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Electricity metering data exchange - The DLMS/COSEM Suite - Part 8-6: High speed PLC ISO/IEC 12139-1 profile for neighbourhood networks

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EN 62056-8-6

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ICS 17.220; 35.110; 91.140.50

English Version

Electricity metering data exchange - The DLMS/COSEM suite - Part 8-6: High speed PLC ISO/IEC 12139-1 profile for neighbourhood networks (IEC 62056-8-6:2017)

Échange des données de comptage de l'électricité - La suite DLMS/COSEM - Partie 8-6: Profil CPL ISO/IEC 12139-1 à grande vitesse pour les réseaux de voisinage (IEC 62056-8-6:2017)

Datenkommunikation der elektrischen Energiemessung - DLMS/COSEM - Teil 8-6: Schnelles PLC-ISO/IC-12139-1-Profil für Areal-Netze (IEC 62056-8-6:2017)

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The text of document 13/1730/FDIS, future edition 1 of IEC 62056-8-6, prepared by IEC/TC 13 "Electrical energy measurement and control" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62056-8-6:2017.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2018-02-15
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-05-15

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Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62056-1-0	2014	Electricity metering data exchange - The DLMS/COSEM suite - Part 1-0: Smart metering standardisation framework	EN 62056-1-0	2015
IEC 62056-4-7	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 4-7: DLMS/COSEM transport layer for IP networks	EN 62056-4-7	-
IEC 62056-5-3	-	Electricity metering data exchange - The DLMS/COSEM suite - Part 5-3: DLMS/COSEM application layer	EN 62056-5-3	-
IEC 62056-6-1	-	Electricity metering data exchange - The DLMS/COSEM suite - Part 6-1: Object Identification System (OBIS)	EN 62056-6-1	-
IEC 62056-6-2	2016	Electricity metering data exchange - The DLMS/COSEM suite - Part 6-2: COSEM interface classes	EN 62056-6-2	2016
IEC 62056-7-6	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 7-6: The 3-layer, connection-oriented HDLC based communication profile	EN 62056-7-6	-
IEC 62056-9-7	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 9-7: Communication profile for TCP-UDP/IP networks	EN 62056-9-7	-
IEC 62056-46	-	Electricity metering - Data exchange for meter reading, tariff and load control -- Part 46: Data link layer using HDLC protocol	EN 62056-46	-
IEC/TS 62056-1-1	2016	Electricity metering data exchange - The DLMS/COSEM suite - Part 1-1: Template for DLMS/COSEM communication profile standards	-	-
ISO/IEC 12139-1	2009	Information technology - Telecommunications and information exchange between systems - Powerline communication (PLC) - High speed PLC medium access control (MAC) and physical layer (PHY) - Part 1: General requirements	-	-
ISO/IEC/IEEE 8802-3	2014	Standard for Ethernet	-	-
RFC 1144	-	Compressing TCP/IP Headers for Low-Speed Serial Links	-	-
RFC 2460	-	Internet Protocol, Version 6 (IPv6) Specification	-	-
RFC 2508	-	Compressing IP/UDP/RTP Headers for Low-Speed Serial Links	-	-

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RFC 3095	-	RObust Header Compression (ROHC): Framework and four profiles: RTP, UDP, ESP, and uncompressed	-	-
RFC 791	-	Internet Protocol - DARPA Internet Program Protocol Specification	-	-

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviated terms 8
3.1 Terms and definitions 8
3.2 Abbreviated terms 8
4 Targeted communication environments 9
5 Use of the communication layers for this profile 10
5.1 Information related to the use of the standard specifying the lower layers 10
5.2 Structure of the communication profile 10
5.3 Lower protocol layers and their use 11
5.3.1 Overview 11
5.3.2 Physical layer 11
5.3.3 MAC layer 11
5.4 Service mapping and adaptation layers 11
5.4.1 Overview 11
5.4.2 CPAS 12
5.4.3 IP SSAS 12
5.4.4 HDLC SSAS 16
5.5 Registration and connection management 19
6 Identification and addressing schemes 19
7 Specific considerations for the application layer services 20
7.1 Overview 20
7.2 Application Association establishment and release: ACSE services 20
7.3 xDLMS services 20
7.4 Security mechanisms 21
7.5 Transferring long application messages 21
7.6 Media access, bandwidth and timing considerations 21
7.7 Other considerations 21
8 Communication configuration and management 21
9 The COSEM application process 21
10 Additional considerations for the use of this profile 21
Annex A (informative) Examples 22
A.1 IP-based communication examples 22
A.2 HDLC-based communication examples 25
A.2.1 Example 1: Data link layer connection establishment (SNRM-UA exchange) 25
A.2.2 Example 2: Establishment of an AA (AARQ – AARE exchange) 26
A.2.3 Example 3: Data communication (Get-request) 28
A.2.4 Example 4: Disconnection example with Releasing (DISC) 30
Annex B (normative) COSEM ICs for data exchange using HS-PLC ISO/IEC 12139-1 neighbourhood networks 32
B.1 General 32
B.2 Interface classes for setting up and managing DLMS/COSEM HS-PLC ISO/IEC 12139-1 networks 32

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B.2.1 Overview 32
B.2.2 HS-PLC ISO/IEC 12139-1 MAC setup (class_id = 140, version = 0) 32
B.2.3 HS-PLC ISO/IEC 12139-1 CPAS setup (class_id = 141, version = 0) 33
B.2.4 HS-PLC ISO/IEC 12139-1 IP SSAS setup (class_id = 142, version = 0) 34
B.2.5 HS-PLC ISO/IEC 12139-1 HDLC SSAS setup (class_id = 143, version = 0) 35
B.3 Relation to OBIS 35
B.3.1 Use of value group C 35
B.3.2 Objects for data exchange using DLMS/COSEM HS-PLC ISO/IEC 12139-1 networks 36
Index 37

Figure 1 – Entities and interfaces of a smart metering system using the terminology of IEC 62056-1-0 9
Figure 2 – DLMS/COSEM High Speed PLC profile 10
Figure 3 – Adaptation layer architecture 11
Figure 4 – CPAS frame structure 12
Figure 5 – IP SSAS control packet 13
Figure 6 – IP SSAS data packet 13
Figure 7 – HDLC SSAS Frame 16
Figure 8 – Message configuration for response to HDLC addresses request 17

Table 1 – IP SSAS control packet format Inconsistencies! IP_Len 13
Table 2 – IP SSAS data packet format 14
Table 3 – Values for IP_Header_Comp_Type 15
Table 4 – Valid range of the Transmission_status value 16
Table 5 – HDLC SSAS Frame format 17
Table 6 – Usage of CMD and STA fields 17
Table 7 – Client and Server SAPs for the IP based communication 20
Table 8 – Client and Server SAPs for the HDLC based communication 20
Table B.1 – Use of value group C for abstract objects in the COSEM context 36

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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 document specifies the DLMS/COSEM profile for High Speed PLC (HS-PLC) technologies according to ISO/IEC 12139-1 for neighbourhood networks. The technology is based on Discrete Multi-Tone (DMT) modulation. It may be used in low voltage or on medium voltage distribution networks. The PHY rate of High Speed PLC is typically 24 Mbps, however the data throughput varies according to many aspects of low voltage or medium voltage power lines. Although High Speed PLC can be used both on low voltage and medium voltage networks, in this document HS-PLC on low voltage network is only considered.

When implementing advanced services based on DLMS/COSEM profiles such as complex tariff programs, data security measures, two-way consumption data exchange for demand response and so forth, the neighbourhood network may become a bottleneck. The HS-PLC technology minimizes such bottlenecks due to the high data rates available. Moreover, the HS-PLC technology can accommodate increased amounts of data thus it can additionally support other applications such as Internet of Things (IoT).

Using the high speed PLC technology specified in ISO/IEC 12139-1 may be subject to national regulations. However, this aspect is outside the Scope of this document.

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