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Webservice User Manual

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REFERENCE AND APPLICABLE DOCUMENTS

This section contains the lists of all reference and applicable documents. When referring to any of the documents below, the bracketed reference will be used in the text, such as [R01].

REFERENCE DOCUMENTS				
Ref.	**Title**	**Reference**	**Version**	**Date**
R01	Front Office Functional Analysis and Design	ELX-FO-FAD	22.00	30/06/2021

Table 1: Applicable Documents

APPLICABLE DOCUMENTS				
Ref.	**Title**	**Reference**	**Version**	**Date**
A02	Project Quality Plan	ELX-PQP	1.01	10/02/2011

Table 2: Applicable Documents

ABBREVIATIONS AND ACRONYMS

ABBREVIATIONS AND ACRONYMS	
Abbreviation	**Meaning**
WSDL	Web Services Description Language
XML	Extensible Markup Language
XSD	XML Schema
ECAS	European Citizen Action Service

Table 3: Abbreviations and Acronyms

DEFINITIONS	
Term	**Meaning**
CELLAR	The CELLAR can be seen as the content repository module. This application aims to store all content and metadata needed by the Publications Office and its applications.

Table 4: Definitions

1 INTRODUCTION

1.1 PURPOSE OF THE DOCUMENT

The aim of this User Manual is to describe how to use the web service provided by the EUR-Lex 2012 system. This document may be used by all users interested in the usage of this web service.

1.2 SCOPE OF THE DOCUMENT

This User Manual refers to the EUR-Lex web services functionality as defined in the Functional Specifications Document [R01].

1.3 INTENDED AUDIENCE

The present document is intended to be read by the following people:

- OP IT Project Manager;
- OP Test Team;
- OP EUR-Lex Working Group;

1.4 STRUCTURE OF THE DOCUMENT

The document is organised as follows:

- **Chapter 1 - Introduction** provides an overview of the purpose of this document, and the intended audience;
- **Chapter 2 - Registration** explains how the different functionalities related to web services that are accessible from the new EUR-Lex 2012 interface;
- **Chapter 3 - Use the web service** explains how to use the EUR-Lex 2012 web services with a free testing tool like *SOAPUI;*
- **Chapter 4 - Expert search syntax** explains the syntax of the expert search.

2 REGISTRATION

The new EUR-Lex 2012 provides a web service opened to external user in order to search for legal content. It is a convenient way to perform search queries on the legal content of EUR-Lex without having to use the different search forms present on the website. The search results provided are contained in a structured XML compliant a specific schema definition.

In order to use the web service, the user must be registered in the new EUR-Lex and must subscribe to the web service.

2.1 WEB SERVICE REGISTRATION

The user can access the web services page using the link present in the right menu as shown on the next picture.

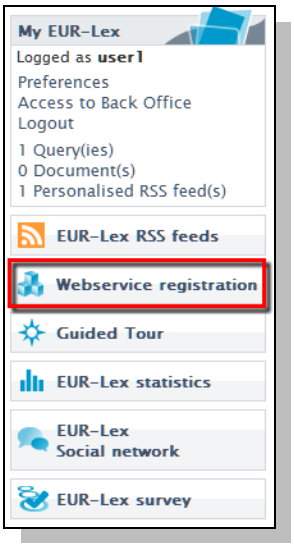

Figure 1: Link to the web service

The user has to register in order to have access to the service. An administrator will check the registration data and allow or forbid the use of the web services.

The link to the registration form is available on the web service page when the user is not yet registered to the web service.

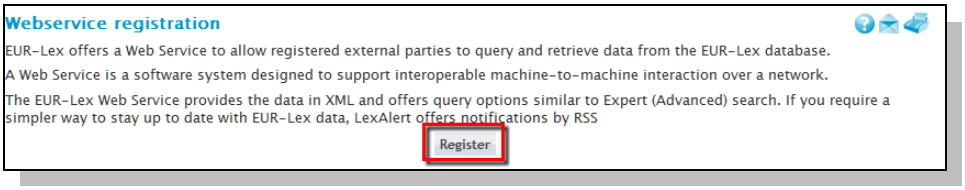

Figure 2: Link to register for the web services

Clicking on the *Register* button redirects the user to the registration form.

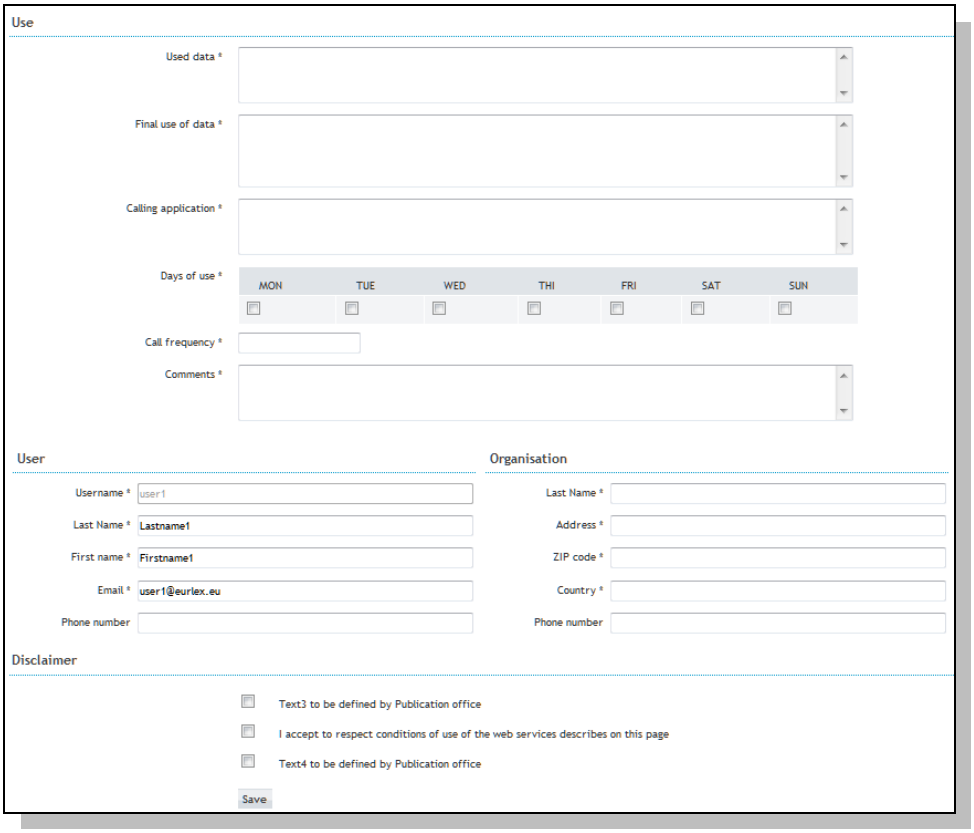

Figure 3: Web services registration form

The form contains the following fields:

EDITABLE FIELDS		
Field	**Description**	**Mandatory**
Used data	Description of the data that will be used in the scope of the utilisation of the web service.	Yes
Final use of data	The description of the data usage	Yes
Calling application	Description of the calling application	Yes
Days of use	Selection of the day of the week when the service will be used. One check box by week day.	Yes
Call frequency	The number of calls per day that is foreseen	Yes
Comments	Some additional comments	Yes
Username	The username of the user is prefilled and in a read-only mode.	N/A
First name	The first name of the applicant	Yes
Last name	The last name of the applicant	Yes
Phone number	The phone number of the applicant	No
Email address	The email address of the applicant	Yes
Name	The name of the organisation	Yes
Address	The address of the organisation	Yes
ZIP code	The ZIP code of the organisation	Yes
Country	The country of the organisation	Yes

Phone number	The phone number of the organisation	No
I accept the terms of usage	Indicates that the user accepts the terms of usage of the web service	Yes

Table 5: Editable fields for the web services demand

The demand is sent to the administrator after clicking on *Save*. The administrator checks regularly all the requests and accept or reject each of them. The user is informed by email about the details of the web service access.

3 USE THE WEB SERVICE

This section describes how to use the web service; an example is provided below using SoapUI, an open source testing tool.

The query done with the web service must respect a particular syntax. The request that have to be provided is detailed in the next section.

Finally, it will describe the complete procedure, step by step, to perform a web service request using SoapUI on the EUR-Lex FrontOffice and also a simple and usual way.

3.1 ACCESS THE WEB SERVICES SPACE

3.1.1 VIEW THE WSDL

When the status of the user is granted, he is allowed to use the web service.

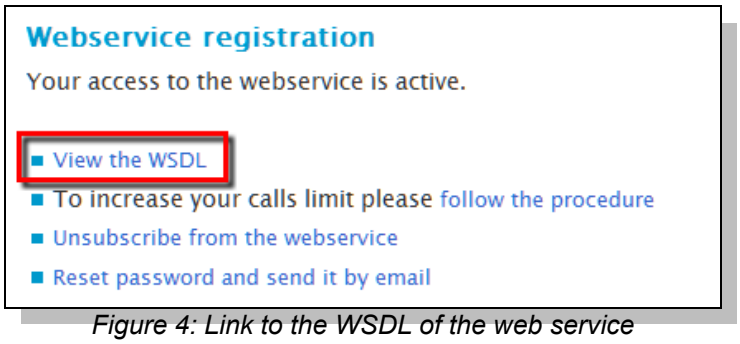

Figure 4: Link to the WSDL of the web service

The user is able to download the WSDL of the web service to retrieve the information necessary to use it.

3.1.2 CHANGE THE LIMITS OF THE WEB SERVICE DEMAND

The number of calls that can be performed each day is limited. In order to change the limitations, the user can send a demand to increase or decrease the limitations for the web services demands. To achieve this, he needs to use the link shown on the next figure in order to see the procedure to apply:

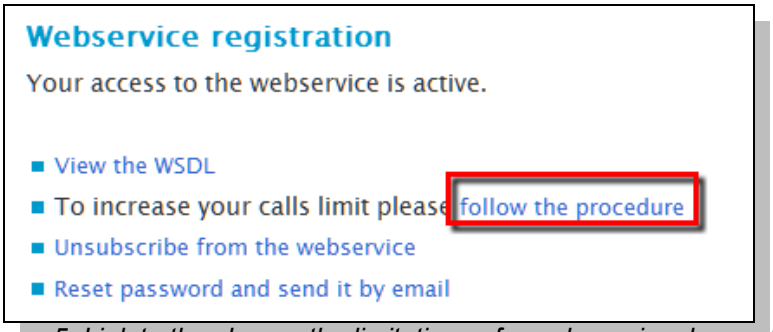

Figure 5: Link to the change the limitations of a web service demands

3.1.3 UNSUBSCRIBE FROM THE WEB SERVICE

If the user does not need to use the web services anymore, he can unsubscribe from the web services using the link shown on the next figure:

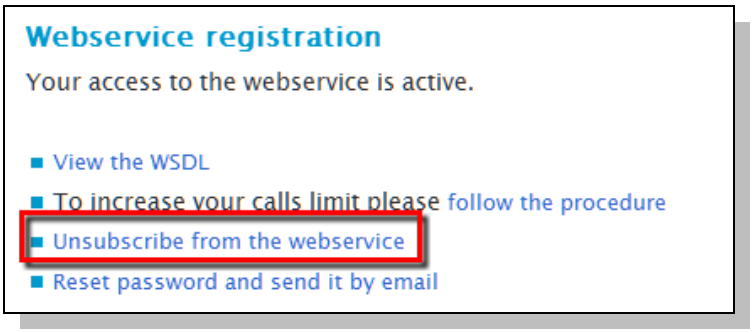

Figure 6: Link to unsubscribe from the web service

A form is displayed asking the user to give the reason of withdrawal.

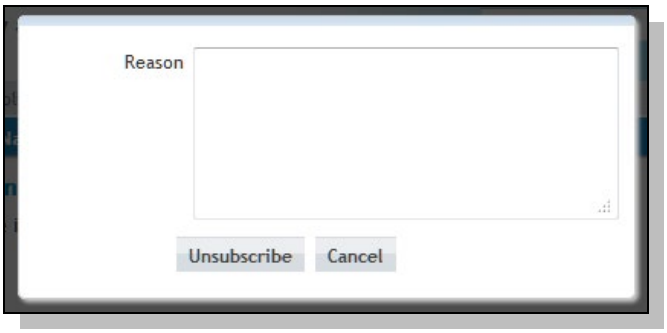

Figure 7: Field to enter the reason of withdrawal from the web services

The withdrawal reason is saved after clicking on *unsubscribe* and the access to the web service is closed.

3.1.4 RESET PASSWORD AND SEND IT BY EMAIL

If the user doesn't remember his password for the web service, he can ask to generate a new one by clicking on the following link:

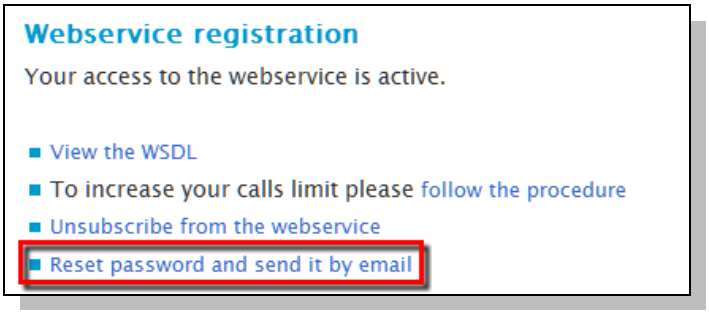

Figure 8: Link to reset the password for the web service

Once the link clicked, an email is sent to the user with the newly generated password.

3.2 XML INPUT

The input of the web service must respect the soap envelop structure. The soap envelop is composed of a *Header* and *Body* elements. The content of *Body* must respect an XSD defined by EUR-Lex. Moreover, the *Header* must contain information about security. The template to be used by the web service is the following:

```
<soap:Envelope xmlns:sear="http://eur-lex.europa.eu/search"
xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
```

```
   <soap:Header>
      <wsse:Security soap:mustUnderstand="true" xmlns:wsse="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
         <wsse:UsernameToken wsu:Id="UsernameToken-3" xmlns:wsu="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
            <wsse:Username>${EUR-Lex username}</wsse:Username>
            <wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-username-token-profile-1.0#PasswordText">${WS password}</wsse:Password>
         </wsse:UsernameToken>
      </wsse:Security>
   </soap:Header>
   <soap:Body>
      <sear:searchRequest>
         <sear:expertQuery>${expert query}</sear:expertQuery>
         <sear:page>${page}</sear:page>
         <sear:pageSize>${pageSize}</sear:pageSize>
         <sear:searchLanguage>${search language}</sear:searchLanguage>
         <sear:excludeAllConsleg>${excludeAllConsleg}</sear:excludeAllConsleg>
         <sear:limitToLatestConsleg>${limitToLatestCons}</sear:limitToLatestConsleg>
      </sear:searchRequest>
   </soap:Body>
</soap:Envelope>
```

You can find below the description of each required field:

- `wsse:Username`: Username used by the user to log in EUR-Lex. This is provided by ECAS.
- `wsse:Password`: The password received by email once the user registration to the web services has been accepted by an administrator.
- `sear:expertQuery`: The query used by the search engine to retrieve documents. The following chapter explains the syntax of the expert search.
- `searc:page`: The page of the search results, as the system uses the pagination. For instance, the user is allowed to retrieve the 10 results of the second page. It corresponds to the documents from 10 to 20.
- `sear:pageSize`: The size of the page used in the pagination.
- `sear:searchLanguage`: The search language. When using a web service client, a list of value is provided for the search language.
- `sear:excludeAllConsleg`: To exclude all consolidated legislation.
- `sear:limitToLatestConsleg`: To limit to the latest consolidated legislation.

All these fields are required to perform a query. It is really important to respect the defined namespaces.

An error will be thrown if:

- One of the field value is missing;
- The user accessing web service is not granted by an administrator;
- The syntax of the expert query is invalid (see chapter **Expert search syntax**);
- The page size is greater than the defined limit size. By default, the maximum value is 1000;
- The number of web service call during the current day is greater than the defined limit. The default value is 1000.

3.3 USE THE WEB SERVICE WITH *SOAPUI*

With an easy-to-use graphical interface, SoapUI allows you to easily and rapidly create and execute automated functional, regression, compliance, and load tests. It also allows the user to quickly test soap web service. The version of SOAPUI used for the elaboration of this document was 4.0.1.

You can freely download this software on the following website: http://sourceforge.net/projects/soapui/files/

The next sections explain how to use *SOAPUI* to perform web service against the new EUR-Lex.

3.3.1 CREATE A NEW *SOAPUI* PROJECT

You can retrieve the URL of the WSDL via the Front Office interface, as described in the section 3.1.1.

Start SoapUI and create a new project: File -> New soapUI Project and enter the following parameter, as described on the Figure 9: New soapUi project:

- Project Name: whatever you want
- Initial WSDL/WADL: The URL retrieved via the Front Office interface (for instance http://eur-lex.europa.eu/eurlex-ws?wsdl)
- Create Requests: checked

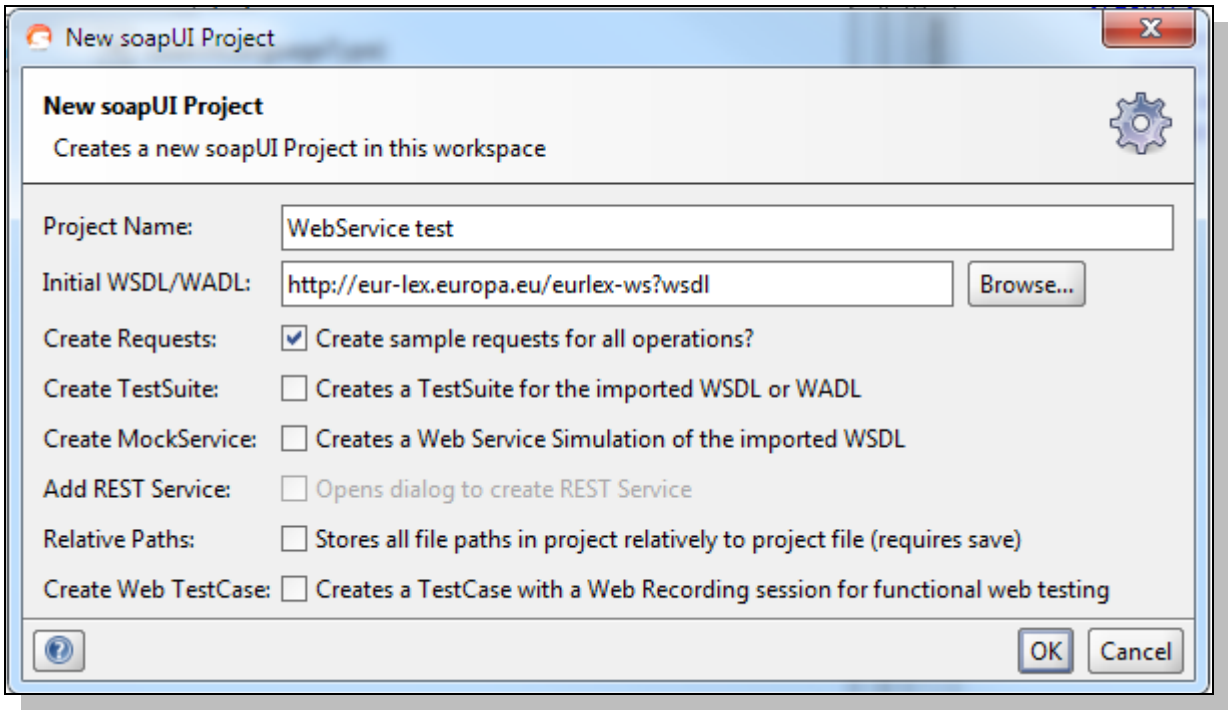

Figure 9: New soapUi project

3.3.2 CREATE A QUERY WITH SOAPUI

This will automatically create a sample request to be fulfilled. Then, navigate to the form view of the sample request and fill the form:

- *expertQuery*: the query you want to perform, in the expert syntax;
- *page*: the page you want to retrieve;
- *pageSize*: the number of results you want to retrieve in a page;
- *searchLanguage*: the search language.

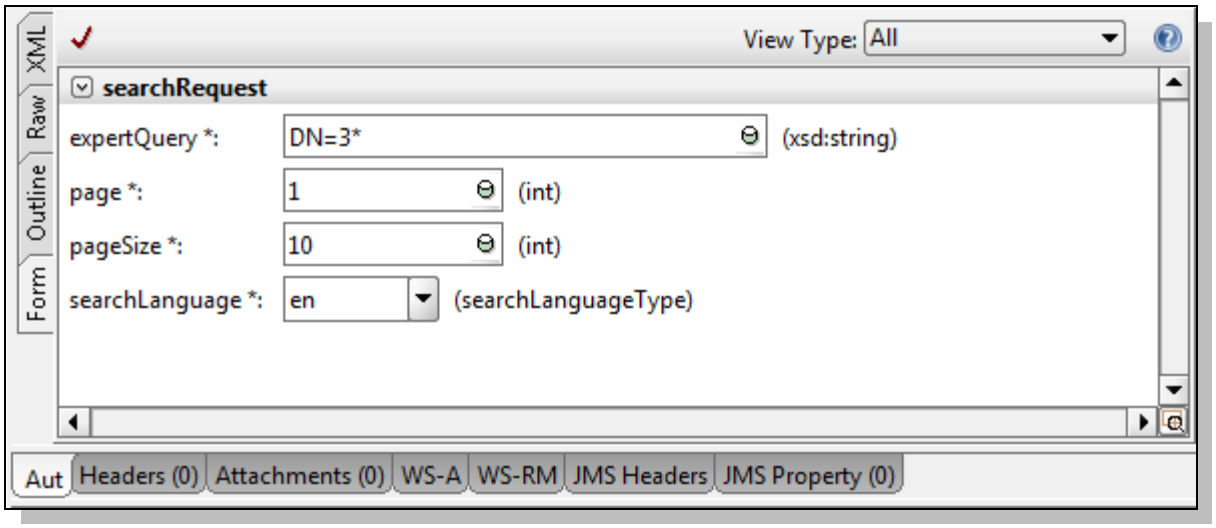

Figure 10 Web service form

These elements are described in the section **XML Input.**

Then, you need to add the authentication to the request. Click on the XML view of the request, and click on the *Aut* button (bottom left hand corner) and enter the following information in the form:

- *Username*: the username of the username registered to the Front Office web services
- *Password*: the password received when you registered to the Front Office web services

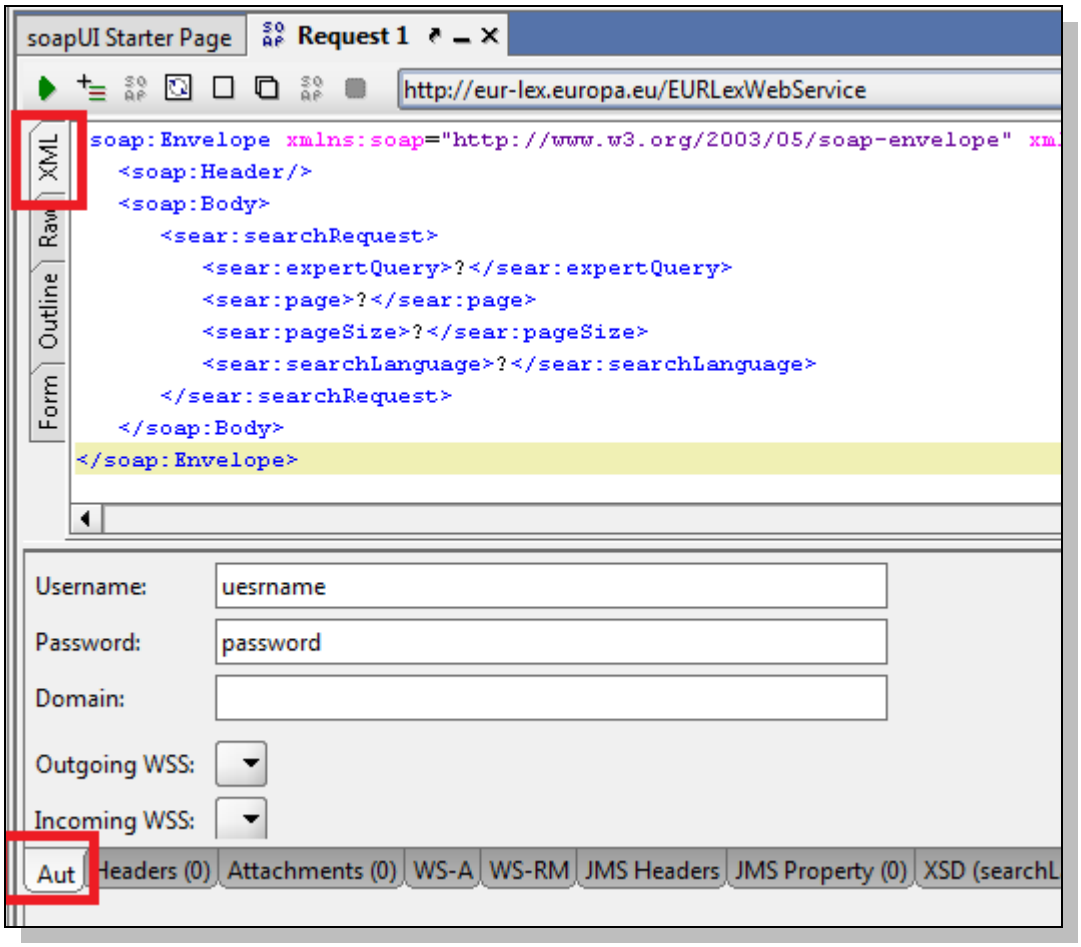

Figure 9 Authentication

Finally, right click in the XML view and click "*Add WSS Username Token*". Ensure that "*PasswordText*" is selected and click OK. The result is shown on the following figure. A username token has been added in the request headers.

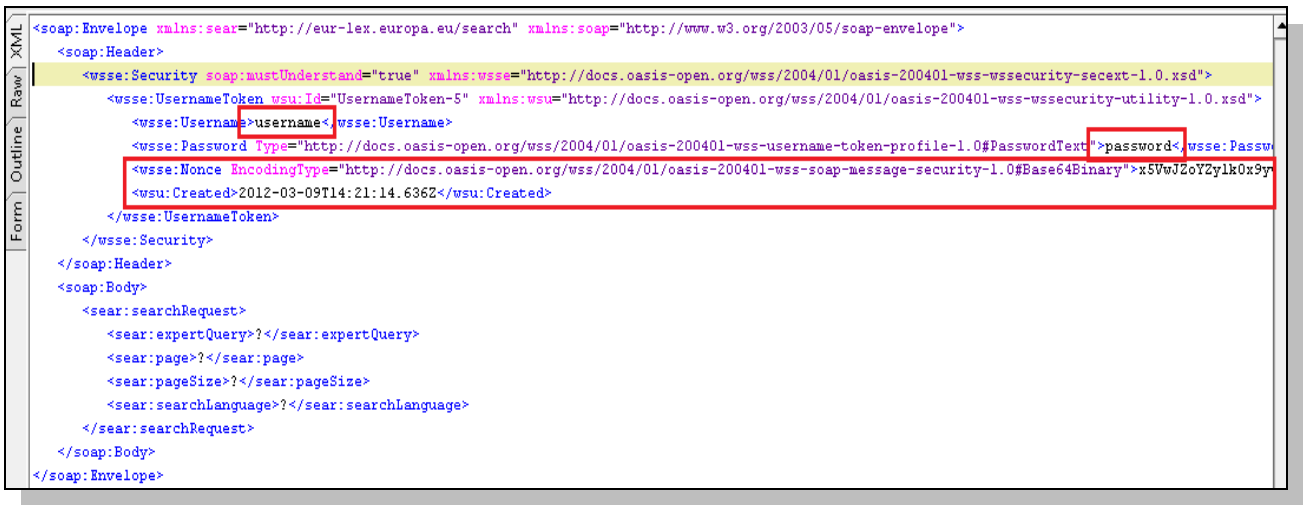

Figure 10: Username Token element

As you can see in the previous figure, the *username* and the *password* entered in the *Aut* field have been automatically added in the *Header*.

To perform the same query many times, you need to delete the lines with the xml elements `<wsse:Nonce>` and `<wsu:Created>`.

To start the request, click on  to retrieve the results.

If you have some difficulties to fill the web service request, you can retrieve the template to use to perform a web service query thanks to the FrontOffice web service template, as described in the section **XML result**.

The following figure shows you the result of a web service request:

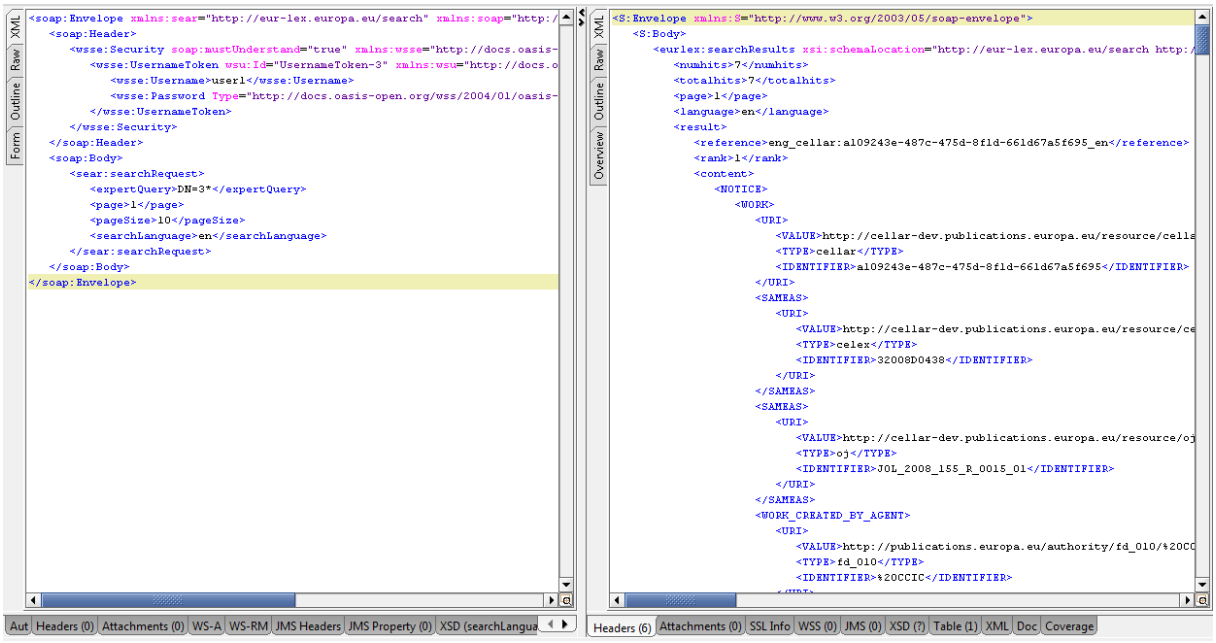

Figure 11 Results

3.4 XML RESULT

The result of the web service is a *Soap Envelope*. That envelop contains a *Body* element which contains XML elements that respect an XSD that can be retrieved from EUR-Lex.

The root element in the *Body* is the `searchResults` element. It contains:

- *numhits*: the number of results in the page;
- *totalhits*: the total number of results related to the query;
- *page*: the current page of results;
- *language*: the search language;
- *result*: the element related to a result. This element contains:
  - *reference*: the CELLAR reference;
  - *rank*: the index of the document;
  - *document_link*: links to the manifestations of the document (at word, tiff, html or pdf format), if any manifestation of the document exist;
  - *content*: the metadata of the document;

You can find below a sample of the result.

```
<S:Envelope xmlns:S="http://www.w3.org/2003/05/soap-envelope">
   <S:Body>
      <searchResults xsi:schemaLocation="http://eur-lex.europa.eu/search
http://localhost:7001/eurlex-frontoffice/eurlex-ws?xsd=3" xmlns="http://eur-
lex.europa.eu/search" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
         <numhits>10</numhits>
         <totalhits>1946</totalhits>
         <page>1</page>
         <language>en</language>
         <result>
            <reference>eng_cellar:93836665-712f-4444-a1e6-dadad5607e80_en</reference>
            <rank>1</rank>
            <content>
               <NOTICE>
                  <EXPRESSION>
                     <EXPRESSION_TITLE>
                        <VALUE>Decision on the …</VALUE>
                     </EXPRESSION_TITLE>
                     <EXPRESSION_USES_LANGUAGE>
                        <URI>
                           <IDENTIFIER>ENG</IDENTIFIER>
                        </URI>
                     </EXPRESSION_USES_LANGUAGE>
                              …
```

The content element will contain some metadata of the document. The list of provided metadata depends on query:

- If the expert query contains a SELECT clause, the provided metadata will only be those present in the SELECT clause;
- If the expert query doesn't contain any SELECT clause, the list metadata provided will be the list defined in the default search profile of the user, in the EUR-Lex 2012 website.

To know the possibilities of the expert syntax, please refer to the section **Expert search syntax.**

3.5 GET WEB SERVICE TEMPLATE

Getting the web service template is a very useful way to retrieve the web service request to be used to perform the same request that the one performed on the EUR-Lex website. It allows you to perform web service requests even if you don't know the expert query syntax.

Each user who has a web service status granted can get the web service template for every query he performs.

To get the web service template after a search, the user needs to click on the following icon:

Figure 12: Link to get the web service template

After clicking on the icon, a new window is displayed giving the request template. The user just needs to copy the provided XML and paste it in the XML view of the SOAPUI project created. Before launching the search in the WSDL, the user only needs to insert his password in the query.

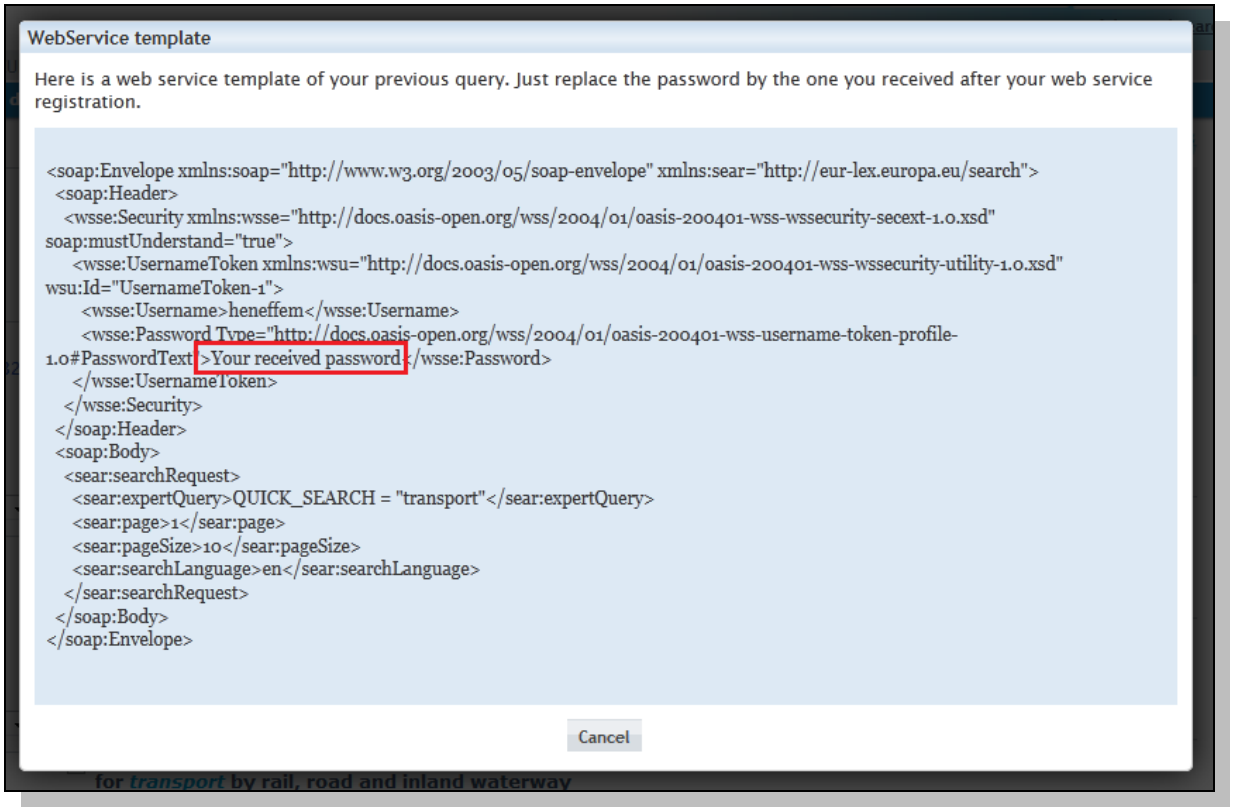

Figure 13 Web service template

4 EXPERT SEARCH SYNTAX

The Expert search functionality is used to have a flexible search option that allows the combination of many criteria. Each expert search query must comply with a specific syntax described in this chapter.

The basic rule is to use the following scheme: *metadata operator value.* The criteria to enter are written as pairs of metadata and corresponding value.

The user can easily check if the syntax of the query is correct by using the expert search in the EUR-Lex website. Some data helpers are provided as well to help the user with the use of the different metadata.

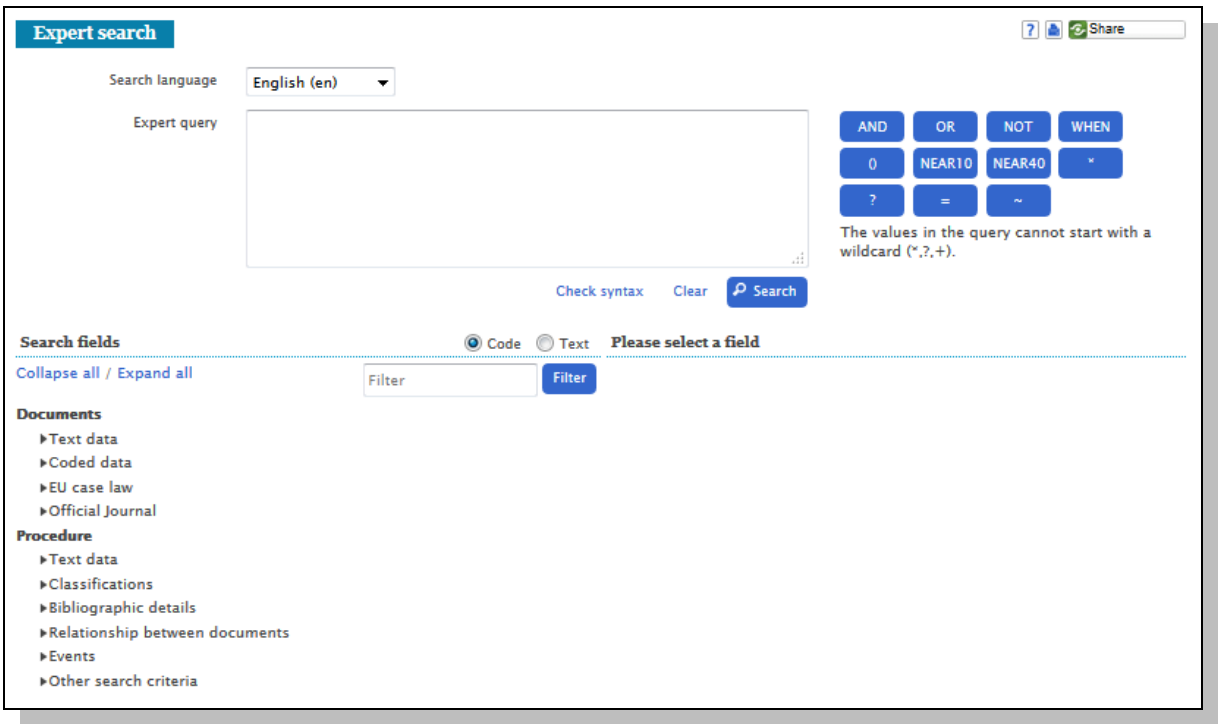

Figure 14 Expert search

The Expert search functionality is used to have a flexible search option that allows the combination of many criteria. However, some rules need to be applied.

The basic rule is to use the following scheme: *metadata operator value.* The criteria to enter are written as pairs of metadata and corresponding value.

Find here a list of rules that need to be followed given with some examples:

4.1 GENERAL FEATURES

- Truncation, as for example a wildcard (*) or single character (?) can be used for a search term. The wildcard stands for 0 to n characters and '?' replaces one single character;

  Example: DN=3200?D* will search for all decision documents of sector 3 within the years 2000 to 2009.

- Select clause can be entered in the expert search to request more metadata to be displayed. The selected metadata will be requested for display additionally to the metadata selected in the default profile of the user.

Examples: SELECT IX WHERE TE ~ council will request the metadata IX as metadata to display in the search result.

- Boolean operators can be used to separate and group search criteria or values in different ways. The expert search includes three different operators: 'AND', 'OR' and 'NOT'. AND is used to impose that all criteria must be fulfilled, 'OR' is used when at least one criteria is mandatory and 'NOT' will exclude some criteria.

  Examples: DN = 32000* AND TI ~ Transport

  DN = 32000* OR TI ~ Transport

  DN = 32000* NOT TI ~ Transport

  DN = 32000* NOT 32000D*

  In all cases, NOT has precedence over AND and AND has precedence over OR.

- Parentheses establish relationships among search terms so that the search engine is able to interpret how to respond. A set of elementary or more complex queries can be combined, separated by parentheses to clearly identify the query structure and override operators' precedence if needed.

  Example: (Title ~ equal treatment) NOT (Type_Sector = 9)

  This query is equivalent to Title ~ equal treatment NOT Type_Sector = 9

  In some cases, it is necessary to include parentheses in a query to get correct. Imagine that a user is looking for a document that contains the words 'equal treatment' or 'equal rights'. One can structure the query as following:

  Title ~ equal AND (treatment OR rights)

  If he omits the parentheses, the search engine will look for documents that contain either the words "equal treatment" or "rights" (or both).

- A date or a number can be entered as an exact value or a range of values. The following operators are valid to enter queries with a range of values: < (smaller than), <= (smaller or equal to), > (greater than), >= (greater or equal to), <> (is not equal to).

  Examples: Date_of_document >= 25/12/2000

- Some metadata contain codes as well as labels to identify a value. The user can either use the search on codes or labels. Using a '_CODED' suffix for a metadata will imply searches on codes only. Using a '_DECODED' suffix will only perform the query on the label of a value. If no suffix is specified, the system searches on labels and codes.

4.2 THE EQUAL ('=') OPERATOR

- The system will by default search on a string of words using an exact match.

  Example: Title = genetically modified organism

  This query will search for all documents having as title "genetically modified organism ".

4.3 THE CONTAINS ('~') OPERATOR

- When no parentheses or quotes are specified, the system will search for a document containing all words regardless of the order.

Example: Title ~ genetically modified organism

This query will search for all documents that containing the words “genetically”, “modified” and “organism” in the title.

- When quotes are specified, the system will search on a string of words using an exact match.

  Example: Title ~ “genetically modified organism”

  This query will search for all documents that contain the exact sequence of words “genetically modified organism” in the title.

- If you want to search for a word or sentence containing special characters that are used by the expert query syntax (e.g. the parenthesis) then you must use double quotes to surround the word or sentence.

  Example: *Title ~ the European Economic Community ('the Community')* is not a valid query, to be sure that the search engine performs the search correctly, use *Title ~ "the European Economic Community ('the Community')"*

It is important to note that the ‘~’ operator is only available for full text searches. If, in a query, one wishes to combine metadata value search with text searches using proximity operators, both terms must clearly be separated with an AND Boolean expression (OR is not permitted). Any term using the operator ‘~’ or searching for a value with proximity operators is considered as a full text search (e.g. TI ~ transport, TI = transport &pa agriculture) Any other term are considered as metadata search (e.g. DN=32008D0438, DD > 01/01/2012).

Examples:

(Text ~ transport &pa perishable) AND (DD>01/01/2000 OR DN=3*) is a valid query

(Text ~ “transport &pa perishable” OR DN=3*) AND (DD>01/01/2000) is not a valid query

(Text ~ transport &pa perishable) OR (DD>01/01/2000 OR DN=3*) is not valid either.

4.4 THE WHEN (‘WHEN’) OPERATOR

The WHEN operator acts like and AND operator but restricts the search within a single occurrence of the metadata (in case of the metadata has multiple occurrences). This single occurrence is identified thanks to the value of the metadata, which has to be specified in the WHEN clause.

The query (COLL_OJ_OLD = OJ-C WHEN NO_OJ_CLASS = R) will restrict the search to a single occurrence of the metadata RESOURCE_LEGAL_PUBLISHED_IN_OFFICIAL-JOURNAL which match OJ series ‘C’ and OJ class ‘R’.

```
<RESOURCE_LEGAL_PUBLISHED_IN_OFFICIAL-JOURNAL type="link">
  <EMBEDDED_NOTICE>
    <WORK>
      ...
      <OFFICIAL-JOURNAL_CLASS type="data">
        <VALUE>R</VALUE>
      </OFFICIAL-JOURNAL_CLASS>
      <OFFICIAL-JOURNAL_PART_OF_COLLECTION_DOCUMENT type="concept">
        <URI>
          <VALUE>http://publications.europa.eu/resource/authority/document-collection/OJ-C</VALUE>
          <IDENTIFIER>OJ-C</IDENTIFIER>
          <TYPE>document-collection</TYPE>
        </URI>
        <IDENTIFIER>OJ-C</IDENTIFIER>
        <PREFLABEL>OJ-C</PREFLABEL>
      </OFFICIAL-JOURNAL_PART_OF_COLLECTION_DOCUMENT>
      ...
    </WORK>
  </EMBEDDED_NOTICE>
</RESOURCE_LEGAL_PUBLISHED_IN_OFFICIAL-JOURNAL>

<RESOURCE_LEGAL_PUBLISHED_IN_OFFICIAL-JOURNAL type="link">
  <EMBEDDED_NOTICE>
    <WORK>
      ...
      <OFFICIAL-JOURNAL_CLASS type="data">
        <VALUE>R</VALUE>
      </OFFICIAL-JOURNAL_CLASS>
      <OFFICIAL-JOURNAL_PART_OF_COLLECTION_DOCUMENT type="concept">
        <URI>
          <VALUE>http://publications.europa.eu/resource/authority/document-collection/OJ-L</VALUE>
          <IDENTIFIER>OJ-L</IDENTIFIER>
          <TYPE>document-collection</TYPE>
        </URI>
        <IDENTIFIER>OJ-L</IDENTIFIER>
        <PREFLABEL>OJ-L</PREFLABEL>
      </OFFICIAL-JOURNAL_PART_OF_COLLECTION_DOCUMENT>
      ...
    </WORK>
  </EMBEDDED_NOTICE>
</RESOURCE_LEGAL_PUBLISHED_IN_OFFICIAL-JOURNAL>
```

The same query using an AND operator, (COLL_OJ_OLD = OJ-C AND NO_OJ_CLASS = R), won't restrict the search to a single occurrence of the metadata RESOURCE_LEGAL_PUBLISHED_IN_OFFICIAL-JOURNAL. The search is performed across all occurrences of the metadata.

The WHEN operator is only available for metadata having simple XPATH expression. Complex metadata with multiple XPATH expression will not be accepted by the expert search.

Examples:

(COLL_OJ_OLD = OJ-A WHEN NO_OJ_CLASS = R) AND ((NO_OJ_OLD = 10 WHEN YEAR_OJ_OLD = 2007) WHEN PAGE_FIRST = 0012)

(COLL_OJ_OLD = OJ-C WHEN NO_OJ_CLASS = R)

4.5 THE PROXIMITY OPERATORS

Proximity operators can be used to search for terms in a specific range of words. They can be used in a range of:

- sentence (using the operator “&se”);
- paragraph (using the operator “&pa”);
- 10 terms (using the operator “NEAR10”);
- 40 terms (using the operator “NEAR40”);

Example: Text = transport &se perishable will search for documents that contain the words transport and perishable within the same sentence.

Text = transport &pa perishable will search for documents that contain the words transport and perishable within the same paragraph.

Text = transport NEAR10 perishable will search for documents that contain the term perishable within 10 terms from the term perishable.

Note that even if quotes are used, the system will be able to interpret the operator and use the proximity operators correctly.

The terms using a proximity operator are considered by the system as full text search. Therefore, the limitation described for the ‘~’ operator is also applicable when using proximity operator.

4.6 SEARCH ON DATES

- The search on dates can be performed using the operators =, >, <, <=, >= (e.g. DD>01/01/2000).
- It is also possible to search using relative dates using the keywords TODAY, MONTHS and DAYS. For instance DD = TODAY – 5 DAYS

4.7 SEARCH ON CELEX NUMBERS

- The Set function can be used to find documents within a collection of CELEX numbers. The different numbers need to be separated by commas.

  Example: SET(72008L0063, 21992A1231(11), 31977R3024) will return 3 documents.

  Note that truncation operators can also be used in this case.
- The use of parentheses is not allowed in a CELEX number for a search. This means that DN=21992A1231(11) will create an error in the expert search, because parentheses are used to establish relationships among search terms. If one needs to look for the document with CELEX number 21992A1231(11), he need to use quotes. A valid query is:

  DN=”21992A1231(11)”

Attention should be paid to all reserved words as for example AND, OR, etc. Those words refer to expert search options.

4.8 SEARCH ON TEXT

The Text metadata can use the “~” and the “=” operators but the <, >, <=,>= are not supported for this type of metadata.

End of Document