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IEEE Standard for
Local and metropolitan area networks—

Time-Sensitive Networking for Fronthaul

Sponsor

LAN/MAN Standards Committee
of the
IEEE Computer Society

Approved 7 May 2018

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Abstract: This standard defines profiles that select features, options, configurations, defaults, protocols, and procedures of bridges, stations, and LANs that are necessary to build networks that are capable of transporting fronthaul streams, which are time sensitive.

Keywords: bridged network, fronthaul, IEEE 802®, IEEE 802.1™, IEEE 802.1CM™, synchronization, time-sensitive networking, TSN, Virtual Local Area Network, VLAN, VLAN Bridge

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Introduction

This introduction is not part of IEEE Std 802.1CM-2018, IEEE Standard for Local and metropolitan area networks—Time-Sensitive Networking for Fronthaul.

This standard defines profiles that select features, options, configurations, defaults, protocols and procedures of bridges, stations, and LANs that are necessary to build networks that are capable of transporting fronthaul streams, which are time-sensitive.

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1. Overview

1.1 Scope

This standard defines profiles that select features, options, configurations, defaults, protocols and procedures of bridges, stations, and LANs that are necessary to build networks that are capable of transporting fronthaul streams, which are time-sensitive.

NOTE—Stream and flow are used as synonyms in this document.[1]

1.2 Purpose

The purpose of this standard is to specify defaults and profiles that enable the transport of time-sensitive fronthaul streams in Ethernet bridged networks.

1.3 Introduction

Fronthaul provides connectivity between functional blocks of a cellular base station (BS). The fronthaul flows between these functional blocks have stringent quality of service requirements. The successful support of fronthaul flows in a bridged network requires the selection of specific features and options that are specified in a number of different standards, some developed by IEEE Project 802®, and others (in particular, those that relate to functionality in OSI layer 3 and above; ISO/IEC 7498:1994 [B11]) developed by other standards organizations.[2]

This standard selects features and options that support OSI layers 1 and 2 in bridges and end stations from the following specifications:

— Virtual Local Area Network (VLAN) Bridge specification in IEEE Std 802.1Q™.[3]
— MAC service specifications in IEEE Std 802.1AC™.

[1]Notes in text, tables, and figures of a standard are given for information only and do not contain requirements needed to implement this standard.

[2]The numbers in brackets correspond to those of the bibliography in Annex C

[3]Information on references can be found in Clause 2.