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**Electricity metering data exchange – The DLMS/COSEM suite –
Part 7-5: Local data transmission profiles for local networks (LN)**

**Échange des données de comptage de l'électricité – La suite DLMS/COSEM –
Partie 7-5: Profils de transmission de données locales pour réseaux locaux (LN)**



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INTERNATIONAL STANDARD

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**Electricity metering data exchange – The DLMS/COSEM suite –
Part 7-5: Local data transmission profiles for Local Networks (LN)**

**Échange des données de comptage de l'électricité – La suite DLMS/COSEM –
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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 17.220.20; 35.100.01; 91.140.50

ISBN 978-2-8322-3326-9

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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	10
3 Terms, definitions and abbreviations	11
3.1 Terms and definitions	11
3.2 Abbreviations	11
4 Targeted communication environments	11
5 Use of the communication layers for these profiles	12
5.1 Information related to the use of the standards specifying the lower layers	12
5.2 Structure of the profile.....	12
5.3 Use of the lower layers.....	13
5.3.1 Overview	13
5.3.2 Physical layer	14
5.3.3 MAC layer.....	14
5.3.4 Data link layer.....	14
5.4 Service mapping and adaptation layers.....	14
5.4.1 For the default HDLC based data link layer	14
5.4.2 For other lower layers	15
5.5 Registration and connection management.....	15
6 Identification and addressing scheme.....	15
6.1 General identification and addressing scheme	15
6.2 Addressing for the default HDLC based data link layer.....	15
6.3 Addressing for other data link layers.....	15
7 Specific considerations for the application layer services.....	15
7.1 Overview	15
7.2 Application Association establishment and release: ACSE services.....	15
7.3 xDLMS services	15
7.4 Security mechanisms	16
7.5 Transferring application messages.....	16
7.6 Media access, bandwidth and timing considerations.....	16
8 Communication layer configuration and management	17
9 The COSEM application process (AP).....	17
9.1 Model and services	17
9.2 COSEM interface classes (IEC 62056-6-2) to configure the LDTI	18
9.3 Security environment (not valid for legacy mode)	19
9.4 Restrictions for interfaces supporting “Legacy operating modes”	20
10 Additional considerations for the use of this profile – Safety	21
Annex A (normative) Media specific profile: Optical interface	22
A.1 IEC 62056-21 port.....	22
A.2 IEC 62056-21 port operating in legacy mode.....	23
Annex B (normative) Media specific Profile: TP with carrier signalling Interface.....	25
B.1 IEC 62056-3-1 port.....	25
B.2 IEC 62056-3-1 port operating in legacy mode	26
Annex C (normative) Media specific profile: EIA-485, TIA-232-F interface	29

C.1	Electrical port RS485/232.....	29
Annex D (normative)	Media specific profile: M-Bus EN 13757-2	31
D.1	M-Bus with the HDLC based data link layer	31
Annex E (normative)	IP profile	33
E.1	IP profile	33
Annex F (informative)	LDTI configuration examples	35
F.1	Example 1: only one value (active energy A+) pushed.....	35
Annex G (informative)	LDTI encoding examples	37
G.1	xDLMS APDUs used (without protection and without general-block-transfer)	37
G.2	Example 1: Only one value is pushed	37
G.3	Example 2: The OBIS code and one value is pushed.....	37
Index.....		40
Figure 1 – LDTI DLMS/COSEM client as part of a consumer device		9
Figure 2 – LDTI DLMS/COSEM client as part of a local adaptor		9
Figure 3 – Entities and interfaces of a smart metering system.....		12
Figure 4 – IEC 62056-7-5 LDTI interface in the context of the smart metering architecture		12
Figure 5 –Local data transmission reference model		13
Figure 6 – LDTI – the interface to a pre-established DLMS/COSEM LDTI client.....		18
Figure 7 – Interface classes modelling the push operation		19
Figure 8 – Example of a security environment for a LDTI using global keys		20
Figure 9 – LDTI – operating in “legacy mode”		21
Figure A.1 – Structure of the optical interface profile		22
Figure A.2 – Structure of the optical interface “operating in legacy mode” – profile		24
Figure B.1 – Structure of the TP with carrier signalling profile		25
Figure B.2 – Structure of the TP with carrier signalling – “operating in legacy mode” – profile.....		27
Figure C.1 – Structure of the RS485/232 profile.....		29
Figure D.1 – Structure of the “M-Bus with HDLC based data link layer” profile.....		31
Figure E.1 – Structure of the IP profile		33
Table 1 – Features of communication profiles using DLMS/COSEM compatible and legacy protocol modes		9
Table 2 – Conformance block for the LDTI association.....		16
Table 3 – Configuration of a LDTI operating in "legacy mode"		20
Table A.1 – Mandatory setup attribute values for an optical IEC 62056-21 interface supporting IEC 62056-5-3		23
Table A.2 – Mandatory setup attribute values for an optical IEC 62056-21 operating in the “legacy mode”		24
Table B.1 – Mandatory setup attribute values for a TP IEC 62056-3-1 supporting IEC 62056-5-3		26
Table B.2 – Mandatory setup attribute values for a TP IEC 62056-3-1 operating in the “legacy mode”		28
Table C.1 – Mandatory setup attribute values for an electrical RS485/232 IEC 62056-21 interface supporting IEC 62056-5-3		30

Table D.1 – Mandatory setup attribute values for an M-Bus port with HDLC based data link layer.....32

Table E.1 – Mandatory setup attribute values for an IP port34

Table F.1 – Configuration example: one value pushed every 10 s via optical port.....35

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING DATA EXCHANGE –
THE DLMS/COSEM SUITE –****Part 7-5: Local data transmission profiles for Local Networks (LN)**

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DLMS User Association
Zug/Switzerland
www.dlms.com

International Standard IEC 62056-7-5 has been prepared by technical committee 13: Electrical energy measurement and control.

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

CDV	Report on voting
13/1605/CDV	13/1650/RVC

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 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

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INTRODUCTION

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 transmitting metering data modelled by COSEM interface objects through Local Data Transmission Interfaces (LDTI). The LDTI may be part of a meter or of a Local Network Access Point (LNAP) hosting a DLMS/COSEM server.

The specification of the communication profiles follows the rules defined in IEC 62056-5-3:2016, Annex A.

A major driver for the introduction of smart metering is to provide the consumer with suitable metering information to optimise his/her energy consumption and/or production. For that purpose, smart meters are equipped with local interfaces providing metering data for the consumer on consumer devices.

IEC 62056-21 and IEC 62056-3-1 are communication standards that specify direct local data exchange and data exchange through local networks. They provide protocol modes that support the DLMS/COSEM application layer and thus the COSEM object model. They also specify legacy modes that do not support the DLMS/COSEM application layer.

In order to allow connecting legacy consumer equipment to the LDTI, this International Standard also specifies communication profiles using protocol modes that do not support the DLMS/COSEM application layer.

It is assumed, however, that in all cases the metering application is modelled by COSEM interface objects.

It is also assumed that the meter has interfaces that fully support DLMS/COSEM and allow the configuration of the local data transmission interface by a DLMS/COSEM client.

The requirements on the physical type of the interface, the choice of the data transmitted and the transmitting pattern highly depends on the markets and projects the meter is designed for.

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 7-5: Local data transmission profiles for Local Networks (LN)

1 Scope

This part of IEC 62056 specifies DLMS/COSEM communication profiles for transmitting metering data modelled by COSEM interface objects through a Local Data Transmission Interface (LDTI). The LDTI may be part of a meter or of a Local Network Access Point (LNAP) hosting a DLMS/COSEM server.

The main body of this standard specifies the common aspects of the different communication profiles for the LDTI interface.

The Annexes specify the communication protocol specific elements. The Annexes form an integral part of this International Standard.

Annex A (normative) specifies a communication profile using the protocol specified in IEC 62056-21. Clause A.1 specifies the communication profile that supports the DLMS/COSEM application layer and Clause A.2 specifies the communication profile using the legacy Mode D. The physical interface is the optical interface specified in IEC 62056-21:2002, 4.3.

Annex B (normative) specifies a communication profile using the protocol specified in IEC 62056-3-1. Clause B.1 specifies the communication profile that supports the DLMS/COSEM application layer and Clause B.2 specifies the communication profile using the legacy mode. The physical interface is twisted pair using carrier signalling known as the Euridis Bus.

Annex C (normative) specifies a communication profile based on the DLMS/COSEM 3-layer, connection oriented HDLC based profile specified in IEC 62056-7-6. The physical interface is RS 485 or TIA-232-F.

Annex D (normative) specifies a communication profile using the physical layer specified in EN 13757-2 and the HDLC based data link layer specified in IEC 62056-46. The physical interface is twisted pair with baseband signalling.

Annex E (normative) specifies a communication profile using UDP/IP. The physical layer is out of the scope of this International Standard.

The communication profiles in Clauses A.1, B.1, and Annexes C, D and E support the DLMS/COSEM application layer.

Annex F (informative) specifies an LDTI configuration example.

Annex G (informative) provides encoding examples.

Additional communication profiles for other media/communication protocols may be added in the future.

Table 1 shows the features of communication profiles using DLMS/COSEM compatible and legacy protocol modes.