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**Electricity metering data exchange – The DLMS®/COSEM suite –
Part 8-12: Communication profile for Low-Power Wide Area Networks (LPWANs)**

**Échange des données de comptage de l'électricité – La suite DLMS®/COSEM –
Partie 8-12: Profil de communication pour réseaux étendus à basse
consommation (LPWAN)**



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CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and abbreviated terms	7
3.1 Terms and definitions.....	7
3.2 Abbreviated terms.....	7
4 Targeted communication environments.....	8
4.1 General.....	8
4.1.1 Overview	8
4.1.2 Security	9
4.2 Use of the communications layers for this profile	9
4.2.1 Information related to the use of the standard specifying the lower layers (IEC TS 62056-1-1:2016, 5.1)	9
4.2.2 Structure of the communication profiles (IEC TS 62056-1-1:2016, 5.2)	9
4.2.3 Lower protocol layers and their use (IEC TS 62056-1-1:2016, 5.3)	10
4.2.4 Service mapping and adaptation layers (IEC TS 62056-1-1:2016, 5.4).....	11
4.2.5 Registration and connection management (IEC TS 62056-1-1:2016, 5.5).....	11
4.3 Identification and addressing schemes (IEC TS 62056-1-1:2016, Clause 6).....	11
4.4 Specific considerations for the application layer services (IEC TS 62056-1- 1:2016, Clause 7)	11
4.4.1 Overview (IEC TS 62056-1-1:2016, 7.1).....	11
4.4.2 Application Association establishment and release: ACSE services (IEC TS 62056-1-1:2016, 7.2).....	12
4.4.3 xDLMS services (IEC TS 62056-1-1:2016, 7.3).....	12
4.4.4 Security mechanisms (IEC TS 62056-1-1:2016, 7.4).....	12
4.4.5 Transferring long application messages (IEC TS 62056-1-1:2016, 7.5).....	12
4.4.6 Media access, bandwidth and timing consideration (IEC TS 62056-1- 1:2016, 7.6)	12
4.5 Communication configuration and management (IEC TS 62056-1-1:2016, Clause 8)	12
4.6 The COSEM application process (IEC TS 62056-1-1:2016, Clause 9).....	12
Annex A (informative) Examples	13
A.1 Example 1: DLMS®/COSEM GET Service transported through LPWAN using LoRaWAN technology	13
A.2 Example 2: DLMS®/COSEM DataNotification Service transported through LPWAN with SCHC fragments.....	15
A.3 Example 3: DLMS®/COSEM Access Service transported through LPWAN with SCHC fragments.....	22
Bibliography.....	30
Figure 1 – Communication architecture.....	8
Figure 2 – LPWAN (SCHC) architecture outline	9
Figure 3 – DLMS®/COSEM LPWAN communication profile.....	10
Figure A.1 – The DLMS®/COSEM GET Service on LPWAN	15

Table 1 – Client and server SAPs	11
Table A.1 – Get Service example	13
Table A.2 – Data-Notification Service with Profile Generic	16
Table A.3 – Example – Access Service	22

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING DATA EXCHANGE –
THE DLMS®/COSEM SUITE –****Part 8-12: Communication profile for
Low-Power Wide Area Networks (LPWANs)**

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The text of this International Standard is based on the following documents:

Draft	Report on voting
13/1877/CDV	13/1901/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

Part 8-12: Communication profile for Low-Power Wide Area Networks (LPWANs)

1 Scope

This part of IEC 62056 describes the use of DLMS®/COSEM for Low-Power Wide Area Networks (LPWANs). It specifies how the COSEM data model and the DLMS®/COSEM application layer can be used over various LPWAN technologies using an adaptation layer based on IETF RFC 8724, and in particular over LoRaWAN.

This profile is intended to be used with LPWANs as defined in IETF RFC 8724, in particular LoRaWAN. Low-Power Wide Area Networks (LPWANs) are wireless technologies with characteristics such as large coverage areas, low bandwidth, possibly very small packet and application-layer data sizes, and long battery life operation. This document does not provide functionality to manage the lower layers of the LPWANs.

This part of the DLMS®/COSEM suite specifies the communication profile for Low-Power Wide Area Networks (LPWANs).

The DLMS®/COSEM LPWAN communication profiles use a connection-less transport layer based on the Internet Standard User Datagram Protocol (UDP) and Internet Protocol (IPv6).

The adaptation layer is based on IETF RFC 8724 which provides both a header compression/decompression mechanism and an optional fragmentation/reassembly mechanism. SCHC compression is based on static context with small context identifier to represent full IPv6/UDP/COSEM wrapper headers. If required, SCHC fragmentation is used to support IPv6 MTU over the LPWAN technologies.

This document follows the rules defined in IEC 62056-5-3:2023, Annex A, and in IEC 62056-1-0, and IEC TS 62056-1-1:2016 for its structure. See also Annex A for examples.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC TS 62056-1-1:2016, *Electricity metering data exchange – The DLMS®/COSEM suite – Part 1-1: Template for DLMS®/COSEM communication profile standards*

IEC 62056-4-7:2015, *Electricity metering data exchange – The DLMS®/COSEM suite – Part 4-7: DLMS®/COSEM transport layer for IP networks*

IEC 62056-5-3:2023, *Electricity metering data exchange – The DLMS®/COSEM suite – Part 5-3: DLMS®/COSEM application layer*