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

GB/T 28589-2024

Replacing GB/T 28589-2012

Geographic information - Positioning services

地理信息 定位服务

(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Symbols, abbreviations, previous version compatibility, UML notation and UML packages
4.1 Symbols and abbreviations
4.2 Compatibility with previous versions
4.3 UML Notation
4.4 UML Package
5 Consistency
5.1 Overview
5.2 Conformance Requirements
5.3 Structure of requirements clauses
6 Positioning Service Model
6.1 Overview
6.2 Static Data Structure of Location Service
6.3 Basic and extended information of positioning services
7 Definition and description of basic information
7.1 Overview
7.2 System Information
7.3 Time period information
7.4 Observation Information
7.5 Quality Information
7.6 Positioning Service Operation
8 Reliability of positioning results
8.1 Overview
8.2 Reliability Model
9 Specific technical information
9.1 Overview
9.2 Operating Conditions

9.3 Raw Measurement Data

Appendix A (Normative) Conformance

A.1 Overview

A.2 Consistency of the conceptual model

A.3 Consistency of positioning service requirements

A.4 Consistency of Location Service Operations

Appendix B (Informative) Positioning Service Accuracy Report

B.1 Overview

B.2 Structure of Data Quality Sub-element Descriptor

B.3 Generalization to Dataset Accuracy

Appendix C (Informative) Overview of Positioning Services

C.1 Overview

C.2 Positioning Service Process

Appendix D (Informative) GNSS operating conditions

D.1 Overview

D.2 GNSS operating conditions

D.3 GNSS calculation conditions

D.4 Measurement conditions

D.5 Raw Measurement Data

Appendix E (Informative) Reliability Evaluation Method

E.1 Overview

E.2 Evaluation Methods for Positioning Services

E.3 Evaluation methods for time period related attributes-Collection time

E.4 Evaluation methods for observation-related attributes

E.5 Evaluation methods for quality-related attributes

E.6 Calculating the degree of reliability

Appendix F (Informative) Example of extended positioning service results

F.1 Overview

F.2 Types of positioning results

Appendix G (Informative) Use Cases

G.1 Background

G.2 Key Issues

G.3 Solution

G.4 Examples

References

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 is required.

This document replaces GB/T 28589-2012 "Geographic Information Positioning Services". Compared with GB/T 28589-2012, except for the structural adjustment in addition to the integration and editorial changes, the main technical changes are as follows.

Changed the UML model (see 4.3, 4.4, 6.2, Chapter 7 and 9.2, 5.2, 5.3, 6.2, 6.3.1, Chapter 7 and 8.2.1), taking into account the concepts related to the model, the consistency with other standards, and the relationship between specific technical content and the abstract model.

independence;

The terminology items have been changed (see Chapter 3), they have been aligned with other existing standards, and unused terminology items have been deleted (see 2012 versions 4.7, 4.8, 4.9, 4.14, 4.22, and 4.28);

The definition of the abbreviation "NADyy" was deleted and the definition of the abbreviation "URI" was added (see 4.1); c) Added instructions on compatibility with previous versions (see Chapter 4); d) Added explanation on the conformance categories and conformance requirements of document definitions (see Chapter 5); e) Added observation information to the basic information of the positioning service model (see 6.1, 7.1 and 7.4), and deleted "PS_reference mode" Classes and their UML models (see 7.4.2.3 of the 2012 edition);

A set of convenient structures is added to the location service model (see Chapter 8); g) Changed the "Specific Technical Information" for the operating conditions of GNSS platforms to a specific technical information framework to support a wider range of positioning system framework (see Chapter 9, Chapter 8 of the 2012 edition).

This document is equivalent to ISO 19116:2019 "Geographic Information Location Services".

The following editorial changes were made to this document.

Replaced the letter symbols for geodetic height and gravity height (see 3.11); -Changed the informative appendix. Added "Overview of Positioning Services" (see Appendix C); added "GNSS Operating Conditions" (see Appendix D); added "Reliability Evaluation Method" (see Appendix E); added "Examples of Extended Positioning Service Results" (See Appendix F); added the informative appendix "Use Cases" (see Appendix G); deleted the informative appendix "Class Names in This Standard (See Appendix NA of the 2012 edition)

Introduction

Location service is one of the processing services defined in ISO 19119. Processing services include computation-oriented and model domain element operations.

This document defines and describes the location services.

Location services use various types of technologies to provide location and location-related information to various applications, as shown in Figure 1.

These positioning technologies differ in many aspects, but some important information items and operations are common, such as positioning data, observation time, these general information items and operations are widely used in related fields. In addition, there are some that are only used for specific positioning technologies.

information items and operations, such as signal strength, geometric factors, and raw observations, which may be helpful in correctly using positioning. Therefore, this document specifies common data elements applicable to various types of positioning services and specific data elements related to specific positioning technologies.

Figure 1 Overview of positioning services

Modern electronic positioning technology can quickly and accurately measure the coordinates of the Earth's surface or near-Earth space positions, thus enabling geographic information systems to store. However, positioning technology has neither a universal structure for expressing location information nor a universal method for expressing accuracy and reliability.

The positioning service interface specified in this document provides a variety of data structures and operations, allowing the spatial orientation system to operate with higher efficiency and interoperability.

Operational use of positioning technology.

Geographic information positioning service

1 Scope

This document specifies the data structure and content of the communication interface between the location providing device and the location using device, and provides a the method of obtaining reliable location information using specific positioning technology describes the method of obtaining and explicitly interpreting location information through the communication interface of the location-using device.

A reliability measurement method is given to determine whether the positioning result information meets the expected purpose.