DR 11-0011 — WML: The number of lines per page

Status: Further Consideration Required

Subject: WML: The number of lines per page

Qualifier: Request for clarification

Submitter: Murata Organization: JISC

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Submitter’s Defect Number: None

Supporting Document(s): None

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IS 29500 Reference(s): 29500:2012 Part 1, §17.6.5, “docGrid (Document Grid)”, p. 554

Related DR(s): None

Nature of the Defect:

When the value of the type attribute of the docGrid element is "lines", "linesAndChars" or "snapToChars", the user intends to specify the number of lines per page. But the logic for computing the number of lines per page is unclear.

Solution Proposed by the Submitter:

Add the following text.

In the case of single-column horizontal writing, it is computed by the following steps:

1. Subtract the value of the attribute w:top and that of the attribute w:bottom of the w:pgMar element from the value of the attribute w:h of the w:pgSz element.
2. Find the line pitch, which is represented by the attribute w:linePitch of the element w:docGrid.
3. The quotient (the integer part) for dividing the value computed in step 1 by the value in step 2 provides the number of lines per page.

[Example:

Case 1: Horizontal writing single column, the type is LinesAndChars and the charSpace is not present.

<w:sectPr w:rsidR="00530F52" w:rsidSect="004C1B8B">

 <w:pgSz w:w="11906" w:h="16838" w:code="9"/>

 <w:pgMar w:top="1985" w:right="1805" w:bottom="1701" w:left="1701"
 w:header="851" w:footer="992" w:gutter="0"/>

 <w:cols w:space="425"/>

 <w:docGrid w:type="linesAndChars" w:linePitch="360"/>

</w:sectPr>

 pgSz/@w:h - pgMar/@w:top - pgMar/@w:botttom = 13152

We divide this value by w:docGrid/@w:linePitch = 360 (which is 18pt \* 20)

 13152 / 360 = 36.533333333333

By truncating the result, we obtain 36.

Case 2: Horizontal writing single column, the type is LinesAndChars and the charSpace is present.

<w:sectPr w:rsidR="00530F52" w:rsidSect="001903E5">

 <w:pgSz w:w="11906" w:h="16838" w:code="9"/>

 <w:pgMar w:top="1985" w:right="1805" w:bottom="1701" w:left="1701"
 w:header="851" w:footer="992" w:gutter="0"/>

 <w:cols w:space="425"/>

 <w:docGrid w:type="linesAndChars" w:linePitch="360" w:charSpace="6144"/>

</w:sectPr>

 pgSz/@w:h - pgMar/@w:top - pgMar/@w:botttom = 13152

We divide this value by w:docGrid/@w:linePitch = 360 (which is 18pt \* 20).

 13152 / 360 = 36.533333333333

By truncating the result, we obtain 36.

end example]

In the final solution, cover the single-column vertical writing case, the multi-column horizontal writing case, and the multi-column vertical writing case as well.

Schema Change(s) Needed:

No

**Editor’s Response:**

**2011-03-28 Fang Chunyan:**

You can find from the four examples [attached to private mail sent to Chris, Murata-san, and Rex] that the relationship between linePitch and number of lines is ambiguous.

**2012-02-06/08, Prague F2F Meeting:**

See DR 11-0009.

**2012-04-15 Prof. Ning Li (via Murata-san):**

See DR 11-0008.

**2015-08-03 Murata-san:**

I did some experiments using Word 2013 on Windows 8.  I am a bit embarrassed.

If we try to specify the number of characters per line in a multi-column document, something strange happens.  The number of characters per line in the page layout menu and that in the multi-column layout menu ometimes differ.  I have two such documents.  In both cases, the number shown in the page layout menu is correct. while that shown in the multi-column layout menu is incorrect.

By typing Hiragana characters repeatedly, we can verify that.

<https://goo.gl/G6mD7w>

<https://goo.gl/FdNKbk>

In my interpretation, the differences shown above reveal bugs.

**2015-08-03 Murata-san:**

I tried to find the rule for computing the number of characters per line by experiment.  I changed the value of the charSpace attribute of the docGrid element using oXygen.  (I did not use MS Office to change the value of this attribute, since it also changes other values thus hampering my intention).  Then, I invoked MS Office to see how many characters fit in a line and also to examine the page layout setting view to see the number of characters per line setting.

Here is the result.

charSpace  the number of characters

    0       18

 1502       18

 1503       17

 4121       17

 4122       16

 7065       16

 7066       15

10403       15

10404       14

14219       14

The description of this attribute in 29500-1 provides a rule for computing the desired character pitch.   By multiplying the number of characters and the computed desired character pitch, I computed twips per line. twips per line

3780

3912.011719

3694.760742

3912.075195

3682.03125

3911.953125

3667.529297

3911.938477

3651.210938

3912.001953

But what is the column width?  Here goes.

pgSz/@w (twips)           11906

pgMar/@right(twips)        3997

pgMar/@left (twips)        3997

col width (twips)          3912 = 11906 - (3997 + 3997)

Twips per line computed above does not exceed the col width (twips).

Although 3912.011719, 3912.075195, and 3912.001953 are exceptions, the difference is very small.  So far so good.

But why can't we have just one more character per line?

In other words, does

  (1 + the number of characters per line) \* desired character pitch

exceed the column width?

Here are the computed values.

3990

4129.345703

3912.099609

4142.197266

3912.158203

4156.450195

3912.03125

4172.734375

3912.011719

4191.430664

I am afraid that 3912.099609, 3912.158203, and 3912.011719 are not so large.  They are even smaller than one of the exception values shown above.  Why can't we have one more character in line?

I am confused.  Probably, to understand subtle deviations, we have to read the source code.

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