DR 15-0010 — WML: Differences between the elements fldChar and hyperlink

Status: Further Consideration Required

Subject: WML: Differences between the elements fldChar and hyperlink

Qualifier: Request for clarification

Submitter: Chunyan Fang Organization: (CESI)

Contact Information: [fangcy@cesi.cn](fangcy%40cesi.cn)

Submitter’s Defect Number: None

Supporting Document(s): None

Date Circulated by Secretariat: 2015-06-16

Deadline for Response from Editor: 2015-08-16

IS 29500 Reference(s): 29500:2012 Part 1, §17.16.18, “fldChar (Complex Field Character)”, pp. 1263–1267

Related DR(s): None

Nature of the Defect:

There is no description about the use environment between fldChar and hyperlink

Solution Proposed by the Submitter:

Add the description about the use environment between fldChar and hyperlink

Schema Change(s) Needed:

No

**Editor’s Response:**

**2015-06-15 Chunyan Fang:**

There are two methods to describe the hyperlink:

1 by fldChar elements with field code styles, for example:



2 by hyperlink element without field code styles, for example:



There is no description about the use environment between fldChar element and hyperlink element. If we save by hyperlink element, the file will lose the field codes’ run styles. For example:

Before save file:



Save file and open again:



**2015-05-15/18 London Meeting:**

Chris took ownership of this issue. It appears that with one approach the formatting is preserved on save, but is discarded using the other approach. However, this is some expectation that they should behave the same.

**2016-02-29/03-02 Barcelona Meeting:**

Darrin’s short response:

We believe it is out of scope to document formally, why there are two ways to represent hyperlinks in the file format. The standard defines both ways, and Word implements them. While the hyperlink element is probably easier for 3rd parties to implement, there are some times when the fldChar approach is required. The two most obvious are when hyperlinks span an end paragraph mark, and when using track changes. [See the detailed response below.]

Feedback from Caroline:

Does it also address the second issue raised?  The submitter believes that style markup is lost on "save" if the Hyperlink element is used.

If he is mistaken in his understanding, we should probably explain that in a response from the editor.

Darrin’s detailed response:

What are the differences between fldChar and hyperlink? Also, user is asking for a “description about the use environment between fldChar and hyperlink”.

We believe it is out of scope to document formally, why there are two ways to create hyperlinks. The standard details these two methods and Word implements them.

However, I can describe informally why this is the case. It was believed that a <w:hyperlink> element is easier for 3rd party users to parse, and is acceptable for most of the use cases.

However, there are cases where the hyperlink element is insufficient. For example, if you create a hyperlink that extends across an end paragraph mark, you would end up with malformed XML. Something like this would not be valid:

<w:p>

 <w:r>

 <w:t>Here is a</w:t>

 </w:r>

 <w:hyperlink r:id="rId4" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>hyperlink that overlaps</w:t>

 </w:r>

 </w:p>

 <w:p>

 <w:r>

 <w:t>across two paragraphs. This is invalid XML.</w:t>

 </w:r>

 </w:p>

 </w:hyperlink>

A second case where it’s insufficient involves track changes. If you have an existing hyperlink in a document, turn on track changes, and modify that hyperlink, you’ll see that we replace it with a fldChar construct. That contains the current hyperlink information as well as the previous version of the hyperlink information.

For example, start with a hyperlink element:

 <w:hyperlink r:id="rId4" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>Display Text</w:t>

 </w:r>

 </w:hyperlink>

Here, rId4 (defined in documents.xml.rels) points to bing:

 <Relationship Id="rId4" Type="http://schemas.openxmlformats.org/officeDocument/2006/relationships/hyperlink" Target="http://www.bing.com/" TargetMode="External" />

If we wanted to use this element while changing the URL with track changes enabled, we would have to have two full hyperlink XML blobs. One has an rId4, the original URL, while the other has rId5, the new URL. Notice we are now showing duplicate content to user viewing tracked changes, even though we only changed the URL of the link, not the display text:

 <w:ins w:id="0" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:hyperlink r:id="rId5" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>Display Text</w:t>

 </w:r>

 </w:hyperlink>

 </w:ins>

 <w:del w:id="1" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:hyperlink r:id="rId4" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>Display Text</w:t>

 </w:r>

 </w:hyperlink>

 </w:del>

To avoid this, if a user edits a hyperlink with track changes enabled, then saves, we get a construct that allows us to only show the display text once, but shows the current URL, and the previous version of the URL:

 <w:r>

 <w:fldChar w:fldCharType="begin" />

 </w:r>

 <w:ins w:id="0" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:r w:rsidR="007B58B2">

 <w:instrText>HYPERLINK "http://www.google.com/"</w:instrText>

 </w:r>

 </w:ins>

 <w:del w:id="1" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:r w:rsidDel="007B58B2">

 <w:delInstrText xml:space="preserve"> HYPERLINK "http://www.yahoo.com/" </w:delInstrText>

 </w:r>

 </w:del>

 <w:ins w:id="2" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z" />

 <w:r>

 <w:fldChar w:fldCharType="separate" />

 </w:r>

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>More Display Text</w:t>

 </w:r>

 <w:r>

 <w:fldChar w:fldCharType="end" />

 </w:r>

So in summary, the hyperlink element is straightforward and useful most of the time. But when you need to do something a little more complex, we can use fldChar instead.

There was agreement in principle to resolve this by the addition of non-normative text, possibly in the Primer annex. The above text looks like a good starting point.

More feedback from Caroline:

The document is certainly helpful and I suggest that a slightly edited version is sent to the poster.  But it does not address the issue he raised about styles not being preserved for hyperlink elements.

**2016-06-14/16 Prague Meeting:**

We reviewed the DR log entry. We plan to ask the submitter (CN) to see if our raw response is headed in the right direction. If so, we’ll take much of what is in the DR log entry and put it in the WML section of the Primer annex.

**2016-09-15/29 Seoul Meeting:**

The submitter agrees with our plan to add the tutorial feedback to the Primer.

**Action**: Rex will write up the final proposal.

**Action**: Rex will spin off Caroline’s concern regarding style preservation into a separate DR.

**2016-10-07 Rex Jaeschke:**

**Part 1, §L.1.17.3, “HYPERLINK Field vs. fldChar”, p. xx [[NEW SUBCLAUSE]]**

There are two ways to create hyperlinks: via a HYPERLINK field or the fldChar element. In general, a <w:hyperlink> element is easier for third-party users to parse, and is acceptable for most of the use cases. However, there are cases where the hyperlink element is insufficient. For example, creating a hyperlink that extends across an end paragraph mark results in malformed XML. For example, the following is invalid:

<w:p>
 <w:r>

 <w:t>Here is a</w:t>

 </w:r>

 <w:hyperlink r:id="rId4" w:history="1">

 <w:r w:rsidRPr="00446387">

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 </w:r>

 </w:p>

 <w:p>

 <w:r>

 <w:t>across two paragraphs. This is invalid XML.</w:t>

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 </w:p>

 </w:hyperlink>

A second case where it’s insufficient involves tracked changes. If you have an existing hyperlink in a document, you turn on track changes, and then modify that hyperlink, you’ll see that it is replaced with a fldChar That contains the current hyperlink information as well as the previous version of the hyperlink information. For example, start with a hyperlink element:

 <w:hyperlink r:id="rId4" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

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 </w:rPr>

 <w:t>Display Text</w:t>

 </w:r>

 </w:hyperlink>

Here, rId4 (defined in documents.xml.rels) points to the target shown below:

<Relationship Id="rId4" Type="http://schemas.openxmlformats.org/officeDocument/2006/relationships/hyperlink" Target="http://www.bing.com/" TargetMode="External" />

If we wanted to use this element while changing the URL with track changes enabled, we would have to have two full hyperlink XML blobs: one has an rId4, the original URL, while the other has rId5, the new URL. Notice we are now showing duplicate content to any user viewing tracked changes, even though we only changed the URL of the link, not the display text:

 <w:ins w:id="0" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:hyperlink r:id="rId5" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>Display Text</w:t>

 </w:r>

 </w:hyperlink>

 </w:ins>

 <w:del w:id="1" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:hyperlink r:id="rId4" w:history="1">

 <w:r w:rsidRPr="00446387">

 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>Display Text</w:t>

 </w:r>

 </w:hyperlink>

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To avoid this, if a user edits a hyperlink with track changes enabled, then saves, we get a construct that allows us to show only the display text once, but shows the current URL, and the previous version of the URL:

 <w:r>

 <w:fldChar w:fldCharType="begin" />

 </w:r>

 <w:ins w:id="0" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:r w:rsidR="007B58B2">

 <w:instrText>HYPERLINK "http://www.google.com/"</w:instrText>

 </w:r>

 </w:ins>

 <w:del w:id="1" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z">

 <w:r w:rsidDel="007B58B2">

 <w:delInstrText xml:space="preserve"> HYPERLINK "http://www.yahoo.com/" </w:delInstrText>

 </w:r>

 </w:del>

 <w:ins w:id="2" w:author="Cameron LaRue" w:date="2016-02-08T15:56:00Z" />

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 <w:rPr>

 <w:rStyle w:val="Hyperlink" />

 </w:rPr>

 <w:t>More Display Text</w:t>

 </w:r>

 <w:r>

 <w:fldChar w:fldCharType="end" />
 </w:r>

In summary, the hyperlink element is straightforward and useful most of the time. But when you need to do something a little more complex, use fldChar instead.

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