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Electricity metering data exchange – the DLMS/COSEM suite – Part 8-4: Communication profiles for narrow-band OFDM PLC PRIME neighbourhood networks

Échange des données de comptage de l'électricité – la suite DLMS/COSEM – Partie 8-4: Profils de communication pour réseaux de voisinage OFDM PLC PRIME à bande étroite

IEC 62056-8-4:2018-12(en-fr)

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ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 8-4: Communication profiles for narrow-band OFDM PLC PRIME neighbourhood networks

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PRIME Alliance
2-12, Avenue de la Renaissance
1000, Brussels/ (BE)
www.prime-alliance.org.com

International Standard IEC 62056-8-4 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

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

CDV	Report on voting
13/1749/CDV	13/1763/RVC

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 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 "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

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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 using Recommendation ITU-T G.9904:2012 *Narrow-band orthogonal frequency division multiplexing power line communication transceivers for PRIME networks*. It applies for devices installed on the neighbourhood network.

It follows the rules defined in IEC 62056-5-3:2017, Annex A, and in IEC 62056-1-0 and the IEC TS 62056-1-1 recommendations for its structure.

The communication profile specified in this document is based on the results of the European OPEN Meter project, Topic Energy 2008.7.1.1, Project no.: 226369, www.openmeter.com, and has been prepared by the PRIME Alliance Technical Working Group, www.prime-alliance.org.

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 8-4: Communication profiles for narrow-band OFDM PLC PRIME neighbourhood networks

1 Scope

This part of IEC 62056 specifies DLMS/COSEM communication profiles for narrow-band OFDM power line carrier PRIME neighbourhood networks using the modulation as specified in Recommendation ITU-T G.9904:2012.

Three communication profiles are specified:

- a profile using the IEC 61334-4-32 LLC layer;
- a profile using TCP-UDP/IPv4;
- a profile using TCP-UDP/IPv6.

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 61334-4-32:1996, *Distribution automation using distribution line carrier systems – Part 4: Data communication protocols – Section 32: Data link layer – Logical link control (LLC)*

IEC 61334-4-511:2000, *Distribution automation using distribution line carrier systems – Part 4-511: Data communication protocols – Systems management – CIASE protocol*

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

IEC TS 62056-1-1, *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 62056-5-3:2017, *Electricity metering data exchange – The DLMS/COSEM suite – Part 5-3: DLMS/COSEM application layer*

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

IEC 62056-6-2:2017, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes*

IEC 62056-9-7:2013, *Electricity metering data exchange – The DLMS/COSEM suite – Part 9-7: Communication profile for TCP-UDP/IP networks*

Recommendation ITU-T G.9904:2012, *Series G: Transmission systems and media, digital systems and networks Access networks – In premises networks. Narrowband orthogonal frequency division multiplexing power line communication transceivers for PRIME networks*

STD0005 – Internet Protocol
Author: J. Postel
Date: September 1981
Also: RFC0791, RFC0792, RFC0919, RFC0922, RFC0950, RFC1112
Available from: http://www.ietf.org/rfc/rfc0791.txt

STD0006 – User Datagram Protocol
Author: J. Postel
Date: 28 August 1980
Also: RFC 768
Available from: http://www.ietf.org/rfc/rfc0768.txt

STD0007 – Transmission Control Protocol
Author: J. Postel
Date: September 1981
Available from: http://www.ietf.org/rfc/rfc0793.txt

RFC 1144, Compressing TCP/IP Headers for Low Speed serial Link
Author: V. Jabobson
Date: February 1990
Available from https://tools.ietf.org/rfc/rfc1144.txt

RFC 2460, Internet Protocol, Version 6 (IPv6) Specification
Authors: S. Deering, Cisco, R. Hinden Nokia
Date: December 1998
Available from: http://www.ietf.org/rfc/rfc2460.txt

RFC 2464, Transmission of IPv6 Packets over Ethernet Networks
Authors M. Crawford Fermilab
Date: December 1998
Available from: http://www.ietf.org/rfc/rfc2464.txt

RFC 3315, Dynamic Host Configuration Protocol for IPv6 (DHCPv6)
Authors R. Droms, E J. Bound, B. Volz, T. Lemon, C. Perkins, M. Carney
Date: July 2003
Available from: www.ietf.org/rfc/rfc3315.txt

RFC 4291, IP Version 6 Addressing Architecture
Authors R. Hinden Nokia, S. Deering Cisco Systems
Date: February 2006.
Available from: http://www.ietf.org/rfc/rfc4291.txt

RFC 4862, IPv6 Stateless Address Configuration
Authors S. Thomson, Cisco, T. Narten IBM, T. Jinmei, Toshiba
Date: September 2007.
Available from: www.ietf.org/rfc/rfc4862.txt

RFC 6282, Compression Format for IPv6 Datagrams over IEEE 802.15.4–Based Networks
Authors J. Hui, Ed. Arch Rock Corporation P. Thubert Cisco
Date: September 2011.
Available from: http://www.ietf.org/rfc/rfc6282.txt