**INTERNATIONAL STANDARD ISO/IEC 9075-3:1999**
TECHNICAL CORRIGENDUM 2

Published 2003-06-01

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION
INTERNATIONAL ELECTROTECHNICAL COMMISSION • МЕЖДУНАРОДНАЯ ЭЛЕКТРОТЕХНИЧЕСКАЯ КОМИССИЯ • COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

# Information technology — Database languages — SQL —

## Part 3:
## Call-Level Interface (SQL/CLI)

TECHNICAL CORRIGENDUM 2

*Technologies de l'information — Langages de base de données — SQL —*

*Partie 3: Interface de niveau d'appel (SQL/CLI)*

*RECTIFICATIF TECHNIQUE 2*

Technical Corrigendum 2 to ISO/IEC 9075-3:1999 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*. ISO/IEC 9075-3:1999/Cor. 2:2003 cancels and replaces ISO/IEC 9075-3:1999/Cor. 1:2000.

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**Statement of purpose for rationale:**

A statement indicating the rationale for each change to ISO/IEC 9075 is included. This is to inform the users of that standard as to the reason why it was judged necessary to change the original wording. In many cases the reason is editorial or to clarify the wording; in some cases it is to correct an error or an omission in the original wording.

**Notes on numbering:**

Where this Corrigendum introduces new Syntax, Access, General and Conformance Rules, the new rules have been numbered as follows:
Rules inserted between, for example, Rules 7) and 8) are numbered 7.1), 7.2), etc. [or 7) a.1), 7) a.2), etc.]. Those inserted before Rule 1) are numbered 0.1), 0.2), etc.
Where this Corrigendum introduces new Subclauses, the new subclauses have been numbered as follows:
Subclauses inserted between, for example, Subclause 4.3.2 and 4.3.3 are numbered 4.3.2a, 4.3.2b, etc.
Those inserted before, for example, 4.3.1 are numbered 4.3.0, 4.3.0a, etc.

**ICS 35.060** **Ref. No. ISO/IEC 9075-3:1999/Cor.2:2003(E)**

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Published in Switzerland

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Full document details: ISO_IEC 9075-3_1999_Cor 2_2003

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# Information technology — Database languages — SQL —

Part 3:
**Call-Level Interface (SQL/CLI)**

TECHNICAL CORRIGENDUM 2

### 3.1.1.Definitions provided in Part 3

*1. Rationale: Provide missing definition*

Insert the following item:

a.0) **data source**: A synonym for the SQL-server that is part of the current connection.

### 3.3.2.1 Clause, subclause and table relationships

*1. Rationale: Separating data type correspondence tables in Foundation and CLI.*

Replace the following rows from Table 1 "Clause, Subclause, and Table relationships":

| Clause, Subclause, or Table in this part of /ISO/IEC 9075 | Corresponding Clause, Subclause, or Table from another part | Part containing correspondence |
|---|---|---|
| Subclause 5.15, "Data type correspondences" | Subclause 13.6, "Data type correspondences" | ISO/IEC 9075-2 |
| Table 44, "Data type correspondences for Ada" | Table 18, "Data type correspondences for Ada" | ISO/IEC 9075-2 |
| Table 45, "Data type correspondences for C" | Table 18, "Data type correspondences for C" | ISO/IEC 9075-2 |
| Table 46, "Data type correspondences for COBOL" | Table 18, "Data type correspondences for COBOL" | ISO/IEC 9075-2 |
| Table 47, "Data type correspondences for Fortran" | Table 18, "Data type correspondences for Fortran" | ISO/IEC 9075-2 |
| Table 48, "Data type correspondences for MUMPS" | Table 18, "Data type correspondences for MUMPS" | ISO/IEC 9075-2 |
| Table 49, "Data type correspondences for Pascal" | Table 18, "Data type correspondences for Pascal" | ISO/IEC 9075-2 |
| Table 50, "Data type correspondences for PL/I" | Table 18, "Data type correspondences for PL/I" | ISO/IEC 9075-2 |

with the following rows:

| Clause, Subclause, or Table in this part of /ISO/IEC 9075 | Corresponding Clause, Subclause, or Table from another part | Part containing correspondence |
|---|---|---|
| Subclause 5.15, "SQL/CLI data type correspondences" | *none* | *none* |
| Table 44, "SQL/CLI data type correspondences for Ada" | *none* | *none* |

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| | | |
|---|---|---|
| Table 45, "SQL/CLI data type correspondences for C" | *none* | *none* |
| Table 46, "SQL/CLI data type correspondences for COBOL" | *none* | *none* |
| Table 47, "SQL/CLI data type correspondences for Fortran" | *none* | *none* |
| Table 48, "SQL/CLI data type correspondences for MUMPS" | *none* | *none* |
| Table 49, "SQL/CLI data type correspondences for Pascal" | *none* | *none* |
| Table 50, "SQL/CLI data type correspondences for PL/I" | *none* | *none* |

### 4.4.5 Connection attributes

1. *Rationale: Remove the anomaly in <savepoint specifier> and correct the specification of which locators are marked invalid when an SQL-transaction ends.*

Replace the 5th paragraph with:

The SAVEPOINT NAME connection attribute specifies the savepoint to be referenced in an invocation of the EndTran routine that uses the SAVEPOINT NAME ROLLBACK or SAVEPOINT NAME RELEASE CompletionType. The SAVEPOINT NAME attribute is set to a zero-length string when the SQL-connection is allocated.

## 5.1 <CLI routine>

1. *Rationale: Add missing rule.*

Insert the following Syntax Rule:

8.1) There shall be no <separator> between the <CLI name prefix> and the <CLI generic name>

2. *Rationale: Separating data type correspondence tables in Foundation and CLI.*

Replace Syntax Rule 12) with:

12) Let *operative data type correspondence table* be the data type correspondence table for *HL* as specified in Subclause 5.15, "SQL/CLI data type correspondences". Refer to the two columns of the operative data type correspondence table as the "SQL data type column" and the "host data type column".


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## 5.3 Description of CLI item descriptor areas

1. *Rationale: Separating data type correspondence tables in Foundation and CLI.*

Replace General Rule 6) with:

6) Let *HL* be the standard programming language of the invoking host program. Let *operative data type correspondence table* be the data type correspondence table for *HL* as specified in Subclause 5.15, "SQL/CLI data type correspondences". Refer to the two columns of the operative data type correspondence table as the *SQL data type column* and the *host data type column*.

## 5.5 Implicit DESCRIBE USING clause

1. *Rationale: Editorial - typographic error.*

Replace General Rule 5) c) iv) 1) with:

5) c) iv) 1) If TYPE indicates a <character string type>, then LENGTH is set to the length or maximum length in characters of the character string. OCTET_LENGTH is set to the maximum possible length in octets of the character string. If *HL* is C, then the lengths specified in LENGTH and OCTET_LENGTH do not include the implementation-defined null character that terminates a C character string. CHARACTER_SET_CATALOG, CHARACTER_SET_SCHEMA, and CHARACTER_SET_NAME are set to the <character set name> of the character string's character set. COLLATION_CATALOG, COLLATION_SCHEMA, and COLLATION_NAME are set to the <collation name> of the character string's collation.

## 5.11 Deferred parameter check

1. *Rationale: Editorial - style error.*

Replace General Rule 4) with:

4) Let *L2* be the set of all allocated SQL-statements in *L1* that have an associated deferred parameter number.

## 5.13 Description of CLI item descriptor areas

1. *Rationale: Remove mangled text*

Replace Syntax Rule 5) c) xiv) with:

5) c) xiv) TYPE indicates ARRAY or ARRAY LOCATOR, the value of CARDINALITY is a valid value for the cardinality of an array, there is exactly one immediately subordinate descriptor area of IDA, and that item descriptor area is valid.

2. *Rationale: Editorial - misplaced row.*

Delete the following row from Table 6 — Fields in SQL/CLI row and parameter descriptor areas

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| Field | Data Type |
|---|---|
| **Fields in item descriptor areas** | |
| COUNT | SMALLINT |

Insert the following row into Table 6 — Fields in SQL/CLI row and parameter descriptor areas

| Field | Data Type |
|---|---|
| **Header fields** | |
| COUNT | SMALLINT |

## 5.14 Other tables associated with CLI

1. *Rationale: Correct the specification of which locators are marked invalid when an SQL-transaction ends.*

In Table 14 — Codes used for transaction termination, replace the row:

| Termination type | Code |
|---|---|
| SAVEPOINT NAME COMMIT | 2 |

with:

| Termination type | Code |
|---|---|
| SAVEPOINT NAME ROLLBACK | 2 |

2. *Rationale: Remove the anomaly in <savepoint specifier>.*

In Table 14 — Codes used for transaction termination, delete the following rows:

| Termination type | Code |
|---|---|
| SAVEPOINT NUMBER COMMIT | 3 |
| SAVEPOINT NUMBER RELEASE | 5 |

In Table 16 — Codes used for connection attributes, delete the following row:

| Attribute | Code | May be set |
|---|---|---|
| SAVEPOINT NUMBER | 10028 | Yes |


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In Table 19 — Data types of attributes, delete the following row:

| Attribute | Data type | Values |
|---|---|---|
| **Statement attributes** | | |
| SAVEPOINT NUMBER | INTEGER | Not specified |

3. *Rationale: Correct the contents of the Type column of Table 20 "Codes used for descriptor fields".*

In Table 20 — Codes used for descriptor fields, delete the following rows:

| Field | Code | SQL Item Descriptor Name | Type |
|---|---|---|---|
| CARDINALITY | 1040 | CARDINALITY | Status |
| CURRENT_TRANSFORM_GROUP | 1039 | (Not applicable) | Status |
| DEGREE | 1041 | DEGREE | Status |
| RETURNED_CARDINALITY_ POINTER | 1043 | RETURNED_CARDINALITY | Status |
| SCOPE_CATALOG | 1033 | SCOPE_CATALOG | Status |
| SCOPE_NAME | 1035 | SCOPE_NAME | Status |
| SCOPE_SCHEMA | 1034 | SCOPE_SCHEMA | Status |
| SPECIFIC_TYPE_CATALOG | 1036 | (Not applicable) | Status |
| SPECIFIC_TYPE_NAME | 1038 | (Not applicable) | Status |
| SPECIFIC_TYPE_SCHEMA | 1037 | (Not applicable) | Status |

In Table 20 — Codes used for descriptor fields, add the following rows:

| Field | Code | SQL Item Descriptor Name | Type |
|---|---|---|---|
| CARDINALITY | 1040 | CARDINALITY | Item |
| CURRENT_TRANSFORM_GROUP | 1039 | (Not applicable) | Item |
| DEGREE | 1041 | DEGREE | Item |
| RETURNED_CARDINALITY_ POINTER | 1043 | RETURNED_CARDINALITY | Item |
| SCOPE_CATALOG | 1033 | SCOPE_CATALOG | Item |
| SCOPE_NAME | 1035 | SCOPE_NAME | Item |
| SCOPE_SCHEMA | 1034 | SCOPE_SCHEMA | Item |
| SPECIFIC_TYPE_CATALOG | 1036 | (Not applicable) | Item |

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| | | | |
|---|---|---|---|
| SPECIFIC_TYPE_NAME | 1038 | (Not applicable) | Item |
| SPECIFIC_TYPE_SCHEMA | 1037 | (Not applicable) | Item |

4. *Rationale: Add the missing codes.*

In Table 37 — Codes used for concise data types, add the following rows:

| Date Type | Code |
|---|---|
| USER-DEFINED TYPE | 17 |
| ROW | 19 |
| ARRAY | 50 |

## 5.15 Data type correspondences

1. *Rationale: Separating data type correspondence tables in Foundation and CLI.*

Change the name of this subclause to "SQL/CLI data type correspondences".

2. *Rationale: Separating data type correspondence tables in Foundation and CLI.*

In the Function replace the 1st paragraph with:

Replace first paragraph Specify the SQL/CLI data type correspondences for SQL data types and host language types associated with the required parameter mechanisms, as shown in Table 3, "Supported calling conventions of SQL/CLI routines by language".

3. *Rationale: Separating data type correspondence tables in Foundation and CLI.*

In the Tables section:

Replace the title of Table 44 — "Data type correspondences for Ada" with:
Table 44 — "SQL/CLI data type correspondences for Ada".

Replace the title of Table 45 — "Data type correspondences for C" with:
Table 45 — "SQL/CLI data type correspondences for C".

Replace the title of Table 46 — "Data type correspondences for COBOL" with:
Table 46 — "SQL/CLI data type correspondences for COBOL".

Replace the title of Table 47 — "Data type correspondences for Fortran" with:
Table 47 — "SQL/CLI data type correspondences for Fortran".

Replace the title of Table 48 — "Data type correspondences for MUMPS" with:
Table 48 — "SQL/CLI data type correspondences for MUMPS".

Replace the title of Table 49 — "Data type correspondences for Pascal" with:
Table 49 — "SQL/CLI data type correspondences for Pascal".


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