Survey on using XML Tagging for non-text elements in Patent Documents

Office / Question	AU	CH	DK	EP	JP	KR	RU
Q1. Usage of industry standards (Yes /No)	No	Yes, See Annex A	No	Yes, - for maths: MathML; - for tables: OASIS/CALS	No	Yes, - for maths: MathML; - for tables: OASIS See Annex B	Yes, See Annex C
Q2. Plans to use industry standard(s) (Yes/ No)	No plan	No			No concrete plans	No plan	No plan
Q3. Usage of office-specific XML Tags for non-text elements (Yes/No)	No office-specific standard	We use the "figref" element inside the "entry" element of the table, as proposed in the ep-patent-doc.dtd			No	Yes, <EMI> for image or PDF file	
Q4. Any reason to use office-specific XML Tags for non-text elements		We use the table element for formatting reasons and therefore reuse the tags used for formatting letters in the document and defined in the <p> element					
Q5. Any specific reason not to use XML Tags for non-text elements					The JPO waited to adopt them because the CWU standard and CWU handling tools had not been widespread. However, the JPO is considering to adopt CALStable and MathML in the next generation system. CML is also under review.		
Q6. Further comments				The only non-text elements not marked up by the EPO are chemical formulae - this has been discussed at Trilateral/WIPO level for some time. The reason is that there is no agreed standard for this, although CML is probably the most likely candidate.			RUPTO uses WIPO Standard ST.36 with ru-office–specific-data (RU national extension, which constitutes considerable part of XML elements in the "Russian" version of ST.36). RU national extension doesn't include tags for specific non-text elements.

ANNEX A

CH Office's Practice

We apply the XML Exchange Table Model DTD when using the <table> element.
(http://www.oasis-open.org/specs/soextblx.dtd)
The table element is used for tables, for formatted text, for enumerations like description of figures.

```
<tables num="1">
  <table colsep="0" frame="none" rowsep="0">
    <tgroup cols="2" colsep="0" rowsep="0" align="left">
       <colspec (…) >
          <tbody valign="top">
             <row valign="top" rowsep="0">
                <entry valign="top" align="left" colname="1">Fig.
                   <figref num="1" idref="f0001">1</figref>
                </entry>
             <entry valign="top" align="left" colname="2">eine Vorderansicht
auf den feststehenden Teil eines Wärmetauschers gemäss der Erfindung
in Form einer Prinzipskizze,
             </entry>
            </row>
(…)
```

- Corresponding rendered document-

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Fig. 1	eine Vorderansicht auf den feststehenden Teil eines Wärmetauschers gemäss der Erfindung in Form einer Prinzipskizze,
Fig. 2	eine geschnittene Seitenansicht des Wärmetauschers nach Fig. 1 in einer Prinzipskizze,
Fig. 3	eine Explosionsansicht eines Drehkörpers nach einem ersten Ausführungsbeispiel eines Wärmetauschers nach der Erfindung,
Fig. 4	eine geschnittene Seitenansicht nach Fig. 3,
Fig. 5	eine Draufsicht auf den Drehkörper gemäss einem zweiten Ausführungsbeispiel eines Wärmetauschers nach der Erfindung,
Fig. 6	eine Seitenansicht auf den Drehkörper nach Fig. 5,
Fig. 7	eine Unteransicht auf einen Luftkanal des Drehkörpers nach Fig. 5 und
Fig. 8	eine Seitenansicht auf den Luftkanal des Drehkörpers nach Fig. 7.

ANNEX B

KR Office's Practice

KIPO uses MathML but does not use the Schema. Instead, we use images for a mathematical formula. For table KIPO uses table model which are available at the website (http://www.oasis-open.org/tables/exchange/1.0).

```
      <xs:import namespace="http://www.w3.org/1998/Math/MathML"
schemaLocation="./mathml2/mathml2/mathml2.xsd"/>
      <xs:import namespace="http://www.oasis-open.org/tables/exchange/1.0"
schemaLocation="./soextblx/soextblx.xsd"/>
      <xs:element name="P">
            <xs:annotation>
                  <xs:documentation>식별번호</xs:documentation>
            </xs:annotation>
            <xs:complexType mixed="true">
                  <xs:choice minOccurs="0" maxOccurs="unbounded">
```

< Example: Mathematical formula >

- XML instance

```
<P><Maths num="1"><DF><EMI id="1" height="15" width="23" file="pct00001.tif"/></DF>
 </Maths></P>
<P n="7" indent="0" align="CENTER"><Maths num="2"><DF><EMI id="2" height="17"
width="175" file="pct00002.tif"/></DF></Maths>
```

- Corresponding rendered document-

【수학식 1】

$$\sum_{n=0} a^2$$

【수학식 2】

$$\{(x \times y)(\text{픽셀}) \times \text{밝기}(255) \times 3(\text{색})\} \times \left[1 - \frac{z(\text{깊이})}{\text{밝기}(255) \times 3(\text{색})}\right]^{10}$$

< Example: Table using OASIS model >

- OASIS example with XML instance-

```
<P align="CENTER" indent="14" n="60">Table </P>
<P align="JUSTIFIED" indent="14" n="61">
<table><tgroup cols="2" xmlns="http://www.oasis-open.org/tables/exchange/1.0">
<colspec align="center" colname="col1" colnum="1" colwidth="5365"/>
<colspec align="center" colname="col2" colnum="2" colwidth="4709"/>
<tbody>
<row>
<entry align="center" colname="col1">테스트/entry>
<entry align="center" colname="col2">테스트</entry>
</row>
<row>
<entry align="center" colname="col1">123455</entry>
<entry align="center" colname="col2">35<BR/>40<BR/>1.0(with SLHX)<BR/>1.5(without
SLHX)<BR/>7<BR/>5<BR/>0.75<BR/>10</entry>
</row>
</tbody>
</tgroup>
</table>
</P>
<BR/><P align="CENTER" indent="14" n="62">Table 2 </P>
<P align="JUSTIFIED" indent="14" n="63">
<table><tgroup cols="2" xmlns="http://www.oasis-open.org/tables/exchange/1.0">
<colspec align="center" colname="col1" colnum="1" colwidth="5409"/>
<colspec align="left" colname="col2" colnum="2" colwidth="4734"/>
<tbody>
<row>
<entry align="center" colname="col1">테스트 entry>
<entry align="left" colname="col2">테스트 entry>
</row>
<row>
<entry align="center" colname="col1"> [mm]<BR/> 두께 [mm]<BR/>열 수<BR/>단
수<BR/>단간격 [mm]<BR/>열간격 [mm]<BR/>핀 재질<BR/>핀 형상<BR/>핀 간격 [mm]<BR/>핀 두께
[mm]<BR/>관 형상<BR/>열교환기 폭 [mm]</entry>
<entry align="center"
colname="col2">7<BR/>0.62<BR/>2 열<BR/>52<BR/>21<BR/>12.7<BR/>Al<BR/>Louver<BR/>1.2<
BR/>0.1<BR/>micro fin tube<BR/>920</entry>
</row>
</tbody>
</tgroup>
</table>
</P>
```

- Corresponding rendered document-

Table 1

TEST	test
1 [℃]	35
2 [%]	40
3 [m/s]	1.0(with SLHX) 1.5(without SLHX)
4 [℃]	7
5 [℃]	5
6 [-]	0.75
7 [kW]	10

Table 2

TEST	TEST
1 [mm]	7
2 [mm]	0.62
3	2열
4	52
5 [mm]	21
6 [mm]	12.7
7	Al
8	Louver
9 [mm]	1.2
10 [mm]	0.1
11	micro fin tube
12 [mm]	920

ANNEX C

RU Office’s Practice

RUPTO uses **image format**.

Example:

```
<maths id='Equation30001' num='0001'><img id='imd0001' wi='22' he='11'
file="image002.jpg" img-format='jpg'></img></maths>
```