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

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**Information technology -- Telecommunications and information
exchange between systems -- Community energy-saving
control network protocol**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method equivalent to ISO /IEC /IEEE18880.2015 "Information Technology Ubiquitous Green Community Control Network Protocol."

The documents of our country that have a consistent correspondence with the international documents referenced in this standard are as follows.

---GB/T 7408-2005 Data element and exchange format information exchange date and time representation (ISO 8601.2000,

IDT)

This standard also made the following editorial changes.

--- In order to harmonize with the national standard system, the standard name was changed to "inter-communication and information between information technology systems"

Interest Exchange Community Energy Conservation Control Network Agreement.

Introduction

This standard defines important system components for building a digital community, including gateways for fieldbus networks, for building data sharing

The data storage and application units of the station can be used to build ubiquitous facility network infrastructure at the building and city level. This standard

In the IPv4/IPv6 network environment, the communication protocol for interconnection and data exchange between components (gateways, storage, application units) can be more

Sample devices, memory, and application services including centralized management, energy saving, environmental monitoring, alarm systems, etc. are integrated.

It is now widely accepted that deploying facility networks within buildings, houses, and factories is an effective tool for achieving energy management and energy efficiency goals.

Networking of facilities based on the TCP/IP protocol enables energy management within buildings and even within the city. However,

Most of the former systems were independently developed and operated independently, which made installation and operation costs quite high.

In general, in order to better connect sensors and actuators via the Internet in the fieldbus, we have introduced gateways.

meter. However, currently we require facility network applications of this size not simply to connect devices, these emerging applications are in the real world.

In the implementation of the Department, it is usually necessary to have (1) large-capacity memory for storing historical data of sensor readings, and (2) users supporting interactive operations.

Interface, (3) reporting system, and (4) data analyzer.

These system components can work together, especially in a network of facilities with energy-aware capabilities. However due to these systems

Components are developed independently and independently, so if there is no specific analysis, integration, and manipulation between the systems,

It is difficult to achieve collaboration or interoperability directly.

If you define a common communication protocol, you can achieve interoperability between these system components and improve the efficiency of the deployment of the facility network.

At the same time, it can reduce the cost of system integration and interoperability management, enabling the facility network to be applied to small and medium-sized

buildings, even in

Inside the house. For product suppliers, the components produced do not need to be customized, and can still be sold all over the world, sometimes with reasonable

This can achieve large-scale production.

In order to achieve energy management within the entire building and even in the city, the IEEE P18880 working group launched the ubiquitous green society.

The District Network Control Protocol Project (UGCCNet), which regulates the remote control architecture of the facility network. The scope and purpose of the project is to pass regulations

Communication protocol between network components (ie device access gateway, data storage and application unit) to achieve interoperability between components,

Thereby building a facility network infrastructure based on the Internet model. This standard was developed to support interoperability between facility network components.

And the openness of component development. First, abstract the generic facility network components through a simple component model. Then, this standard defines the group

Communication protocol between pieces. To support autonomous collaboration between components, this standard also introduces a registration mechanism.

This standard defines the basic framework for communication and aims to build a new network for facility updates, next-generation facility management and small and medium-sized facilities.

Energy saving of a scale-scale facility network. This standard extends the past facility management to transport for the purpose of achieving energy efficiency and integration of management platforms.

Battalion management. In addition, the basic framework defined in this standard can also be used for system level collaboration.

Remote communication and information exchange between information technology systems

Community Energy Conservation Control Network Protocol

1.1 Scope

This standard defines communication between components (gateways, storage, application units) and data exchange in an IPv4/IPv6 network environment.

The protocol enables the compatibility of multi-vendor devices with an open application interface on a common digital infrastructure. This standard defines the construction

Important system components of the digital community, including gateways for fieldbus networks, storage for data sharing platforms, and application notes

Yuan can be used to build ubiquitous facility network infrastructure between buildings and within the city. This standard allows multiple service providers and integrators

Distributed operations of the infrastructure define component management protocols that support distributed infrastructure interoperability. This standard also considers the phase

The security requirements should be in order to ensure the security and integrity of the data.

1.2 Purpose

This standard applies to the construction of green communities that are well managed and energy efficient, and are allowed to be included.

Interconnection of multiple building facilities, including small-scale different field networks, data sharing platforms and application units. Products based on this standard can

Achieve ubiquitous information perception, storage and display, for example, capacity and energy use, environmental status and information, human activities, HVAC

State, lighting system, weather, alarm, data analysis, data prediction, etc. This standard provides for interoperability between system components.

And share the data platform, including the realization of synergy with the control system.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 8601 data element exchange format information exchange date and time representation (Dataelementsandinterchangeformat-Informationinterchange-Representationofdatesandtimes)1)

IETF RFC793 Transmission Control Protocol [TransmissionControlProtocol(TCP)]2)

IETF RFC2460 Internet Protocol Version 6 [InternetProtocol, Version6 (IPv6) Specification]

IETF RFC3986 Uniform Resource Identifier. Generic Syntax [UniformResourceIdentifiers(URI). GenericSyntax]

IETF RFC3986 Uniform Resource Identifier. Generic Syntax [UniformResourceIdentifiers(URI). GenericSyntax]

W3C?? Extensible Markup Language [ExtensibleMarkupLanguage(XML)1.0]3), 4)