



INTERNATIONAL STANDARD ISO/IEC 9075-14:2006 TECHNICAL CORRIGENDUM 1

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Information technology — Database languages — SQL — Part 14: XML-Related Specifications (SQL/XML)

TECHNICAL CORRIGENDUM 1

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

Partie 14: Spécifications relatives au XML (SQL/XML)

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to ISO/IEC 9075-14:2006 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

Statement of purpose for rationale

A statement indicating the rationale for each change to ISO/IEC 9075-14:2006 is included. This is to inform the users of ISO/IEC 9075-14:2006 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 Technical 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 Technical Corrigendum introduces new subclauses, the new subclauses have been numbered as follows:

Subclauses inserted between, for example, 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.

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Contents

	Page
4 Concepts.....	1
4.2 XML.....	1
4.2.3 Characteristics of XML values.....	1
4.9 XML namespaces.....	1
4.10 Overview of mappings.....	2
4.10.5 Mapping SQL data types to XML.....	2
4.10.7 Mapping XQuery atomic values to SQL values.....	2
6 Scalar expressions.....	2
6.5 <XML cast specification>.....	2
6.13 <XML element>.....	4
6.16 <XML PI>.....	4
7 Query expressions.....	5
7.1 <table reference>.....	5
9 Mappings.....	6
9.5 Mapping SQL data types to XML Schema data types.....	6
10 Additional common rules.....	6
10.6 Determination of identical values.....	6
10.12 Determination of namespace URI.....	7
10.13 Construction of an XML element.....	7
10.19 Constructing an unvalidated XQuery document node.....	8
10.21 Determination of an XQuery formal type notation.....	8
10.22 Validating an XQuery document or element node.....	9

Tables

Table	Page
1 XML namespace prefixes and their URIs.	1

Information technology — Database languages — SQL —

Part 14:

XML-Related Specifications (SQL/XML)

TECHNICAL CORRIGENDUM 1

4 Concepts

4.2 XML

4.2.3 Characteristics of XML values

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace the 4th paragraph with:

Every XML value that is either the null value or a non-null value of type XML(CONTENT(ANY)) that is an XQuery document node ***D*** such that, for every XQuery element node that is contained in the XQuery tree ***T*** rooted in ***D***, the **type-name** property is **xs:untyped** and the **nilled** property is **false**, and for every XQuery attribute node that is contained in ***T***, the type property is **xs:untypedAtomic** is a value of **type-name** XML(CONTENT(UNTYPED)).

4.9 XML namespaces

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Delete the following row from Table 2, “XML namespace prefixes and their URIs”

Table 1 — XML namespace prefixes and their URIs

XML namespace prefix	XML namespace URI
xdt	http://www.w3.org/2005/xpath-datatypes

4.10 Overview of mappings

4.10.5 Mapping SQL data types to XML

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace the 12th paragraph with:

The SQL interval types are mapped to the XML Query types **xs:yearMonthDuration** and **xs:dayTimeDuration**. The **xs:pattern** facet is used to require precisely the year, month, day, hour, minute and second fields indicated by the SQL type. The pattern also reflects the leading field precision and the fractional seconds precision (when applicable). Annotations optionally indicate the SQL type, leading field precision and (when applicable) the fractional seconds precision.

4.10.7 Mapping XQuery atomic values to SQL values

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace the 2nd and 3rd bullets of the 3rd paragraph with:

- If **AT** is **xs:yearMonthDuration**, or derived from **xs:yearMonthDuration**, then **xs:yearMonthDuration**.
- If **AT** is **xs:dayTimeDuration**, or derived from **xs:dayTimeDuration**, then **xs:dayTimeDuration**.

6 Scalar expressions

6.5 <XML cast specification>

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rules 3) d) ii) 1) and 3) d) ii) 2) with:

- 3) ...
- d) ...
- ii) ...
 - 1) If **SD** is a year-month interval type, then let **XSBT** be the XQuery simple type **xs:yearMonthDuration**.

- 2) If *SD* is a day-time interval type, then let **XSBT** be the XQuery simple type **xs:dayTimeDuration**.

2. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace Note 17 with:

NOTE 17 — **XMLT** may be in the built-in namespace denoted by the prefix **xs**, or it may be in an implementation-dependent namespace, not necessarily available to the user.

3. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rules 4) i) and 4) j) with:

4) ...

- i) Let **XSC** and **XDC** be augmented with an XQuery variable **\$TEMP** whose XQuery formal type notation is "**xs:anyAtomicType**" and whose value is **AV**.
- j) Let **BV** be the result of the XQuery evaluation with XML 1.1 lexical rules, using **XSC** and **XDC** as the XQuery expression context, of the XQuery expression

Case:

- i) If *SQLT* is **TIMESTAMP WITHOUT TIME ZONE**, then

```
fn:adjust-dateTime-to-timezone(
  fn:adjust-dateTime-to-timezone( $TEMP cast as xs:dateTime,
                                   xs:dayTimeDuration("PT0H")
                                ), ( ) ) cast as XMLT
```

- ii) If *SQLT* is **TIME WITHOUT TIME ZONE**, then

```
fn:adjust-time-to-timezone(
  fn:adjust-time-to-timezone( $TEMP cast as xs:time,
                              xs:dayTimeDuration("PT0H")
                           ), ( ) ) cast as XMLT
```

- iii) If *SQLT* is **DATE**, then

```
fn:adjust-date-to-timezone(
  fn:adjust-date-to-timezone( $TEMP cast as xs:date,
                              xs:dayTimeDuration("PT0H")
                           ), ( ) ) cast as XMLT
```

- iv) Otherwise,

```
$TEMP cast as XMLT
```

If this XQuery evaluation raises an XQuery error, then an exception condition is raised: *XQuery error*.

4. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rules 4) k) ix) and 4) k) x) with:

- 4) ...
- k) ...
 - ix) If ***XT*** is ***xs:yearMonthDuration*** or derived from ***xs:yearMonthDuration***, then let *A* be an arbitrary <literal> of year-month interval type whose value is ***BV***.
 - x) If ***XT*** is ***xs:dayTimeDuration*** or derived from ***xdt:dayTimeDuration***, then let *A* be an arbitrary <literal> of day-time interval type whose value is ***BV***.

6.13 <XML element>

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rule 3) b) iii) with:

- 3) ...
- b) ...
 - iii) The **type-name** property is ***xs:untypedAtomic***.

6.16 <XML PI>

1. *Rationale: Remove all leading space, CR, LF and tab characters by aligning with XQuery.*

Replace General Rules 3), 4) and 5) with:

- 3) Let *USV* be the result of applying the General Rules of Subclause 9.8, “Mapping values of SQL data types to values of XML Schema data types”, to *SVE* as the value of an SQL data type, an indication that binary strings are to be encoded in hex as *ENCODING*, “absent” as *NULLS*, and *False* as *CHARMAPPING*. *USV* is a character string of Unicode characters.

- 4) If the value of

'<?' *I* || ' ' || *USV* || '?>'

does not conform to rule [16], “PI”, of [XML 1.1], then an exception condition is raised: *data value — invalid processing instruction*.

NOTE 25 — If the implementation does not support XML 1.1, then the processing instruction target *I* is subject to a Conformance Rule limiting it to be an XML 1.0 Name. Under that assumption, if the proposed processing instruction conforms to rule [16] of [XML 1.1], then it also conforms to rule [16] of [XML 1.0].

- 5) Let ***XVFT*** be the XQuery formal type notation determined by the Syntax Rules of Subclause 10.21, “Determination of an XQuery formal type notation”, with *USV* AS *SOURCE*.

- 6) Let **XSC** be an XQuery static context created according to the Syntax Rules of Subclause 10.20, “Creation of an XQuery expression context”, with the *BNF non-terminal* argument omitted.
- 7) Let **XDC** be an XQuery dynamic context created according to the General Rules of Subclause 10.20, “Creation of an XQuery expression context”.
- 8) Let **XSC** and **XDC** be augmented with an XQuery variable **\$EXPR**, whose XQuery formal type notation is **XVFT**, and whose value is *USV*.
- 9) Case:
 - a) If Feature X211, “XML 1.1 support”, is supported, then let **PN** be the result of an XQuery evaluation with XML 1.1 lexical rules, using **XSC** and **XDC** as the XQuery expression context of the XQuery expression

processing-instruction I { \$EXPR }
 - b) Otherwise, let **PN** be the result of an XQuery evaluation with XML 1.0 lexical rules, using **XSC** and **XDC** as the XQuery expression context of the XQuery expression

processing-instruction I { \$EXPR }
- 10) The result of the <XML PI> is *PN*.

7 Query expressions

7.1 <table reference>

1. *Rationale: Fix a bug in the syntactic transformation of XMLTABLE, which prevented the user-supplied column names from being accessible from the outside.*

Replace Syntax Rule 4) e) i) with:

- 4) ...
 - e) ...
 - i) If $XTCD_j$ is an <XML table ordinality column definition>, then let SLI_j be

$I.N$

2. *Rationale: Fix a bug in the syntactic transformation of XMLTABLE, which prevented the user-supplied column names from being accessible from the outside.*

Replace Syntax Rule 4) h) with:

- 4) ...

- h) The <XML table> is equivalent to

```
LATERAL
( XNDC
  SELECT SLI1 AS CN1, SLI2 AS CN2, ..., SLINC AS CNNC
  FROM XMLITERATE ( XMLQUERY ( XTRP XQAL
                           RETURNING SEQUENCE BY REF EMPTY ON EMPTY ) )
                   AS I ( V, N )
) AS CORR DCLP
```

9 Mappings

9.5 Mapping SQL data types to XML Schema data types

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rules 8) l) v) with:

- 8) ...
- l) ...
- v) Case:
- 1) If *SQLT* is a year-month duration, then let **DTYPE** be **xs:yearMonthDuration**.
 - 2) If *SQLT* is a day-time duration, then let **DTYPE** be **xs:dayTimeDuration**.

10 Additional common rules

10.6 Determination of identical values

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rule 1) b) i) with:

- 1) ...
- b) ...
- i) If **XQAT** is **xs:duration**, or an XML Schema type derived from **xs:duration**, then let **YM1** and **YM2** be XQuery atomic values of type **xs:yearMonthDuration**

whose year and month components equal the year and month components of **XQAV1** and **XQAV2**, respectively, and let **DT1** and **DT2** be XQuery atomic values of type **xs:dayTimeDuration** whose day, hour, minute, and second components equal the day, hour, minute, and second components of **XQAV1** and **XQAV2**, respectively. **XQAV1** and **XQAV2** are identical values if **YM1** equals **YM2** and **DT1** equals **DT2**.

10.12 Determination of namespace URI

1. *Rationale: Correct URL*

Replace Syntax Rule 2) a) ii) 2) B) I) with:

- 2) ...
 - a) ...
 - ii) ...
 - 2) ...
 - B) ...
 - I) If **P** is equivalent to '**sqlxml**', then let **NSURI** be
<http://standards.iso.org/iso/9075/2003/sqlxml>

2. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace Note 53 with:

NOTE 53 — The XML namespace prefixes **fn** and **local**, which are predeclared in [XQuery], if present in an <XML element name> or an <XML attribute name>, need to be in the scope of one or more <XML namespace declaration>s.

10.13 Construction of an XML element

1. *Rationale: W3C have consolidated the xdt: namespace into the xs namespace.*

Replace General Rule 4) c) iii) 1) B) III) with:

- 4) ...
 - c) ...
 - iii) ...
 - 1) ...
 - B) ...
 - III) The **type** property is **xs:untypedAtomic**.