Notification of upcoming Changes to the schema's (XSD) of the CPC Scheme and Definitions

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1 Introduction

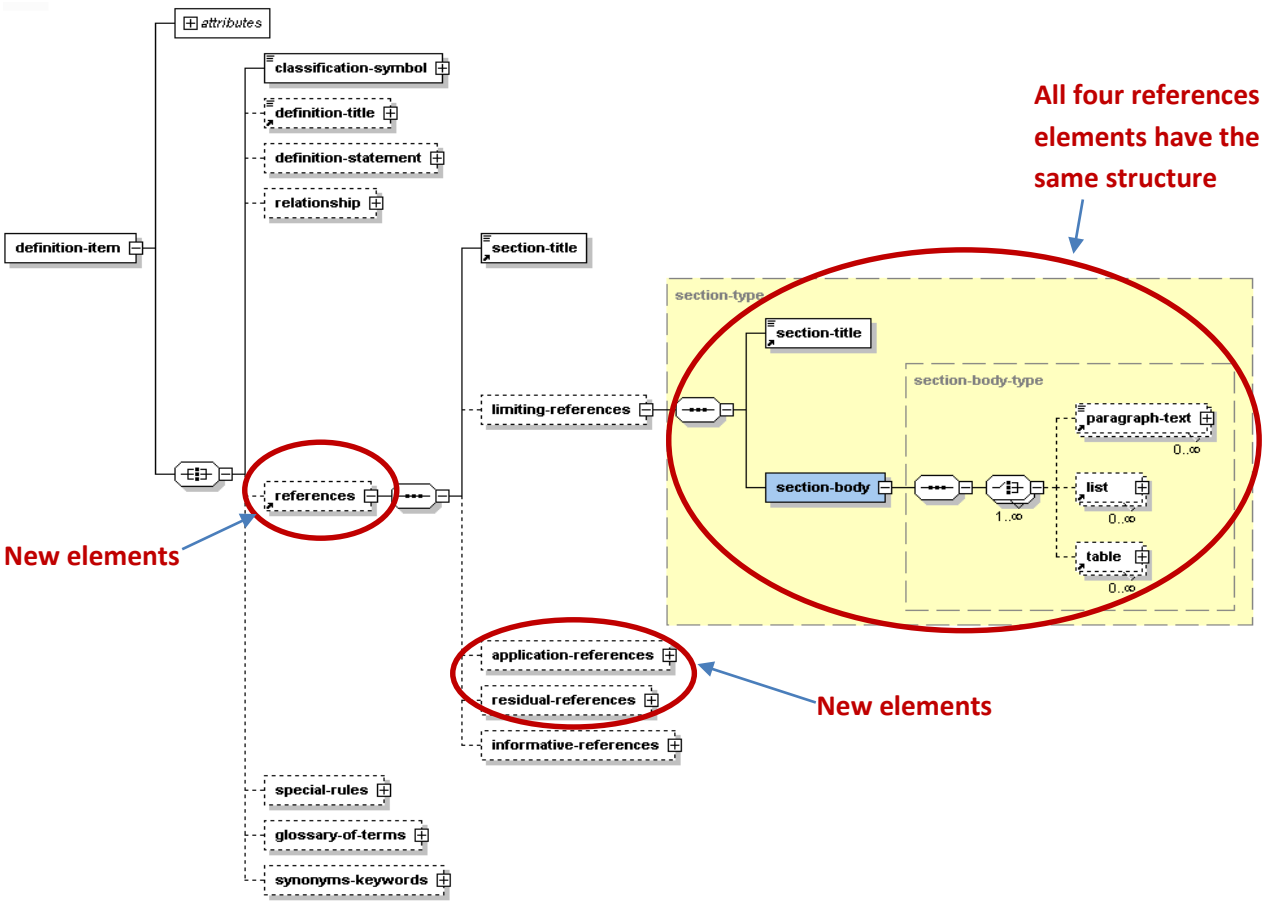
The EPO and USPTO have agreed to introduce improvements to the schema's of the CPC scheme and definitions. The changes will enter into force with the November 2016 release. The full set of files for scheme and definitions is expected to be available for pre-release in early October 2016 on www.cpcinfo.org.

In this document the changes are described and illustrated. This document is supported with sample files that will illustrate in more detail the changes, including the XSDs. The content of data in the sample files might not reflect the current official data, however the format is according to the introduced changes.

2 Changes to CPC Definitions Schema

2.1 Restructure of References in Definitions

1. Added two new elements: application-references, residual-references
2. Moved all references (limiting-references, application-references, residual-references, informative-references) into **references** element which is one single section of definitions.



Example:

```
<references>
<section-title>References</section-title>
<limiting-references>
<section-title>Limiting references</section-title>
<section-body><paragraph-text type="preamble">This subclass/group does not cover:</paragraph-text><table>
        <table-row>
          <table-column preferred-width="14.25cm">
            <paragraph-text type="body">Combinations or associations of metal-working machines, not directed to a particular result;
Details, components or accessories for machine tools.</paragraph-text>
          </table-column>
          <table-column preferred-width="2.81cm">
            <paragraph-text type="body"><class-ref scheme="cpc">B23Q</class-ref></paragraph-text>
          </table-column>
        </table-row>
      </table>
</section-body>
</limiting-references>
<application-references>
<section-title>Application-oriented references</section-title>
<section-body><paragraph-text type="preamble">Examples of places where the subject matter of this place is covered when specially
adapted, used for a particular purpose, or incorporated in a larger system:</paragraph-text><table>
        <table-row>
          <table-column preferred-width="14.25cm">
            <paragraph-text type="body">Cutting implements specially adapted for horticultural purposes; Delimbing standing
trees</paragraph-text>
          </table-column>
          <table-column preferred-width="2.81cm">
            <paragraph-text type="body"><class-ref scheme="cpc">A01G3/00</class-ref></paragraph-text>
          </table-column>
        </table-row>
      </table>
</section-body>
</application-references>
<residual-references>
<section-title> References out of a residual place</section-title>
<section-body><paragraph-text type="preamble">Examples of places in relation to which this place is residual:</paragraph-
text><table>
        <table-row>
          <table-column preferred-width="14.25cm">
            <paragraph-text type="body">Tools or bench devices not otherwise provided for, for fastening, connecting</paragraph-text>
          </table-column>
          <table-column preferred-width="2.81cm">
            <paragraph-text type="body"><class-ref scheme="cpc">B25B</class-ref></paragraph-text>
          </table-column>
        </table-row>
      </table>
    </section-body>
</residual-references>
<informative-references>
<section-title>Informative references</section-title>
    <section-body><paragraph-text type="preamble">Attention is drawn to the following places, which may be of interest for
search:</paragraph-text>
      <table>
        <table-row>
          <table-column preferred-width="14.25cm">
            <paragraph-text type="body">Machines, devices or processes for planing, slotting, shearing, broaching</paragraph-text>
          </table-column>
          <table-column preferred-width="2.81cm">
            <paragraph-text type="body"><class-ref scheme="cpc">B23D</class-ref></paragraph-text>
          </table-column>
        </table-row>
      </table>
    </section-body>
  </informative-references>
</references>
```

Sample Text in publication after the schema change:

References:

Limiting References

This subclass does not cover:

Regulating electric characteristics of arcs in general	G05F1/02

Application-oriented References

Examples of places where the subject matter of this subclass is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Intra-cavitary probes with motor driven transducer elements	A61B 8/12

References out of a residual place

Examples of places in relation to which this place is residual:

Electric discharge tubes	H01J
Electric discharge lamps	H01J 61/00- H01J 65/00
Electric incandescent lamps	H01K
Semiconductor devices with at least one particular jump barrier or surface barrier, specially adapted for light emission	H01L 27/15, H01L 33/00
Organic light emitting devices (OLED)	H01L 27/32, H01L 51/50
Stimulated-emission devices	H01S
Plasma torches	H05H 1/26
Electric lighting	Numerous areas of technology, e.g. F21.

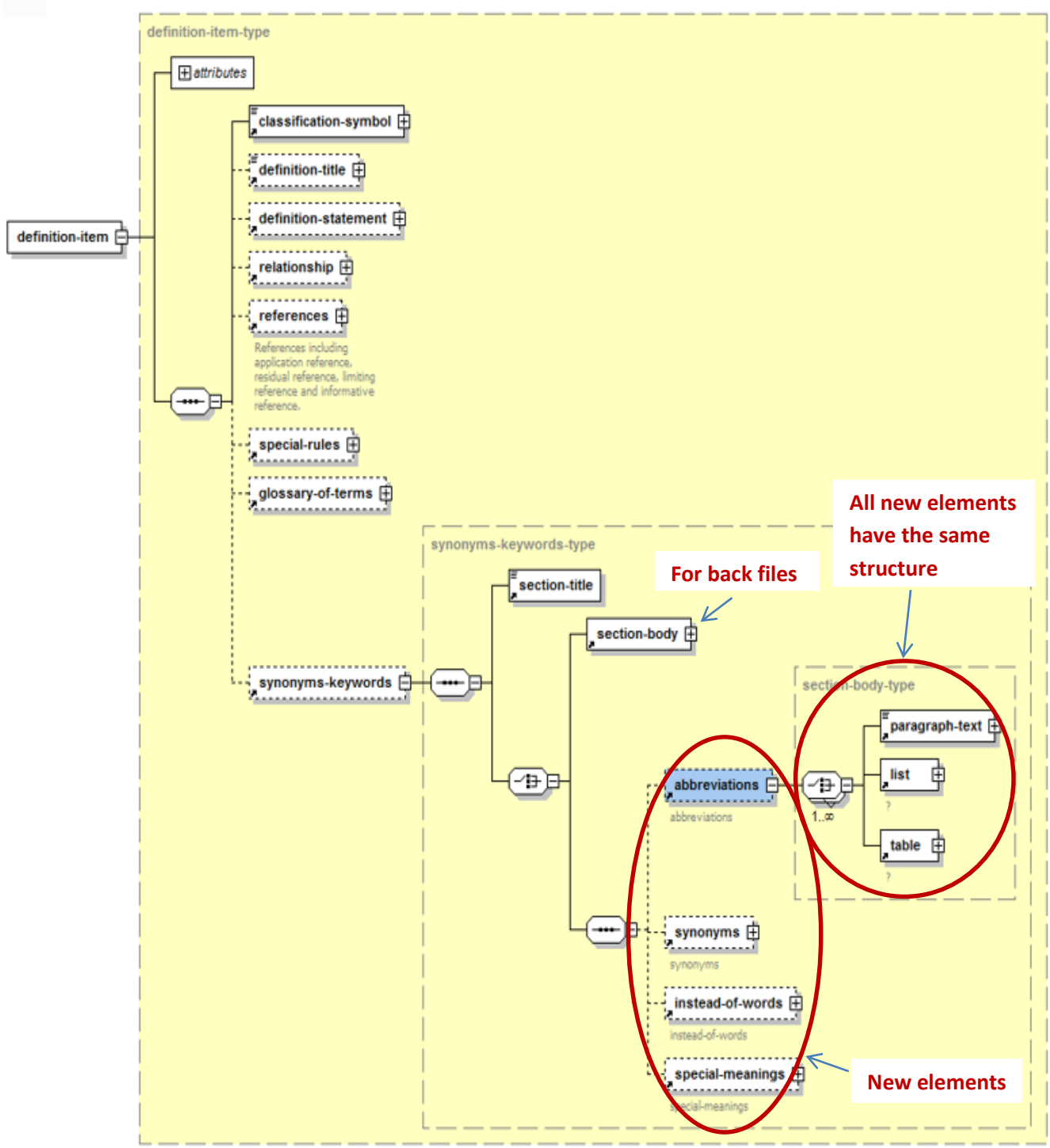
Informative Reference

Attention is drawn to the following places, which may be of interest for search:

Measuring of temperature by colorimeter	G01J
Control of temperature in general	G05D 23/00
Regulating electric power in general	G05F 1/66

2.2 Restructure of synonyms-keywords in definitions

Subdivide synonyms-keywords section into four subsections: abbreviations, synonyms, instead-of-words, and special-meanings



Example:

```
<synonyms-keywords>
<section-title>Synonyms and Keywords</section-title>
<abbreviations>
  <paragraph-text type="preamble">In patent documents the following abbreviation are often used:</paragraph-text>
  <table>
    <table-row>
      <table-column preferred-width="4.64cm">
        <paragraph-text type="body">AOV</paragraph-text>
      </table-column>
      <table-column preferred-width="10.4cm">
        <paragraph-text type="body">Autonomously Operated Vehicle</paragraph-text>
      </table-column>
    </table-row>
     </table>
  </abbreviations>
<synonyms>
  <paragraph-text type="preamble">In patent documents the following words/expressions are often used as synonyms:</paragraph-text>
  <list>
    <list-item><paragraph-text>conning-tower; and sail; or fin; </paragraph-text></list-item>
  </list>
  </synonyms>
<instead-of-words>
  <paragraph-text type="preamble">In patent documents the word/expression in the first column is often used instead of the word/expression in the second column which is used in the classification scheme of this place:</paragraph-text>
  <table>
    <table-row>
      <table-column>
        <paragraph-text type="body">(underwater) wing or rudder</paragraph-text>
      </table-column>
      <table-column>
        <paragraph-text>hydrofoil</paragraph-text>
      </table-column>
    </table-row>
  </table>
</instead-of-words>
<special-meanings>
  <paragraph-text type="preamble">In patent documents the word/expression in the first column is often used with the meaning in the second column:</paragraph-text>
  <table>
    <table-row>
      <table-column>
        <paragraph-text>conning-tower</paragraph-text>
      </table-column>
      <table-column>
        <paragraph-text>the (armoured) pilot house of a surface warship</paragraph-text>
      </table-column>
    </table-row  </table>
  </special-meanings>
</synonyms-keywords>
```

Sample Text in publication after the schema change:

Synonyms and Keywords

In patent documents the following abbreviation are often used:

LED	Light emitting diode
OLED	Organic Light emitting diode
CCFL	Cold Cathode Fluorescent lamp
CFL	Compact Fluorescent lamp
HID	High Intensity discharge lamp
HPS	High Pressure lamp

In patent documents the following words/expressions are often used as synonyms:

- liquid, fluid , water
- Raney catalyst, sponge-metal catalyst, skeletal catalyst

In patent documents the word/expression in the first column is often used instead of the word/expression in the second column which is used in the classification scheme of this place:

fluid	liquid
location	site

In patent documents the word/expression in the first column is often used with the meaning in the second column:

Examining	Measuring
compacting	compression moulding

2.3 Preamble and subheading in definitions

Changed the enumeration of values for @type attribute of paragraph-text element:

- Converted @type=”normal” to @type=”preamble” and added value “subheading” to @type attribute of paragraph-text element

Old	New
<xs:simpleType name="paragraph-type"> <xs:restriction base="xs:string"> <xs:enumeration value="body"/> <xs:enumeration value="**normal**"/> </xs:restriction> </xs:simpleType>	<xs:simpleType name="paragraph-text-category-type"> <xs:restriction base="xs:string"> <xs:enumeration value="body"/> <xs:enumeration value="**preamble**"/> <xs:enumeration value="**subheading**"/> </xs:restriction> </xs:simpleType>

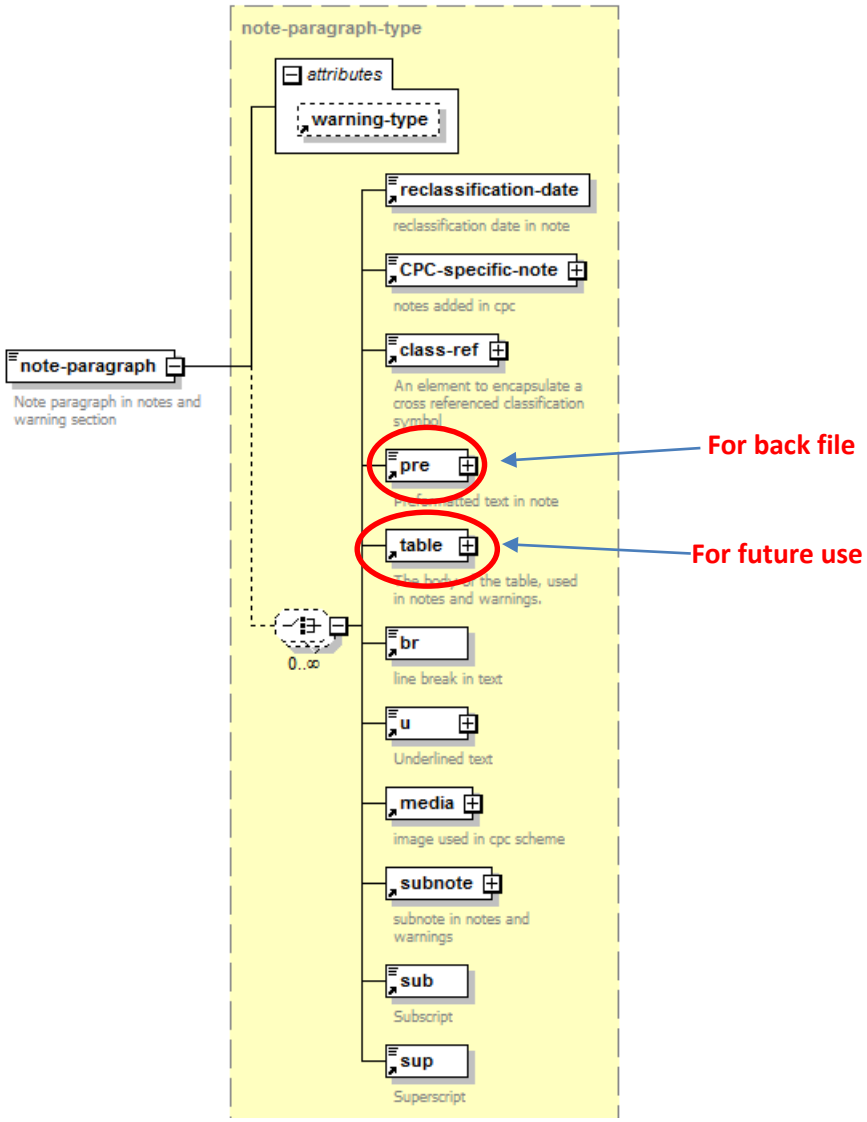
Example:

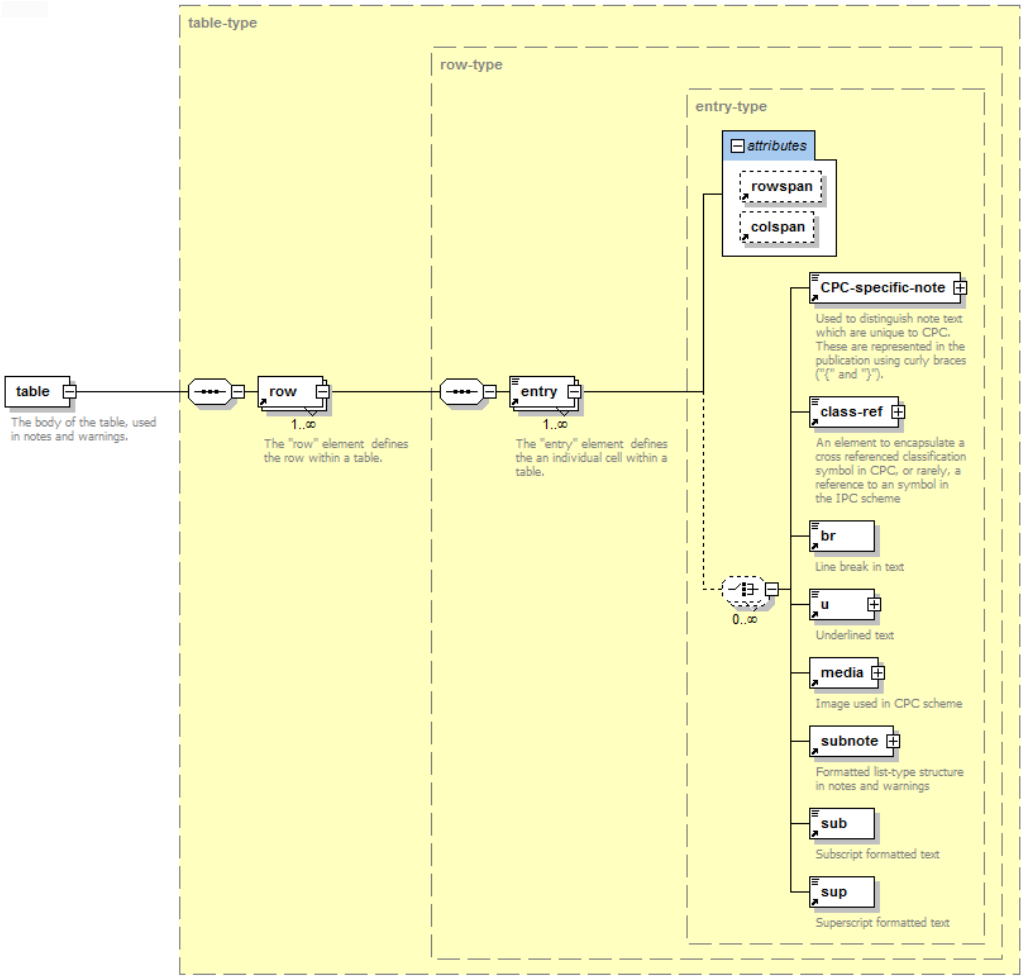
```
<definition-statement>
   <section-title>Definition statement</section-title>
   <section-body>
      <paragraph-text type="preamble">This subclass/group covers:</paragraph-text>
      <paragraph-text type="body">Lottery games, bingo games, football pools and the like; Associated devices and accessories for playing or checking such games.</paragraph-text>
      <paragraph-text type="subheading">Further details of subgroups</paragraph-text>
      <paragraph-text type="body"> <class-ref scheme="cpc">A63F3/0605</class-ref>-<class-ref scheme="cpc">A63F3/062</class-ref> cover the type of game: Lottery games (<class-ref scheme="cpc">A63F3/0605</class-ref>), lottos (<class-ref scheme="cpc">A63F3/061</class-ref>), football pools (<class-ref scheme="cpc">A63F3/0615</class-ref>), bingo games (<class-ref scheme="cpc">A63F3/062</class-ref>). <class-ref scheme="cpc">A63F3/0625</class-ref> and <class-ref scheme="cpc">A63F3/065</class-ref> cover more precisely the devices for filling-in, checking, the tickets and accessories therefor.</paragraph-text>
   </section-body>
</definition-statement>
```

3 Changes to CPC scheme schema

3.1 Added table element in note-paragraph

Through future scheme releases, pre element will be replaced with table element



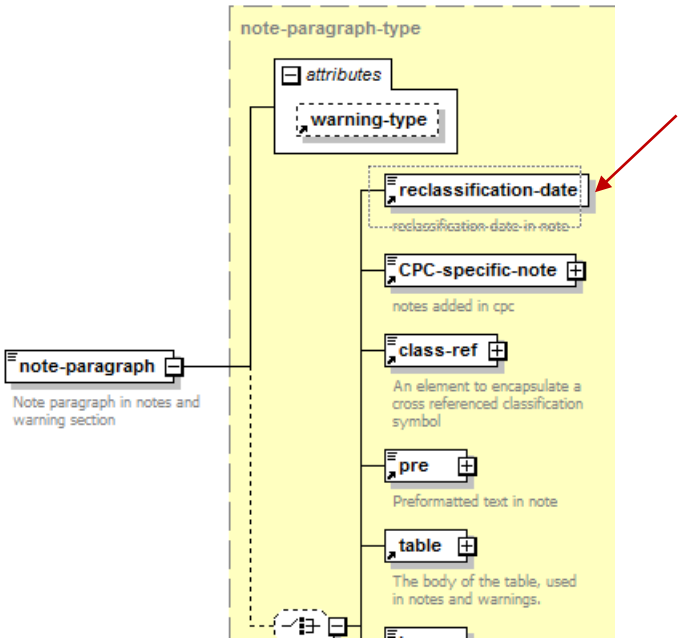


Example:

```
<note type="warning">
        <note-paragraph warning-type="ipc-not-used"> The following IPC groups are not used in the
CPC system. Subject matter covered by these groups is classified in the following CPC groups:
                <table>
                        <row>
                                <entry>
                                        <class-ref scheme="ipc">A01B69/04</class-ref>
                                </entry>
                                <entry> covered by </entry>
                                <entry>
                                        <class-ref scheme="cpc">A01B69/008</class-ref>
                                </entry>
                        </row>
                        <row>
                                <entry>
                                        <class-ref scheme="ipc">A01B69/06</class-ref>
                                </entry>
                                <entry> covered by </entry>
                                <entry>
                                        <class-ref scheme="cpc">A01B69/005</class-ref>
                                </entry>
                        </row>
                </table>
        </note-paragraph>
</note>
```

3.2 Add reclassification-date element for frozen warnings

Added optional element reclassification-date to note-paragraph



Example:

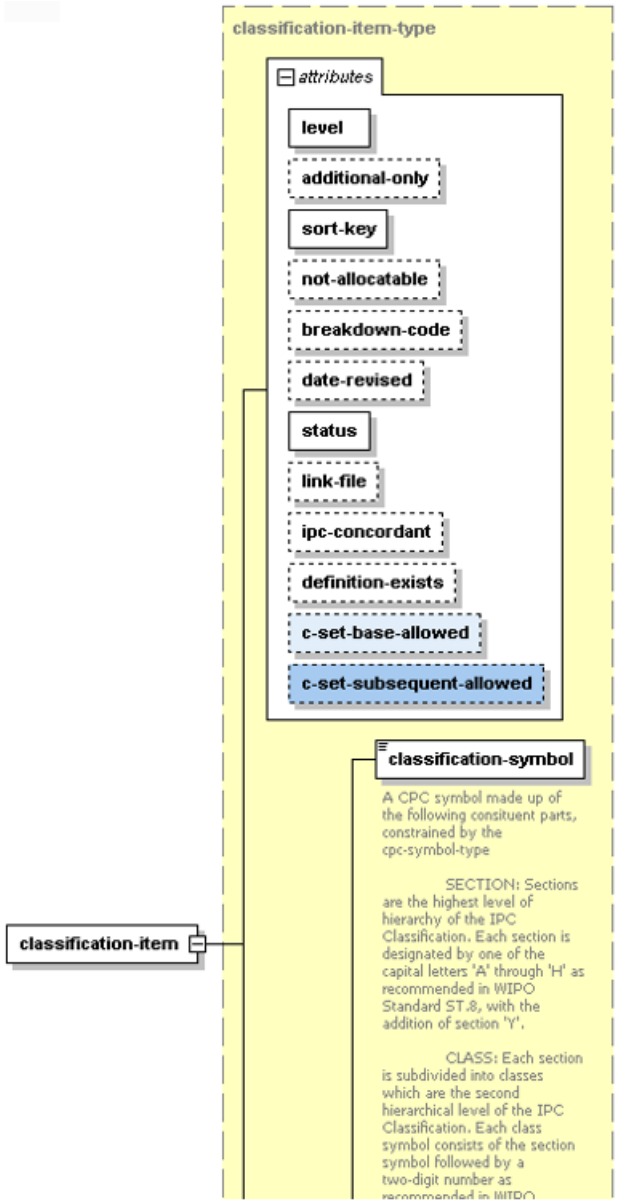
```
<classification-symbol>A63F13/005</classification-symbol>
<class-title date-revised="2013-01-01">
        <title-part>
        <CPC-specific-text>
        <text scheme="cpc">characterised by the type of game, e.g. ball games, fighting
games</text>
        </CPC-specific-text>
        </title-part>
</class-title>
<notes-and-warnings>
        <note type="warning">
                <note-paragraph warning-type="reclass-source">
                Group <class-ref scheme="cpc">A63F13/005</class-ref> is no longer used for the
                classification of documents as of <reclassification-date>2013-01-
                01</reclassification-date>. The backfile of this group is being reclassified into
                groups <class-ref scheme="cpc">A63F13/80</class-ref>-<class-ref
                scheme="cpc">A63F13/847</class-ref>.<br/><br/>Until reclassification is
                complete, groups <class-ref scheme="cpc">A63F13/005</class-ref> and <class-ref
                scheme="cpc">A63F13/80</class-ref> - <class-ref
                scheme="cpc">A63F13/847</class-ref> should be considered in order to perform a
                complete search.
                </note-paragraph>
        </note>
</notes-and-warnings>
```

3.3 Add two new optional attributes related to Combination set

Added two new optional attribute to classification item:

@**c-set-base-allowed**: Used to indicate if the symbol is allowed for allocation as the first symbol in a combination set (rank 1)

@**c-set-subsequent-allowed:** Used to indicate if the symbol is allowed for allocation as a subsequent symbol in a combination set (rank 2 and further)



Example:

<classification-item breakdown-code="true" not-allocatable="false" level="9" additional-only="true" sort-key="A63F300/8017" definition-exists="true" ipc-concordant="CPCONLY" **c-set-base-allowed="false" c-set-subsequent-allowed="true"** date-revised="2013-01-01" status="published"><classification-symbol>A63F2300/8017</classification-symbol><class-title date-revised="2013-01-01"><title-part><text>Driving on land or water</text></title-part><title-part><text>Flying</text></title-part></class-title></classification-item>

3.4 Scheme schema Technical clean up

After detailed analysis of entire CPC Scheme xml data and schema, we have conducted following technical schema cleanup to make the schema more consistent with the XML data and remove redundant XML data. While the majority of the changes do not have an impact on the XML data, several changes will require a one-time data conversion.

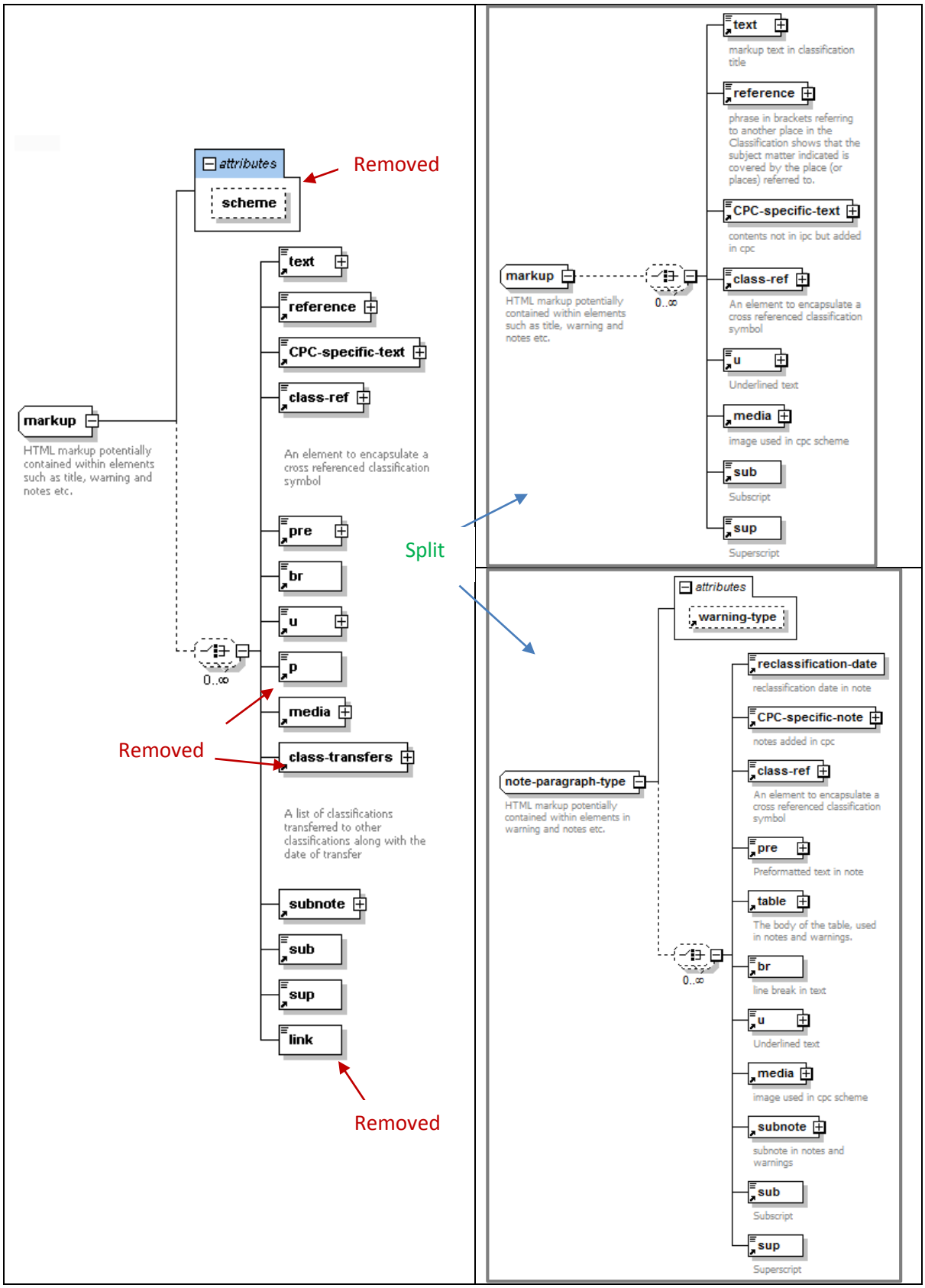
3.4.1 Restructure of markup type

1. Removed attribute @scheme from markup. Our analysis showed that this attribute was either not used or misused in the scheme XML files. **(has impact on XML instances, require one time removal of un-necessary attribute)**

   Example:

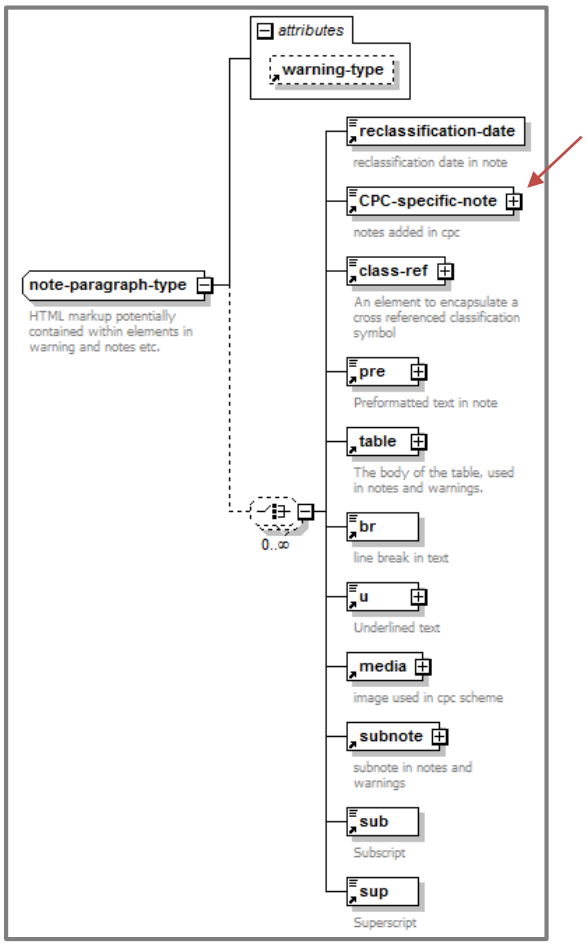
Old	New
<class-title date-revised="2013-01-01"><title-part><text scheme="ipc">without alternating possibility, </text><CPC-specific-text><text scheme="cpc">e.g. with rotary counters provided with scrapers</text></CPC-specific-text></title-part></class-title>	<class-title date-revised="2013-01-01"><title-part><text>without alternating possibility, </text><CPC-specific-text><text>e.g. with rotary counters provided with scrapers</text></CPC-specific-text></title-part></class-title>

2. To separate title specific content from notes and warning specific elements, “markup” complex type was split into markup and note-paragraph-type (**No impact on XML instance**)
3. Removed un-used element p, class-transfers, link elements **(no impact on XML instance)**


attributes
scheme
Removed
markup
HTML markup potentially contained within elements such as title, warning and notes etc.
0..∞
text
reference
CPC-specific-text
class-ref
An element to encapsulate a cross referenced classification symbol
pre
br
u
p
media
Removed
class-transfers
A list of classifications transferred to other classifications along with the date of transfer
subnote
sub
sup
link
Removed
Split
markup
HTML markup potentially contained within elements such as title, warning and notes etc.
0..∞
text
markup text in classification title
reference
phrase in brackets referring to another place in the Classification shows that the subject matter indicated is covered by the place (or places) referred to.
CPC-specific-text
contents not in ipc but added in cpc
class-ref
An element to encapsulate a cross referenced classification symbol
u
Underlined text
media
image used in cpc scheme
sub
Subscript
sup
Superscript
attributes
warning-type
note-paragraph-type
HTML markup potentially contained within elements in warning and notes etc.
0..∞
reclassification-date
reclassification date in note
CPC-specific-note
notes added in cpc
class-ref
An element to encapsulate a cross referenced classification symbol
pre
Preformatted text in note
table
The body of the table, used in notes and warnings.
br
line break in text
u
Underlined text
media
image used in cpc scheme
subnote
subnote in notes and warnings
sub
Subscript
sup
Superscript

3.4.2 Rename cpc-specific-text inside notes-and-warnings to cpc-specific-note

This change has Impact on XML instance, which requires one time conversion



Example:

<note type="note"><note-paragraph>Subject matter classified in groups <class-ref scheme="cpc">A23J3/22</class-ref> to <class-ref scheme="cpc">A23J3/28</class-ref> is also classified in groups <class-ref scheme="cpc">A23J3/04</class-ref> to <class-ref scheme="cpc">A23J3/20</class-ref>, if the nature of the protein is of interest **<CPC-specific-note>**except if subgroups <class-ref scheme="cpc">A23J3/22</class-ref> to <class-ref scheme="cpc">A23J3/28</class-ref> already provide for this subject matter**</CPC-specific-note>**</note-paragraph></note>

3.4.3 Other cleanup and further restrictions (no impact on XML instances)

1. Added default value "false" to the following attributes in classification-item: @additional-only, @not-allocatable, @breakdown-code
2. Changed ipc-symbol type enumerated values to
   xsd:pattern value="CPCONLY"
   xsd:pattern value="[A-H]([0-9][0-9])[A-Z]([1-9]\d{0,2}/\d{2,6})"
3. Changed level attribute value to between 2 and 19 inclusive (previously from 1).
4. Made id attribute and type attribute as required in media element
5. Changed symbol type value pattern to:
   xsd:pattern value="[A-HY]([0-9][0-9])?"
   xsd:pattern value="[A-HY]([0-9][0-9])[A-HJ-NP-Z]"
   xsd:pattern value="[A-HY]([0-9][0-9])[A-HJ-NP-Z]([1-9]\d{0,2}/\d{2,6})"
   xsd:pattern value="[A-HY]([0-9][0-9])[A-HJ-NP-Z](2\d{3}/\d{2,6})"
6. Changed element u from markup type to mixed content with class-ref element
7. Removed unused @qualifier attribute from class-ref
8. Updated descriptions for all elements and definitions