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

GB/T 16263.5-2025

Replacing GB/T 16263.5-2015

**Information technology - ASN.1 encoding rules - Part 5:
Mapping W3C XML schema definitions into ASN.1
(English Translation)**

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Reference

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 5 of GB/T 16263 "Information Technology ASN.1 Encoding Rules". GB/T 16263 has published the following part.

- Part 1: Specifications of Basic Encoding Rules (BER), Regular Encoding Rules (CER) and Untypical Encoding Rules (DER);
- Part 2: Specification of Restricted Encoding Rules (PER);
- Part 4: XML Encoding Rules (XER);
- Part 5: Mapping of W3C XML Schema Definitions to ASN.1.

This document replaces GB/T 16263.5-2015 "Information Technology ASN.1 Encoding Rules Part 5: W3C XML Schema Definition" Compared with GB/T 16263.5-2015, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) Changed the provisions for blank constraints with retain or replace values in enumeration constraints (see 12.4.1.4, 2015 edition) 12.4.1.4);

b) Changed the ASN.1 choice type representation for special-purpose simple and complex type definition mappings when the value constraint is a fixed value.

(See 24.8.2 and 24.8.3, 2015 edition 24.8.2 and 24.8.3).

This document is equivalent to ISO/IEC 8825-5:2021 "Information technology ASN.1 encoding rules Part 5: W3C XML schema" Defining the mapping to ASN.1.

Introduction

This document specifies the conversion of a W3C XML Schema Definition (an XSD schema) to an Abstract Syntax Notation One (ASN.1) schema.

Version 1 mapping and version 2 mapping. These mappings can be applied to any XSD schema. Both mappings are identical to the ASN.1 XER encoding instructions.

Together they describe the generation of one or more ASN.1 modules containing type definitions.

ASN.1 schema (resulting from any version mapping) is consistent with the ASN. Extended XML Encoding Rules (EX-TENDED-XER) can be used to generate and validate W3CXML1.0 document sets that are identical to the original XSD schema.

The generated ASN.1 types and encodings will support the same semantic content as the XSD schema.

When converting ASN.1 files to XSD files, ASN.1 tools can be used interchangeably with XSD tools.

Other standardized ASN.1 encodings, such as the Regular Encoding Rules (DER) or the Persistent Encoding Rules (PER), may be used with this document.

The mappings are used together to generate the encoding of the second version of the mapping. Compared with the encoding generated by the first version of the mapping, it involves more the date and time types and wildcards are different (also, less redundant).

This document, combined with the ASN.1 encoding rules, provides a fully standardized and vendor-independent implementation of data originally defined using XSD schemas.

A compact and canonical binary encoding of.

ASN.1 schemas are specifications for the information content of messages (abstract syntax) and the exact format of XML documents (e.g., the use of attributes instead of elements).

The result is a clearer and usually less redundant schema than the original XSD schema.

Appendix A is a normative appendix. It is an ASN.1 module that contains the XSD built-in types corresponding to the first version of the mapping in this document.

A set of ASN.1 type definitions. The XSD schema to ASN.1 schema mapping can be imported using the type reference name of this type definition.

to include built-in type definitions.

Appendix B is a normative annex that provides the second version of the mapping of the ASN.1 modules in this document.

Appendix C is an informative appendix that describes the object identifiers, OIDs, and object descriptions assigned by this document.

Symbol value.

Appendix D is an informative appendix that gives an example of mapping from an XSD schema to an ASN.1 schema.

Appendix E is an informative appendix that describes the use of the mapping defined in this document together with the standardized ASN.1 encoding rules.

Use XSD schemas to define data and provide both compact and atypical encodings.

GB/T 16263 is intended to consist of eight parts.

--- Part 1: Basic Encoding Rules (BER), Regular Encoding Rules (CER) and Untypical Encoding Rules (DER) specifications, the purpose of to specify a set of basic encoding rules.

--- Part 2: Specification of Restricted Encoding Rules (PER) aims to define a set of restricted encoding rules.

--- Part 3: Encoding Control Notation (ECN) specification, the purpose is to standardize the ASN.1 encoding control notation.

--- Part 4: XML Encoding Rules (XER), the purpose of which is to specify the Basic XML Encoding Rules (BASIC-XER), regular XML Encoding Rules Set (CXER) and Extended XML Encoding Rules Set (EXTENDED-XER).

--- Part 5: Mapping of W3C XML Schema Definitions to ASN.1, the purpose of which is to specify the mapping from any XSD schema to an ASN.1 schema There are two versions of the mapping.

--- Part 6: Registration and application of PER coded instructions. The purpose is to specify the format, mechanism, registration authority and operation of PER coded instructions.

Methods for associating PER with ASN.1.

--- Part 7: Octet Encoding Rules (OER) specification, which aims to provide constraints for the basic octet encoding rules and any given ASN.1 value generates a unique encoding.

--- Part 8: JavaScript Object Notation Encoding Rules (JER) specification, which aims to specify a set of JavaScript object representation JSON encoding rules for applications that interoperate with JSON.

Information technology ASN.1 encoding rules Part 5: W3C XML Schema Definition ASN.1 Mapping