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Wind energy generation systems - Part 25-5: Communications for monitoring and control of wind power plants - Compliance testing

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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ICS 27.180

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61400-25-5

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English Version

Wind energy generation systems - Part 25-5: Communications for monitoring and control of wind power plants - Compliance testing (IEC 61400-25-5:2017)

Systèmes de production d'énergie éolienne - Partie 25-5: Communications pour la surveillance et la commande des centrales éoliennes - Essais de conformité (IEC 61400-25-5:2017)

Windenergieanlagen - Teil 25-5: Kommunikation für die Überwachung und Steuerung von Windenergieanlagen - Konformitätsprüfungen (IEC 61400-25-5:2017)

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European Committee for Electrotechnical Standardization
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European foreword

The text of document 88/643/FDIS, future edition 2 of IEC 61400-25-5, prepared by IEC/TC 88 "Wind energy generation systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61400-25-5:2017.

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)	2018-07-25
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-10-25

This document supersedes EN 61400-25-5:2007.

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

Endorsement notice

The text of the International Standard IEC 61400-25-5:2017 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where 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 61400-25-1	2006	Wind turbines - Part 25-1: Communications for monitoring and control of wind power plants - Overall description of principles and models	EN 61400-25-1	2007
IEC 61400-25	series	Wind turbines - Part 25: Communications for monitoring and control of wind power plants	EN 61400-25	series
IEC 61400-25-2	2015	Wind turbines - Part 25-2: Communications for monitoring and control of wind power plants - Information models	EN 61400-25-2	2015
IEC 61400-25-3	2015	Wind turbines - Part 25-3: Communications for monitoring and control of wind power plants - Information exchange models	EN 61400-25-3	2015
IEC 61400-25-4	2016	Wind energy generation systems - Part 25-4: Communications for monitoring and control of wind power plants - Mapping to communication profile	EN 61400-25-4	2017
IEC 61850-4	2011	Communication networks and systems for power utility automation - Part 4: System and project management	EN 61850-4	2011
IEC 61850-6	2009	Communication networks and systems for power utility automation - Part 6: Configuration description language for communication in electrical substations related to IEDs	EN 61850-6	2010
IEC 61850-7-1	2011	Communication networks and systems for power utility automation - Part 7-1: Basic communication structure - Principles and models	EN 61850-7-1	2011
IEC 61850-7-2	2010	Communication networks and systems for power utility automation - Part 7-2: Basic information and communication structure - Abstract communication service interface (ACSI)	EN 61850-7-2	2010
IEC 61850-7-3	2010	Communication networks and systems for power utility automation - Part 7-3: Basic communication structure - Common data classes	EN 61850-7-3	2011
IEC 61850-7-4	2010	Communication networks and systems for power utility automation - Part 7-4: Basic communication structure - Compatible logical node classes and data object classes	EN 61850-7-4	2010

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IEC 61850-10	2012	Communication networks and systems for power utility automation - Part 10: Conformance testing	EN 61850-10	2013
ISO/IEC 9646	series	Information technology - Open Systems Interconnection - Conformance testing methodology and framework	EN ISO/IEC 9646	series

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INTRODUCTION

The focus of IEC 61400-25 (all parts) is on the communications between wind power plant components such as wind turbines and actors such as SCADA Systems. Internal communication within wind power plant components is outside the scope of IEC 61400-25 (all parts).

IEC 61400-25 (all parts) is designed for a communication environment supported by a client-server model. Three areas are defined, that are modelled separately to ensure the scalability of implementations:

a) wind power plant information models,

b) information exchange model, and

c) mapping of these two models to a standard communication profile.

The wind power plant information model and the information exchange model, viewed together, constitute an interface between client and server. In this conjunction, the wind power plant information model serves as an interpretation frame for accessible wind power plant data. The wind power plant information model is used by the server to offer the client a uniform, component-oriented view of the wind power plant data. The information exchange model reflects the whole active functionality of the server. IEC 61400-25 (all parts) enables connectivity between a heterogeneous combination of client and servers from different manufacturers and suppliers.

As depicted in Figure 1, IEC 61400-25 (all parts) defines a server with the following aspects:

– information provided by a wind power plant component, e. g., “wind turbine rotor speed” or “total power production of a certain time interval” is modelled and made available for access. The information modelled in the document is defined in IEC 61400-25-2,

– services to exchange values of the modelled information defined in IEC 61400-25-3,

– mapping to a communication profile, providing a protocol stack to carry the exchanged values from the modelled information (IEC 61400-25-4).

IEC 61400-25 (all parts) only defines how to model the information, information exchange and mapping to specific communication protocols. IEC 61400-25 (all parts) excludes a definition of how and where to implement the communication interface, the application program interface and implementation recommendations. However, the objective of IEC 61400-25 (all parts) is that the information associated with a single wind power plant component (such as the wind turbine) is accessible through a corresponding logical device.

The intended readers for the present document are device or system and/or system component manufacturers and test system developers/providers.

NOTE Abbreviations used in IEC 61400-25-5 are listed in Clauses 3 and 4 or can be found in other parts of IEC 61400-25 standard series that are relevant for compliance testing.

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