IPR Helpdesk

Fact Sheet

November 2011

How to search for patent information

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Introduction

The objective of this fact sheet is to introduce patent searching using one of the most used patent database, Espacenet, which includes quick and advanced search options.

Conducting patent searches is very useful for several purposes, not only for organizations such as SMEs and Universities, but also for researchers. Indeed, patents include both technical and legal information and can consequently be used to:

- Guide the definition of an organization's IP strategy (identifying, for example, any barriers to developing an IP strategy, the avoidance of obstacles, etc.);
- Define a state of the art (to find out what already exists, to check novelty, to improve the quality of a patent application, to understand the IP landscape surrounding your projects and IP);
- Check for freedom to operate (to check if you do not infringe someone else's rights, to search for validity of third parties' IP);
- Check if someone is not in a position of infringing your rights (infringement stills needs to be proved);

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- Keep track on who's doing what (continuous monitoring of patent applications filing).

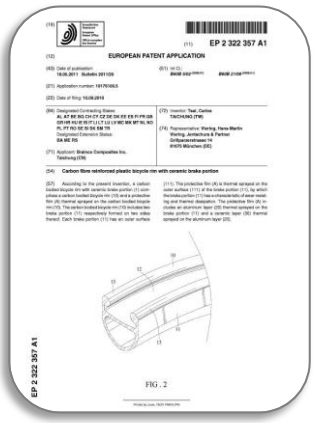
Thus, there are many reasons to learn how to search for patents.

In order to perform good and useful searches, it is essential to understand the structure of patent information, whatever form it can take (full text or bibliographic) as well as where and how to use the search tools available; elements that we also will present in this fact sheet.

1. What information is presented in a patent document[1]

Patent documents are structured in **3 parts**:

- **The first (front) page**, presents general information about the patent:

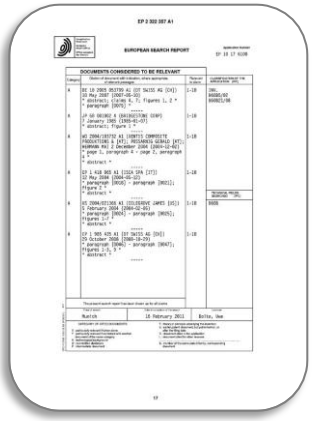


- The title;
- A summary of the invention;
- The name of the inventors;
- The name of the patent assignee (= patent owner);
- Several dates (priority, publication…);
- Several numbers (publication number, priority number…);
- The legal status of the document (patent application, granted patent …);
- The designated states (states in which protection has been asked for);
- Drawing...

- **The technical description - beginning on the second page of the document. It presents a description that can cover more than one page, which includes the technical problem the invention solves, the state of the art, as well as a technical description of the invention.**

[1] Example of the European patent.

- **A third part** includes the drawings, the claims (that provide a clear description of what is legally protected) and eventually a search report (see image).



2. Where to search for patent information?

The easiest way to retrieve patent related information is to use online databases.

The information presented in databases can take different forms. We can find databases including the full text of patent documents, but also databases presenting a "summary" of them. The latter generally present the information contained in the patents' first page (possibly enriched with additional information), called bibliographic reference.

Those databases are respectively called full-text databases and bibliographic databases.

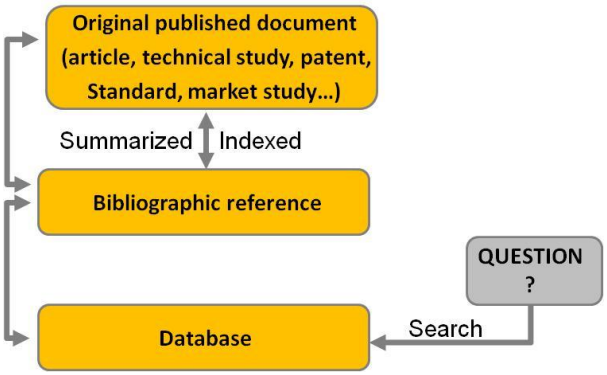


Figure 1: Access to information

It is worth noting that databases can also be classified according to the type of information they include: technical or legal. Indeed, apart from the legal information that is already included in patent documents, additional databases including information related to the legal status of the patent, the payment of fees and owners and representatives, are also at disposal[2].

The most common way used to retrieve patent related information is the use of bibliographic databases. Such information sources are certainly well structured and allow you to perform efficient searches.

[2] Note that to check the real legal status of a patent, it is strongly advised to consult national offices to get more accurate results. Legal databases are useful to check the non validity or withdrawal of patents. Contact details may be found on http://www.innovaccess.eu

Bibliographic references refer to publications (here, the patents).
A bibliographic reference is a textual document (eventually including an image) summarizing the original document. Such references give information about patents and enable an easier identification of them. For easy retrieval, producers of databases generally add information like internal codes or keywords describing the subject treated in the original document.
Generally, a patent bibliographic reference includes:

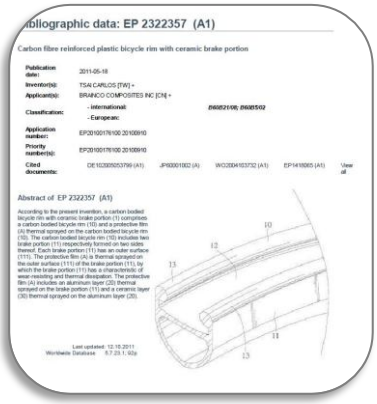
- Title;
- Inventor;
- Patent assignee;
- Abstract;
- Codes (classification codes) and numbers (patent numbers and related dates);
- Drawings or images;
- Keywords.

However, a number of differences can be found, according to the producer of the reference and the kind of information the original document includes.
Information in bibliographic databases is typically structured in what is called informational fields. This means that the same type of content is always placed into the same informational field: the information related to the title is positioned in the title field; the information related to the name of the inventors is always presented in the field inventor, etc.

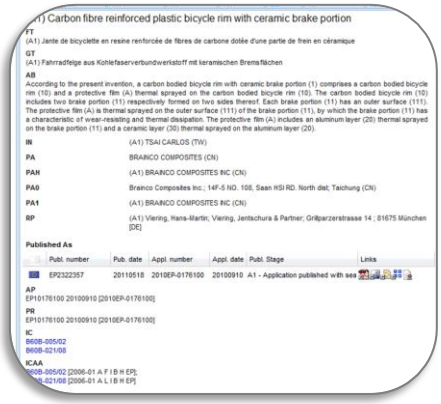
It is this information structure that allows you to retrieve patents more easily.

<u>Examples of patent bibliographic references</u>

Espacenet



Commercial server (Questel-Orbit)



3. Search for information: generalities

When searching for information, you have to select keywords that define the object you are looking for. The first thing to do is to clearly define the object of the search: the different parts or concepts of the search, the geographic area, the firm or time period, etc.

Once these first elements are clearly defined, you should choose the best keywords describing the invention. Find synonyms of the terms describing the invention you are looking for, try to avoid terms with a double signification/homonyms (e.g. can).Specifying the context of their use and avoiding words without any technical signification, such as “general”, ”system” are essentials tasks before running any query.

TIP: *To find synonyms, use dictionaries, synonym dictionaries and even web search engines.*

You should then regroup all the terms related to each concept, and associate terms as well concepts using Boolean operators (AND, OR, NOT) to construct a query.

Example:
You are looking for “warning systems allowing to continuously verifying car tire pressure”.
You can find several concepts and associated keywords in the table below:

Concepts	Associated keywords
Tire	tire, tyre…
Pressure	pressure…
Continuous verification	verification, check, monitoring…
Warning	warning, alarm…

A related query could be:
((tire OR tyre) AND pressure) AND (verify OR check OR monitor) AND (warn OR alarm)

Note: *Do not forget that some words could be written differently between UK English and US English (e.g. airplane and aeroplane), and that some letters can be substituted (“s” and “z”).*

Do not forget that generally, searches are run in patent applications (not all patents available in databases have been granted or are in force). So, according to the purpose of the search, the validity of patents has to be checked.

TIP: Generally, when searching with engines of databases available on the web, you can use quotation marks (“ ”) to search for an entire expression.

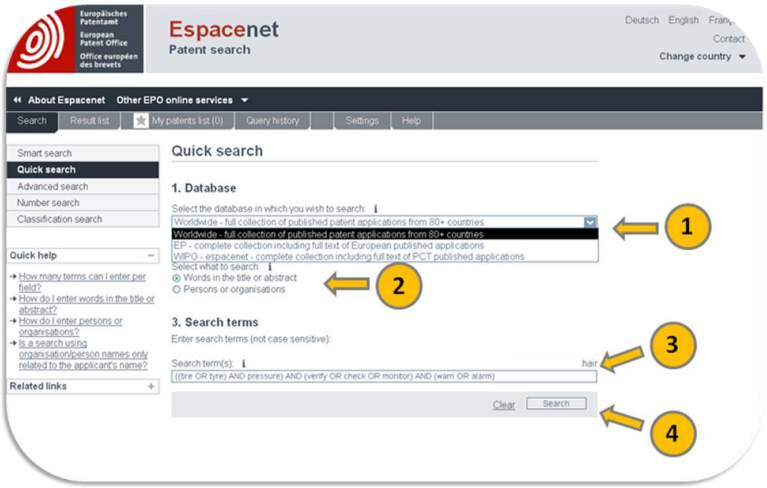
4. Quick search using Espacenet

Espacenet is a database provided by the European Patent Office, which allows free access to more than 70 million patent documents worldwide in 3 collections:

- Patent applications of more than 80 countries worldwide;
- European patent applications ;
- PCT patent applications.

As such, Espacenet is a very interesting multi-database tool to consider when searching for patent information. Among several options, Espacenet allows running a "quick search" and is available at http://worldwide.espacenet.com/.

4.1. How to run a quick search in Espacenet

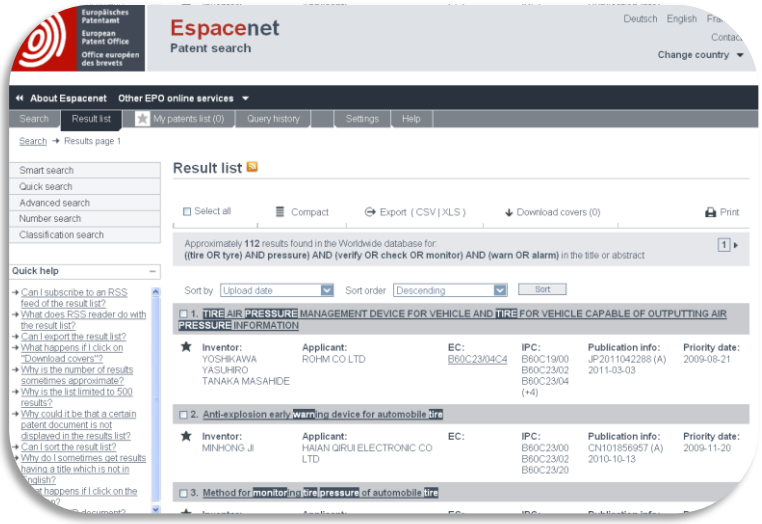


1. According to your need, choose the collection you want to consider.

2. Select what to search: Word or Names of persons or organizations.

3. Introduce your query or names to search for.

4. Click on "Search".

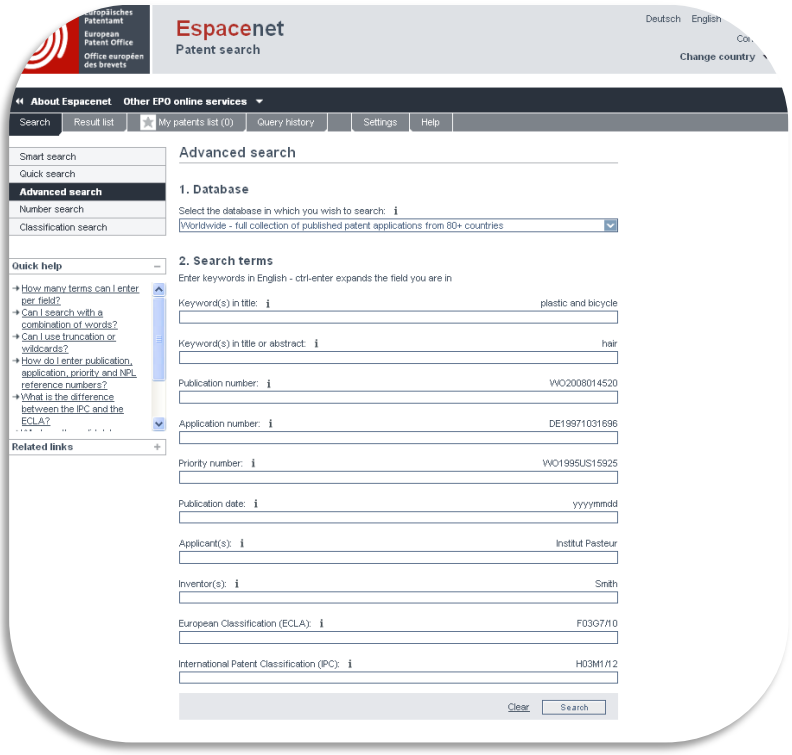


The list of results is displayed for analysis.

Note: *Words are searched in the titles and abstracts fields; names are searched in the inventor and applicant fields.*

5. Advanced search using Espacenet

The advanced search interface on by Espacenet provides the possibility to combine different search items (words, names, codes, numbers). Keywords, codes... have to be introduced in their respective bibliographic field.



Search is possible in the following fields:

- ✓ Title;
- ✓ Title or Abstract;
- ✓ Publication number;
- ✓ Application number;
- ✓ Priority number;
- ✓ Publication date;
- ✓ Applicant;
- ✓ Inventor;
- ✓ European classification (ECLA);
- ✓ International Patent Classification (IPC).

When introducing search criteria in several fields, the system combines them using the AND operator (each term being searched only in the field within which it has been introduced).

Using the advanced search option provides a more precise search than can be realized using the quick search option.

When searching for patents, it is always recommended to combine textual search terms with patent classification codes.

5.1. What are patent classification codes

Patent classification codes indicate the technical field or fields to which the patent application relates. The most used classification is the International Patent Classification (IPC). There are also other classifications, such as the European Patent Classification (ECLA) provided by the European Patent Office (EPO) that is based on the IPC but is more detailed. It is in fact an extension of the IPC that has been developed

because it is considered that the IPC classification entries are too broad (thereby retrieving too many documents); ECLA splits them up into more sub-groups than the IPC[3].

Classification codes are given to patents following the examination of their content by the IP office, and consider the elements protected according to the patent's claims.

The IPC consists in a hierarchical classification system comprising:

- Sections;
- Classes;
- Subclasses;
- Groups (main groups and subgroups).

It includes 8 sections, classified as follows:

- Section A HUMAN NECESSITIES;
- Section B PERFORMING OPERATIONS TRANSPORTING;
- Section C CHEMISTRY; METALLURGY;
- Section D TEXTILES; PAPER;
- Section E FIXED CONSTRUCTIONS;
- Section F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING;
- Section G PHYSICS;
- Section H ELECTRICITY.

Each section being divided into classes, for example:

Section A HUMAN NECESSITIES

Subsection: Agriculture

Class A 01 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING

Subsection: Foodstuffs; Tobacco

Class A 21 BAKING; EDIBLE DOUGHS

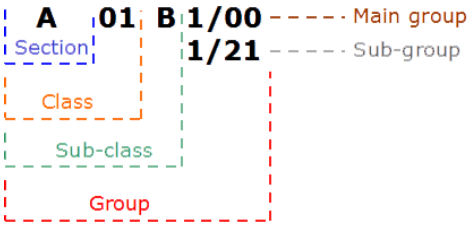
Class A 22 BUTCHERING; MEAT TREATMENT; PROCESSING POULTRY OR FISH

Class A 23 FOODS OR FOODSTUFFS; THEIR TREATMENT, NOT COVERED BY OTHER CLASSES

Class A 24 TOBACCO; CIGARS; CIGARETTES; SMOKERS' REQUISITES

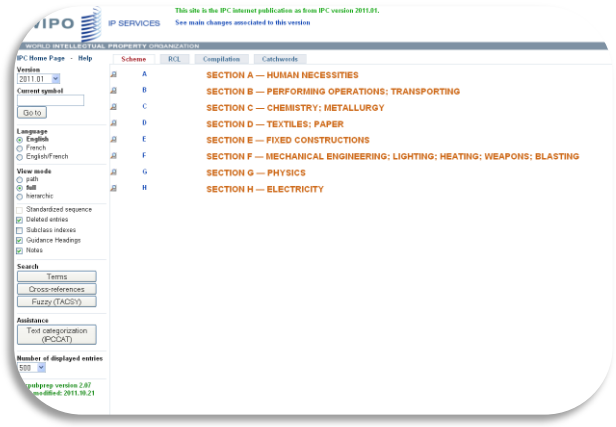
[3] Some countries like US or Japan have also developed their own classification system. Classifications developed by patent database producers have also been developed in order to allow more efficient searches, like the Derwent classification…

Example of an IPC code:



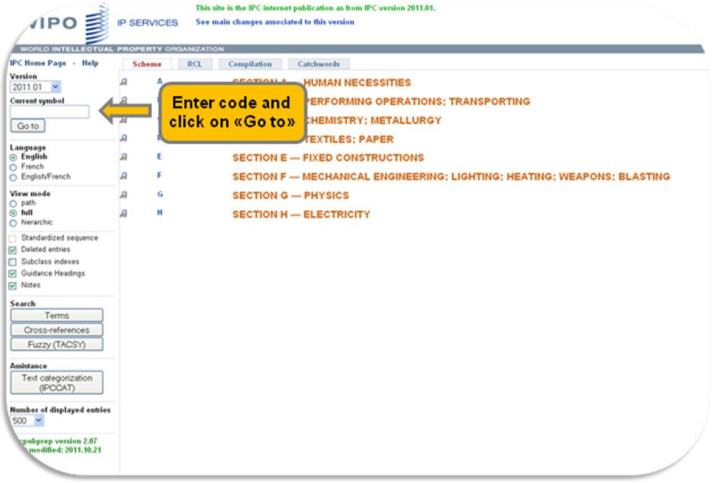
5.2. How to search for IPC codes?

Use the World Intellectual Property Organization (WIPO) website http://www.wipo.int/ipcpub/.



By using the WIPO tool, you may find IPC codes but also related information:

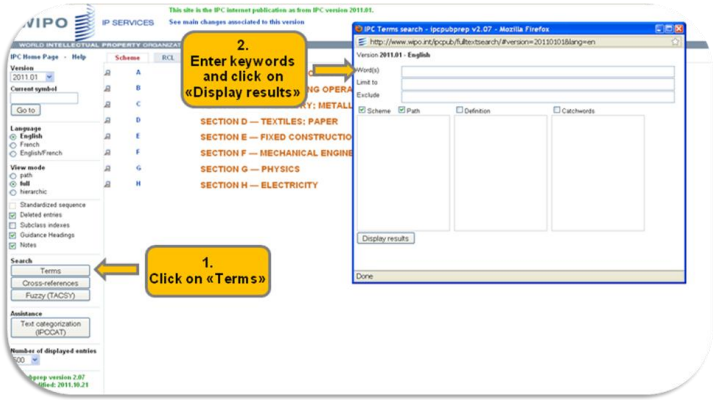
1. **<u>Look for the signification of an IPC code</u>**



2. Search for an IPC code using keywords describing an invention

3 possibilities:

1

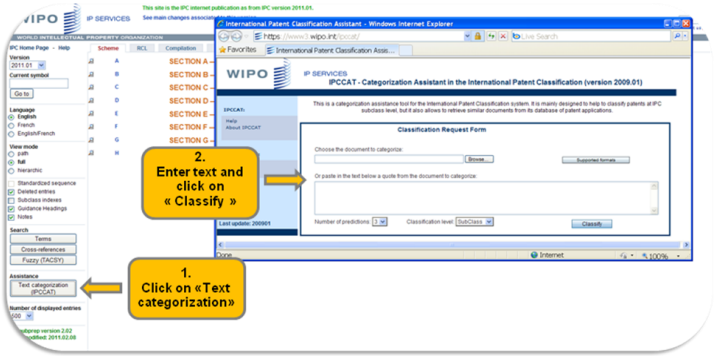


You firstly need to specify that you want to search for keywords by clicking on the "Terms" button. A new window opens where you can introduce your keywords to be searched.

2

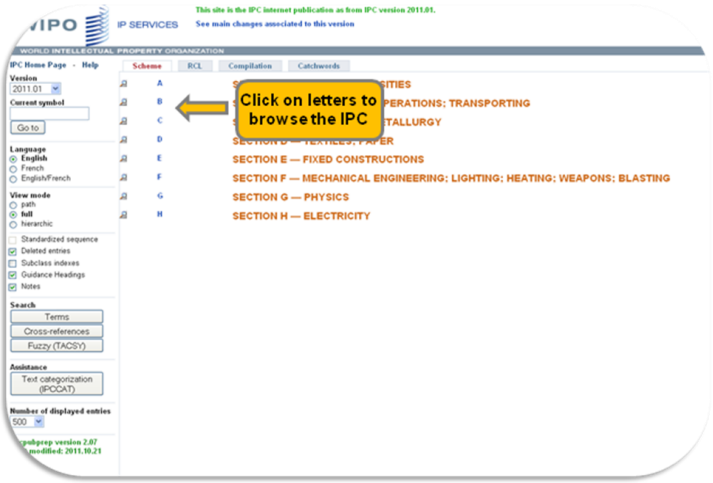
When clicking on a term of the Catchword index, you are redirected to the IPC codes that use this term. Then, you have to choose the most appropriate classification codes.

3



Use the text categorization functionality. It opens a new window that allows you to enter a description of the invention for which you want to find the IPC code.

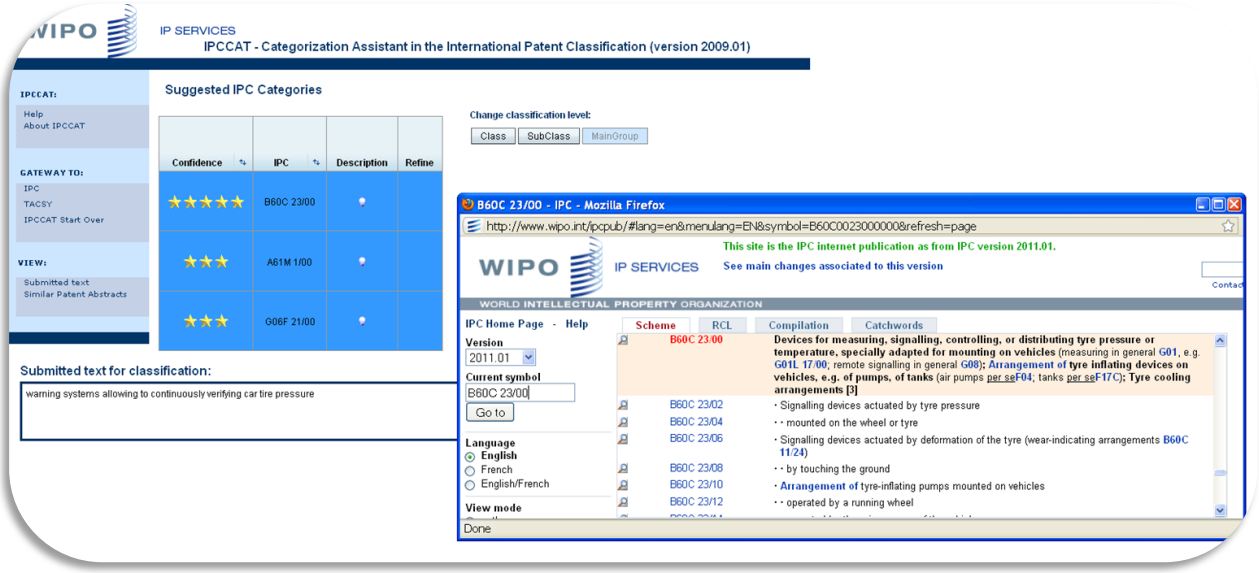
3. Browse the IPC to find a code



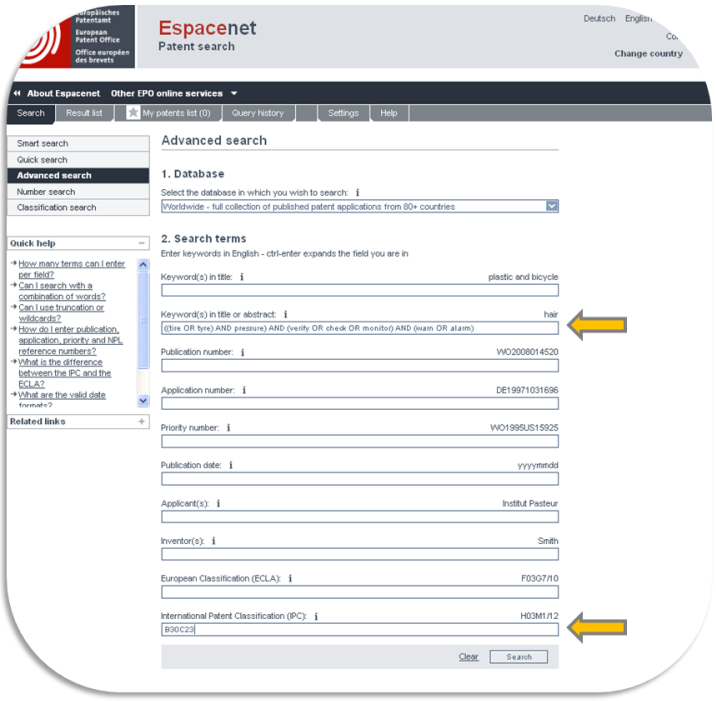
5.3. Patent search using patent classification codes

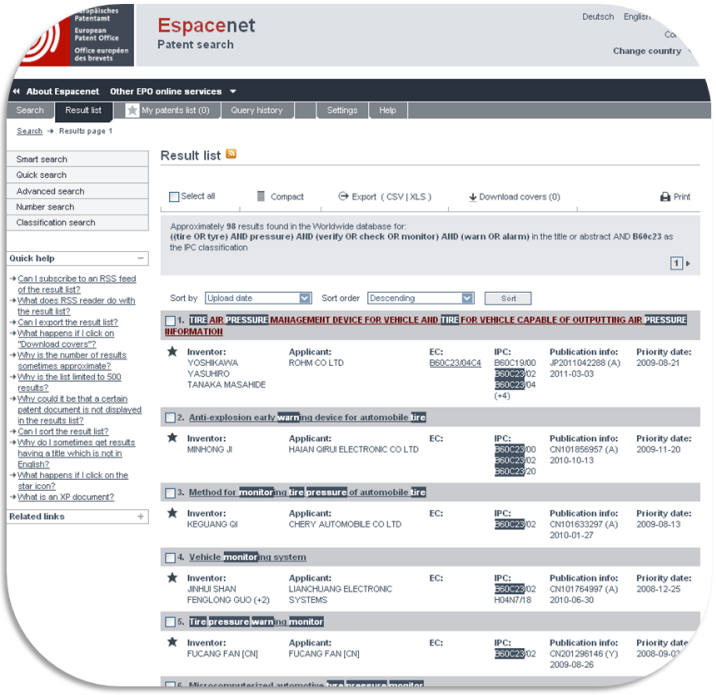
If we re-use the example of the "Quick search", we can firstly search for relevant IPC codes before searching for patents. To do so, we can for example get the help from the categorization function proposed on the WIPO.

If we introduce the description of the invention we are looking for, "warning systems allowing to continuously verifying car tire pressure", we have the following results:



We can in a second step use the “Advanced search“ interface of Espacenet to search for patents and introduce keywords and codes in the related fields:





This search provides you with less and more relevant results than the “Quick search“ does (at the date of writing this fact sheet, 98 hints instead of 112).

Useful Resources

For further information on the topic please also see:

- "About searching in Espacenet": http://www.epo.org/searching/free/espacenet/about.html
- "IPC Internet Publication Help": http://www.wipo.int/ipcpub/shared/htm/help_EN.htm

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Helpline: The Helpline service answers your IP queries within three working days. Please contact us via registration on our website (www.iprhelpdesk.eu), phone or fax.

Website: On our website you can find extensive information and helpful documents on different aspects of IPR and IP management, especially with regard to specific IP questions in the context of EU funded programmes.

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