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

GB/T 17215.653-2018

Replacing GB/T 19882.33-2007

**Electricity metering data exchange -- The DLMS/COSEM suite --
Part 53: DLMS/COSEM application layer**

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Foreword

GB/T 17215 "AC measuring equipment" is divided into several parts, GB/T 17215.6 "Electrical measurement data exchange DLMS/COSEM

Components are divided into the following sections.

- Part 10. Intelligent Measurement Standardization Framework;
- Part 11. DLMS/COSEM communication configuration standard template;
- Part 31. Local area network use based on twisted pair carrier signals;
- Part 46. Data link layer using HDLC protocol;
- Part 47. DLMS/COSEM transmission layer based on IP network;
- Part 53. DLMS/COSEM application layer;
- Part 61. Object Identification System (OBIS);
- Part 62. COSEM interface class;
- Part 73. Wired and wireless M-Bus communication configurations for local and community networks;
- Part 76. HDLC-based connection-oriented three-layer communication configuration;
- Part 91. Communication configuration using the WEB service to access the COSEM server via CAS;
- Part 97. Communication configuration based on TCP-UDP/IP network.

This part is part 53 of GB/T 17215.6.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 19882.33-2007 "Automatic Meter Reading System Part 3-3. Application Layer Data Exchange Protocol COSEM should

Use Layers, see Appendix NA for major technical changes compared to GB/T

19882.33-2007.

This section uses the translation method equivalent to IEC 62056-5-3.2017 "Electrical Measurement Data Exchange DLMS/COSEM Components Section 5-3

Part. DLMS/COSEM Application Layer.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

--- GB/T 16262.1-2006 Information Technology Abstract Syntax Notation 1 (ASN.1) Part 1. Basic notation specification

(ISO /IEC 8824-1.2002, IDT);

---DL/T 790.6-2010 Distribution automation with distribution line carrier Part 6. A-XDR coding rules

(IEC 61334-6.2000, IDT).

This section has made the following editorial changes.

--- The standard name was changed from "Part 5-3" to "Part 53";

--- Increase the main technical changes in Appendix NA (informative appendix) and each version.

Introduction

The third edition of IEC 62056-5-3 has been developed by IEC TC13WG14, including the DLMS User Association (D-type contact partner)

Significant contribution.

This version is consistent with DLMSUA1000-2 and Green Paper version 8.2.2017. The main new feature of COSEMAPDU is ACCESS service.

New security components 1 and 2, universal protection mechanisms and XML schemas that support symmetric key and public key encryption.

Chapter 5 and Appendix F are components based on the NIST file. National Institute of Standards and Technology, Technical Administration, US Department of Commerce provide.

The IEC 62056-XY series of standards corresponds to the national standard GB/T 17215.6XY series.

Electrical measurement data exchange DLMS/COSEM component

Part 53. DLMS/COSEM application layer

1 Scope

This part of GB/T 17215.6 specifies the DLMS/COSEM application layer of the DLMS/COSEM client and server.

Structure, services and agreements. At the same time, the definition rules specify the DLMS/COSEM communication configuration.

It defines the services used to establish and release application connections, as well as the logical names used to access GB/T 17215.662.

(LN) or short name (SN) refers to the data communication service of the methods and attributes of the defined COSEM interface object.

Annex A (Normative) defines how to use the COSEM application layer in various communication profiles. It stipulates how to use

The COSEM interface model constructs various communication profiles for exchanging data with the metering device, as specified in each communication profile

What are the necessary elements. The actual media-specific communication profiles are performed in different parts of the GB/T 17215.6 (IEC 62056) series.

The regulations.

Annex B (normative appendix) specifies SMS short packages.

The Gateway Protocol is specified in Appendix C (Normative).

Examples of coding for APDUs are given in Annex D, Annex E and Annex F (informative).

Appendix G (Normative) provides the NSASuiteB elliptic curve and domain parameters.

Annex H (informative) provides an example of an end-entity signing certificate using P-256 signed with P-256.

Annex I (Normative) specifies the use of a key agreement scheme in DLMS/COSEM.

Annex J (informative) provides an example of exchanging protected xDLMSAPDUs between a third party and a server.

Appendix K (informative) and IEC 62056-5-3:2016 main technical changes.

Appendix NA (informative) and major technical changes in each edition.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this

document.

GB/T 9387.1-1998 Information technology - Open systems interconnection - Basic reference model - Part 1. Basic model (ISO /IEC

7498-1.1994, IDT)

GB/T 15843.1-2017 Information technology security technology entity identification Part 1. General (ISO /IEC 9798-1.

2010, IDT)

GB/T 17215.101-2010 Data exchange terms for metering, rate and load control - Part 1 .

DLMS/COSEM measurement equipment exchange data related terms (IEC TR62051-1..2004, IDT)

GB/T 17215.662-2018 Electrical measurement data exchange DLMS/COSEM components - Part 62. COSEM interface class

(IEC 62056-6-2..2017, IDT)

DL/T 790.441-2004 Distribution automation using distribution line carriers - Part 4-41. Data communication protocol application layer protocol -

Distribution wire message specification (IEC 61334-4-41.1996, IDT)

IEC 61334-6.2000 Distribution automation using distribution line carriers - Part 6. A-XDR coding rules (Distributionau-

tomationusingdistributionlinecarriersystems-Part 6.A-XDRencodingrule)

IEC TR62051.1999 Electrical measurement terms (Electricity metering-Glossaryofterms)