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

**Échange des données de comptage de l'électricité – La suite DLMS/COSEM –
Partie 5-3: Couche application DLMS/COSEM**

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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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CONTENTS

FOREWORD.....	8
INTRODUCTION.....	10
1 Scope.....	11
2 Normative references	11
3 Terms, definitions and abbreviations	13
3.1 Terms and definitions	13
3.2 Abbreviations	13
4 Overview	15
4.1 DLMS/COSEM application layer structure	15
4.2 DLMS/COSEM application layer services	16
4.2.1 ASO services	16
4.2.2 Services provided for application association establishment and release	16
4.2.3 Services provided for data transfer	17
4.2.4 Layer management services	22
4.2.5 Summary of DLMS/COSEM application layer services	22
4.3 DLMS/COSEM application layer protocols	22
5 Information security in DLMS/COSEM	23
5.1 Definitions.....	23
5.2 General.....	23
5.3 Data access security	24
5.3.1 Overview	24
5.3.2 No security (lowest level security) authentication	24
5.3.3 Low Level Security (LLS) authentication	24
5.3.4 High Level Security (HLS) authentication	25
5.4 Data transport security	27
5.4.1 Applying, removing or checking the protection: ciphering and deciphering.....	27
5.4.2 Security context	28
5.4.3 Security policy	28
5.4.4 Security suite	29
5.4.5 Security material	29
5.4.6 Ciphered xDLMS APDUs.....	29
5.4.7 Cryptographic keys	31
5.4.8 The Galois/Counter Mode of Operation (GCM).....	34
6 DLMS/COSEM application layer service specification	43
6.1 Service primitives and parameters	43
6.2 The COSEM-OPEN service	45
6.3 The COSEM-RELEASE service	50
6.4 COSEM-ABORT service	52
6.5 Protection and general block transfer parameters	53
6.6 The GET service	57
6.7 The SET service	59
6.8 The ACTION service	62
6.9 The DataNotification service.....	66
6.10 The EventNotification service	67
6.11 The TriggerEventNotificationSending service	68

6.12	Variable access specification.....	69
6.13	The Read service.....	69
6.14	The Write service.....	73
6.15	The UnconfirmedWrite service.....	76
6.16	The InformationReport service.....	77
6.17	Client side layer management services: the SetMapperTable.request.....	78
6.18	Summary of services and LN/SN data transfer service mapping.....	78
7	DLMS/COSEM application layer protocol specification.....	79
7.1	The control function.....	79
7.1.1	State definitions of the client side control function.....	79
7.1.2	State definitions of the server side control function.....	81
7.2	The ACSE services and APDUs.....	82
7.2.1	ACSE functional units, services and service parameters.....	82
7.2.2	Registered COSEM names.....	85
7.2.3	APDU encoding rules.....	87
7.2.4	Protocol for application association establishment.....	87
7.2.5	Protocol for application association release.....	92
7.3	Protocol for the data transfer services.....	95
7.3.1	Negotiation of services and options – the conformance block.....	95
7.3.2	Confirmed and unconfirmed service invocations.....	96
7.3.3	Protocol for the GET service.....	98
7.3.4	Protocol for the SET service.....	101
7.3.5	Protocol for the ACTION service.....	104
7.3.6	Protocol of the DataNotification service.....	106
7.3.7	Protocol for the EventNotification service.....	106
7.3.8	Protocol for the Read service.....	106
7.3.9	Protocol for the Write service.....	110
7.3.10	Protocol for the UnconfirmedWrite service.....	114
7.3.11	Protocol for the InformationReport service.....	115
7.3.12	Protocol of general block transfer mechanism.....	116
8	Abstract syntax of ACSE and COSEM APDUs.....	127
Annex A (normative) Using the COSEM application layer in various communications profiles.....		142
A.1	General.....	142
A.2	Targeted communication environments.....	142
A.3	The structure of the profile.....	142
A.4	Identification and addressing schemes.....	142
A.5	Supporting layer services and service mapping.....	143
A.6	Communication profile specific parameters of the COSEM AL services.....	143
A.7	Specific considerations / constraints using certain services within a given profile.....	143
A.8	The 3-layer, connection-oriented, HDLC based communication profile.....	143
A.9	The TCP-UDP/IP based communication profiles (COSEM_on_IP).....	143
A.10	The S-FSK PLC profile.....	143
Annex B (normative) SMS short wrapper.....		144
Annex C (informative) AARQ and AARE encoding examples.....		145
C.1	General.....	145
C.2	Encoding of the xDLMS InitiateRequest / InitiateResponse APDUs.....	145
C.3	Specification of the AARQ and AARE APDUs.....	148

C.4	Data for the examples	149
C.5	Encoding of the AARQ APDU	150
C.6	Encoding of the AARE APDU.....	153
Annex D (informative) Encoding examples: AARQ and AARE APDUs using a ciphered application context.....		159
D.1	A-XDR encoding of the xDLMS InitiateRequest APDU, carrying a dedicated key	159
D.2	Authenticated encryption of the xDLMS InitiateRequest APDU	160
D.3	The AARQ APDU	161
D.4	A-XDR encoding of the xDLMS InitiateResponse APDU	162
D.5	Authenticated encryption of the xDLMS InitiateResponse APDU	163
D.6	The AARE APDU.....	164
D.7	The RLRQ APDU (carrying a ciphered xDLMS InitiateRequest APDU).....	165
D.8	The RLRE APDU (carrying a ciphered xDLMS InitiateResponse APDU).....	166
Annex E (informative) Data transfer service examples		167
Annex F (informative) Overview of cryptography.....		183
F.1	General.....	183
F.2	Hash functions	183
F.3	Symmetric key algorithms.....	184
F.3.1	General	184
F.3.2	Encryption and decryption	184
F.3.3	Advanced Encryption Standard (AES).....	185
F.3.4	Encryption Modes of Operation	185
F.3.5	Message Authentication Code.....	186
F.3.6	Key establishment.....	187
F.4	Asymmetric key algorithms.....	187
F.4.1	General.....	187
F.4.2	Digital signatures	188
F.4.3	Key establishment.....	188
Annex G (informative) Significant technical changes with respect to IEC 62056-5-3 Ed.1.0:2013.....		189
Bibliography.....		191
Index.....		194
Figure 1 – Structure of the COSEM Application layers		15
Figure 2 – Summary of DLMS/COSEM AL services.....		22
Figure 3 – Authentication mechanisms during AA establishment		27
Figure 4 – Structure of service specific global ciphering and dedicated ciphering APDUs		30
Figure 5 – Structure of general global ciphering and dedicated ciphering APDUs		30
Figure 6 – Cryptographic protection of xDLMS APDUs using GCM.....		37
Figure 7 – Service primitives.....		43
Figure 8 – Time sequence diagrams.....		44
Figure 9 – Additional service parameters to control cryptographic protection and general block transfer		54
Figure 10 – Partial state machine for the client side control function		80
Figure 11 – Partial state machine for the server side control function		81

Figure 12 – MSC for successful AA establishment preceded by a successful lower layer connection establishment	88
Figure 13 – Graceful AA release using the A-RELEASE service	93
Figure 14 – Graceful AA release by disconnecting the supporting layer	94
Figure 15 – Aborting an AA following a PH-ABORT indication	95
Figure 16 – MSC of the GET service	98
Figure 17 – MSC of the GET service with block transfer	99
Figure 18 – MSC of the GET service with block transfer, long GET aborted	101
Figure 19 – MSC of the SET service	102
Figure 20 – MSC of the SET service with block transfer	102
Figure 21 – MSC of the ACTION service	104
Figure 22 – MSC of the ACTION service with block transfer	105
Figure 23 – MSC of the Read service used for reading an attribute	109
Figure 24 – MSC of the Read service used for invoking a method	109
Figure 25 – MSC of the Read Service used for reading an attribute, with block transfer	110
Figure 26 – MSC of the Write service used for writing an attribute	113
Figure 27 – MSC of the Write service used for invoking a method	113
Figure 28 – MSC of the Write service used for writing an attribute, with block transfer	114
Figure 29 – MSC of the Unconfirmed Write service used for writing an attribute	115
Figure 30 – Partial service invocations and GBT APDUs	118
Figure 31 – GET service with GBT, switching to streaming	120
Figure 32 – GET service with partial invocations, GBT and streaming, recovery of 4 th block sent in the 2nd stream	121
Figure 33 – GET service with partial invocations, GBT and streaming, recovery of 4 th and 5 th blocks	122
Figure 34 – GET service with partial invocations, GBT and streaming, recovery of last block	123
Figure 35 – SET service with GBT, with server not supporting streaming, recovery of 3rd block	124
Figure 36 – ACTION-WITH-LIST service with bi-directional GBT and block recovery	125
Figure 37 – DataNotification service with GBT with partial invocation	126
Figure B.1 – Short wrapper	144
Figure F.1 – Hash function	184
Figure F.2 – Encryption and decryption	185
Figure F.3 – Message Authentication Codes (MACs)	186
Table 1 – Clarification of the meaning of PDU Size for DLMS/COSEM	18
Table 2 – Security suites	29
Table 3 – Ciphered xDLMS APDUs	29
Table 4 – Use of the fields of the ciphered APDUs	31
Table 5 – Cryptographic keys and their management	34
Table 6 – Security control byte	38
Table 7 – Plaintext and additional authenticated data	38
Table 8 – Example for ciphered APDUs	40
Table 9 – HLS example with GMAC	42

Table 10 – Codes for AL service parameters	45
Table 11 – Service parameters of the COSEM-OPEN service primitives	46
Table 12 – Service parameters of the COSEM-RELEASE service primitives	50
Table 13 – Service parameters of the COSEM-ABORT service primitives	53
Table 14 – Additional service parameters	55
Table 15 – Security parameters	56
Table 16 – Service parameters of the GET service	57
Table 17 – GET service request and response types	58
Table 18 – Service parameters of the SET service	60
Table 19 – SET service request and response types	61
Table 20 – Service parameters of the ACTION service	63
Table 21 – ACTION service request and response types	64
Table 22 – Service parameters of the DataNotification service primitives	66
Table 23 – Service parameters of the EventNotification service primitives	67
Table 24 – Service parameters of the TriggerEventNotificationSending.request service primitive	68
Table 25 – Variable Access Specification	69
Table 26 – Service parameters of the Read service	70
Table 27 – Use of the Variable_Access_Specification variants and the Read.response choices	71
Table 28 – Service parameters of the Write service	74
Table 29 – Use of the Variable_Access_Specification variants and the Write.response choices	74
Table 30 – Service parameters of the UnconfirmedWrite service	76
Table 31 – Use of the Variable_Access_Specification variants	77
Table 32 – Service parameters of the InformationReport service	78
Table 33 – Service parameters of the SetMapperTable.request service primitives	78
Table 34 – Summary of ACSE services	79
Table 35 – Summary of xDLMS services for LN referencing	79
Table 36 – Summary of xDLMS services for SN referencing	79
Table 37 – ACSE functional units, services and service parameters	83
Table 38 – Use of ciphered / unciphered APDUs	86
Table 39 – xDLMS Conformance block	96
Table 40 – GET service types and APDUs	98
Table 41 – SET service types and APDUs	101
Table 42 – ACTION service types and APDUs	104
Table 43 – Mapping between the GET and the Read services	107
Table 44 – Mapping between the ACTION and the Read services	108
Table 45 – Mapping between the SET and the Write services	111
Table 46 – Mapping between the ACTION and the Write service	112
Table 47 – Mapping between the SET and the UnconfirmedWrite services	115
Table 48 – Mapping between the ACTION and the UnconfirmedWrite services	115
Table 49 – Mapping between the EventNotification and InformationReport services	116
Table B.1 – Reserved Application Processes	144

Table C.1 – Conformance block	146
Table C.2 – A-XDR encoding of the xDLMS InitiateRequest APDU.....	147
Table C.3 – A-XDR encoding of the xDLMS InitiateResponse APDU	148
Table C.4 – BER encoding of the AARQ APDU.....	151
Table C.5 – Complete AARQ APDU	153
Table C.6 – BER encoding of the AARE APDU	154
Table C.7 – The complete AARE APDU.....	158
Table D.1 – A-XDR encoding of the xDLMS InitiateRequest APDU.....	159
Table D.2 – Authenticated encryption of the xDLMS InitiateRequest APDU	160
Table D.3 – BER encoding of the AARQ APDU.....	161
Table D.4 – A-XDR encoding of the xDLMS InitiateResponse APDU	163
Table D.5 – Authenticated encryption of the xDLMS InitiateResponse APDU.....	163
Table D.6 – BER encoding of the AARE APDU	164
Table D.7 – BER encoding of the RLRQ APDU	166
Table D.8 – BER encoding of the RLRE APDU	166
Table E.1 – Objects used in the examples	167
Table E.2 – Example: Reading the value of a single attribute without block transfer	168
Table E.3 – Example: Reading the value of a list of attributes without block transfer.....	169
Table E.4 – Example: Reading the value of a single attribute with block transfer	171
Table E.5 – Example: Reading the value of a list of attributes with block transfer	173
Table E.6 – Example: Writing the value of a single attribute without block transfer	176
Table E.7 – Example: Writing the value of a list of attributes without block transfer	177
Table E.8 – Example: Writing the value of a single attribute with block transfer	178
Table E.9 – Example: Writing the value of a list of attributes with block transfer	180

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**ELECTRICITY METERING DATA EXCHANGE –
THE DLMS/COSEM SUITE –****Part 5-3: DLMS/COSEM application layer**

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This second edition cancels and replaces the first edition of IEC 62056-5-3 published in 2013. It constitutes a technical revision.

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

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

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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.

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INTRODUCTION

This second edition of IEC 62056-5-3 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 Green Book Edition 7.0 Amendment 3. The main new features are the DataNotification service, the general protection and the general block transfer mechanisms and the SMS short wrapper.

In 2014, the DLMS UA has published Green Book Edition 8.0 adding several new features regarding functionality, efficiency and security while keeping full backwards compatibility.

The intention of the DLMS UA is to bring also these latest developments to international standardization. Therefore, IEC TC13 WG14 launched a project to bring these new elements also to the IEC 62056 series that will lead to Edition 3.0 of the standard.

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WITHDRAWN

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 5-3: DLMS/COSEM application layer

1 Scope

This part of IEC 62056 specifies the DLMS/COSEM application layer in terms of structure, services and protocols for COSEM clients and servers, and defines how to use the DLMS/COSEM application layer in various communication profiles.

It defines services for establishing and releasing application associations, and data communication services for accessing the methods and attributes of COSEM interface objects, defined in IEC 62056-6-2:2016, using either logical name (LN) or short name (SN) referencing.

Annex A (normative) defines how to use the COSEM application layer in various communication profiles. It specifies how various communication profiles can be constructed for exchanging data with metering equipment using the COSEM interface model, and what are the necessary elements to specify in each communication profile. The actual, media-specific communication profiles are specified in separate parts of the IEC 62056 series.

Annex B (normative) specifies the SMS short wrapper.

Annex C, Annex D and Annex E (informative) include encoding examples for APDUs.

Annex F (informative) provides an overview of cryptography.

Annex G (informative) lists the main technical changes in this edition of the 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.

IEC 61334-4-41:1996, *Distribution automation using distribution line carrier systems – Part 4: Data communication protocols – Section 41: Application protocols – Distribution line message specification*

IEC 61334-6:2000, *Distribution automation using distribution line carrier systems – Part 6: A-XDR encoding rule*

IEC TR 62051:1999, *Electricity metering – Glossary of terms*

IEC TR 62051-1:2004, *Electricity metering – Data exchange for meter reading, tariff and load control – Glossary of terms – Part 1: Terms related to data exchange with metering equipment using DLMS/COSEM*

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

IEC 62056-6-1:2015, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-1: Object Identification System (OBIS)*

IEC 62056-6-2:2016, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes*

IEC 62056-8-3:2013, *Electricity metering data exchange – The DLMS/COSEM suite – Part 8-3: Communication profile for PLC S-FSK neighbourhood networks*

ISO/IEC 8824-1:2008, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*

ISO/IEC 8825-1:2008, *Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)*

ISO/IEC 15953:1999, *Information technology – Open Systems Interconnection – Service definition for the Application Service Object Association Control Service Element*

NOTE This standard cancels and replaces ISO/IEC 8649-1:1999 and its Amd. 1:1997 and Amd. 2:1998, of which it constitutes a technical revision.

ISO/IEC 15954:1999, *Information technology – Open Systems Interconnection – Connection-mode protocol for the Application Service Object Association Control Service Element*

NOTE This standard cancels and replaces ISO/IEC 8650-1:1999 and its Amd. 1:1997 and Amd. 2:1998, of which it constitutes a technical revision.

FIPS PUB 180-4:2012, *Secure hash standard*

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NIST SP 800-38D:2007, *Recommendation for Block Cipher Modes of Operation: Galois/Counter Mode (GCM) and GMAC*

NIST SP 800-57:2006, *Recommendation for Key Management – Part 1: General (Revised)*

The following RFCs are available online from the Internet Engineering Task Force (IETF):
<http://www.ietf.org/rfc/std-index.txt>, <http://www.ietf.org/rfc/>

RFC 1321, *The MD5 Message-Digest Algorithm*. Edited by R. Rivest (MIT Laboratory for Computer Science and RSA Data Security, Inc.) April 1992

RFC 3394, *Advanced Encryption Standard (AES) Key Wrap Algorithm*. Edited by J. Schaad (Soaring Hawk Consulting) and R. Housley (RSA Laboratories) September 2002

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