

WORLD INTELLECTUAL PROPERTY ORGANIZATION

SPECIAL UNION FOR THE INTERNATIONAL PATENT  
CLASSIFICATION  
(IPC UNION)

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Internet Publication (IPCPUB) URLs and Services

<b>Date</b>	<b>By</b>	<b>Version</b>	<b>Status</b>	<b>Modification</b>
September 4, 2014	Collioud	5.1	PF approved	Created from and replaces IPC_Internet_URL_Web_Services_specification_V5
November 19, 2014	Collioud	5.3	Revised	Added “Get XML Fragment” service
September 22, 2015	Collioud	6.2	Revised	IPCPUB 6.2
October 9, 2015	Collioud	6.3	Revised	IPCPUB 6.3
April 10, 2017	Collioud	7.0	Revised	IPCPUB 7.0
December 5, 2017	Collioud	7.6	Revised	IPCCAT categorization at subgroup level. Addition of revision-project to concordance-to service.
January 28, 2019	Collioud	7.7	Revised	WIPO global switch from http to https protocol
July 25, 2019	Collioud	8.0	Revised	IPCCAT cross-lingual
November 20, 2019	Collioud	8.1	Revised	Removal of concordance-to web service
March 4, 2020	Collioud	8.4	Revised	IPCPUB 8.4
October 15, 2021	Collioud	9.0	Revised	New AWS URLs

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## 1. Introduction

The purpose of this file is to document how some of functionality of the IPC Internet publication (IPCPUB) proposed by WIPO can be accessed through:

- URL e.g. to hyperlink IPC symbols in a patent document to the corresponding place in the IPC internet publication in authentic languages (hosted by WIPO) or to the corresponding place in the internet publication of national translation of the IPC for IP offices using IPCPUB.
- Services:
  - Web Services that are accessible through an HTTP based API
  - Products made publicly available on WIPO web site or delivered on demand.

The URL of the IPC Internet publication is made of a fixed character string e.g. <https://ipcpub.wipo.int/> and can optionally be concatenated with a number of parameters that can be used to indicate specific aspects of what should be displayed.

The parameters are set through a list of statements in the form of *parameter\_name=value* and separated by **&**.

Part of the terminology used in this document is explained in the on-line help of the system.

In the following, mandatory parameters i.e. without which nothing would be displayed are indicated by (\*) and parameter default values are indicated by (+).

**Note** that *parameter\_name* and *value* are case sensitive **excepted for symbol value**.

## 2. URLs

Access to specific functionality of part of the user interface

### 2.1. Scheme

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters and values:

Parameter	Description	Values	Meaning
<b>NONE</b>	<b>The scheme at Section level for the current edition of the IPC with all default values</b>		
<b>notion</b>	<u>IPC Scheme</u>	scheme	scheme
<b>version</b>	<u>version of the IPC</u> in YYYYMMDD format e.g., 20060101	(+)	Current version by default, i.e. version in force
		latest	Latest published version of the IPC
<b>symbol</b>	14 character string with zero padding (same convention described in the XML validity file) e.g. [A01N0065000000]		
		none	Displays the list of IPC sections
<b>viewmode</b>	Different ways to <u>view</u> of the IPC.	f (+)	Fulltext
		a	Path
		h	Hierarchic view
		m	Maingroup view
<b>notes</b>	presentation of the <u>notes</u>	yes (+)   no	
<b>headings</b>	presentation of the <u>guidance headings</u>	yes (+)   no	
<b>indexes</b>	Allows the presentation of the subsection, class and subclass <u>indexes</u> .	yes   no (+)	
<b>showdeleted</b>	If <b>yes</b> , deleted entries are presented (for the 8th edition, valid only on the advanced level).	yes(+)   no	
<b>menulang</b>	The <u>language</u> of the interface ( <u>menu</u> , buttons, ...)	FR	French
		EN (+)	English
<b>lang</b>	<u>Language(s)</u> in which the IPC is displayed.	en (+)	English
		fr	French
		enfr	double language EN/FR presentation
<b>fipcpc</b>	Display of <u>FI</u> and/or <u>CPC</u> related information	cpc   fi   no (+)	
<b>tree</b>	Display of guiding lines instead of dots below Groups to better visualize the <u>tree</u> structure	yes   no (+)	
<b>definitions</b>	Display of specified Symbol (see symbol parameter above) <u>Definitions</u>	yes   no (+)	

## 2.2. RCL

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters and values:

Parameter	Description	Values	Meaning
<b>notion (*)</b>	<u>Reverse Concordance List</u>	rcl	RCL
<b>symbol</b>	14 character string with zero padding, e.g. [A01N0065000000] If not specified the RCL summary page is accessed		
<b>direction</b>	Whether the concordance is shown from the old version to the new or the opposite.	o2n (+)	Old-to-new
		n2o	New-to-old
<b>version</b>	Target version of the IPC in YYYYMMDD format e.g., 20100101 to get the RCL from IPC 2009.01 to IPC 2010.01	(+)	Current version by default, i.e. version in force
		latest	Latest published version of the IPC
<b>menulang</b>	The <u>language</u> of the interface ( <u>menu</u> , buttons, ...)	EN (+)	English
		FR	French

## 2.3. Catchwords

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters and values:

Parameter	Description	Values	Meaning
<b>notion (*)</b>	<u>Catchword Index</u>	cw	<u>Catchword Index</u>
<b>initial</b>	A capital letter, the initial of the catchword entry.		
<b>cwid</b>	An integer with “CW” prefix, as defined in the catchword master file as the unique identifier for any catchword entry. If not specified the Catchword index summary page is accessed		
<b>version</b>	version of the IPC in YYYYMMDD format e.g., 20060101	(+)	Current version by default
		latest	Latest published version of the IPC
<b>lang</b>	<u>Language(s)</u> in which the IPC is displayed.	en (+)	English
		fr	French
		enfr	Both English and French
<b>menulang</b>	The <u>language</u> of the interface ( <u>menu</u> , buttons...)	EN (+)	English
		FR	French

## 2.4. Compilation

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters and values:

Parameter	Description	Values	Meaning
<b>notion</b> (*)	Compilation of changes in the full IPC	compilation	Full IPC compilation
<b>version</b>	<u>version of the IPC</u> in YYYYMMDD format e.g., 20060101	(+)	Current version by default
		latest	Latest published version of the IPC
<b>lang</b>	<u>Language(s)</u> in which the IPC is displayed.	en (+)	English
		fr	French
<b>menulang</b>	The <u>language</u> of the interface (menu, buttons...)	EN (+)	English
		FR	French

## 2.5. Definitions with their embedded illustrations

Definitions including their embedded illustrations are accessible in IPCPUB through the Scheme URL for the corresponding Symbol.

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters and values:

Parameter	Description	Value	Meaning
symbol (*)	14 character string with zero padding (same convention described in the XML validity file) e.g. [A01N0065000000]		
definitions (*)	Display of <u>definitions</u> .	yes	

## 2.6. Search modes

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters:

### 2.6.1. STATS Assistance (advance search)

Parameter	Description	Value	Meaning
searchmode (*)	Search options to be displayed	stats	STATS search options tab is displayed, advance search options are enabled and Smart search is unselected.

### 2.6.2. IPCCAT Assistance (advance search)

Parameter	Description	Value	Meaning
searchmode (*)	Search options to be displayed	ipccat	IPCCAT search options tab is displayed, advance search options are enabled and Smart search is unselected.

### 2.6.3. Smart search

Parameter	Description	Value	Meaning
searchmode (*)	Search mode	smart (+)	Smart search is selected and advance search options are disabled.



#### 2.6.4. Other Advance search options

Parameter	Description	Values	Meaning
searchmode_(*)	Search mode (and options to be displayed)	advance	Smart search is unselected and advance search options are enabled.
		terms	Terms search options tab is displayed, advance search options are enabled and Smart search is unselected.
		xrefs	Cross-references search options tab is displayed, advance search options are enabled and Smart search is unselected.

#### 2.7. Example

Shows English version of the IPC 2010.01 internet publication scheme for symbol A01N 3/04:

<https://ipcpub.wipo.int/?version=20100101&symbol=A01N0003040000>

### 3. Services

#### 3.1. XML Services Layer

##### 3.1.1. IPC Scheme XML files

It provides XML files at specified granularity (i.e. one per Section, Class or Subclass).

##### 3.1.2. IPC Definitions XML files

It provides a set of XML files, one per Symbol.

##### 3.1.3. CPC Scheme in IPC compliant format

It provides a subset of CPC XML Scheme (and referenced files such as images) in IPC-like XML format (see [subcpc2ipc\\_scheme\\_specs\\_v3\\_1](#)).

##### 3.1.4. FI Scheme in IPC compliant format

It provides the CPC XML Scheme (and referenced files such as images) in IPC-like XML format (see [fi2ipc\\_scheme\\_specs\\_v3\\_1](#)).

## 3.2. Other Web Services

### 3.2.1. “Check IPC Symbol Validity” service

This service is for checking the validity of an IPC symbol.

The {variable} parts of the URL

“https://ipcpub.wipo.int/ws/getvalidity/{symbol}/{version}/” are to be replaced with the following parameters:

Parameter	Description	Values	Meaning
<b>symbol (*)</b>	14 character string with zero padding, e.g. [A01N0065030000]		Symbol to check for validity
<b>version (*)</b>	version of the IPC in YYYYMMDD format e.g., 20090101	version of the IPC in YYYYMMDD format	Version for which the symbol must be valid
		latest	Latest published version of the IPC

This optional parameter can be appended to above URL:

<b>jsonpcallback</b>	If set to a value other than “none”, this parameter allow for cross-domain call of the service from JavaScript enabled web browsers and returns a JSON object instead of an XML fragment	Key or none	Key is a value which allow client and server sides of the application to identify each other. It is more safe to leave the generation of Key to the client application (see example below)
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If **jsonpcallback** is not specified or set to “none”, this service returns an XML fragment such as:

```
<ipc-validity-check>
  <classification-ipcr>
    <version>20130101</version>
    <section>A</section>
    <class>01</class>
    <subclass>N</subclass>
    <main-group>0065</main-group>
    <subgroup>030000</subgroup>
    <ipc-version-indicator>20090101</ipc-version-indicator>
    <symbol-category>I</symbol-category>
    <classification-validity>V</classification-validity>
  </classification-ipcr>
</ipc-validity-check>
```

With:

**version:** version of the IPC in YYYYMMDD format.

**section, class, subclass, main-group, subgroup:** describe the concerned IPC symbol. These elements are defined in the IPC validity file specification.

**ipc-version-indicator:** IPC version in which the symbol was last revised (YYYYMMDD format).

As all symbols were considered revised at the opportunity of the IPC reform in January 2006, the following convention is used: if the symbol is marked in the IPC scheme as last revised in a version before 2006.01 the returned ipc-version-indicator is 2006.01.

This element is not returned if symbol is not valid.

**symbol-category:** “K”, “I” or “D” (see entry-type in IPC validity file specification). This element is not returned if symbol is not valid.

**classification-validity:** “V” or “N” (Valid / Not valid). The value in this element is the binary result of checking existence of symbol defined by **section, class, subclass, main-group, subgroup** in the IPC version referred to by **version**.

If **jsoncallback** is different to “none”, this service returns a JSON object such as:

```
key({
  "version": "20130101",
  "section": "A",
  "class": "01",
  "subclass": "N",
  "main_group": "0065",
  "subgroup": "030000",
  "ipc_version_indicator": "20090101",
  "symbol_category": "K",
  "classification_validity": "V"
})
```

### 3.2.1.1. Example using JQuery

To call the service from JavaScript in a web browser and to check the validity of an IPC symbol A01N0001000000 for the latest version of the IPC:

```
jQuery.getJSON(
  'https://ipcpub.wipo.int/ws/getvalidity/A01N/latest/?jsoncallback=
  ?',
  function(data) {
    if(data.classification_validity=='V')
      alert('Your symbol is valid!');
    else
      alert('Your symbol is NOT valid!');
  });
```

### 3.2.1.2. Example using Python

```
import requests
from xml.etree import ElementTree

# Call the service
request = requests.get(
    (
        'https://ipcpub.wipo.int/ws/'
        'getvalidity/'
        'A01N0001000000/'
        '20100101/'
    ),
    verify=False
)

# Load HTTP response body into an XML Element Tree
xmlltree = ElementTree.fromstring(request.text)

# Find validity element
validity = xmlltree.find(
    'classification-ipcr/classification-validity'
)

# Test validity element content
if validity.text == 'V':
    print 'Your symbol is valid!'
else:
    print 'Your symbol is NOT valid!'
```

### 3.2.2. “Store Selected IPC Symbol” service

**Caution:** web browser must accept Cookies from wipo.int in order to use this service.

This option stores the information specified as value of the parameter in a file associated to the current client session. This is used for example to retrieve later an IPC symbol previously selected by the user (using the Get IPC Symbol web service described in the next paragraph) from other IPC related web applications.

The fixed part of the URL “https://ipcpub.wipo.int/” is to be concatenated with the following parameters:

Parameter	Description	Values	Meaning
<b>Store</b>	The IPC notion to be stored. Activates the automatic storage of the “Current symbol”.	symbol	The symbol in the “Current Symbol” box

### 3.2.3. “Get Selected IPC Symbol” service

**Caution:** web browser must accept Cookies from wipo.int in order to use this service.

This service is to retrieve the symbol stored in application server as described in the previous paragraph.

The fixed part of the URL <https://ipcpub.wipo.int/ws/getcurrentsymbol/> is to be concatenated with the following parameter:

Parameter	Description	Values	Meaning
<b>jsonpcallback</b>	If set to a value other than “none”, this parameter allow for cross-domain call of the service from JavaScript enabled web browsers.	<i>Key</i>	<i>Key</i> is a value which allow client and server sides of the application to identify each other. It is recommended to leave the generation of <i>Key</i> to the client application (see example below)

#### 3.2.3.1. Example using JQuery

- a) The calling web application displays the IPC internet publication:
 

```
jQuery('iframe#ipcpub').attr('src', 'https://ipcpub.wipo.int/?store=symbol', 'ipcpub');
```
- b) An IPC symbol is expected to be selected in the IPC internet publication (the selected symbol is shown in the “Current symbol field”).
- c) The calling web application calls the Get IPC Symbol service to retrieve the symbol stored. For example: using JQuery to update an element named “symbol” with the IPC Symbol captured through a button named “getsymbol”:
 

```
jQuery('#getsymbol').click(function () {
  var
  url='https://ipcpub.wipo.int/ws/getcurrentsymbol/?jsonpcallback=?'
  });
  jQuery.getJSON(url,
  function(data) {jQuery('#symbol').val(data)});
});
```

### 3.2.4. "IPCCAT" service

This service provided by the IPCCAT system is documented as part of IPCPUB which provides a user interface for text categorization in the IPC and interfaces IPCCAT web service.

**Caution:** this service does not support many queries in a short period of time, **please use it sparingly.**

The purpose of this service is to get IPC predictions based on a given text. Predictions which can only be gotten at Class, Sub-class or Main Group level are qualified with a confidence score. Information about IPCCAT, its training set, coverage of the IPC and quality metrics for its predictions is available under the IPCCAT section of IPCPUB online help.

The fixed part of the URL of this service is: <https://ipccat.wipo.int/EN/query>.

The IPCCAT service accepts the following parameters to be passed as URL parameters or in the HTTP request body in XML format:

Parameter	Description	Values	Meaning
<b>lang (*)</b>	ISO 639-1 two-letter code of the language in which text categorization is requested	ar de en es fr ja ko pt ru zh	Arabic German English Spanish French Japanese Korean Portuguese Russian Chinese
<b>numberofpredictions (*)</b>	Number of predictions	1 2 3 4 5	The maximum number of IPC Symbols to be returned by this service
<b>hierarchiclevel (*)</b>	IPC hierarchic level name	CLASS SUBCLASS MAINGROUP SUBGROUP	The IPC hierarchic level at which the classification should be proposed: Class, Subclass, Main Group or Sub Group
<b>startfromsymbol</b>	A symbol valid in the IPC version indicated as relevant for IPCCAT training, e.g. A01N0065030000		The place of the IPC delimiting the search scope.
<b>text (*)</b>	UTF-8 encoded text, maximum length is 1500 characters for languages other than English.		The text on which the prediction is based.

#### 3.2.4.1. Examples

##### Example of parameters passed as URL parameters:

```
https://ipccat.wipo.int/EN/query
?startfromsymbol=G06
&hierarchiclevel=MAINGROUP
&lang=en
&numberofpredictions=2
&text=automatic text classification for patent
```

This simple method can be used if text parameter value is short enough.

### Example of parameters passed as XML in the HTTP request body:

```
<ipccat>
  <startfromsymbol>G06</startfromsymbol>
  <hierarchiclevel>MAINGROUP</hierarchiclevel>
  <lang>en</lang>
  <numberofpredictions>2</numberofpredictions>
  <text>automatic text classification for patent</text>
</ipccat>
```

This method is recommended for long texts, mainly when the value of the lang parameter is “en”, in which case the length of the text is not limited.

### In both cases above, XML data returned in the HTTP response body is for example:

```
<predictions>
  <msg>ok</msg>
  <prediction>
    <rank>1</rank>
    <category>G06F0017</category>
    <score>1675</score>
  </prediction>
  <prediction>
    <rank>2</rank>
    <category>G06K0009</category>
    <score>1208</score>
  </prediction>
</predictions>
```

#### 3.2.4.2. XML response description

The response is made of <predictions> root element that contains a <msg> element followed by zero or more <prediction> elements.

The <msg> element content is one of these texts:

- **“ok”**: there is no error in request parameters and there is at least one prediction as result.
- **“No result”**: The text to be classified is too short or the specific combination of parameter values can not produce any result.
- **“Invalid parameter”**: Parameter(s) name or value(s) do not comply with this specification.
- **“This instance of IPCCAT only supports the following language(s): xx, yy”**: For example the language in which the text to be categorized is written must be English (EN) or French (FR), in such case the message is “This instance of IPCCAT only supports the following language: en, fr”.

The <prediction> element contains three elements:

- <rank>: the value is an integer indicating the rank of a prediction among others returned by the service. The rank is established by sorting confidence

scores of returned predictions i.e. the prediction with highest confidence score has rank 1, next confidence score has rank 2 ...).

- `<category>`: the value is an IPC Symbol of hierarchic level according to `<hierarchiclevel>` parameter value. This Symbol is the IPC place that IPCCAT predicts as best matching the content of `<text>`.
- `<score>`: the value is an integer indicating the level of confidence that IPCCAT has in the content of `<text>` matching the concerned category in the requested IPC hierarchical level. As example of their use, in IPCPUB user interface, these confidence score are converted into a number of stars as follow:

Confidence score	Number of stars
From 0 to 599	0
From 600 to 699	1
From 700 to 899	2
From 900 to 1249	3
From 1250 to 1599	4
From 1600	5

Note: The confidence score is directly linked to the performance of the neural network. For instance, from 1600 onwards, IPCCAT's prediction is correct in 97% of tested cases (for a given neural network).

### 3.1. Other services

The following services are available as downloadable files at <https://www.wipo.int/classifications/ipc/en/ITsupport/>.

#### 3.1.1. Inventory of ever used IPC Symbols

It provides a list of the Symbols that were ever valid in the IPC, with their date of creation and their date of deletion.

#### 3.1.2. List of IPC scheme titles in authentic languages

Lists of IPC Symbol / Title pairs that can be loaded in a database or a spreadsheet.

#### 3.1.3. List of IPC symbols referred to by IPC Definitions

List of IPC symbols referred to by each Definition of a given IPC version. Each referring Definition is indicated by the symbol of the IPC Scheme where this Definition appears.

## 4. Prototypes

Some calls to IPC internet publication services are illustrated by prototypes available under <https://www.wipo.int/classifications/ipc/en/ITsupport/prototypes/index.html>.

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