Defect Reports for IS 29500

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2009-01-24

Note. Page numbers in "References in Document" row are based on the documents from the following file:
http://standards.iso.org/ittf/PubliclyAvailableStandards/c051463_ISOIEC%2029500-1_2008(E).zip

Contents

Ecma-09-001: Incorrect range restriction in backward (Backward) and forward (Forward)

QUALIFIER	Error
TOPIC	SpreadsheetML, Charts, Trend lines
REFERENCES IN DOCUMENT	Part 4: §21.2.2.12, backward (Backward), Page 3763

Part 4: §21.2.2.73, forward (Forward), Page 3795 |
| NATURE OF DEFECT | **Defect Summary**

The standard states that when the backward element is used to define a trend line for non-scatter charts, only two values are valid: 0 and 0.5.

The standard fails to state the valid values for the backward element when it is used to define a trend line for scatter charts.

The standard states that when the forward element is used to define a trend line for non-scatter charts, the value of this element must be a multiple of 0.5.

The standard fails to state the valid values for the forward element when it is used to define a trend line for scatter charts.

These observations are incompatible with existing documents and should be updated to reflect such prior art.

Background

These two elements define the number of categories, or units in the case of a scatter chart, that the trend line extends before, or after, the data for the series that is being trended.

Existing documents contain trend lines defined using backward and forward values that do not satisfy the documented restrictions. Such documents contain non-negative values for both the backward and forward elements. |
| SOLUTION PROPOSED BY THE SUBMITTED | The standard should be updated such that the backward element, when used for any chart type, can be any non-negative number.

The standard should be updated such that the forward element, when used for any chart type, can be any non-negative number. |
| SCHEMA CHANGE | No schema change required |

Ecma-09-002: Incorrect range restriction in ST_HoleSize (Hole Size)

QUALIFIER	Error
TOPIC	SpreadsheetML, Charts
REFERENCES IN DOCUMENT	Part 4: §21.2.3.18, ST_HoleSize (Hole Size), Page 3384
NATURE OF DEFECT	**Defect Summary** The standard states that the ST_HoleSize simple type has a minimum value of 10. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** When defining a donut chart, the ST_HoleSize simple type is used to define the size of the hole in the chart. This simple type expresses the size of the hole as a percentage of the size of the chart. Existing documents contain donut charts with hole sizes in the range of 1 percent to 90 percent.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated such that the new minimum value for the ST_HoleSize simple type should be 1.

SCHEMA CHANGE	```xml
	<xsd:simpleType name="ST_HoleSize">
	    <xsd:restriction base="xsd:unsignedByte">
	        <xsd:minInclusive value="~~10~~1"/>
	        <xsd:maxInclusive value="90"/>
	    </xsd:restriction>
	</xsd:simpleType>
	``

Ecma-09-003: Incorrect data type and range restriction in ST_Period (Period)

QUALIFIER	Error
TOPIC	SpreadsheetML, Charts, Trend lines
REFERENCES IN DOCUMENT	Part 4: §21.2.3.33, ST_Period (Period), Page 3826
NATURE OF DEFECT	**Defect Summary** The standard states that the ST_Period simple type uses the XML Schema unsignedByte data type and supports a range from 2 to 255. These observations are incompatible with existing documents and should be updated to reflect such prior art. **Background** When defining a moving average trend line, the ST_Period simple type is used to define the period of the trend line. Existing documents contain trend lines with their periods defined such that they that do not satisfy the documented restrictions. Such documents specify the period using the XML Schema unsignedInt data type and contain values larger than the specified maximum of 255.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated such that the ST_Period simple type is defined using the XML Schema unsignedInt data type and with an unbounded maximum value.
SCHEMA CHANGE	``` <xsd:simpleType name="ST_Period"> <xsd:restriction base="xsd:unsignedBytexsd:unsignedInt"> <xsd:minInclusive value="2"/> <xsd:maxInclusive value="255unbounded"/> </xsd:restriction> </xsd:simpleType> ```

Ecma-09-004: Incomplete enumeration definition for ST_MarkerStyle (Marker Style)

QUALIFIER	Error
TOPIC	SpreadsheetML, Charts
REFERENCES IN DOCUMENT	Part 4: §21.2.3.27, ST_MarkerStyle (Marker Style), Page 3888
NATURE OF DEFECT	**Defect Summary** The standard states that ST_MarkerStyle is defined as an enumeration of a set of supported marker styles. The defined set of supported marker styles in incomplete as it fails to include all marker styles in use with existing documents and should be updated to reflect such prior art. **Background** It is often useful to emphasize data points in a chart. This emphasis is called a marker. Markers can be styled to take the form of, for example, a diamond shape or a square shape. The style of a marker can also be specified such that the application can determine the style to be used. Such a specification is called "auto". Existing documents contain marker styles specified as "auto".
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated such that the ST_MarkerStyle simple type's enumeration include a value of "auto".

SCHEMA CHANGE	```xml
	<xsd:simpleType name="ST_MarkerStyle">
	    <xsd:restriction base="xsd:string">
	        <xsd:enumeration value="circle"/>
	        <xsd:enumeration value="dash"/>
	        <xsd:enumeration value="diamond"/>
	        <xsd:enumeration value="dot"/>
	        <xsd:enumeration value="none"/>
	        <xsd:enumeration value="picture"/>
	        <xsd:enumeration value="plus"/>
	``

```
                    <xsd:enumeration value="square"/>

                    <xsd:enumeration value="star"/>

                    <xsd:enumeration value="triangle"/>

                    <xsd:enumeration value="x"/>

                    <xsd:enumeration value="auto"/>

                </xsd:restriction>

            </xsd:simpleType>
```

Ecma-09-005: Incorrect measurement unit and range restriction in ST_Perspective (Perspective)

QUALIFIER	Error
TOPIC	SpreadsheetML, Charts
REFERENCES IN DOCUMENT	Part 4: §21.2.3.34, ST_Perspective (Perspective), Page 3892
NATURE OF DEFECT	**Defect Summary** The standard provides contradictory information regarding the allowed range for the ST_Perspective simple type: "[t]his simple type specifies that the contains contain an integer between 0 and 100", and "[t]his simple type also specifies the following restrictions: • This simple type has a minimum value of greater than or equal to 0. • This simple type has a maximum value of less than or equal to 240." The standard also states that the ST_Perspective simple type represents a percentage. The contradictory definition of the range restriction and the representation unit of ST_Perspective is unclear and incompatible with existing documents. It should be updated for clarity and to reflect such prior art. **Background** In order to visualize a chart in 3 dimensions, a perspective angle needs to be defined. Existing documents contain charts with perspectives defined using one-half degrees as their unit of measurement, and they contain measurements in the range of 0 to 240 one-half degrees.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated such that the ST_Perspective simple type's unit of measurement be defined as one-half degree with a supported range from 0 to 240 one-half degrees.
SCHEMA CHANGE	`No schema change required`

Ecma-09-006: Incorrect data type in ST_Skip (Skip)

QUALIFIER	Error
TOPIC	SpreadsheetML, Charts
REFERENCES IN DOCUMENT	Part 4: §21.2.3.44, ST_Skip (Skip), Page 3897
NATURE OF DEFECT	**Defect Summary** The standard states that the ST_Skip simple type is defined using the XML Schema unsignedShort data type. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** When defining a chart it is often necessary to skip rendering tick labels or tick marks in order to adequately display the chart within the space provided The ST_Skip simple type is used to declare how many tick labels or tick marks, should be skipped for a give category or series axis. Existing documents declare the number of skipped tick labels or tick marks using the XML Schema unsignedInt data type.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated such that the ST_Skip simple type is defined using the XML Schema unsignedInt data type.

SCHEMA CHANGE	`<xsd:simpleType name="ST_Skip">`
	
	    `<xsd:restriction base="`~~`xsd:unsignedShort`~~**`xsd:unsignedInt`**`">`
	
	        `<xsd:minInclusive value="1"/>`
	
	    `</xsd:restriction>`
	
	`</xsd:simpleType>`

Ecma-09-007: Incorrect list of valid children elements for ser (Pie Chart Series)

This Defect Report is rescinded based on our latest investigation.

Ecma-09-007: Incorrect list of valid children elements for ser (Pie Chart Series)

Ecma-09-008: Incorrect range for Precision value space

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §18.17.5.2, Precision, Page 2296
NATURE OF DEFECT	The standard states that "[t]he value space consists of the values m x 2^n, where m is an integer whose absolute value is less than 2^{53}, and n is an integer between -1075 and 970, inclusive.

This is incompatible with existing documents and should be updated to reflect such prior art. |
| SOLUTION PROPOSED BY THE SUBMITTED | The standard should be updated such that the value space is defined as follows:

The value space consists of the values $(-1)^s * m * 2^n$, where s is 0 or 1, m is an integer greater than or equal to 0 and less than 2^{53}, and n is an integer between -1074 and 971, inclusive. |
| SCHEMA CHANGE | `No schema change required` |

Ecma-09-009: Incorrect definition of uniqueTag (Unique Value for Record)

QUALIFIER	Error
TOPIC	WordprocessingML, Mail Merge
REFERENCES IN DOCUMENT	Part 1: §17.14.35, uniqueTag (Unique Value for Record), Page 1088
NATURE OF DEFECT	**Defect Summary** The standard states that the uniqueTag element in the CT_RecipientData complex type contains a text node defined by the base XML Schema base64Binary datatype. This definition is incompatible with existing documents and should be updated to reflect such prior art (as well as to conform to the WordprocessingML design goal of storing only user text in text nodes). **Background** This element defines the unique key for a single data record within a data source used for a mail merge operation, allowing that record to be explicitly included/excluded from the mail merge. Existing documents store this information using a val attribute on the uniqueTag element in the CT_RecipientData complex type.
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated such that the uniqueTag element is defined with a val attribute of type XML Schema base64Binary.

SCHEMA CHANGE	In wml.xsd:
	
	`<xsd:complexType name="CT_RecipientData">`
	`    <xsd:sequence>`
	`        <xsd:element name="active" type="CT_OnOff" minOccurs="0"/>`
	`        <xsd:element name="column" type="CT_DecimalNumber" minOccurs="1"/>`
	`        <xsd:element name="uniqueTag" type="CT_Base64Binary" minOccurs="1"/>`
	`    </xsd:sequence>`
	`</xsd:complexType>`
	
	`<xsd:complexType name="CT_Base64Binary">`
	`    <xsd:attribute name="val" type="xsd:base64Binary" use="required">`
	`    </xsd:attribute>`
	`</xsd:complexType>`

Ecma-09-010: Incorrect description of calculatedMember (Calculated Member)

QUALIFIER	Error
TOPIC	SpreadsheetML, Pivot Tables
REFERENCES IN DOCUMENT	Part 1: §18.10.1.10, calculatedMember (Calculated Member), Page 2030
NATURE OF DEFECT	**Defect Summary** The standard states that calculated items in a PivotTable cannot be added: Represents a calculated OLAP hierarchy. A calculated member is a member of an OLAP-based PivotTable whose value is calculated on the OLAP server. For PivotTables that are created from OLAP cubes the summarized values are precalculated on the OLAP server before the SpreadsheetML application displays the results. These fields appear in the PivotTable field list but cannot be changed from within the PivotTable. You cannot change the summary function used to calculate data fields or subtotals, or add calculated items. This is incompatible with existing documents and should be updated to reflect such prior art. The noun "you" is also ambiguous and should be clarified.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated to remove this restriction, as well as clarify who "you" is: Represents a calculated member to be created on the OLAP server. A calculated member is a member in an OLAP hierarchy for which the value is calculated by an OLAP server using a Multidimensional Expressions (MDX) expression. For PivotTables that are created from OLAP cubes the summarized values are calculated by an OLAP server before the SpreadsheetML application displays the results. In OLAP PivotTables, the consuming application cannot change the summary function used to calculate totals and subtotals.
SCHEMA CHANGE	No schema change required

Ecma-09-011: Extensibility broken for externalLink (External Reference)

QUALIFIER	Error
TOPIC	SpreadsheetML, Workbook
REFERENCES IN DOCUMENT	Part 1: §18.14.8, externalLink (External Reference), Page 2248
NATURE OF DEFECT	**Defect Summary** The standard states that the extLst child element is mutually exclusive with the externalBook, ddeLink and oleLink child elements. This will limit the future proofing of the externalLink element as it directly forces a trade-off between extensibility (extLst) and content (externalBook, ddeLink and oleLink). The intent of the extList child element is to add data in a backward compatible manner to the externalLink element when it is used in external book, DDE link and OLE link scenarios.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated such that the externalBook, ddeLink and oleLink child elements are not mutually exlusive with the extLst child element.
| SCHEMA CHANGE | ```xml
<xsd:complexType name="CT_ExternalLink">
    <xsd:choice>
        <xsd:element name="externalBook" type="CT_ExternalBook"
                    minOccurs="0" maxOccurs="1"/>
        <xsd:element name="ddeLink" type="CT_DdeLink" minOccurs="0"
                    maxOccurs="1"/>
        <xsd:element name="oleLink" type="CT_OleLink" minOccurs="0"
                    maxOccurs="1"/>
        <xsd:element name="extLst" minOccurs="0" type="CT_ExtensionList"/>
    </xsd:choice>
    <xsd:element name="extLst" minOccurs="0" type="CT_ExtensionList"/>
</xsd:complexType>
``` |

Ecma-09-012: Incomplete list of valid child elements for Office Open XML Math objects

QUALIFIER	Error
TOPIC	Shared MLs, Math
REFERENCES IN DOCUMENT	Part 1: §17.5.1.3, customXml (Inline-Level Custom XML Element), Page 534
	Part 1: §17.5.1.9 smartTag (Inline-Level Smart Tag), Page 546
	Part 1: §17.5.2.31 sdt (Inline-Level Structured Document Tag), Page 590
	Part 1: §17.16.19 fldSimple (Simple Field), Page 1417
	Part 1: §17.16.22 hyperlink (Hyperlink) , Page 1423
	Part 1: §22.1.2.26 deg (Degree), Page 4105
	Part 1: §22.1.2.28 den (Denominator), Page 4108
	Part 1: §22.1.2.32 e (Element (Argument)), Page 4113
	Part 1: §22.1.2.37 fName (Function Name), Page 4122
	Part 1: §22.1.2.52 lim (Limit), Page 4137
	Part 1: §22.1.2.75 num (Numerator), Page 4170
	Part 1: §22.1.2.77 oMath (Office Math), Page 4173
	Part 1: §22.1.2.112 sub (Subscript (Pre-Sub-Superscript)), Page 4208
	Part 1: §22.1.2.114 sup (Superscript (Superscript object)), Page 4211
NATURE OF DEFECT	**Defect Summary**
	The standard provides a list of the child elements which are allowed within elements defining objects in Office Open XML Math.
	The corresponding schema definition for these elements fails to include several common WordprocessingML objects which are used within Office Open XML Math in existing documents and should be updated to reflect such prior art.
	Background
	The elements in question enable the use of common WordprocessingML constructs such as custom XML markup, fields, smart tags, structured document tags, and hyperlinks within Math elements.

SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to include the following parent elements for the customXml, fldSimple, hyperlink, sdt, and smartTag elements: **deg (§22.1.2.26); den (§22.1.2.28); e (§22.1.2.32); fName (§22.1.2.37); lim (§22.1.2.52); num (§22.1.2.75); oMath (§22.1.2.77); sub (§22.1.2.112); sup (§22.1.2.114)** As well ,the following child elements should be listed for the deg, den, e, fName, lim, num, oMath, sub, and sup elements:

customXml (Inline-Level Custom XML Element)	§17.5.1.3
fldSimple (Simple Field)	§17.16.19
hyperlink (Hyperlink)	§17.16.22
sdt (Inline-Level Structured Document Tag)	§17.5.2.31
smartTag (Inline-Level Smart Tag)	§17.5.1.9

SCHEMA CHANGE	In the EG_OMathElements group in shared-math.xsd, remove the reference to w:EG_RunLevelElts and replace with a reference to a new w:EG_PContentMath:

```
<xsd:group name="EG_OMathElements">
   <xsd:choice>
      <xsd:group ref="EG_OMathMathElements"/>
      <xsd:group ref="w:EG_PContentMath"/>
   </xsd:choice>
</xsd:group>
```

Add the corresponding new groups in wml.xsd, defined as follows:

```
<xsd:group name="EG_PContentMath">
  <xsd:choice>
     <xsd:group ref="EG_PContentBase" minOccurs="0" maxOccurs="unbounded" />
     <xsd:group ref="EG_ContentRunContentBase" minOccurs="0"
maxOccurs="unbounded" />
   </xsd:choice>
 </xsd:group>
 <xsd:group name="EG_PContentBase">
   <xsd:choice>
     <xsd:element name="customXml" type="CT_CustomXmlRun"/>
     <xsd:element name="fldSimple" type="CT_SimpleField" minOccurs="0"
maxOccurs="unbounded"/>
     <xsd:element name="hyperlink" type="CT_Hyperlink"/>
   </xsd:choice>
 </xsd:group>
 <xsd:group name="EG_ContentRunContentBase">
   <xsd:choice>
     <xsd:element name="smartTag" type="CT_SmartTagRun"/>
     <xsd:element name="sdt" type="CT_SdtRun"/>
     <xsd:group ref="EG_RunLevelElts" minOccurs="0" maxOccurs="unbounded" />
   </xsd:choice>
 </xsd:group>
```

Ecma-09-013: Incomplete definition for Font Part

QUALIFIER	Error
TOPIC	Parts, Font Part
REFERENCES IN DOCUMENT	Part 1: §15.2.13, Font Part, Page 159
NATURE OF DEFECT	**Defect Summary** The standard declares three content types for the Font Part, yet only defines the contents for the first two content types: • application/x-fontdata • application/x-font-ttf The standard fails to define the contents for the third content type: • application/vnd.openxmlformats officedocument.obfuscatedFont This content type is used within existing Office Open XML documents and should be properly defined by the standard. **Background** The content type in question allows applications to distinguish between TrueType/OpenType fonts included in Office Open XML documents without obfuscation, and those obfuscated using the algorithm defined by the Font Embedding (§17.8.1) subclause within WordprocessingML. Existing documents use the obfuscatedFont content type to specify that the font in question has been obfuscated and must be handled according to the rules in the section referenced above.
SOLUTION PROPOSED BY THE SUBMITTER	The Standard should be corrected to include a definition of the third content type: application/vnd.openxmlformats officedocument.obfuscatedFont. Add the following to the list on page 160 to define this content type: • **application/vnd.openxmlformats officedocument.obfuscatedFont specifies that the font is stored in the TrueType or OpenType format and is obfuscated using the algorithm specified by Font Embedding (§17.8.1). Only packages of type WordprocessingML are permitted to reference this content type.**
SCHEMA CHANGE	No schema change required.

Ecma-09-014: Incorrect restriction on externalData (External Data Relationship)

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §21.2.2.63, externalData (External Data Relationship), Page 3790
NATURE OF DEFECT	**Defect Summary** The standard declares a single valid relationship type for this element via the id attribute: http://schemas.openxmlformats.org/officeDocument/2006/relationships_ package This is incompatible with existing documents and should be updated to reflect such prior art.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated to add an additional relationship type to the list of valid relationship types for this element via the id attribute. The following relationship type should be added: http://schemas.openxmlformats.org/officeDocument/2006/relationships_ oleObject
SCHEMA CHANGE	No schema change required

Ecma-09-015: Incorrect restriction on the Name Representation

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §18.17.6.5, Name Representation, Page 2300
NATURE OF DEFECT	**Defect Summary** The standard states that named cells, or cell ranges, should be defined in the Worksheet part, implying that uniqueness is at the Worksheet part. It is asserted that this is inconsistent with the intent of this element. Looking at the list of valid parent elements, we only see Workbook and not Worksheet. As such, there is a conflict between the intent implied in the XML and the prose as currently written.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated to correct the location as to where named cells, or cell ranges, need to be defined: "These names shall be defined in the ~~Worksheet~~ **Workbook** part's XML …"
SCHEMA CHANGE	No schema change required

Ecma-09-016: Incomplete list of formula error value constants and valid expression error values

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §18.17.2.1, Constants, Page 2276 Part 1: §18.17.3, Error values, Page 2291
NATURE OF DEFECT	**Defect Summary** The standard defines a set of valid formula error constants which is incomplete as it fails to include the "#GETTING_DATA" error constant. The standard defines a set of valid error values for expressions which is incomplete as it fails to include the "#GETTING_DATA" error. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents make use of the constant and the expression error when using external data.

SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated to include the "#GETTING_DATA" error constant in the list of formula error values:
	
	 error-constant=
	
	   "#DIV/0! " | "#N/A" | "#NAME? " | "#NULL! " |
	
	   "#NUM! " | "#REF! " | "#VALUE! " **| "#GETTING_DATA"** ;
	
	 The standard should be updated to include the "#GETTING_DATA" error in the list of valid error values for expressions:
	
	 <table><tr><td>**#GETTING_DATA**</td><td>**Intended to indicate when a cell reference cannot be evaluated because the value for the cell has not been retrieved or calculated.**</td></tr></table>

SCHEMA CHANGE	No schema change required

Ecma-09-017: Incomplete list of valid child elements for oMath (Office Math)

With the schema change in place, this is an exact duplicate of Ecma-09-012.

Ecma-09-017: Incomplete list of valid child elements for oMath (Office Math)

Ecma-09-018: Incorrect attribute name in Array Formulas

QUALIFIER	Error
TOPIC	SpreadsheetML, Formulas
REFERENCES IN DOCUMENT	Part 1: §18.17.6.3, Array Formulas, Page 2298
NATURE OF DEFECT	**Defect Summary** The standard states that the attribute used to define the reference to which the formula applies is named "r". This is incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents use the name "ref" for this attribute.
SOLUTION PROPOSED BY THE SUBMITTED	The standard should be updated to use the name "ref" for the ST_CellRef in array formulas. Updates include those to prose, examples and schemas.

SCHEMA CHANGE	```
	<xsd:complexType name="CT_CalcCell">
	    <xsd:attribute name="rref" type="ST_CellRef" use="required"/>
	    <xsd:attribute name="i" type="xsd:int" use="optional" default="0"/>
	    <xsd:attribute name="s" type="xsd:boolean" use="optional"
	                    default="false"/>
	    <xsd:attribute name="l" type="xsd:boolean" use="optional"
	                    default="false"/>
	    <xsd:attribute name="t" type="xsd:boolean" use="optional"
	                    default="false"/>
	    <xsd:attribute name="a" type="xsd:boolean" use="optional"
	                    default="false"/>
	</xsd:complexType>
	``

Ecma-09-019: Inserted math control character missing valid child

QUALIFIER	Error
TOPIC	Shared MLs, Math
REFERENCES IN DOCUMENT	Part 1: §17.13.5.16 ins (Inserted Math Control Character), Page 957
NATURE OF DEFECT	**Defect Summary** The standard states that the ins and del elements are mutually exclusive when present as a child element of the ctrlPr element (when storing revision information for a Math control character, such as a fraction bar). However, this definition is incompatible with existing documents which store insertion and deletion data simultaneously for the same control character. **Background** When a range of text in a WordprocessingML document is inserted by one user, then subsequently deleted by another user (common in heavily revised documents), the revision data must store an insertion containing a deletion in order to be fully expressive. This is done by allowing the del element to optionally appear within the ins element to store these precise conditions.
SOLUTION PROPOSED BY THE SUBMITTER	The Standard should be corrected to allow the del element to be a valid child when a math control character is part of both a tracked insertion and tracked deletion in order to represent the condition mentioned above.

SCHEMA CHANGE	Change the type of the ins element inside the EG_RPrMath group from CT_RPrChange to a newly defined CT_MathCtrlIns, defined as follows:
	
	`<xsd:complexType name="CT_MathCtrlIns">`
	`  <xsd:complexContent>`
	`    <xsd:extension base="CT_TrackChange">`
	`      <xsd:choice minOccurs="0">`
	`        <xsd:element name="del" type="CT_RPrChange" minOccurs="1"/>`
	`        <xsd:element name="rPr" type="CT_RPr" minOccurs="1"/>`
	`      </xsd:choice>`
	`    </xsd:extension>`
	`  </xsd:complexContent>`
	`</xsd:complexType>`
	
	This new type allows the del element as a child of the ins element.

Ecma-09-020: Previous Run Properties not valid child of deleted math control character

QUALIFIER	Error
TOPIC	Shared MLs, Math
REFERENCES IN DOCUMENT	Part 1: §17.13.5.13 del (Deleted Math Control Character), Page 949
NATURE OF DEFECT	**Defect Summary** The standard states that the rPr element stored within the del element is of type CT_RPrOriginal, which means that this set of run properties is incapable of storing formatting revision information. However, there exist existing documents which contain formatting revision information data for a deleted control character, which must be maintained. **Background** When formatting of a run is changed and that change is tracked, the original formatting information is typically stored beneath an rPrChange element within the parent rPr element. The CT_RPrOriginal complex type does not permit the presence of an rPrChange element to store this information.
SOLUTION PROPOSED BY THE SUBMITTER	Remove rPr (Previous Run Properties - §17.3.2.27) as a valid child, and replace it with rPr (Run Properties - §17.3.2.28), which includes the rPrChange element.
| SCHEMA CHANGE | Change the type of the del element inside the EG_RPrMath group from CT_RPrChange to a newly defined CT_MathCtrlDel, defined as follows:<br><br>```xml
<xsd:complexType name="CT_MathCtrlDel">
  <xsd:complexContent>
    <xsd:extension base="CT_TrackChange">
      <xsd:choice minOccurs="0">
        <xsd:element name="rPr" type="CT_RPr" minOccurs="1"/>
      </xsd:choice>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```<br><br>This new type differs only in the type of the rPr element (from CT_RPrOriginal to CT_RPr). |

Ecma-09-021: Previous Run Properties not valid child of inserted math control character

QUALIFIER	Error
TOPIC	Shared MLs, Math
REFERENCES IN DOCUMENT	Part 1: §17.13.5.16 ins (Inserted Math Control Character), Page 957
NATURE OF DEFECT	**Defect Summary** The standard states that the rPr element stored within the ins element is of type CT_RPrOriginal, which means that this set of run properties is incapable of storing formatting revision information. However, there exist existing documents which contain formatting revision information data for an inserted control character, which must be maintained. **Background** When formatting of a run is changed and that change is tracked, the original formatting information is typically stored beneath an rPrChange element within the parent rPr element. The CT_RPrOriginal complex type does not permit the presence of an rPrChange element to store this information.
SOLUTION PROPOSED BY THE SUBMITTER	Remove rPr (Previous Run Properties - §17.3.2.27) as a valid child, and replace it with rPr (Run Properties - §17.3.2.28), which includes the rPrChange element.

SCHEMA CHANGE	See DR (Ecma-09-019) – the type of the rPr element in the newly created CT_MathCtrlIns complex type should be CT_RPr, not CT_RPrOriginal:
	
	<pre><xsd:complexType name="CT_MathCtrlIns">
	  <xsd:complexContent>
	    <xsd:extension base="CT_TrackChange">
	      <xsd:choice minOccurs="0">
	        <xsd:element name="del" type="CT_RPrChange" minOccurs="1"/>
	        <xsd:element name="rPr" type="**CT_RPr**" minOccurs="1"/>
	      </xsd:choice>
	    </xsd:extension>
	  </xsd:complexContent>
	</xsd:complexType></pre>

Ecma-09-022: Incorrect restriction on scenario (Scenario)

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §18.3.1.75 scenario (Scenario), Page 1853
NATURE OF DEFECT	**Defect Summary** The standard states that named scenarios should be defined in the Workbook part, implying that uniqueness is at the Workbook part. It is asserted that this is inconsistent with the intent of this element. Looking at the list of valid parent elements, we only see Worksheet and not Workbook. As such, there is a conflict between the intent implied in the XML and the prose as currently written.
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to correct the location as to where named scenarios need to be defined: "Scenario's name (user input). Shall be unique for the ~~workbook~~**worksheet**."
SCHEMA CHANGE	No schema change required

Ecma-09-023: Incorrect restriction on item (PivotTable Field Item)

QUALIFIER	Error
TOPIC	SpreadsheetML, Pivot Tables
REFERENCES IN DOCUMENT	Part 1: §18.10.1.45 item (PivotTable Field Item), Page 2069
NATURE OF DEFECT	**Defect Summary** The standard states that the x attribute (item index) for the item element applies only to non-OLAP PivotTables. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents use the x attribute for both OLAP and non-OLAP PivotTables.
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to remove the non-OLAP restriction: "~~Applies only non-OLAP PivotTables.~~"
SCHEMA CHANGE	No schema change required

Ecma-09-024: Incomplete set of format symbols for numFmts (Number Formats)

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §18.8.31 numFmts (Number Formats), Page 1972
NATURE OF DEFECT	**Defect Summary** The standard states does not include the fraction format symbol, "/", in the list of valid format symbols for numFmts. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents contain the fraction format symbol.
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to add the fraction format symbol, "/", to the list of valid format symbols. The fraction format symbol displays the number in the format of a fraction. It is interpreted as the fraction format symbol only when preceded and followed by a number symbol (0, #, and ?).
SCHEMA CHANGE	`No schema change required`

Ecma-09-025: Incorrect naming of Root Element for certain parts

QUALIFIER	Error
TOPIC	SpreadsheetML, Parts
REFERENCES IN DOCUMENT	Part 1: §12.3 Part Summary, Page 67
NATURE OF DEFECT	**Defect Summary** The standard states a set of root element names for each part in SpreadsheetML. As defined in this set, the standard uses the following root element names: _(table below)_ These entries are incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents use different root element names for these parts.

Part	Relationship Target of	Root Element	Ref.
Custom XML Mappings	Workbook	mapInfo	§12.3.6
Dialogsheet	Workbook	dialogSheet	§12.3.7
External Workbook References	Workbook	externalReference	§12.3.9
Single Cell Table Definitions	Dialogsheet, Worksheet	singleCells	§12.3.19

SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to use root element names that are found in existing documents:

Part	Relationship Target of	Root Element	Ref.
Custom XML Mappings	Workbook	~~mapInfo~~ **MapInfo**	§12.3.6
Dialogsheet	Workbook	~~dialogSheet~~ **dialogsheet**	§12.3.7
External Workbook References	Workbook	~~externalReference~~ **externalLink**	§12.3.9
Single Cell Table Definitions	Dialogsheet, Worksheet	~~singleCells~~ **singleXmlCells**	§12.3.19

SCHEMA CHANGE	No schema change required

Ecma-09-026: Incomplete set of implicit relationships for Worksheet Part

QUALIFIER	Error
TOPIC	SpreadsheetML, Parts
REFERENCES IN DOCUMENT	Part 1: §12.3.24 Worksheet Part, Page 99
NATURE OF DEFECT	**Defect Summary** The standard states an incomplete set of valid implicit relationships for the Worksheet Part. This set is missing the relationship to the Query Table Part as defined in §12.3.14. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents contain implicit relationships between the Worksheet Part and the Query Table Part.
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to add the Query Table Part in the list of valid implicit relationships for the Worksheet Part.
SCHEMA CHANGE	`No schema change required`

Ecma-09-027: Incorrect Root Namespace for the Styles Part

QUALIFIER	Editorial
TOPIC	SpreadsheetML, Parts
REFERENCES IN DOCUMENT	Part 1: §12.3.20 Styles Part, Page 94
NATURE OF DEFECT	**Defect Summary** The standard states an incorrect root namespace for the Style Part of a spreadsheet: http://schemas.openxmlformats.org/spreadsheetml/2006/mains The trailing "s" character is inconsistent with all other root namespaces for all other spreadsheet parts, and in fact, all other parts within the standard. It is asserted that the trailing "s" character is a typographical error. This is incompatible with existing documents and should be updated to reflect such prior art. **Background** Existing documents contain Style Parts with root namespaces of this form: http://schemas.openxmlformats.org/spreadsheetml/2006/main
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to remove the trailing "s" character: http://schemas.openxmlformats.org/spreadsheetml/2006/mains
SCHEMA CHANGE	No schema change required

Ecma-09-028: xml:space attribute note declared in SpreadsheetML

QUALIFIER	Error
TOPIC	SpreadsheetML
REFERENCES IN DOCUMENT	Part 1: §18.2.5 definedName (Defined Name), Page 1715
	Part 1: §18.3.1.38 evenFooter (Even Page Footer), Page 1802
	Part 1: §18.3.1.29 evenHeader (Even Page Header), Page 1803
	Part 1: §18.3.1.40 f (Formula), Page 1805
	Part 1: §18.3.1.41 firstFooter (First Page Footer), Page 1808
	Part 1: §18.3.1.42 firstHeader (First Page Header), Page 1809
	Part 1: §18.3.1.43 formula (Formula), Page 1809
	Part 1: §18.3.1.44 formula1 (Formula1), Page 1809
	Part 1: §18.3.1.45 formula2 (Formula2), Page 1810
	Part 1: §18.3.1.57 oddFooter (Odd Page Footer), Page 1823
	Part 1: §18.3.1.58 oddHeader (Odd Page Header), Page 1823
	Part 1: §18.3.1.96 v (Cell Value), Page 1883
	Part 1: §18.4.12 t (Text), Page 1906
	Part 1: §18.5.1.1 calculatedColumnFormula (Calculated Column Formula), Page 1908
	Part 1: §18.7.1 author (Author), Page 1929
	Part 1: §21.2.2.59 evenFooter (Even Footer), Page 3788
	Part 1: §21.2.2.60 evenHeader (Even Header), Page 3789
	Part 1: §21.2.2.66 firstFooter (First Footer), Page 3792
	Part 1: §21.2.2.67 firstHeader (First Header), Page 3792
	Part 1: §21.2.2.124 oddFooter (Odd Footer), Page 3817
	Part 1: §21.2.2.125 oddHeader (Odd Header), Page 3818
	Part 1: §22.6.2.5 author (Author), Page 4269

NATURE OF DEFECT	**Defect Summary**
	The above referenced elements are intended to capture customer data, which may or may not include white space (spaces, tabs and blank lines). In the context of customer data, such white space should be considered significant and that that intention needs to be signaled to the consuming application program.
	The xml:space attribute, as defined in the XML 1.0 specification, is used to "signal an intention that in that element, white space should be preserved by applications". The standard fails to declare the xml:space attribute for the above reference elements. Without declaring the xml:space attribute, there is no manner to signal to a consuming application program that such data should be considered significant and hence preserved. Without such a signal, there is a potential data loss scenario.
SOLUTION PROPOSED BY THE SUBMITTER	The standard should be updated to declare the xml:space attribute as valid for the above referenced elements.
SCHEMA CHANGE	Schema change required