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

**Part 5:
Still Image**

iTeh STANDARD PREVIEW

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

Partie 5: Image fixe

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Contents	Page
Foreword	vi
Introduction	vii
1 Scope	1
2 Normative references	3
3 Definitions, notations, and conventions.....	5
3.1 Definitions.....	5
3.1.1 Definitions provided in Part 1	5
3.1.2 Definitions provided in Part 5	5
3.1.3 Definitions taken from ISO/IEC 9075	6
3.1.4 Definitions taken from ISO/IEC 10918-1	6
3.2 Notations.....	7
3.2.1 Notations provided in Part 1	7
3.2.2 Notations provided in Part 5	7
3.3 Conventions.....	8
4 Concepts	9
4.1 Introduction	9
4.2 Concepts taken from ISO/IEC 9075	11
4.3 Types representing digital images	12
4.3.1 Attributes of the SI_StillImage type.....	12
4.3.2 Methods of the SI_StillImage type	12
4.4 Image features	14
4.4.1 Feature types	14
4.4.2 Assessing the similarity of images	15
4.5 Complementary SQL-invoked regular functions	16
4.6 Auxiliary type SI_Color	20
4.7 The Still Image Information Schema	21
5 Still Image Types	22
5.1 SI_StillImage Types and Routines.....	22
5.1.1 SI_StillImage Type.....	22
5.1.2 SI_StillImage Methods	26
5.1.3 SI_setContent Method	28
5.1.4 SI_changeFormat Method	29
5.1.5 SI_Thumbnail Methods.....	31
5.1.6 Functions Complementing SI_StillImage Methods	33
5.1.7 SI_chgContent Function.....	34
5.1.8 SI_convertFormat Function	35
5.1.9 SI_getThumbnail Function	36
5.1.10 SI_getSizedThmbnl Function.....	37
5.1.11 Functions Complementing Observer Functions of Type SI_StillImage	38
5.1.12 Functions not intended for Public Use	40
6 Feature Types	47
6.1 SI_AverageColor Type and Routines	47
6.1.1 SI_AverageColor Type.....	47
6.1.2 SI_AverageColor Methods	49
6.1.3 SI_Score Method	53
6.1.4 SI_fndAverageColor Function	54
6.1.5 SI_mkAverageColor Function.....	55
6.1.6 SI_ScoreByAvrgClr Function	56
6.2 SI_ColorHistogram Type and Routines	57
6.2.1 SI_ColorHistogram Type	57

6.2.2	SI_ColorHistogram Methods.....	61
6.2.3	SI_Append Method.....	64
6.2.4	SI_Score Method.....	66
6.2.5	SI_findColorHstgrm Function.....	67
6.2.6	SI_mkColorHstgrm Function.....	68
6.2.7	SI_arrayClrHstgrm Function.....	69
6.2.8	SI_appendClrHstgrm Function.....	70
6.2.9	SI_ScoreByClrHstgr Function.....	71
6.3	SI_PositionalColor Type and Routines.....	72
6.3.1	SI_PositionalColor Type.....	72
6.3.2	SI_PositionalColor Method.....	74
6.3.3	SI_Score Method.....	76
6.3.4	SI_findPositColor Function.....	77
6.3.5	SI_ScoreByPositClr Function.....	78
6.4	SI_Texture Type and Routines.....	79
6.4.1	SI_Texture Type.....	79
6.4.2	SI_Texture Method.....	81
6.4.3	SI_Score Method.....	82
6.4.4	SI_findTexture Function.....	83
6.4.5	SI_ScoreByTexture Function.....	84
6.5	SI_FeatureList Type and Routines.....	85
6.5.1	SI_FeatureList Type.....	85
6.5.2	SI_FeatureList Method.....	89
6.5.3	SI_setFeature Methods.....	91
6.5.4	SI_Score Method.....	95
6.5.5	SI_mkFeatureList Function.....	97
6.5.6	SI_ScoreByFtrList Function.....	98
6.5.7	Regular Functions Complementing SI_setFeature Methods.....	99
6.5.8	Regular Functions Complementing Observer Functions of type SI_FeatureList.....	101
6.6	Auxiliary Types and Routines.....	105
6.6.1	SI_Color Type.....	105
6.6.2	SI_RGBColor Method.....	106
6.6.3	SI_mkRGBColor Function.....	108
7	SQL/MM Still Image Information Schema.....	110
7.1	Introduction.....	110
7.2	SI_IMAGE_FORMATS view.....	111
7.3	SI_IMAGE_FORMAT_CONVERSIONS view.....	112
7.4	SI_IMAGE_FORMAT_FEATURES view.....	113
7.5	SI_THUMBNAIL_FORMATS view.....	114
7.6	SI_VALUES view.....	115
7.7	Short name views.....	116
8	SQL/MM Still Image Definition Schema.....	118
8.1	Introduction.....	118
8.2	SI_IMAGE_FORMATS base table.....	119
8.3	SI_IMAGE_FORMAT_CONVERSIONS base table.....	120
8.4	SI_IMAGE_FORMAT_FEATURES base table.....	121
8.5	SI_THUMBNAIL_FORMATS base table.....	122
8.6	SI_VALUES base table.....	123
9	Status Codes.....	124
10	Conformance.....	127
10.1	Requirements for conformance.....	127
10.2	Claims of conformance.....	132
Annex A	133
A.1	Implementation-defined Meta-variables.....	134
Annex B	135
B.1	Implementation-dependent Meta-variables.....	137
Index	138

Tables	Page
Table 1 – Method and function name correspondences.....	16
Table 2 – SQLSTATE class and subclass values	124

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 13249 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 13249-5 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 4: General purpose facilities

— Part 5: Still Image

— Part 6: Data Mining

Annexes A and B of this part of ISO/IEC 13249 are for information only.

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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, "Still Image Types", defines the still image user-defined types and associated routines.
- 6) Clause 6, "Feature Types", defines the user-defined types provided for the manipulation of still image features.
- 7) Clause 7, "SQL/MM Still Image Information Schema" defines the SQL/MM Still Image Information Schema.
- 8) Clause 8, "SQL/MM Still Image Definition Schema" defines the SQL/MM Still Image Definition Schema.
- 9) Clause 9, "Status Codes" defines the SQLSTATE codes used in this part of ISO/IEC 13249.
- 10) Clause 10, "Conformance", defines the criteria for conformance to this part of ISO/IEC 13249.
- 11) 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 implementor shall provide in each case.
- 12) 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.

In the text of this part of ISO/IEC 13249, Clauses begin a new odd-numbered page, and in Clause 5, "Still Image Types", through Clause 10, "Conformance", Subclauses begin a new page. Any resulting blank space is not significant.

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

Part 5: Still Image

1 Scope

This part of ISO/IEC 13249:

- a) introduces the Still Image part of ISO/IEC 13249,
- b) gives the references necessary for this part of this part of ISO/IEC 13249,
- c) defines notations and conventions specific to this part of this part of ISO/IEC 13249,
- d) defines concepts specific to this part of this part of ISO/IEC 13249,
- e) defines the still image user-defined types and their associated routines.

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

- A still image user-defined type is generic to image data handling. It addresses the need to store, manage and retrieve information based on aspects of image data such as height, width and format and based on image features such as average color, color histogram, positional color and texture.
- A still image user-defined type does not redefine the database language SQL directly or in combination with another still image data type.

The still image user-defined types are applicable to all different image formats. However, not all functionality can be used with all known still image formats.

An implementation of this part of ISO/IEC 13249 may exist in environments that also support information and content management, 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, graphics, multimedia, scientific research, and medicine.

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2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 13249. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 13249 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 9075-1:1999, *Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework)*.

ISO/IEC 9075-2:1999, *Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation)*.

ISO/IEC 9075-4:1999, *Information technology — Database languages — SQL — Part 4: Persistent Stored Modules (SQL/PSM)*.

ISO/IEC 13249-1:2000, *Information technology — Database languages — SQL multimedia and application packages — Part 1: Framework*.

ISO/IEC 10918-1:1994, *Information technology — Digital compression and coding of continuous-tone still images: Requirements and guidelines*.

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3 Definitions, notations, and conventions

3.1 Definitions

For the purposes of this part of ISO/IEC 13249, the following definitions apply.

3.1.1 Definitions provided in Part 1

This part of ISO/IEC 13249 makes use of all terms defined in Part 1 of ISO/IEC 13249.

3.1.2 Definitions provided in Part 5

This part of ISO/IEC 13249 defines the following terms:

3.1.2.1

basic image feature

a basic image feature is an image feature that is not a composite feature

3.1.2.2

color space

a set of conventions how to represent a color value

3.1.2.3

composite feature

an image feature which consists of basic image features and their associated weights

3.1.2.4

image format

a set of conventions for storing the image data of digital images in a specific compressed or uncompressed interchange format

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3.1.2.5

image feature

characteristic (other than inherent image characteristics) of the image data

3.1.2.6

inherent image characteristics

image format and particular physical characteristics of a digital image

3.1.2.7

list of weighted features

see composite feature

3.1.2.8

picture element

see sample in Subclause 3.1.4, "Definitions taken from ISO/IEC 10918-1"

3.1.2.9

raw image

a binary string that represents a certain image

3.1.2.10

similarity of images

a numerical measure obtainable by the comparison of two images; the measure is based on image features

ISO/IEC 13249-5:2001(E)

3.1 Definitions

3.1.2.11

thumbnail

a raw image which was obtained from another raw image by downsizing

3.1.3 Definitions taken from ISO/IEC 9075

This part of ISO/IEC 13249 makes use of the following terms defined in ISO/IEC 9075:

3.1.4 Definitions taken from ISO/IEC 10918-1

This part of ISO/IEC 13249 makes use of the following terms defined in ISO/IEC 10918-1:

- a) columns

NOTE 1 The use of "columns" here is as defined in the JPEG standard and not as defined in the SQL standard.

- b) component

- c) (digital) (still) image

NOTE 2 Parentheses around the text "digital" and "still" is a convention used by ISO/IEC 10918-1 to denote that the phrases "digital image", "still image", and "image" are interchangeable.

- d) image data

- e) interchange format

- f) (number of) lines

NOTE 3 Parentheses around the text "number of" is a convention used by ISO/IEC 10918-1 to denote that the phrases "number of lines" and "lines" are interchangeable.

- g) sample

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3.2 Notations

3.2.1 Notations provided in Part 1

The notations used in this part of ISO/IEC 13249 are defined in Part 1 of ISO/IEC 13249.

3.2.2 Notations provided in Part 5

This part of ISO/IEC 13249 uses the prefix 'SI_' for user-defined types, attributes and SQL-invoked routine names.

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