ANSI C12/IEC 62056-5-3 ED3

American National Standard
for Electricity Metering Data Exchange – The DLMS/ COSEM Suite
Part 5-3:DLMS/COSEM Application Layer

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FOREWORD FOR U.S. ADOPTION

This American National Standard is an adoption of IEC 62056-5-3 Ed. 3 *Electricity Metering Data Exchange – The DLMS/ COSEM Suite Part 5-3: DLMS/COSEM Application Layer*. Any reference in this standard to an IEC 62056 part is understood to mean a reference to the equivalent ANSI/IEC 62056 part, where it exists.

This standard contains all the original text from IEC 62056-5-3 Ed.3 without change.

Suggestions for the improvement of this standard are welcome and should be submitted to:

Vice President, Technical Services
National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

This standard was processed and approved by committee of interested stakeholders as required by ANSI for adoption. In this particular situation, all committee members voted for its approval. At the time this standard was approved, the committee consisted of the following members:

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ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

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FOREWORD

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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 for 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
Zug/Switzerland
www.dlms.com

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1 Device Language Message Specification.

International Standard IEC 62056-5-3 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

This third edition cancels and replaces the second edition of IEC 62056-5-3, published in 2016. It constitutes a technical revision.

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

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

FDIS	Report on voting
13/1744/FDIS	13/1747/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the 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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This third 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 DLMS UA 1000-2, the “Green Book” Ed. 8.2:2017. The main new features are the ACCESS service, the new security suites 1 and 2 supporting symmetric key and public key cryptography, the general protection mechanism and the XML schema for COSEM APDUs.

Clause 5 is based on parts of NIST documents. Reprinted courtesy of the National Institute of Standards and Technology, Technology Administration, U.S. Department of Commerce.

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 DLMS/COSEM clients and servers, and defines rules to specify the DLMS/ COSEM 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 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 (normative) specifies the gateway protocol.

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

Annex G (normative) provides NSA Suite B elliptic curves and domain parameters.

Annex H (informative) provides an example of an End entity signature certificate using P-256 signed with P-256.

Annex I (normative) specifies the use of key agreement schemes in DLMS/COSEM.

Annex J (informative) provides examples of exchanging protected xDLMS APDUs between a third party and a server.

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