SLOVENSKI STANDARD
SIST EN 62056-53:2007

01-november-2007

Nadomešča:

SIST EN 62056-53:2004

Merjenje električne energije – Izmenjevanje podatkov za odbiranje stanja električnih števcev ter krmiljenje tarife in obremenitve – 53. del: Aplikacijska plast COSEM (IEC 62056-53:2006)

Electricity metering - Data exchange for meter reading, tariff and load control -- Part 53: COSEM application layer

Messung der elektrischen Energie - Zählerstandsübertragung, Tarif- und Laststeuerung - Teil 53: COSEM-Anwendungsschicht

Equipements de mesure de l'énergie électrique - Echange des données pour la lecture des compteurs, le contrôle des tarifs et de la charge -- Partie 53: Couche application COSEM

Ta slovenski standard je istoveten z: **EN 62056-53:2007**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
35.100.70	Uporabniški sloj	Application layer
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

SIST EN 62056-53:2007 **en,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62056-53

April 2007

ICS 91.140.50; 35.100.70

Supersedes EN 62056-53:2002

English version

Electricity metering - Data exchange for meter reading, tariff and load control - Part 53: COSEM application layer (IEC 62056-53:2006)

Equipements de mesure de l'énergie électrique - Echange des données pour la lecture des compteurs, le contrôle des tarifs et de la charge - Partie 53: Couche application COSEM (CEI 62056-53:2006)

Messung der elektrischen Energie - Zählerstandsübertragung, Tarif- und Laststeuerung - Teil 53: COSEM-Anwendungsschicht (IEC 62056-53:2006)

This European Standard was approved by CENELEC on 2007-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 62056-53:2007 E

Foreword

The text of document 13/1387/FDIS, future edition 2 of IEC 62056-53, prepared by IEC TC 13, Electrical energy measurement, tariff- and load control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62056-53 on 2007-02-01.

This European Standard supersedes EN 62056-53:2002.

The main changes with respect to EN 62056-53:2002 are as follows:

– the protocol of the COSEM-RELEASE service has been changed: depending on the communication profile used, these services may rely on the ACSE A_RELEASE services;

– the parsing order of the AARQ APDU has been changed;

– handling of repeated application association requests has been simplified;

– the Service_Class parameter of the COSEM-OPEN service is now linked to the response allowed field of the xDLMS-Initiate.request APDU;

– the Service_Class parameter of COSEM services for data exchange using LN referencing is now linked to bit 6 of the Invoke-Id-And-Priority parameter;

– a new, optional EXCEPTION APDU has been introduced. The server may send back this APDU after an erroneous service request;

– a general part about using the COSEM application layer in various communication profiles has been added;

– the description of using the COSEM Application layer in the 3-layer, connection-oriented, HDLC based communication profile has been amended;

– a new, TCP-UDP/IP based communication profile has been defined.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-02-01

The International Electrotechnical Commission (IEC) and CENELEC draw attention to the fact that it is claimed that compliance with this International Standard / European Standard may involve the use of a maintenance service concerning the stack of protocols on which the present standard IEC 62056-53 / EN 62056-53 is based.

The IEC and CENELEC take no position concerning the evidence, validity and scope of this maintenance service.

The provider of the maintenance service has assured the IEC that he is willing to provide services under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the provider of the maintenance service is registered with the IEC. Information may be obtained from:

DLMS [1)] User Association
Geneva / Switzerland
www.dlms.ch

[1)] Device Language Message Specification

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62056-53:2006 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

ISO/IEC 7498-1	NOTE	Harmonized as EN ISO/IEC 7498-1:1995 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-300	2001	International Electrotechnical Vocabulary - Electrical and electronic measurements and measuring instruments - Part 311: General terms relating to measurements - Part 312: General terms relating to electrical measurements - Part 313: Types of electrical measuring instruments - Part 314: Specific terms according to the type of instrument	-	-
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	EN 61334-4-41	1996
IEC 61334-6	2000	Distribution automation using distribution line carrier systems - Part 6: A-XDR encoding rule	EN 61334-6	2000
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 62056-21	2002	Electricity metering - Data exchange for meter reading, tariff and load control - Part 21: Direct local data exchange	EN 62056-21	2002
IEC 62056-42	2002	Electricity metering - Data exchange for meter reading, tariff and load control - Part 42: Physical layer services and procedures for connection-oriented asynchronous data exchange	EN 62056-42	2002
IEC 62056-46 A1	2002 2006	Electricity metering - Data exchange for meter reading, tariff and load control - Part 46: Data link layer using HDLC protocol	EN 62056-46 A1	2002 2007

Publication	Year	Title	EN/HD	Year
IEC 62056-47	2006	Electricity metering - Data exchange for meter reading, tariff and load control - Part 47: COSEM transport layers for IPv4 networks	EN 62056-47	2007
IEC 62056-61	2006	Electricity metering - Data exchange for meter reading, tariff and load control - Part 61: Object identification system (OBIS)	EN 62056-61	2007
IEC 62056-62	2006	Electricity metering - Data exchange for meter reading, tariff and load control - Part 62: Interface classes	EN 62056-62	2007
ISO/IEC 8649	1996	Information technology - Open systems interconnection - Service definition for the Association Control Service Element	-	-
ISO/IEC 8650-1	1996	Information technology - Open systems interconnection - Connection-oriented protocol for the association control service Information technology - ASN.1 encoding rules: Protocol specification	-	-
ISO/IEC 8824	Series	Information technology - Abstract Syntax Notation One (ASN.1)	-	-
ISO/IEC 8825	Series	Information technology - ASN.1 encoding rules	-	-
ISO/IEC 13239	2002	Information technology - Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures	-	-
STD 0005	1981	Internet Protocol	-	-
STD 0006	1980	User Datagram Protocol	-	-
STD 0007	1981	Transmission Control Protocol	-	-

INTERNATIONAL STANDARD

IEC 62056-53

Second edition
2006-12

Electricity metering – Data exchange for meter reading, tariff and load control –

Part 53: COSEM application layer

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICITY METERING – DATA EXCHANGE FOR METER READING, TARIFF AND LOAD CONTROL –

Part 53: COSEM application layer

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this International Standard may involve the use of a maintenance service concerning the stack of protocols on which the present standard IEC 62056-53 is based.

The IEC takes no position concerning the evidence, validity and scope of this maintenance service.

The provider of the maintenance service has assured the IEC that he is willing to provide services under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the provider of the maintenance service is registered with the IEC. Information may be obtained from:

DLMS[1] User Association

Geneva / Switzerland

www.dlms.ch

International Standard IEC 62056-53 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

[1] Device Language Message Specification

This standard cancels and replaces the first edition which was published in 2002. It constitutes a technical revision. The main changes with respect to the previous edition are as follows:

- the protocol of the COSEM-RELEASE service has been changed: depending on the communication profile used, these services may rely on the ACSE A_RELEASE services;
- the parsing order of the AARQ APDU has been changed;
- handling of repeated application association requests has been simplified;
- the Service_Class parameter of the COSEM-OPEN service is now linked to the response-allowed field of the xDLMS-Initiate.request APDU;
- the Service_Class parameter of COSEM services for data exchange using LN referencing is now linked to bit 6 of the Invoke-Id-And-Priority parameter;
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- the description of using the COSEM Application layer in the 3-layer, connection-oriented, HDLC based communication profile has been amended;
- a new, TCP-UDP/IP based communication profile has been defined.

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

FDIS	Report on voting
13/1387/FDIS	13/1398/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 parts of IEC 62056 series, published under the general title *Electricity metering – Data exchange for meter reading, tariff and load control,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

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

ELECTRICITY METERING – DATA EXCHANGE FOR METER READING, TARIFF AND LOAD CONTROL –

Part 53: COSEM application layer

1 Scope

This part of IEC 62056 specifies the COSEM application layer in terms of structure, services and protocols for COSEM clients and servers, and defines how to use the 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 62056-62, using either logical name (LN) or short name (SN) referencing.

Annex A describes the xDLMS application service element.

Annex B defines how to use the COSEM application layer in various communication profiles.

Annex C includes encoding examples for APDUs.

Annex D gives an explanation of the role of data models and protocols in electricity meter data exchange.

2 Normative references

The following referenced documents are indispensable for the application 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 60050-300:2001, *International Electrotechnical Vocabulary (IEV) – Electrical and electronic measurements and measuring instruments – Part 311: General terms relating to measurements – Part 312: General terms relating to electrical measurements – Part 313: Types of electrical measuring instruments – Part 314: Specific terms according to the type of instrument*

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

IEC 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 62056-21:2002, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*