

# TECHNICAL SPECIFICATION

Electricity metering data exchange – The DLMS/COSEM suite –  
Part 1-1: Template for DLMS/COSEM communication profile standards  
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[IEC TS 62056-1-1:2016](https://standards.iteh.ai/catalog/standards/sist/abece3a3-5e61-49b2-9f80-45a8ee7234d4/iec-ts-62056-1-1-2016)

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING DATA EXCHANGE –  
THE DLMS/COSEM SUITE –****Part 1-1: Template for DLMS/COSEM communication profile standards**

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62056-1-1, which is a technical specification, has been prepared by IEC technical committee 13: Electrical energy measurement and control.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
13/1643A/DTS	13/1656/RVC

Full information on the voting for the approval of this technical specification 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 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 website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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A bilingual version of this publication may be issued at a later date.

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## INTRODUCTION

This Technical Specification defines a communication profile template, to be used for establishing IEC 62056 communication profile standards which follow the IEC 62056-1-0 standardization framework.

NOTE It is foreseen that this TS will be integrated into IEC 62056-1-0 as an informative Annex at the next revision of that standard.

In particular, this template is suited for establishing communication profile standards that specify how DLMS/COSEM is used on a specific communication technology where it is assumed that the specific communication technology is already defined by a specific communication standard. The purpose of this template is:

- to improve the readability of the standards;
- to improve the efficiency to develop communication profile standards.

*In the Introduction of an IEC 62056 communication profile standard, remove the text above (starting with "This Technical Specification defines ..." and ending with "...to improve the efficiency to develop communication profile standards") and add the following text:*

As defined in IEC 62056-1-0, the IEC 62056 DLMS/COSEM suite provides specific communication profile standards for communication media relevant for smart metering.

Such communication profile standards specify how the COSEM data model and the DLMS/COSEM application layer can be used on the lower, communication media specific protocol layers.

Communication profile standards refer to communication standards that are part of the IEC 62056 DLMS/COSEM suite or to any other open communication standard.

This International Standard specifies DLMS/COSEM communication profiles for <add a brief description of the communication technology and the smart metering interfaces covered>.

It follows the rules defined in IEC 62056-5-3:2016, Annex A.

*Add one paragraph to justify the relevance of the standard by summarising the main use cases of this profile.*

## ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

### Part 1-1: Template for DLMS/COSEM communication profile standards

*The title of an IEC 62056 communication profile standard shall be:*

## ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

### Part x-x: XXXX communication profile for YYYY networks

*Where:*

- *XXXX identifies the communication technology as it appears in the lower layer standard(s) referenced);*
- *YYYY identifies the smart metering network section(s) (WAN, NN, LN) the communication technology is used for.*

#### 1 Scope

This part of IEC 62056 defines a template for IEC 62056 communication profile standards.

It provides the “Table of contents” of such standards and provides guidance to develop the content of the relevant clauses and subclauses.

*NOTE* The parts of the standard providing guidance are written in italic font.  
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*In the Scope of an IEC 62056 communication profile standard, remove the text above and add the following:*

This International Standard specifies DLMS/COSEM communication profiles for *<add a brief description of the communication technology and the smart metering interfaces covered>*.

The scope of this communication profile standard is restricted to aspects concerning the use of communication protocols in conjunction with the COSEM data model and the DLMS/COSEM application layer. Data structures specific to a communication protocol are out of the Scope of the communication profile standard.

They should be specified in the specific protocol standards.

Any project specific definitions of data structures and data contents may be provided in project specific companion specifications.

*Add any other relevant information identifying what is and what is not in the Scope of the communication profile standard.*

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.



List here the standards which are normatively referenced in this document.

IEC 62056-1-0, *Electricity metering data exchange – The DLMS/COSEM suite – Part 1-0: Smart metering standardisation framework*

IEC 62056-4-7, *Electricity metering – Data exchange for meter reading, tariff and load control: DLMS/COSEM transport layers for IP networks*

IEC 62056-5-3:2016, *Electricity metering data exchange – The DLMS/COSEM suite – Part 5-3: DLMS/COSEM application layer*

IEC 62056-6-1, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-1: Object Identification System (OBIS)*

IEC 62056-6-2, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes*

IEC 62056-9-7, *Electricity metering data exchange – The DLMS/COSEM SUITE – Part 9-7: Communication profile for TCP-UDP/IP networks*

### 3 Terms, definitions and abbreviations

Include here the relevant terms, definitions and abbreviations as shown below:

#### 3.1 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions in IEC 60050-300, IEC 62051, IEC 62051-1, IEC 62056 (all parts) as well as the following apply.

Where there is a difference between the definitions in the glossaries and those contained in communication profile standards established by TC 13, then the latter shall take precedence in applications of the relevant standard.

For terms and definitions, use the format below:

##### 3.1.1

###### term 1

definition 1

EXAMPLE 1 First example for term 1.

EXAMPLE 2 Second example for term 1.

Note 1 to entry: First note for term 1.

Note 2 to entry: Second note for term 1.

[SOURCE: where definition 1 was found]

##### 3.1.2

###### term 2

definition 2

EXAMPLE Only one example for term 2 – no numbering.

Note 1 to entry: Only one note for term 2 – still needs to be numbered.

*Examples (to be deleted):*

**3.1.3****new system**

server system, which is in the unconfigured state: its MAC address equals "NEW-address"

[SOURCE: IEC 61334-4-511:2000, 3.9.3]

**3.1.4****new system title**

system-title of a new system

[SOURCE: IEC 61334-4-511:2000, 3.9.4]

Note 1 to entry: This is the system title of a system, which is in the new state.

**3.2 Abbreviations**

*Include here all abbreviations used in the text:*

*Examples (to be deleted if not used):*

AA	Application Association
APDU	Application Layer Protocol Data Unit
COSEM	Companion Specification for Energy Metering
DLMS	Device Language Message Specification
HDLC	High-level Data Link Control
IP	Internet Protocol
TCP	Transmission Control Protocol
xDLMS_ASE	Extended DLMS Application Service Element

**4 Targeted communication environments**

*Define the communication environment – with respect to the smart metering architecture used in IEC 62056-1-0 – for which the communication profile standard is specified. In the text, identify the entities and interfaces implementing the communication profile standard. See Figure 1.*

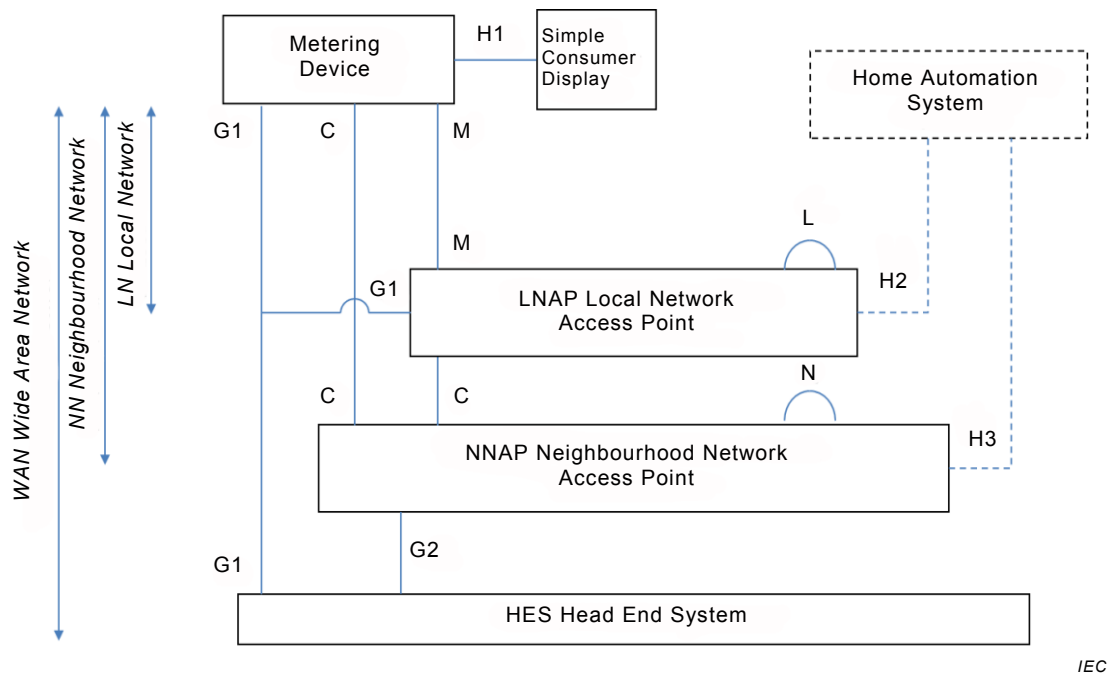


Figure 1 – Entities and interfaces of a smart metering system using the terminology of IEC 62056-1-0

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## 5 Use of the communication layers for this profile

### 5.1 Information related to the use of the standard specifying the lower layers

Provide here all information that is relevant for using the communication standard in the communication profile standard but which is **not part** of the communication standard referenced:

- selection from the options which are foreseen by the communication standard;
- parts of the communication standard which are not used;
- restrictions concerning the use of the communication standard in the communication profile standard;
- addressing (apart from the elements specified in Clause 6).

Extensions to the existing communication standards should be avoided. Modifications to the existing communications standards shall be avoided.

Additional details may be specified in 5.3.

### 5.2 Structure of the communication profiles

This subclause specifies the structure of the communication profile, i.e. the protocol layers included.

If DLMS/COSEM can be used over the lower layers specified by the protocol standard in different ways, several communication profiles can be specified in the standard.

Define the reference architecture according to Figure 2 below: