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

GB/T 33188.1-2016

**Geographic information -- Reference model -- Part 1:
Fundamentals**

地理信息 参考模型 第1部分：基础

(English Translation)

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Table of Contents

Preface

Introduction

1 Scope

2 Consistency

3 Normative reference document

4 Terms, definitions and abbreviations

4.1 Terms and definitions

4.2 Abbreviations

Interoperability

5.1 Interoperability of geographic information

5.2 Geographic information interoperability in e - government

Foreword

GB/T 33188 "Geographic Information Reference Model" is divided into two parts.

Part 1. Foundation;

Part 2. Image.

This part is part 1 of GB/T 33188.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to the international standard ISO 19101-1.:2014 "Geographic Information Reference Model Part 1. Fundamentals" (English version).

This section is proposed by the National Mapping Geographic Information Service.

This section is under the jurisdiction of the National Geographic Information Standardization Technical Committee (SAC/TC230).

This part of the drafting unit. Chinese Academy of Agricultural Sciences, agricultural resources and agricultural division of the Institute, the National Basic Geographic Information Center, China Geology Research Bureau Development Research Center, Beijing Normal University.

Introduction

In addition to the traditional application requirements for digital geographic information, users of information technology recognize that location-based indexing is the organization and use of data Basic pathways. Currently, a variety of sources of various types of data through the location of the relationship is widely used in the Web (World Wide Web) on the distribution and sharing.

In fact, geographic information plays an important role in the knowledge gained from the Web as an important source. As a result, geographic information is standardized Sharing and using (and interoperating) geographic information is essential.

Geographic information standardization is a complex task involving the definition of geographic information interoperability, basic data types (such as space-time information), modeling Rules, real-world phenomena of semantics, metadata, services and other aspects. To complete this task, you can use the reference model, using integration and a consistent way to achieve. The Geographic Information Reference Model provides a comprehensive perspective on the elements of the geographic information field and One of its basic purposes is to define and describe geographic information, location-based systems, syntax, structure, and semantics.

Interoperability. The definition of geographic information interoperability will serve as the basis for the standardization of geographic information, which will help.

- to improve the understanding and use of geographic information;
- Increased access,, integration and sharing of geographic information;
- Promote the use of digital geographic information and related hardware and software systems quickly, efficiently and economically;
- a unified approach to global ecological and humanitarian issues.

This section defines the International Organization for Standardization (ISO) Geographic Information Reference Model, which provides a structured set of geographic information series Guidance, to a certain extent, can make digital geographic information is widely used. The reference model illustrates the basis of geographic information standardization, including Description, management and service, and how these three are interrelated in the geographic information field to support interoperability, how to manage in the area of geographic information Interoperability with other information fields. Therefore, this part provides a vision for the standardization of geographic information, so that geographic information and other types the integration of information is possible, and vice versa.

This reference model is described by a conceptual framework. The conceptual framework is based on interoperability description to determine geographic information standardization activities A range of mechanisms that describe the various aspects of standardization and

the interrelationships between them.

This reference model establishes the role of semantics, describes new technologies (such as Web and new ways to access the Web) and the semantic Web How to support interoperability in the geographic information field. This reference model is also provided for a specific reference model for specific aspects of geographic information standardization frame.

This reference model consists of five main chapters. Chapter 5 describes geographic information interoperability from the perspective of communication and e-government. number 6 the chapter identifies the basis of the reference model and the scope and requirements of ISO geographic information standardization activities. Chapter 7 provides an abstract real world the request. Chapter 8 details the ISO geographic information reference model and the specific requirements. Finally, Chapter 9 outlines ISO geography Information series standards related to the special standards.

This part is part 1 of GB/T 33188, and the subsequent sections describe the content, elements, and structure of interest in different areas. For example the second part of the information reference model standard describes the specific content of the image.

In order to achieve its objectives, in the ISO Geographic Information Series standard, geographic information standardization is related to geographic information and information technology Conceptual combination. The development of geographic information standards should take into account the use of general information technology standards as much as possible or modified. only when these standards are not available, only need to develop geographic information standards.

This section identifies the basic method of the structured ISO Geographic Information Series standard. The reference model is ISO/IEC 10746-1 [17] (RM-ODP), as well as other ISO -related standards and technical reports. This part does not Specify any specific product or technology that implements a geographic information system.

This section provides information systems analysts, project planners, geographic information standard compilers for ISO Geographic Information Series standards as well as other relevant personnel in order to understand the basic principles of the Geographic Information Series standards and the overall requirements for the standardization of geographic information.

This reference model is based on ontology and knowledge, with emphasis on the semantics associated with geographic information interoperability. Therefore, in the communication context the new definition of interoperability, to determine the three basic interoperability of geographic information. Based on these bases and four abstractions, one is introduced A new conceptual framework for organizing reference models.

This part also provides reference for China to formulate the standard system of geographic

information and has important guidance for the development of international standards for geographic information in China significance.

Geographic Information Reference Model Part 1. Fundamentals

1 Scope

This part of GB/T 33188 defines a standardized reference model for geographic information, describes the concept of interoperability, the Basis of Standardization of Geographic Information.

Although this part of the information technology and information technology standards in the context of the development, but this part of any application development or technology to achieve Irrelevant.

2 Consistency

ISO 19105 specifies the general consistency and testing requirements for the Geographic Information Series standards.

Any standard and specific standards that are consistent with this part shall meet all the requirements specified in the Appendix A Abstract Test Suite.

Other specific conformance requirements are described in each ISO Geographic Information Standard.

3 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

4.1 Terms and definitions

The following terms and definitions apply to this document.

4.1.1

Application Support the data manipulation and processing of user requirements.

4.1.2

Application mode applicationschema One or more conceptual models for applying the required data.

4.1.3

Basic standard basestandard Used to build special standards for ISO geographic