (CABLE); Fourth generation transmission systems for interactive cable television services - IP cable modems; Part 6: Security; DOCSIS® 3.1 [ANSI/SCTE 220-5 2016]".

2.2 Informative references

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definition of terms, symbols and abbreviations

3.1 Terms

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

cable modem: modulator-demodulator at the subscriber premises intended for use in conveying data communication on a cable television system

cable modem termination system: device located at the cable television system headend or distribution hub, which provides complementary functionality to the cable modems to enable data connectivity to a wide-area network

converged cable access platform: device located at the cable television system headend or distribution hub that combines the functionality of a cable modem termination system with that of an Edge QAM, providing high-density services to cable subscribers

distribution hub: facility in a cable network which performs the functions of a headend for customers in their immediate area, and which receives some or all of its content for transmission from a master headend in the same metropolitan or regional area

Edge QAM (EQAM): device that receives packets of digital video or data, repacketizes the video or data into an MPEG transport stream and digitally modulates the transport stream onto a downstream RF carrier using quadrature amplitude modulation (QAM)

headend: central facility that is used for receiving, processing and combining broadcast, narrowcast and other signals to be carried on a cable network

3.2 Symbols

Void.

3.3 Abbreviations

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

CCAP	Converged Cable Access Platform
CM	Cable Modem
CMTS	Cable Modem Termination System
CPE	Customer Premise Equipment
DHCP	Dynamic Host Configuration Protocol
EQAM	Edge QAM
HFC	Hybrid Fibre Coax
IP	Internet Protocol
IPDR	Internet Protocol Detail Record
IPv4	Internet Protocol version 4