TECHNICAL SPECIFICATION

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Information technology — Database languages — SQL multimedia and application packages —

Part 7: History

Technologies de l'information — Langages de bases de données — Multimédia SQL et paquetages d'application —

Partie 7: Historique

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, the joint technical committee may decide to publish an ISO/IEC Technical Specification (ISO/IEC TS), which represents an agreement between the members of the joint technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/IEC TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/IEC TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 13249-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

ISO/IEC 13249 consists of the following parts, under the general title *Information technology — Database languages — SQL multimedia and application packages*:

— *Part 1: Framework*

— *Part 2: Full-Text*

— *Part 3: Spatial*

— *Part 5: Still image*

— *Part 6: Data mining*

— *Part 7: History* [Technical Specification]

Introduction

The purpose of ISO/IEC 13249 is to define multimedia and application specific types and their associated routines using the user-defined features in ISO/IEC 9075.

ISO/IEC 13249 is based on the content of ISO/IEC International Standard Database Language (SQL).

The organization of this Technical Specification is as follows:

1) Clause 1, "Scope", specifies the scope of this Technical Specification.

2) Clause 2, "Normative references", identifies additional standards that, through reference in this Technical Specification, constitute provisions of this Technical Specification.

3) Clause 3, "Terms, definitions, notations, and conventions", defines the definitions, concepts, notations and conventions used in this Technical Specification.

4) Clause 4, "Concepts", presents concepts used in the definition of this Technical Specification.

5) Clause 5, "History Procedures", defines the history associated routines.

6) Clause 6, "History Types", defines the user-defined types provided for the manipulation of history.

7) Clause 7, "SQL/MM History Information Schema" defines the SQL/MM History Information Schema.

8) Clause 8, "SQL/MM History Definition Schema" defines the SQL/MM History Definition Schema.

9) Clause 9, "Status Codes", defines the SQLSTATE codes used in this Technical Specification.

10) Clause 10, "Conformance", defines the criteria for conformance to this Technical Specification.

In the text of this Technical Specification, clauses begin a new page. Any resulting blank space is not significant.

The history user-defined types and routines defined in this Technical Specification adhere to the following:

a) A history user-defined type and routine are generic to history data handling. History user-defined types and routines provide the means to record changes to the rows of a persistent base table in an SQL database, so that applications using such a persistent base table shall be completely independent of whether there is any recording of changes. This means that, when changes are to be recorded, an application does not need to be modified and its behaviour remains the same.

b) History user-defined types and routines provide the means to query the recorded changes for such a table.

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

The scope of this Technical Specification is limited to support for history when there are no changes to the definition of the tracked columns of a tracked table. The following operations are not supported in this Technical Specification:

a) DROP COLUMN operation to a tracked column of a tracked table.

b) ALTER COLUMN operation to a tracked column of a tracked table except changes of the default value.

The scope of this Technical Specification is limited to support for history when a tracked table has at least one unique constraint with NOT NULL that is not modified by any ALTER TABLE statements.

If a transaction does not have an isolation level that is SERIALIZABLE, the results in the recorded history are implementation-dependent.

Information technology — Database languages — SQL multimedia and application packages —

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1 Scope

The ISO/IEC 13249 series defines a number of packages of generic data types common to various kinds of data used in multimedia and application areas, to enable that data to be stored and manipulated in an SQL database.

This Technical Specification:

a) defines concepts specific to this Technical Specification;

b) defines history user-defined types and their associated routines.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9075-1:2008, *Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework)*

ISO/IEC 9075-2:2008, *Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation)*

ISO/IEC 9075-4:2008, *Information technology — Database languages — SQL — Part 4: Persistent Stored Modules (SQL/PSM)*

ISO/IEC 9075-11:2008, *Information technology — Database languages — SQL — Part 11: Information and Definition Schemas (SQL/Schemata)*

ISO/IEC 13249-1:2007, *Information technology — Database languages — SQL multimedia and application packages — Part 1: Framework*