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Cooperative Patent Classification (CPC)

CPC web services

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OPS RESTful web services

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CPC Retrieval

Valid Query-string parameters in the CPC service

Query-string	Description
depth	Determines how many children elements should be included in the response
ancestors	Includes symbols above the requested element
navigation	Includes navigation symbols next & previous in the response

Request for the classification B32B7/00 with 1 child element:

<http://ops.epo.org/3.1/rest-services/classification/cpc/b32b7/00?depth=1>

```
xml version="1.0" encoding="UTF-8" standalone="yes" ?>
world-patent-data xmlns:ops="http://ops.epo.org" xmlns:reg="http://www.epo.org/register"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:cpc="http://www.epo.org/cpcexport"
xmlns:cpcdef="http://www.epo.org/cpcdefinition">
  neta name="elapsed-time" value="0" />
  :classification-scheme>
  :pc>
  :lass-scheme scheme-type="cpc" export-date="2013-12-03">
  :classification-item level="7" additional-only="false" sort-key="B32B7/00" not-allocatable="false" breakdown-code="false" date-
  revised="2013-11-22" link-file="classification/cpc/B32B7/00">
  :classification-symbol>B32B7/00</cpc:classification-symbol>
  :lass-title date-revised="2013-01-01">
  itle-part>
  ext scheme="ipc">Layered products characterised by the relation between layers, i.e. products comprising layers having different
  physical properties and products characterised by the interconnection of layers</cpc:text>
  :pc:title-part>
  :pc:class-title>
  :classification-item level="8" additional-only="false" sort-key="B32B7/005" not-allocatable="false" breakdown-code="false" date-
  revised="2013-11-22" link-file="classification/cpc/B32B7/005">
  :classification-symbol>B32B7/005</cpc:classification-symbol>
  :lass-title date-revised="2013-01-01">
  itle-part>
  :omment>
  ext scheme="cpc">in respect of orientation of features</cpc:text>
  :xplanation>
  ext scheme="cpc">
  :lass-ref scheme="cpc">B32B5/12</cpc:class-ref>
  :es precedence
  :pc:text>
  :pc:explanation>
  :pc:comment>
  :pc:title-part>
  :pc:class-title>
  neta-data>D</cpc:meta-data>
  :pc:classification-item>
  :classification-item level="8" additional-only="false" sort-key="B32B7/02" not-allocatable="false" breakdown-code="false" date-
  revised="2013-11-22" link-file="classification/cpc/B32B7/02">
  :classification-symbol>B32B7/02</cpc:classification-symbol>
  :lass-title date-revised="2013-01-01">
  itle-part>
  ext scheme="ipc">in respect of physical properties, e.g. hardness</cpc:text>
  :pc:title-part>
  :pc:class-title>
  neta-data>D</cpc:meta-data>
  :pc:classification-item>
  :classification-item level="8" additional-only="false" sort-key="B32B7/04" not-allocatable="false" breakdown-code="false" date-
  revised="2013-11-22" link-file="classification/cpc/B32B7/04">
  :classification-symbol>B32B7/04</cpc:classification-symbol>
  :lass-title date-revised="2013-01-01">
  itle-part>
  ext scheme="ipc">characterised by the connection of layers</cpc:text>
  :pc:title-part>
  :pc:class-title>
  neta-data>+</cpc:meta-data>
  :pc:classification-item>
  neta-data>+D</cpc:meta-data>
  :pc:classification-item>
  :pc:class-scheme>
  :ps:cpc>
  :ps:classification-scheme>
  :ps:world-patent-data>
```

CPC Media retrieval

- To retrieve CPC media referenced in the classification text in the format specified (gif,jpeg,tif, mp3 etc....)
- The media name and type can be extracted from the CPC retrieval response.

[http://ops.epo.org/3.1/restservices/classification/cpc/media/\[image-name\]](http://ops.epo.org/3.1/restservices/classification/cpc/media/[image-name])

Example

Use the classification retrieval service, extract the media name and type from the response (e.g. **A01N37/12** symbol):

```

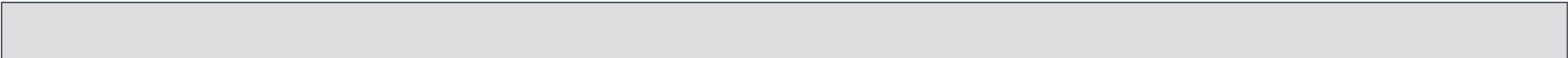
<ops:world-patent-data xmlns:ops="http://ops.epo.org"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:cpc="http://www.epo.org/cpcexport">
  <ops:meta name="elapsed-time" value="1"/>
  <ops:classification-scheme>
    <ops:cpc>
      <cpc:class-scheme scheme-type="cpc" export-date="2012-10-13">
        <cpc:classification-item level="8" additional-only="false" sort-
          key="A01N37/12" not-allocatable="false" breakdown-code="false" date-
          revised="2012-10-12" link-file="classification/cpc/A01N37/12">
          <cpc:classification-symbol>A01N37/12</cpc:classification-symbol>
          <cpc:class-title date-revised="2012-10-12">
            <cpc:title-part>
              <cpc:text scheme="ipc">containing the group <cpc:media
                id="classification/cpc/media/100.gif" type="gif"/>, wherein Cn means a
                carbon skeleton not containing a ring</cpc:text>
            </cpc:title-part>
            <cpc:title-part>
              <cpc:text scheme="ipc"> This analogues thereof</cpc:text>
            </cpc:title-part>
          </cpc:classification-item>
        </cpc:class-scheme>
      </ops:cpc>
    </ops:classification-scheme>
  </ops:world-patent-data>
  
```

Request example:

```

GET http://ops.epo.org/3.1/rest-services/classification/cpc/media/100.gif
Accept: image/gif
  
```

The image in GIF format will be the response



CPC search

In case you do not know the name of a symbol, this will identify possible interesting CPC symbols by searching for keywords in title and abstracts in the Espacenet database

The result will be a list of CPC symbols with a percentage value.
Only the first 10 CPC symbols with the highest percentage are shown.

Example:

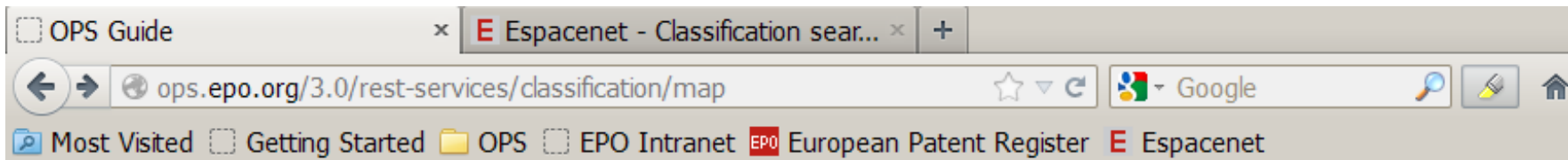
<http://ops.epo.org/3.0/rest-services/classification/cpc/search/?q=laminate>


```

<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <ops:world-patent-data xmlns:ops="http://ops.epo.org" xmlns:reg="http://www.epo.org/register" xmlns:xlink="http://www.w3.org/1999/xl
  xmlns:cpcdef="http://www.epo.org/cpcdefinition">
  <ops:meta name="elapsed-time" value="728" />
  - <ops:classification-search total-result-count="10" scheme-type="CPC">
    <ops:query syntax="CQL">titleandabstract = laminate</ops:query>
  - <ops:search-result>
    - <ops:classification-statistics classification-symbol="B32B27/00" percentage="5.485232">
      - <cpc:class-title date-revised="2013-01-01">
        - <cpc:title-part>
          <cpc:text scheme="ipc">Layered products comprising</cpc:text>
          - <cpc:comment>
            <cpc:text scheme="cpc">a layer of</cpc:text>
          </cpc:comment>
          <cpc:text scheme="ipc">synthetic resin</cpc:text>
          - <cpc:comment>
            - <cpc:explanation>
              - <cpc:text scheme="cpc">
                <cpc:class-ref scheme="cpc">B32B5/02</cpc:class-ref>
                /
                <cpc:class-ref scheme="cpc">B32B5/16</cpc:class-ref>
                /
                <cpc:class-ref scheme="cpc">B32B5/18</cpc:class-ref>
                take precedence; thermoplastic elastomer
                <cpc:class-ref scheme="cpc">B32B2274/00</cpc:class-ref>
              </cpc:text>
            </cpc:explanation>
          </cpc:comment>
        </cpc:title-part>
      </cpc:class-title>
    </ops:classification-statistics>
    - <ops:classification-statistics classification-symbol="B32B15/00" percentage="2.2503517">
      - <cpc:class-title date-revised="2013-01-01">
        + <cpc:title-part>
          </cpc:class-title>
        </ops:classification-statistics>
      - <ops:classification-statistics classification-symbol="B32B2307/00" percentage="1.8284107">
        - <cpc:class-title date-revised="2013-01-01">
          - <cpc:title-part>
            <cpc:text scheme="ipc">Properties of the layers or laminate</cpc:text>
          </cpc:title-part>
        </cpc:class-title>
      </ops:classification-statistics>
    - <ops:classification-statistics classification-symbol="B32B7/00" percentage="1.8284107">
      - <cpc:class-title date-revised="2013-01-01">
        - <cpc:title-part>
          <cpc:text scheme="ipc">Layered products characterised by the relation between layers, i.e. products comprising layers having
            interconnection of layers</cpc:text>
          </cpc:title-part>
        </cpc:class-title>
      </ops:classification-statistics>
  </ops:search-result>
  </ops:classification-search>
</ops:world-patent-data>
  
```

Concordance mapping services

Mapping services from ECLA/CPC to ECLA/CPC/IPC



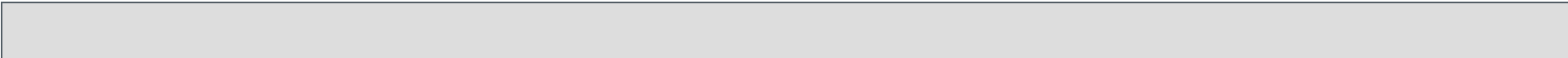
Guide

OPS services / Classification Service / Mapping

In schema	Class	Out schema	
<input type="text" value="ecla"/>	<input type="text" value="/ C01F7/06M"/>	<input type="text" value="cpc"/>	<input type="button" value="Construct"/>

Result

<http://ops.epo.org/3.0/rest-services/classification/map/ecla/C01F7/06M/cpc>



CPC validation service (2014) (1/2)

- The classification validity service verifies the CPC classification existence on a specific date (*activeDate*).
- If the optional request parameter "*activeDate*" is not specified, the system will use the current date instead.
- The service accepts only 'full' classification symbols, starting from Main group, like A01B1/00.

CPC validation service (2014 (2/2))

Structure will be like:

```
HEAD /rest-services/classification/cpc/validation/A01B63/002  
HEAD /rest-services/classification/cpc/validation/A01B63/002?activeDate=20130101
```

HTTP response code	Reason
200	Valid classification symbol
400	Classification symbol format is invalid
404	Classification symbol does not exist on date specified

CPC Definition Retrieval (2014)

Returns the definition XMLs in the format they are present on cpcinfo.org or it shall extract the definition per symbol if the granularity of the definition symbols is more than subclass (e.g. C07C)

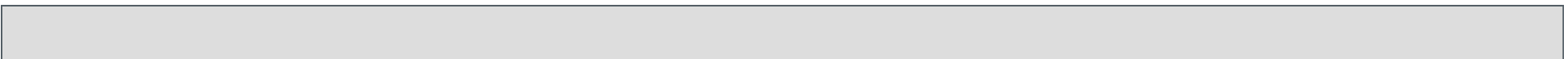
Preview of the retrieval API

GET /rest-services/classification/cpc/definition/C07C

GET /rest-services/classification/cpc/definition/C07C2531/00

Future web service for uploading classification data (in development)

- Requirements
- Challenges/solutions
- Example Classification Allocation XML
- Example Combination Set XML
- Example structure optimized XML (OX)
- POST transaction example
- Example of query on transaction data



Requirements

- The web-service shall provide a means for a National Office to submit collections of patent documents complete with allocations (CPC classification symbols and C-sets).
- Validation of data (valid symbol, INV, ADD etc.)
- The web-service shall provide a means to query this transaction data, for example to query the status of a submitted batch (transaction) or allocations therein.

Challenges/solutions

- ❖ All offices have currently different structures, although elements are present (ST36/CPC allocation standard, DocDB XML)
- ❖ Service shall be able to process a so-called “Optimised XML” (OX)
- ❖ A service shall therefore be provided that enables a National Office to transform their own XML format to the OX format so that it can be subsequently consumed by the web-service (JAVA-API).
- ❖ Each batch (transaction) will be posted in a staging area and processed in a batch process that will validate the data

Example Classification Allocation XML

```
<patent-classification>  
  <classification-scheme office="EP" scheme="CPCNO">  
    <date>20130101</date>  
  </classification-scheme>  
  <classification-symbol>G06F9/06</classification-symbol>  
  <classification-value>I</classification-value>  
  <classification-status>B</classification-status>  
  <classification-data-source>H</classification-data-source>  
  <generating-office>SE</generating-office>  
  <action-date>  
    <date>20130101</date>  
  </action-date>  
</patent-classification>
```

Example Combination set XML

```
<combination-set>
  <group-number>1</group-number>
  <combination-rank>
    <rank-number>1</rank-number>
    <patent-classification>
      <classification-scheme office="EP" scheme="CPCNO">
        <date>20130101</date>
      </classification-scheme>
      <classification-symbol>A01B1/00</classification-symbol>
      <classification-value>I</classification-value>
      <classification-status>B</classification-status>
      <classification-data-source>H</classification-data-source>
      <generating-office>SE</generating-office>
      <action-date>
        <date>20130201</date>
      </action-date>
    </patent-classification>
  </combination-rank>
  <combination-rank>
    <rank-number>2</rank-number>
    <patent-classification>
      <classification-scheme office="EP" scheme="CPCNO">
        <date>20130101</date>
      </classification-scheme>
      <classification-symbol>A01B3/00</classification-symbol>
      <classification-value>I</classification-value>
      <classification-status>B</classification-status>
      <classification-data-source>H</classification-data-source>
      <generating-office>SE</generating-office>
      <action-date>
        <date>20130201</date>
      </action-date>
    </patent-classification>
  </combination-rank>
</combination-set>
```

Example structure optimized XML (OX)

```
<patent-documents>
  <patent-document country="SE" doc-number="7908310" kind="L" status="A">
    ...
  </patent-document>
  <patent-document country="SE" doc-number="5908310" kind="L"
    status="A">
    <patent-classification>
      <classification-scheme office="EP" scheme="CPCNO">
        <date>20130101</date>
      </classification-scheme>
      <classification-symbol>G06F9/06</classification-symbol>
      <classification-value>I</classification-value>
      <classification-status>B</classification-status>
      <classification-data-source>H</classification-data-source>
      <generating-office>SE</generating-office>
      <action-date>
        <date>20130101</date>
      </action-date>
    </patent-classification>
  </patent-document>
</patent-documents>
```

The <patent-classification> container element may have a mixed content of:

- Classification allocations (<patent-classification>)
- Combination Sets of classification allocations "grouped in sequence". (<combination-set>)

POST Transaction example (1/2)

- Processes an XML file (OX format) containing SE documents and their allocations into the Staging Area and assigns a TRANSACTION ID so that the particular set of documents can be queried in future to find out their status. The list of documents and allocations to be processed is specified in the request body in OX format. If the request is successful, the TRANSACTION ID is returned in the response.

Structure:	<code>POST /service/<version>/office/<country-code>/transaction</code>
Example:	<code>http://ecs-t.internal.epo.org/service/1.0.0/office/SE/transaction</code>

POST Transaction example (2/2)

```
<transaction>
  <patent-document country="SE" doc-number="4908310" kind="L" status="A">
    <patent-classifications>
      <patent-classification>
        <classification-scheme office="EP" scheme="CPCNO">
          <date>20130101</date>
        </classification-scheme>
        <classification-symbol>G06F9/06</classification-symbol>
        <classification-value>I</classification-value>
        <classification-status>B</classification-status>
        <classification-data-source>H</classification-data-source>
        <generating-office>SE</generating-office>
        <action-date>
          <date>20130101</date>
        </action-date>
      </patent-classification>
    </patent-classifications>
  </patent-document>
</transaction>
```

```
<transaction id="101" status="PENDING" href="http://ecs-
t.internal.epo.org/service/1.0.0/office/SE/transaction/101"/>
```

Example of query on transaction data

Structure: GET /service/<version>/office/<country-code>

Example: <http://ecs-t.internal.epo.org/service/1.0.0/office/GB>

Example Response Body

```
<national-office cc="GB" href="/service/1.0.0/office/GB ">  
  <transaction id="101" status="PENDING"  
  href="/service/1.0.0/office/GB/transaction/101" />  
  <transaction id="102" status="PENDING"  
  href="/service/1.0.0/office/GB/transaction/102" />  
</national-office>
```

Thank you for your attention!

