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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30966.5-2022

Replacing GB/T 30966.5-2015

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

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document is part 5 of GB/T 30966 "Wind Turbine Wind Farm Monitoring System Communication". GB/T 30966 has

The following parts have been published.

- Part 1. Principles and models;
- Part 2. Information model;
- Part 3. Information exchange model;
- Part 4. Mapping to communication protocol;
- Part 5. Conformance testing;
- Part 6. Logical node classes and data classes for status monitoring.

This document replaces GB/T 30966.5-2015 "Wind Turbine Wind Farm Monitoring System Communication Part 5. Consistency

Test", compared with GB/T 30966.5-2015, except for structural adjustments and editorial changes, the main technical changes are as follows.

- Changed part of the term content (see Chapter 3, Chapter 3 of the 2015 edition);
- Added some abbreviations (see Chapter 4);
- Added the review required by the client (see 5.3.2.3);
- Changed the conformance test of the relevant equipment (see Chapter 6, Chapter 6 of the 2015 edition).

This document is equivalent to IEC 61400-25-5:2017 "Wind Turbine Generating Sets Part 25-5: Communication of Wind Farm Monitoring System -

Consistency Test".

The following minimal editorial changes have been made to this document.

--- In order to coordinate with existing standards, change the name of the standard to "Wind Turbine Wind Farm Monitoring System Communication Part 5."

Conformance Test";

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

IEC 61400-25 (all parts) addresses wind farm components (such as wind turbines) and other parts involved in generating electricity

(such as SCADA system) interconnection communication problems. IEC 61400-25 (all parts) for communication environments supported by the client-server model

For the design, the following three aspects are defined and modeled separately to ensure the scalability of the implementation.

- a) wind farm information model;
- b) information exchange model;
- c) Map these two models to a standard communication protocol.

The wind farm information model and the information exchange model work together to create a visual interface for the interaction between the client and the server. as a visiting wind

Interpretation framework of power field data, wind farm information model provides a unified, component-based view of wind farm data to the client through the server.

The information exchange model reflects the full functionality of the server. IEC 61400-25 (all parts) support from different manufacturers and suppliers

Connections between heterogeneous combinations of clients and servers. GB/T 30966 (all parts) currently consists of the following 6 parts.

--- Part 1: Principles and models. The purpose is to study the general communication between the wind farm SCADA system and the wind turbine

sexual demands.

--- Part 2: Information Model. The purpose is to specify the summary description of the

logical node class, the logical node class of the wind farm to the common logical node class definitions and requirements.

--- Part 3. Information exchange model. The purpose is to specify an information exchange model that can be used by clients and servers to access

The content and structure of the wind farm information model defined in GB/T 30966.2.

--- Part 4. Mapping to the communication protocol. The purpose is to specify a specific mapping oriented to the protocol stack, and provide a link between the client and the remote server.

Provide the required information encoding for information exchange between them.

--- Part 5. Conformance testing. The purpose is to specify the various components (such as wind turbines) and participants (such as wind turbines) in the wind farm

General requirements for communication between SCADA systems), detailing standard techniques for implementing conformance testing, and deterministic

Specific measurement techniques applied when parameters are available.

--- Part 6. Logical node classes and data classes for status monitoring. Its purpose is to control wind turbine or wind farm components or structures

Observe the components for a period of time, evaluate the state and state changes of the components or structural parts, so as to find potential faults

early signs.

Wind Turbine Wind Farm Monitoring System Communication

Part 5. Conformance testing

1 Scope

This document describes in detail the standard techniques for implementing conformance testing, as well as the specific measurement techniques applied when determining performance parameters. These

The application of technology has improved users' purchase intentions for systems with simple integration, stable operation, and support for customized applications.

As shown in Figure 1, this document defines.

--- Methods and abstract test cases for conformance testing of server and client devices in wind farms.

--- According to the communication requirements specified in IEC 61400-25 (all parts), the device needs to be measured indicators.

NOTE. The role of test equipment in conformance testing and verification of results is beyond the scope of this document.

Figure 1 IEC 61400-25 standard communication model concept

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

GB/T 30966.1 Communication of wind farm monitoring system for wind turbines - Part 1.Principles and models

(GB/T 30966.1-2022, IEC 61400-25-1.2017, IDT)

GB/T 30966.2-2022 Wind turbine wind farm monitoring system communication Part 2.Information model

(IEC 61400-25-2.2015, IDT)

GB/T 30966.3 Communication of Wind Power Plant Monitoring System for Wind Turbines Part 3.Information Exchange Model

(GB/T 30966.3-2022, IEC 61400-25-3.2015, IDT)

GB/T 30966.4 Communication of wind farm monitoring system for wind turbines - Part 4.Mapping to communication protocol