Australian Standard™

Information technology—Database languages—SQL multimedia and application packages

Part 3: Spatial

STANDARDS AUSTRALIA

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Part 3: Spatial

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-027, Data Management & Interchange.

This Standard is identical with, and has been reproduced from, ISO/IEC 13249-3:2003, *Information technology—Database languages—SQL multimedia and application packages*—Part 3: *Spatial*.

The objective of this Standard is to define spatial data types and their associated routines for use in SQL databases by software developers.

This Standard is Part 3 of AS 3249, *Information technology—Database languages—SQL multimedia and application packages*, which is published in parts as follows:

Part 1: Framework
Part 2: Full-Text
Part 3: Spatial (this Standard)
Part 5: Still image
Part 6: Data mining

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover.

(b) In the source text 'this part of ISO/IEC 13249' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO/IEC		AS ISO/IEC	
9075	Information technology—Database languages—SQL (all parts)	9075	Information technology—Database languages—SQL (all parts)
13249	Information technology—Database languages—SQL multimedia and application packages	13249	Information technology—Database languages—SQL multimedia and application packages
13249-1	Part 1: Framework	13249.1	Part 1: Framework
ISO		AS/NZS ISO	
19111	Geographic information—Spatial referencing by coordinates	19111	Geographic information—Spatial referencing by coordinates

Only referenced documents that have been adopted as Australian or Australian/New Zealand Standards have been listed.

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INTRODUCTION

The purpose of this International Standard is to define multimedia and application specific types and their associated routines using the user-defined features in ISO/IEC 9075.

This document is based on the content of ISO/IEC International Standard Database Language (SQL).

The organization of this part of ISO/IEC 13249 is as follows:

1) Clause 1, "Scope", specifies the scope of this part of ISO/IEC 13249.
2) Clause 2, "Normative references", identifies additional standards that, through reference in this part of ISO/IEC 13249, constitute provisions of this part of ISO/IEC 13249.
3) Clause 3, "Definitions, notations, and conventions", defines the notations and conventions used in this part of ISO/IEC 13249.
4) Clause 4, "Concepts", presents concepts used in the definition of this part of ISO/IEC 13249.
5) Clause 5, "Geometry Types", defines the geometry supertype.
6) Clause 6, "Point Types", defines primitive 0-dimensional geometry types.
7) Clause 7, "Curve Types", defines primitive 1-dimensional geometry types.
8) Clause 8, "Surface Types", defines primitive 2-dimensional geometry types.
9) Clause 9, "Geometry Collection Types", defines the geometry collection types.
10) Clause 10, "Spatial Reference System Types", defines the user-defined type to manage spatial reference systems.
11) Clause 11, "Angle and Direction Types", defines the angles and direction types.
12) Clause 12, "Support Routines", defines supporting functions and procedures used by this part of ISO/IEC 13249.
13) Clause 13, "SQL/MM Spatial Information Schema" defines the SQL/MM Spatial Information Schema.
14) Clause 14, "SQL/MM Spatial Definition Schema" defines the SQL/MM Spatial Definition Schema.
15) Clause 15, "Status Codes", defines the SQLSTATE codes used in this part of ISO/IEC 13249.
16) Clause 16, "Conformance", defines the criteria for conformance to this part of ISO/IEC 13249.
17) Annex A, "Implementation-defined elements", is an informative Annex. It lists those features for which the body of this part of ISO/IEC 13249 states that the syntax or meaning or effect on the database is partly or wholly implementation-defined, and describes the defining information that an implementer shall provide in each case.
18) Annex B, "Implementation-dependent elements", is an informative Annex. It lists those features for which the body of this part of ISO/IEC 13249 states explicitly that the meaning or effect on the database is implementation-dependent.
19) Annex C, “Incompatibilities with ISO/IEC 13249-3:1999”, is an informative Annex. It lists incompatibilities with the previous version of this part of ISO/IEC 13249-3.
20) Annex D, "Geometry Type Hierarchy", is an informative Annex. It visually describes the inheritance relationship between user-defined types in this part of ISO/IEC 13249.
21) Bibliography is the last informative Annex. It is a list of selective reading relating to this part of ISO/IEC 13249.

In the text of this part of ISO/IEC 13249, Clauses begin a new odd-numbered page, and in Clause 5, "Geometry Types", through Clause 11, "Angle and Direction Types", subclauses begin a new page. Any resulting blank space is not significant.

NOTES

AUSTRALIAN STANDARD

Information technology—Database languages—SQL multimedia and application packages

Part 3: Spatial

1 Scope

This part of ISO/IEC 13249:

a) introduces the Spatial part of ISO/IEC 13249,

b) gives the references necessary for this part of ISO/IEC 13249,

c) defines notations and conventions specific to this part of ISO/IEC 13249,

d) defines concepts specific to this part of ISO/IEC 13249,

e) defines spatial user-defined types and their associated routines.

The spatial user-defined types defined in this part adhere to the following:

— A spatial user-defined type is generic to spatial data handling. It addresses the need to store, manage and retrieve information based on aspects of spatial data such as geometry, location, and topology.

— A spatial user-defined type does not redefine the database language SQL directly or in combination with another spatial data type.

Implementations of this part of ISO/IEC 13249 may exist in environments that also support geographic information, decision support, data mining, and data warehousing systems.

Application areas addressed by implementations of this part of ISO/IEC 13249 include, but are not restricted to, automated mapping, desktop mapping, facilities management, geoengineering, graphics, multimedia, and resource management applications.