DR 14-0013 — SML: definedName attribute localSheetId

Status: Further Consideration Required

Subject: SML: definedName attribute localSheetId

Qualifier: Request for clarification

Submitter: Charlie Clark Organization: Ecma/Clark Consulting & Research

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Submitter’s Defect Number: None

Supporting Document(s): None

Date Circulated by Secretariat: 2014-10-24

Deadline for Response from Editor: 2014-12-24

IS 29500 Reference(s): 29500:2016, Part 1, §18.2.5, “definedName (Defined Name), attribute localSheetId”, p. 1555–1556

Related DR(s): None

Nature of the Defect:

In the specification, it says:

“Specifies the sheet index in this workbook where data from an external reference is displayed.

[Example: In the following example, the defined name refers to a range whose data source is an external database called Northwind\_Database :

<definedName name="Northwind\_Database"

localSheetId="2">Sheet5!$A$1:$T$47</definedName>

end example]

The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.”

Which index is meant? The physical order of the worksheets in the workbook? Or does it perhaps refer to the worksheet with the relevant sheetId?

And how does the example differ from:

<definedName name="Northwind\_Database">Sheet5!$A$1:$T$47</definedName>

From what I've seen of database references I thought they had to user "\_xlnm .Database" within the name attribute?

Solution Proposed by the Submitter:

None

Schema Change(s) Needed:

No

**Editor’s Response:**

**2015-02-06 Chris Rae**

This DR concerns the localSheetID attribute of the SpreadsheetML definedName element, and states that the attribute's meaning is unclear.

After looking into this, I think the submitter is right and that it's not at all clear what this attribute is intended to represent. I've attached some proposed changes to the standard (see below). A couple of notes:

* I think that the example mentioned by the submitter is poorly chosen. It mentions a "data source" and "external database" - the submitter is correct that this isn't the defined name required for a SpreadsheetML data connected range, and really I don't think any mention should be made of external data as it complicates the example and isn't relevant. I've reworded it as such.
* Revision records also contain defined names with the same attribute - they have much better descriptions. For example, in 18.11.1.13, the localSheetId is described as " An integer representing the id of the sheet to which this defined name belongs. This shall be used local defined names only." (sic)
* I notice that Microsoft's MS-OI29500 implementer notes (<https://msdn.microsoft.com/en-us/library/ee908652(v=office.12).aspx)> already cover Excel's behaviour with this attribute - as the standard is not well-defined at all, many of my changes are from there.

Proposed changes:

**Part 1: §18.2.5, “definedName (Defined Name)”, p. xx**

…

|  |  |
| --- | --- |
| Attributes | Description |
| localSheetId (Local Name Sheet Id) | Specifies that this defined name is a sheet-scoped reference, and specifies ~~the~~ a parent sheet ~~index in this workbook where data from an external reference is displayed~~. The sheet element with localSheetId equal to the value of this attribute shall be the parent sheet. If this attribute is specified, the value of the name attribute shall be unique among all defined names.  [Example: ~~In the following example, the~~A defined name ~~local,~~ scoped to the sheet with sheetId~~ID 1~~ equal to 2~~, refers to a range whose data source is an external database called “Northwind\_Database”~~:  <definedName name="Northwind\_Data~~base~~"  localSheetId="2">Sheet5!$A$1:$T$47</definedName>  end example]  [Note: Although not a typical use case, a name scoped to one particular sheet may refer to a cell reference in another. *End note*]  For further information on local defined names, see §L.2.2.11.  The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype. |

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**2015-02-07 Murata-san:**

I do not understand what is meant by "The sheet element with localSheetId equal to the value of this attribute".  An example of such a sheet element would be nice as part of   
the first example.

**2015-02-09 Chris Rae**

Thanks for taking a look at this! That's a good idea - I was struggling a bit with how to talk about local-scoped names which referred to references on different sheets without over-complicating the text.

I've updated the example to include the sheet definition, and changed it to refer to a locally-scoped name with a local reference. I think that should make it significantly clearer.

**Part 1: §18.2.5, “definedName (Defined Name)”, p. xx**

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|  |  |
| --- | --- |
| Attributes | Description |
| localSheetId (Local Name Sheet Id) | Specifies that this defined name is a sheet-scoped reference, and specifies ~~the~~ a parent sheet ~~index in this workbook where data from an external reference is displayed~~. The sheet element with localSheetId equal to the value of this attribute shall be the parent sheet. If this attribute is specified, the value of the name attribute shall be unique among all defined names.  [Example: ~~In the following example, the~~A defined name ~~local,~~ scoped to the sheet with sheetId~~ID 1 equal to 2,~~ upon which it resides, with its accompanying sheet definition ~~refers to a range whose data source is an external database called “Northwind\_Database”~~:  <definedName name="Northwind\_Data~~base~~"  localSheetId="2">Sheet5!$A$1:$T$47</definedName>  …  <sheets>  <sheet name="Sheet5" sheetId="2" r:id="rId1"/>  </sheets>  end example]  [Note: Although not a typical use case, a name scoped to one particular sheet may refer to a cell reference in another. *End note*]  For further information on local defined names, see §L.2.2.11.  The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype. |

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**2015-02-09 Murata-san:**

Thanks.  This is much better.  Should localSheetId be sheetId?

**2015-02-09 Chris Rae**

No – localSheetId is a lookup into sheetId values elsewhere.

**2015-02-09 Murata-san:**

But "The sheet element with localSheetId equal to the value of this attribute shall be the parent sheet." appears to indicate that <sheet> has localSheetId="2" .  But it has sheetId="2"

**2015-02-10 Chris Rae**

Sorry, I was looking at the wrong instance. You’re quite right. I’ve attached an updated version. Thank you!

**Part 1: §18.2.5, “definedName (Defined Name)”, pp. 1,552–1,553, attribute** localSheetId

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|  |  |
| --- | --- |
| Attributes | Description |
| localSheetId (Local Name Sheet Id) | Specifies that this defined name is a sheet-scoped reference, and specifies ~~the~~ a parent sheet ~~index in this workbook where data from an external reference is displayed~~. The sheet element with sheetId equal to the value of this attribute shall be the parent sheet. If this attribute is specified, the value of the name attribute shall be unique among all defined names.  [Example: ~~In the following example, the~~A defined name, ~~local~~ scoped to the sheet ~~with sheetIdID 1 equal to 2~~upon which it resides, with its accompanying sheet definition~~, refers to a range whose data source is an external database called “Northwind\_Database”~~:  <definedName name="Northwind\_Data~~base~~"  localSheetId="2">Sheet5!$A$1:$T$47</definedName>  …  <sheets>  <sheet name="Sheet5" sheetId="2" r:id="rId1"/>  </sheets>  end example]  [Note: Although not a typical use case, a name scoped to one particular sheet may refer to a cell reference in another. *End note*]  For further information on local defined names, see §L.2.2.11.  The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype. |

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**2015-02-24/26 Seattle F2F Meeting:**

Agreed with Chris’ proposal. Closed in COR4.

**2015-04-05 Charlie Clark:**

I think there is an error in the proposed resolution due to the many different ways that worksheets can be referred to.

<definedName name="Northwind\_Database"

localSheetId="2">Sheet5!$A$1:$T$47</definedName>

<sheets>

<sheet name="Sheet5" sheetId="2" r:id="rId1"/> </sheets>

This suggests that localSheetId="2" refers to sheetId="2" but I think that this is incorrect because I think localSheetId refers to a 0-based index of the sheets listed in the <sheets>-node of the workbook. I'm guessing this because I've seen localSheetId="0". Also, the implementer notes state:

"The standard specifies localSheetID is the sheet index in this workbook where data from an external reference is displayed."

**2016-02-02 Charlie Clark:**

I think I've come up with an explanation of behavior.

This attribute binds or restricts the name to the sheet as the following sample hopefully illustrates:

<definedNames>

<definedName name="MyRef">Sheet1!$A$1</definedName>

<definedName name="MySheetRef" localSheetId="0">Sheet1!$A$3</definedName>

<definedName name="MySheetRef" localSheetId="1">Sheet2!$A$1</definedName>

<definedName name="MySheetValue" localSheetId="0">3.33</definedName>

<definedName name="MySheetValue" localSheetId="1">14.4</definedName>

<definedName name="MyValue">9.99</definedName>

</definedNames>

The sheets with the index 0 and 1 both have names "MySheetRef" and "MySheetValue", which refer to separate objects. In Excel, at least, these names are only visible for the relevant sheet.

The current docs say "Specifies the sheet index in this workbook where data from an external reference is displayed." which is obviously wrong.

Something like "The name is restricted to a single sheet in the workbook. The id a 0-based index refers to the worksheet with the sheetId of localSheetId+1".

**2016-02-20 Rex Jaeschke:**

Re-opened this issue based on Charlie’s input.

**2016-12-07 Rex Jaeschke:**

MS experts report: “We recommend going with Chris’ proposal with one modification to say that the combination of localSheetId and name rather than just name.

**Part 1: §18.2.5, “definedName (Defined Name)”, pp. 1,555–1,556, attribute** localSheetId

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|  |  |
| --- | --- |
| Attributes | Description |
| localSheetId (Local Name Sheet Id) | Specifies that this defined name is a sheet-scoped reference, and specifies ~~the~~ a parent sheet ~~index in this workbook where data from an external reference is displayed~~. The sheet element with sheetId equal to the value of this attribute shall be the parent sheet. If this attribute is specified, the combination of localSheetId and name attributes shall be unique among all defined names.  [Example: ~~In the following example, the~~A defined name, ~~local~~ scoped to the sheet ~~with sheetIdID 1 equal to 2~~upon which it resides, with its accompanying sheet definition~~, refers to a range whose data source is an external database called “Northwind\_Database”~~:  <definedName name="Northwind\_Data~~base~~"  localSheetId="2">Sheet5!$A$1:$T$47</definedName>  …  <sheets>  <sheet name="Sheet5" sheetId="2" r:id="rId1"/>  </sheets>  end example]  [Note: Although not a typical use case, a name scoped to one particular sheet may refer to a cell reference in another. *End note*]  For further information on local defined names, see §L.2.2.11.  The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype. |

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Changes to Part 1: Y Part 2: N Part 3: N Part 4: N