ANSI C12/IEC 62056-6-2 ED3

American National Standard
for Electricity Metering Data Exchange – The DLMS/ COSEM Suite
Part 6-2:COSEM Interface Classes

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FOREWORD FOR U.S. ADOPTION

This American National Standard is an adoption of IEC 62056-6- 2 Ed.3 *Electricity Metering Data Exchange – The DLMS/ COSEM Suite Part 6-2: COSEM Interface Classes*. Any reference in this standard to an IEC 62056 part is understood to mean a reference to the equivalent ANSI/IEC 62056 part, where it exists.

This standard contains all the original text from IEC 62056-6-2 Ed.3 without change.

Suggestions for the improvement of this standard are welcome and should be submitted to:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 6-2: COSEM interface classes

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DLMS[1] User Association
Zug/Switzerland
www.dlms.com

International Standard IEC 62056-6-2 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

This third edition cancels and replaces the second edition of IEC 62056-6-2 published in 2016. It constitutes a technical revision.

The significant technical changes with respect to the previous edition are listed in Annex F (Informative).

The text of this standard is based on the following documents:

FDIS	Report on voting
13/1746/FDIS	13/1750/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 62056 series, published under the general title *Electricity metering data exchange – The DLMS/COSEM suite*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

[1] Device Language Message Specification.

INTRODUCTION

This third edition of IEC 62056-6-2 has been prepared by IEC TC13 WG14 with a significant contribution of the DLMS User Association, its D-type liaison partner.

This edition is in line with the DLMS UA Blue Book Edition 12.2. The main new features are the “Array manager” IC, version 1 of the “Compact data” IC, version 1 of the “GSM diagnostic” IC, the “LTE monitoring” IC, the “NTP setup” IC, the HS-PLC setup ICs and the related new OBIS codes.

Object modelling and data identification

Driven by the business needs of the energy market participants – generally in a liberalized, competitive environment – and by the desire to manage natural resources efficiently and to involve the consumers, the utility meter became part of an integrated metering, control and billing system. The meter is not any more a simple data recording device but it relies critically on communication capabilities. Ease of system integration, interoperability and data security are important requirements.

COSEM, the *Companion Specification for Energy Metering*, addresses these challenges by looking at the utility meter as part of a complex measurement and control system. The meter has to be able to convey measurement results from the metering points to the business processes which use them. It also has to be able to provide information to the consumer and manage consumption and eventually local generation.

COSEM achieves this by using *object modelling* techniques to model all functions of the meter, without making any assumptions about which functions need to be supported, how those functions are implemented and how the data are transported. The formal specification of COSEM interface classes forms a major part of COSEM.

To process and manage the information it is necessary to uniquely identify all data items in a manufacturer-independent way. The definition of OBIS, the *Object Identification System* is another essential part of COSEM. It is based on DIN 43863-3:1997, *Electricity meters – Part 3: Tariff metering device as additional equipment for electricity meters – EDIS – Energy Data Identification System.* The set of OBIS codes has been considerably extended over the years to meet new needs.

COSEM models the utility meter as a *server* application – see 4.7 – used by *client* applications that retrieve data from, provide control information to, and instigate known actions within the meter via controlled access to the COSEM objects. The *clients* act as agents for third parties, i.e. the business processes of energy market participants.

The standardized COSEM interface classes form an extensible library. Manufacturers use elements of this library to design their products that meet a wide variety of requirements.

The server offers means to retrieve the functions supported, i.e. the COSEM objects instantiated. The objects can be organized to *logical devices and application associations* and to provide specific access rights to various clients.

The concept of the standardized interface class library provides different users and manufacturers with a maximum of diversity while ensuring interoperability.

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Acknowledgement

The actual document has been established by the WG Maintenance of the DLMS UA.

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ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 6-2: COSEM interface classes

1 Scope

This part of IEC 62056 specifies a model of a meter as it is seen through its communication interface(s). Generic building blocks are defined using object-oriented methods, in the form of interface classes to model meters from simple up to very complex functionality.

Annexes A to F (informative) provide additional information related to some interface classes.