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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42404-2023

**Information technology - Telecommunications and information exchange
between systems - Local and metropolitan area networks - Timing and
synchronization for time-sensitive applications in bridged local area networks**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents"

drafting:

This document is modified to adopt ISO /IEC /IEEE8802-1AS:2014 "Telecommunications and Information Exchange Bureau between Information Technology Systems"

Local and metropolitan area networks Part 1 AS: Timing and synchronization for time-sensitive applications in bridged local area networks:

The technical differences between this document and ISO /IEC /IEEE8802-1AS:2014 and their reasons are as follows:

---Added PON technologies such as 10GE-PON, XGPON and 10GPON: The original text of the international standard only introduces the EPON phase

related technologies, and my country has upgraded to 10GPON such as 10GE-PON and XGPON in the field of PON related technologies, so the increase

Supplemented 10GE-PON and XGPON technologies, and added normative references to YD/T 2375-2019 to adapt to my country

The actual use of the system (Chapter 5):

---Change IPsec technology to TLSec technology: IPsec technology is a three-layer tunnel encryption protocol and a security scheme adopted by IETF:

TLSec technology is a wired LAN media access control security based on the ternary peer-to-peer architecture, which is the national standard GB/T 15629:3

The security scheme adopted, therefore replaces IPsec technology with TLSec technology (Chapter 15):

---Changed some normative reference documents, and replaced ISO /IEC 8802-11 with GB 15629:11, which adopts the revised international standard,

Replace IEEE802:3 (Chapter 2) with GB/T 15629:3, which adopts the international standard:

The following editorial changes have been made to this document:

--- In 3:15 of this document, add the example of China's Beidou Satellite Navigation System (BDS) as a recognized standard time source;

--- In order to comply with the relevant provisions of GB/T 1:1-2000, 1:1 and 1:2 of the original text of the international standard were merged, and the relevant technical content keep consistent;

--- In order to adapt to the technological development of our country, the management information base code in 15:5 in the original text of the international standard is deleted:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

1 Scope

This document specifies protocols and procedures for meeting synchronization requirements for time-sensitive applications of bridged LANs and virtual bridged LANs, including

This includes performing time synchronization maintenance during normal operation of network components, additions, deletions, failures, and network reconfigurations:

This document is applicable to enable time-sensitive applications connected to bridged LAN sites to meet their respective jitter, drift and time synchronization requirements:

requirements, including time-sensitive applications involving delivery to multiple endpoints and multiple streams:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 15629:3 Specific requirements for telecommunication and information exchange between information technology systems in local area network and metropolitan area network Part 3

Part: Access Method and Physical Layer Specification of Carrier Sense Multiple Access with Collision Detection (CSMA/CD) (GB/T 15629:3-2004,

ISO /IEC /IEEE8802-3:2000, MOD)

GB 15629:11 Specific requirements for telecommunication and information exchange between information technology systems for local area networks and metropolitan area networks Part 11

Sub: Wireless LAN Media Access Control and Physical Layer Specification (GB 15629:11-2003, ISO /IEC /IEEE8802-11:1999, MOD)

GB/T 25931-2010 Accurate clock synchronization protocol for networked measurement and control systems (IEC 61588:2009, IDT)

YD/T 2375-2019 Technical Requirements for High Precision Time Synchronization

ISO /IEC /IEEE8802-1Q:2020 Telecommunications and information exchange between information technology systems Local area network and metropolitan area network No: works)

IEEE802:1ag:2007 Local Area Network and Metropolitan Area Network Virtual Bridging LAN Corrigendum 5: Connectivity Fault Management (Localand Fault Management)

IEEE802:3av:2009 Information Technology Part 3: Amendment 1: 10gb/s Passive Optical Network Physical Layer Specifications and Management Parameters

IEEE802:11v Information technology inter-system telecommunication and information exchange specific requirements for local area network and metropolitan area network Part 11

Sub: Wireless LAN Media Access Control and Physical Layer Specification Amendment 8: IEEE802:11 Wireless Network Management: (Informationtech-