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

GB/T 45790.1-2025

**Geographic information - XML schema implementation - Part 1:
Encoding rules**

地理信息 XML模式实现 第1部分：编码规则

(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 1 of GB/T 45790 "Geographic Information XML Schema Implementation". GB/T 45790 has published the following part.

--- Part 1: Coding rules.

This document is equivalent to ISO/T S19139-1:2019 "Geographic Information XML Schema Implementation Part 1: Encoding Rules".

The type was adjusted from ISO 's technical specifications to our national standards.

The following minimal editorial changes were made to this document.

--- Deleted Appendix B (informative) of the original international standard.

Introduction

With the rapid development and widespread application of geographic information technology, the description, management and sharing of digital geographic information have become increasingly important.

In order to ensure the interoperability and consistency of geographic information data, the International Organization for Standardization (ISO) has developed a series of geographic information standards, including ISO 19115-1, ISO 19110, ISO 19119 and ISO 19157. By defining metadata elements, establishing common metadata terms and these standards provide a structured framework for describing digital geographic information. However, these standards do not specify how to encode metadata.

This, to a certain extent, limits cross-industry and cross-domain data sharing and services.

This document provides a set of clear rules for encoding metadata using the XML language.

The XML schema formed by describing, verifying and exchanging metadata is conducive to enhancing the interoperability of geographic information based on metadata.

GB/T 45790 "Geographic Information XML Schema Implementation" is intended to consist of one part, as follows.

--- Part 1: Encoding rules, the purpose is to provide a set of XML-based encoding rules and implementation for geographic information metadata standards this paper defines a standard XML schema to support the standardized description, validation and exchange of geographic information metadata.

The software aims to enhance the interoperability of geographic information metadata and promote data sharing and integration between different systems, platforms and applications.

The standardization goal of this document is the XML implementation of metadata, and also includes other standards in the geographic information series and those developed by other organizations.

Through the implementation of this document, we can better support the sharing and exchange of domestic geographic information data and improve the geographic information system the interoperability and data quality of the system can meet the development needs of the domestic geographic information industry.

The preparation of this document fully considers the actual situation and development needs of the domestic geographic information industry and aims to provide a reference for the development of domestic geographic information data.

Provide technical support for standardized management and application, and promote the effective use and sharing of geographic information resources.

Implementation of Geographic Information XML Schema Part 1: Coding rules

1 Scope

This document establishes XML encoding rules for the concept model of geographic information resources, which is used to standardize the concept description of geographic information resource types.

The coding rules support the UML model adopted by the national geographic information series standards and the UML special standards used by them, and use XML as the encoding for the output data structure.

The encoding rules described in this document do not apply to the UML application model encoding of geographical features (for relevant rules, please refer to ISO 19136).

2 Normative references

The contents of the following documents constitute 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.

W3CXMLName XML namespace (NamespacesinXML) W3C XML Schema-2 XML Schema Part 2: Datatypes

3 Terms and definitions

The following terms and definitions apply to this document.

Namespace

The set of names that identify, by URI reference, element and attribute names used in XML documents.

[Source. W3CXML]

package

A general mechanism for grouping elements.

Examples. identity information package, metadata entity set information package, constraint information package.

[Source. GB/T 35647-2017, 4.27, modified] 3.3 Polymorphism the property of giving something different meaning or usage depending on the context, which is manifested by allowing an entity (such as a variable, function, or object) to have different Various forms.

Note: Polymorphism has multiple different types.