

ICS 07.040; 35.240.70
CCS A 75



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

GB/T 33187.2-2016

**Geographic information -- Simple feature access -- Part 2: SQL
option**

地理信息 简单要素访问 第2部分：SQL选项
(English Translation)

Issued on: October 13, 2016

Implemented on: February 1, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

Table of Contents

Preface	
Introduction	
1 Scope	
2 Consistency	
3 Normative references	
4 Terms and definitions	
5 Symbols and abbreviations	
6 Architecture	
6.1 Architecture - SQL Implementation Based on Predefined Data Type Feature Tables	
6.2 Architecture - Feature Tables with Geometry Extension SQL Implementation	
7 Component Terms and Conditions	
7.1 Components - Implementation of a feature table based on predefined data types	
7.2 Component - the geometry of the feature table SQL implementation	
Appendix A (Informative) Simple Feature Access - Comparison of SQL and SQL/MM Spaces	
Appendix B (Normative) Conformance testing	
Appendix NA (Informative) Amendment of Wrong Text	

Foreword

GB/T 33187 Simple Elements of Geographic Information Access is divided into two parts.

--- Part 1. General architecture;

--- Part 2. SQL options.

This section GB/T 33187 Part 2.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method is equivalent to using ISO 19125-2:2004 "simple geographic information access Part 2. SQL election item".

This section made the following editorial changes.

- a) Publish the year to ISO 19109 in chapter 3;
- b) Replace "UTM10" in the last sentence of paragraphs 6.1.3 and 6.2.3 of the original text with an example of practical application in our country. "Gaussian-gram Lüg 6 degrees belt

";

c) Replace the source for "SQLINFORMATION_SCHEMA" in 6.2.2 with "ISO 13249-3 in SQL INFORMATION_SCHEMA";

d) Uniformly translate GeometryType into "Geometry Type";

e) An informative appendix NA was added, amending the text incorrectly.

This section proposed by the National Geographic Information Bureau.

This part of the National Geographic Information Standardization Technical Committee (SAC/TC230) centralized.

This section drafting unit. Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Wuhan University, Beijing Normal University, Chinese Academy of Sciences Information workers Cheng Institute, Beijing Shan Haishu Stone Information Technology Co., Ltd., Fujian Normal University, Eurasian Systems Science Research Association.

Introduction

This section defines a structured query language (SQL) mode, the mode through the SQL access layer interface (SQL/CLI) (ISO/IEC 9075-3:2003) Supports the storage, retrieval, querying and updating of feature geometry collections. Features have both spatial and non-spatial attributes.

Its spatial properties are geometric values and simple features are based on 2-dimensional Geometry with linear interpolation between nodes. This part depends on GB/T 33187.1-2016 common components defined in the framework.

In SQL implementations, feature sets are stored as tables. Each row in the table holds an element, and the columns of the table hold the geometry. Feature set Co-located non-spatial attributes map to the table column, the type from the standard SQL data type set. The spatial attributes of the feature set are also mapped as Column, its SQL data type is based on the underlying concept of additional geometric data types. A table of elements is called a feature table (Featuretable). The table contains one or more columns of geometry values. The description of the feature table schema contains SQL based on predefined data types Implements and implements SQL with GeometryType.

In implementations based on predefined data types, the Geometry value column is defined by a foreign key (ForeginKey) that references a GeometryTable achieve. Geometry with geometric table one to many lines of storage. Geometric tables can use the standard SQL numeric, SQL binary classes can also be used Type realization. This section gives a corresponding description of both modes.

The term "with geometry type SQL" is used to refer to an SQL implementation that extends

the geometry type set. In this environment, the geometric value column is taken as Column from SQL geometry type set implementation. The mechanism for extending the type system implemented by SQL is through user-defined types (UDTs) Now. Since mid-1997, commercial SQL implementations have been supporting user-defined types.

Geographic Information Simple Elements Access Part 2. SQL options

1 Scope

This section GB/T 33187 defines a Structured Query Language (SQL) mode, the mode through the SQL Access Layer Interface (SQL/CLI) (ISO/IEC 9075-3:2003) Supports storage, retrieval, querying and updating of feature geometry collections.

This part of the establishment of the structure of the implementation of the elements of the table.

This section defines the terminology used in this architecture.

This section defines a GB/T 23707-2009 simple element-specific standards.

This section describes a set of SQL geometry and its SQL functions. The geometry types and functions described in this section represent ISO 13249-3.

2003 special standard.

This section does not attempt to rely on any part of the mechanisms listed in the SQL environment to add or maintain geometric types, nor Try to standardize it.

- a) the syntax and function used to define the type;
- b) syntax and function for defining SQL functions;
- c) physical storage of instances of the geometry type in the database;
- d) Glossary of terms used to refer to a user-defined type, for example, UDT.

This part of the specification.

--- SQL geometry type name and its geometric definitions.

--- SQL geometry function name, signature and geometry definitions.

This section describes the elements based on GB/T 23707-2009 standard access SQL implementation. The national standard is not how to include There are no requirements as to when, how, or who defined the geometry type in the schema. In particular, one A compatible system can be built into the SQL implementation of geometric types and function set published to the database user can also be dynamically extended SQL to provide database users with geometric types and function sets, but also can be provided in any other way not mentioned in this section user.

2 Consistency

In order to maintain consistency with the entire standard, this section should meet one of the following three conformance class requirements, the same applies to GB/T 33187 part 1.

- a) The feature table SQL implementation based on predefined data types.
 - 1) Use numerical SQL type storage geometry, access with SQL/CLI;
 - 2) Store geometry with binary SQL types, accessed with SQL/CLI;
- b) Geometric types of feature tables that support text and binary SQL/CLI access
Implement SQL.

Appendix B describes the implementation of this part of the conformance test.

3 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article