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

GB/T 42151.4-2024

**Communication networks and systems for power utility
automation - Part 4: System and project management**

电力自动化通信网络和系统 第4部分：系统和项目管理

(English Translation)

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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 4 of GB/T 42151 "Electric Power Automation Communication Networks and Systems": GB/T 42151 has been published for the following part:

- Part 3: General requirements;
- Part 4: System and project management;
- Part 5: Communication requirements for functional and device models;
- Part 7-7: IEC 61850 related data model machine processable format for tools;
- Part 8-1: Specific Communication Service Mapping (SCSM) Mapping to MMS (ISO 9506-1 and ISO 9506-2) and ISO/IEC 8802-3:

This document is equivalent to IEC 61850-4:2020 "Electric power automation communication networks and systems Part 4: System and project management":

The following minimal editorial changes were made to this document:

- For ease of understanding, add the word "conflict" in the headers of the second and third columns of the table in Figure 12 (see 6.4:4:1);
- Added "References":

Introduction

GB/T 42151 "Electric Power Automation Communication Network and System" aims to provide interoperability for all devices in the electric power automation system:

It consists of the following parts:

- Part 1: Introduction: The purpose is to introduce the overview of this document:
- Part 2: Terminology: The purpose is to list the terms and definitions used in this document:
- Part 3: General requirements: The purpose is to introduce the overall requirements of communication networks, with an emphasis on quality requirements:
- Part 4: System and project management: The purpose is to describe the requirements for system and project management processes and the requirements for engineering and testing Dedicated support tools required:
- Part 5: Communication requirements for functions and device models: The purpose is to

specify the communication requirements for various functions of the power automation system:

--- Part 6: Communication configuration description language for power automation systems related to intelligent electronic devices: The purpose is to provide a compatible exchange of intelligent electronic device capability descriptions in a way that allows for the exchange of power automation system capabilities between tools provided by different manufacturers describe:

--- Part 7: Basic communication structure of power automation system: The purpose is to define a hierarchical class model and the services provided by these classes:

services to enable communication between devices:

--- Part 8: Specific communication service mapping SCSM: The purpose is to provide substation control layer and bay layer and station control layer and Communication mapping between bay layers:

--- Part 9: Specific communication service mapping SCSM: The purpose is to provide substation bay layer and process layer and bay layer and Communication mapping between process layers:

--- Part 10: Conformance testing: The purpose is to specify the standard technology for implementing conformance testing and to use when proposing performance parameters specific measurement techniques:

This document is part 4 of GB/T 42151 "Electric Power Automation Communication Network and System", which defines the intelligent System and project management of power automation systems (UAS) with inter-electronic device (IED) communication, as well as system requirements and project management processes Requirements and requirements for special support tools used in engineering and testing:

This document is an important guide for the implementation and management of power automation system projects, and is also an important document for power automation equipment manufacturers to carry out production it is an important guiding document for product design, R&D, production and testing:

Power automation communication network and system Part 4: Systems and Project Management

1 Scope

This document specifies the system of power automation system (UAS) with communication between intelligent electronic devices (IED) in each equipment field of substation:

and project management, and related system requirements:

It includes the following aspects:

---Engineering process and its supporting tools;

--- Life cycle of the entire system and its IEDs;

---Quality assurance starting from the development phase until the UAS and its IEDs cease operation and are decommissioned:

This document also specifies requirements for system and project management processes, and for special support tools used in engineering and testing:

This document is applicable to projects related to power automation system (UAS) processes, for example, substation automation system (SAS):

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document:

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document:

tialfunctioncharts)

Note: GB/T 21654-2008 Sequential Function Chart uses GRAFCET specification language (IEC 60848:2002, IDT) ogy)

Note 1: GB/T 6988.1-2008 Preparation of electrical technical documents Part 1: Rules (IEC 61082-1:2006, IDT)

Note 2: GB/T 6988.5-2006 Preparation of electrical technical documents Part 5: Index (IEC 61082-6:1997, IDT) IEC 61175 Industrial systems, installations and equipment and industrial product signal codes Note: GB/T 16679-2009 Industrial systems, devices and equipment and industrial product signal codes (IEC 61175:2005, IDT) IEC 61850-6:2018 Power automation communication networks and systems Part 6: Power automation system communications associated with IEDs Note: DL/T 860.6-2012 Power enterprise automation communication network and system Part 6: Substation communication configuration related to intelligent electronic devices Description language (IEC 61850-6:2008, IDT) IEC 61850-7 (all parts) Power automation communication networks and systems Part 7: Basic information and communication structure (Commu-nication structure) Note: GB/T 42151.77-2024 Power automation communication networks and systems Part 7-7: IEC 61850 related data model for tools the device can process the format (IEC 61850-7-7:2018, IDT) IEC 81346 (all parts) Industrial systems, devices and equipment and industrial product structure principles and reference codes (Industrial