

ICS 17.220.20

CCS N 22



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

GB/Z 17215.669-2022

**Electricity metering data exchange - The DLMS/COSEM suite - Part 69:
Mapping between the common information model message profiles(IEC
61968-9) and DLMS/COSEM(IEC 62056) data models and protocols**

Issued on: December 30, 2022

Implemented on: July 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
Introduction	
1 Scope	1
2 Normative references	1
3 Terms, definitions and abbreviations and symbols and term identification	2
3.1 Terms and Definitions	2
3.2 Abbreviations	2
3.3 Symbols and term identification	3
4 Reference environment	3
4.1 General Reference Architecture	3
4.2 Reference use case (general use case)	4
4.3 Example use case	4

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.

GB/T 17215 "Alternating Current Measuring Equipment" is divided into several parts, GB/T 17215.6 "Electrical Measurement Data Exchange DLMS/COSEM

Components has published the following sections.

- Part 10. Intelligent measurement standardization framework;
- Part 11. Templates for DLMS/COSEM communication configuration standards;
- Part 31. Use of local area network based on twisted pair carrier signal;
- Part 46. Data link layer using HDLC protocol;
- Part 47. DLMS/COSEM transport layer based on IP network;
- Part 51. Application layer protocol;
- Part 52. Communication Protocol Management Distribution Line Message Specification (DLMS) Server;
- Part 53. DLMS/COSEM application layer;

--- Part 61.Object Identification System (OBIS);

--- Part 62.COSEM interface class;

--- Part 69.Common information model message set (IEC 61968-9) and DLMS/COSEM (IEC 62056) data model and agreement

Mapping between sessions;

--- Part 73.Wired and wireless M-Bus communication configurations for local and community networks;

--- Part 75.Local data transmission configuration of the local network (LN);

--- Part 76.HDLC-based connection-oriented three-layer communication configuration;

--- Part 91.Communication to access DLMS/COSEM server via COSEM Access Service (CAS) using Web services

configuration;

--- Part 97.Communication configuration based on TCP-UDP/IP network.

This document is part 69 of GB/T 17215.6 "DLMS/COSEM Components for Electrical Measurement Data Exchange".

This document is equivalent to IEC TS62056-6-9.2016 "Electrical Measurement Data Exchange DLMS/COSEM Component Part 6-9.

Mapping Between Common Information Model Message Set (IEC 61968-9) and DLMS/COSEM (IEC 62056) Data Model and Protocol". document

The type is adjusted from IEC 's technical specifications to my country's national standardization guiding technical documents.

The document has the following minimal editorial changes.

--- The standard name is determined by "Electrical Measurement Data Exchange DLMS/COSEM Component Part 6-9.Common Information Model Message Set

(IEC 61968-9) and DLMS/COSEM (IEC 62056) data model and protocol mapping" was changed to "Electrical Measurement Data Exchange

Change DLMS/COSEM components Part 69.Common information model message set (IEC 61968-9) and DLMS/

Mapping Between COSEM (IEC 62056) Data Model and Protocol".

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

Introduction

At present, energy conservation, emission reduction, low-carbon, environmental protection and the establishment of a sustainable society have become a global consensus. Countries are actively building regional energy

management system to promote the efficient and scientific use of energy. On this basis, IEC /TC57, TC13 and EN/TC294 jointly established

DLMS/COSEM energy measurement system transmission protocol, in which the electric energy part is defined by IEC 62056 "Electrical measurement data exchange DLMS/

COSEM Components" was completed, and the non-electric part was completed by EN13757 "Instrument Communication System". In order to establish a global unified and open interoperability

As a result, countries around the world have successively transformed IEC 62056 into their own national standards. my country converts IEC 62056-XY into

GB/T 17215.6XY.

GB/T 17215 "Alternating Current Measuring Equipment" is divided into several parts, GB/T 17215.6 "Electrical Measurement Data Exchange DLMS/

COSEM Components is proposed to be composed of the following 25 parts.

--- Part 10.Intelligent measurement standardization framework. The purpose is to understand the relevant aspects of this series of standard architecture, interoperability, information security, etc.

information.

--- Part 11.DLMS/COSEM communication configuration standard template. The purpose is to establish communication configuration standards to follow template.

--- Part 31.Use of local area network based on twisted pair carrier signal. The purpose is to use the twisted pair carrier signal of the local area network to follow specification.

--- Part 41.Data exchange using WAN. Public Switched Telephone Network (PSTN) with LINK protocol. intended to use

A specification followed by the Public Switched Telephone Network with the LINK protocol.

--- Part 42.Physical layer service process for connection-oriented asynchronous data exchange. The purpose is to establish a physical

The specification that the layer join process should follow

--- Part 46.Data link layer using HDLC protocol. The purpose is to use the HDLC asynchronous communication protocol set to follow the data

Link layer specification.

--- Part 47.DLMS/COSEM transport layer based on IP network. DLMS/

The specification followed by the COSEM transport layer.

--- Part 51.Application layer protocol. The purpose is to give the communication architecture between the transport layer and metering equipment described in DL/T 790.441

application layer.

--- Part 52.Communication Protocol Management Distribution Line Message Specification (DLMS) server. The purpose is to provide IEC 62056-31,

The protocol management DLMS server of IEC 62056-41 and IEC 62056-51 is consistent and different from DL/T 790.441.

--- Part 53.DLMS/COSEM application layer. The purpose is to give the application of DLMS/COSEM client and server

Layer structure, services and protocols.

--- Part 58.Smart Message Language (SML). The purpose is to give the structure of SML based on XML grammar for use in TCP/IP

internet language.

--- Part 61.Object Identification System (OBIS). The purpose is to specify a unique identifier for data in electrical measuring equipment.

--- Part 62.COSEM interface class. The purpose is to specify the instrument model and construct the instrument function in the form of interface class.

--- Part 69.Common information model message set (IEC 61968-9) and DLMS/COSEM (IEC 62056) data model and agreement

Mapping between sessions. The purpose is to provide the mapping between CIM and DLMS/COSEM required for ERP information exchange with the main station.

--- Part 73.Wired and wireless M-Bus communication configurations for local and community networks. Intended to use wired and wireless M-

The specification that the mode of the bus follows.

--- Part 75.Local data transmission configuration of the local network (LN). The intent is to use the specification followed by the local networking mode.