Searching Using Different Classification Systems - Overview

- Introduction
  - History
  - Objectives
- Reasons For Using Classification Schemes
  - Electrical, Mechanical, Chemical, Biologics, etc.
    - precise description
  - Technology Platforms
  - Validity and Freedom-to-Operate (FTO)
    - claims analysis
- Search Examples - Using classification effectively
  - Key words plus classifications
- Conclusions
Searching Using Different Classification Systems - Objectives

Understand effective use of classification schema

- Understand the value of classification schemes in the due diligence process; when to use or not use?
  - WIPO, EPO, JPO, or USPTO
- Know which classification scheme(s) to use; All or a few?
- Learn how to access and use the Hierarchies of classes; Broadly or more specifically?
  - Classes, Subclasses, Groups, Subgroups, etc.
- Learn how to focus (narrow) search results
The primary purpose of classification systems is to facilitate the searching and retrieving of patent documents by patent offices and users.

The offices, which have to handle the very large number of patent applications received and the patent documents published each year, are faced with the problem of the maintenance of the search files containing the published patent documents.
Searching Using Different Classification Systems - Introduction

Patent Classification: An extension to subject keywords searching

- **International Patent Classification (IPC)**
  - Established by the Strasbourg Agreement of 1971
  - Provides for a hierarchical system of classification according to different areas of technology

- **European Patent Classification (ECLA)**
  - An extension of the IPC used by the EPO

- **Japanese FI and F-term Classification**
  - A sub-division of the IPC used by the JPO

- **US Patent Classification (USPC)**
  - Grouping by class/subclass used by the USPTO
Patent Classification Systems

- There are three important classification systems used in addition by the largest patent offices: US, EP, JP
- Out of these, the European (ECLA) and the Japanese systems (FI) have very close links to the IPC
Searching Using Different Classification Systems - Introduction

The Logic of Classification - IPC

- Classification systems are **hierarchical** in nature with main headings covering a general area of technology and sub-headings covering a given type of invention
- Each sub-heading has a specific number, which is assigned to all the patent documents relevant to that category
Subheadings: Function and Application

- **Function-oriented** principle means a system is according to the intrinsic nature or function of a process, product or apparatus, independent of its field of application *(how it operates)*

- The **application-oriented** system, on the other hand, is according to the particular use or application of a process, product or apparatus *(how it is used)*
Searching Using Different Classification Systems - The Logic of Classification

International Patent Classification (IPC)

- Provides for a hierarchical system of classification according to different areas of technology
  (see paragraphs 19 to 23 of the Guide to the IPC)
- The Classification consists of several hierarchical levels:
  - Sections - 1st level
  - Classes - 2nd level
  - Subclasses - 3rd level
  - Main groups - 4th level
  - Subgroups - 5th and lower levels

http://www.wipo.int/classifications/ipc/en/faq/index.html#G7
Searching Using Different Classification Systems - The Logic of Classification

Patent Classification

1. **Sections**
   - A: Human Necessities
   - B: Performing Operations, Transporting
   - C: Chemistry, Metallurgy
   - D: Textiles, Paper
   - E: Fixed Constructions
   - F: Mechanical Engineering, Lighting, Heating, Weapons
   - G: Physics
   - H: Electricity
Searching Using Different Classification Systems - The Logic of Classification

Patent Classification

2. Classes

- each section is subdivided into classes
- the symbol for each class is two-digit number following the section symbol
- There is class title to indicate the content of the class

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
Searching Using Different Classification Systems - The Logic of Classification

Patent Classification

3. Subclasses

- each class comprises one or more subclasses:

A 47 FURNITURE; DOMESTIC ARTICLES OR APPLIANCES; COFFEE MILLS; SPICE MILLS; SUCTION CLEANERS IN GENERAL

A 47 B Tables; Desks; Office furniture; Cabinets; Drawers; General details of furniture
A 47 C Chairs; Sofas; Beds
Searching Using Different Classification Systems - The Logic of Classification

Patent Classification

4. Groups

- Each subclass is broken down into subdivisions referred to as "groups," which are either main groups or subgroups.
- Each main group symbol consists of the subclass symbol followed by a one- to three-digit number, the oblique stroke and the number `00.
- The main group title defines a field of subject matter considered to be useful in searching for inventions. Example: A 01 B 1/00 Hand tools.
- Subgroups form subdivisions under the main groups.
  Examples: A 01 B 1/00 Hand tools
  1/24 for treating meadows or lawns.
Notes in the IPC

- In addition to hierarchical entries (sections, classes, subclasses, main groups and subgroups), the classification contains also **notes**

- Notes are important for proper understanding of the text of the IPC because they define specific terms, explain the scope of places and indicate how subject matter is classified
Notes in the IPC (cont.)

- Notes may be associated with a section, subsection, class, subclass, guidance heading or group

Examples: **F42** class covers also means for practice or training which may have aspects of simulation, although simulators are generally covered by class **G09**.

**B22F** “Metallic powder” covers powders containing a substantial proportion of non-metallic material

**B01J 31/00** In this group, the presence of water is disregarded for classification purposes
Searching Using Different Classification Systems - The Logic of Classification

References in the IPC

- The IPC contains different categories of references:
  - Precedence
  - Application Places
  - Limiting

- Informative references: indicate other places in the IPC which cover similar subject matter which could be of interest for search purposes
Searching Using Different Classification Systems - The Logic of Classification

References in the IPC

- The title of a class, subclass, group, or note may contain a phrase in brackets referring to another place in the classification

- Such a phrase, called a reference, shows that the subject matter indicated by the reference is covered by the place (or places) referred to

Example: A01F 7/00 Threshing machines (with flails A01F 9/00)
Searching Using Different Classification Systems - Search Tools

What is the Official Catchword Index?

- Helps the users to find a starting point in the classification scheme by browsing a list of catchwords
- It offers about 20,000 entries consisting of short technical terms/keywords which refer the user to an appropriate classification place
- Try to use generic topics when you are looking for a particular topic. If you did not find "Bacterial leaching", try "Hydrometallurgy", and if you did not find it, try "Metallurgy"
- Available in English and French online

http://www.wipo.int/classifications/ipc/en/faq/index.html#G7
Searching Using Different Classification Systems - The Logic of Classification

The Catchword Index: Access Field of Search

- Having identified technical terms relating to the subject to be searched, the user should consult the Catchword Index to locate a field of search.

- IPCCAT: a linguistic tool that allows to enter short descriptions of technical subject matter, e.g. a summary or abstract, and retrieve suggestions where such subject matter could be classified. The tool is based on a neural network that was trained with a large set of patent documents that were classified by experts.

- TACSYS: this tool allows to enter short descriptions of technical subject matter in natural language.
Searching Using Different Classification Systems - The Logic of Classification

The Catchword Index: Access To Code Symbols

- IPC symbols that were assigned to a patent document when its technical subject matter was classified
- **Symbols** in "bold italics" indicate that the advanced level was used for classifying invention information
- **Symbols** in "italics" indicate that the advanced level was used for classifying additional information
- **Symbols** in "bold regular" font indicate that the core level was used for classifying invention information
- Symbols in "regular" font indicate that the core level was used for classifying additional information
A complete classification symbol comprises the combined symbols representing the section, class, subclass and main group or subgroup.

<table>
<thead>
<tr>
<th>Example: A</th>
<th>01</th>
<th>B</th>
<th>33/00</th>
<th>Main group – 4th level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section – 1st level</td>
<td></td>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Class – 2nd level</td>
<td>33/08</td>
<td>Subgroup – lower level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is the Valid Symbols File?

- For the reformed IPC, the International Bureau provides a so-called validity file for each new core and advanced level edition.
- The validity file contains complete information on the validity periods of all classification symbols ever used in the IPC, i.e. it contains information on what date a particular symbol entered into force and on what date the valid use of this symbol ended.
- If no such expiration date is given in the most recent validity file, the symbol is to be considered as valid for use.
Searching Using Different Classification Systems - Key Advantages

- The number of countries using the IPC when publishing their patent documents is much higher than the number of the members of the Strasbourg Union; the IPC is used in more than 100 countries in the world.
- The IPC is so to speak the *lingua franca* of the patent classification.
- The authentic versions of the IPC are published in English and French.
Searching Using Different Classification Systems - Key Advantages

- You can carry out a search (or you can modify your term based search) using IPC symbols in almost all patent-related databases.
- Using the US Classification, you can carry out a high precision search in the US patent documentation and in US patent databases.
- Using F-terms, you can carry out a high precision search in the Japanese documentation.
- IPC is used universally all over the world which enables you to search, for example, both US and JP documents.

http://www.wipo.int/classifications/ipc/en/faq/index.html#G7
European Patent Classification (ECLA)

European Patent Office (EPO)

The ECLA classification system is an extension of the International Patent Classification system. It contains 129 200 subdivisions, ie about 60 000 more than the IPC, and is therefore more precise. It is also more homogeneous and more systematic.

- ECLA classifications are assigned to patent documents by EPO examiners in order to facilitate prior-art searches
- ECLA is revised continuously and applied retrospectively
Searching Using Different Classification Systems - The Logic of Classification

European Patent Classification (ECLA)

- The EPO needs a classification that:
  - Is more detailed than IPC
  - Can be changed more often
  - Enables complete searching with one symbol (no IPC additions)

- Similar to reasons for FI/FTerms
European Patent Classification (ECLA)
ECLA = Latest IPC Edition

- + EPO Subdivisions
- + EPO Text Additions in IPC groups
- Exceptions:
  - IPC groups/amendments not (yet) introduced
  - IPC of former or future editions

Approx. 90% of the documents that have to be classified under ECLA are allocated a classification within eight months of publication
The classification symbol is made up of a letter denoting the IPC section, followed by a number (two digits) denoting the IPC class (eg **B62**).

Optionally, the classification can be followed by a sequence of a letter (eg **B62J**) denoting the IPC subclass, a number (variable, 1-3 digits, eg **B62J11**) denoting the IPC main group, a forward slash "/" and a number (variable, 1-3 digits, eg **B62J11/00**) denoting the IPC subgroup.

Optionally, the EC subgroup may be added to the IPC symbol. It has the form of a letter, followed by a number (optional), a letter (optional), etc. (eg **B62J11/00B**).
Searching Using Different Classification Systems
Searching Using Different Classification Systems
Searching Using Different Classification Systems

What is the difference between IPC and ECLA?

- The International Patent Classification **IPC** is a hierarchical classification system applied to published patent documents.
- ECLA is the internal classification scheme used by the European Patent Office (EPO) and it is based on the IPC, but it is much more detailed.
- The European Classification **ECLA** is used by the EPO for carrying out patent application searches. It is based on the IPC but is more detailed.
- Try entering the same IPC symbols in the ECLA field as in the IPC field to retrieve more detailed information.
What is the relation between the IPC and ECLA?

- ECLA classification codes can be used to carry out subject searches on the Esp@cenet database
- This is done by either inserting an ECLA classification in the EC classification field, if known, or by clicking on the highlighted ECLA field when a bibliographic record of a patent specification known to be of interest is found

http://www.wipo.int/classifications/ipc/en/faq/index.html#G7
The advantages of ECLA

- When the classification schedules are revised, which happens quite frequently, the Esp@cenet database is revised so that only the latest codes need to be searched to cover backlog documentation.
- The codes are also applied consistently by one group of examiners.
- ECLA is available on EPO website.
- The more detailed subdivision of ECLA also serves as a source for the future revision of the advanced level of the IPC, i.e. for the more detailed subdivision of the present IPC structure.
- Find classification(s) for keywords search screens are available.
Japanese Patent Office (JPO)

- In Japanese patent law, the F-term is a system for classifying Japanese patent documents according to the technical features of the inventions described in them.
- It is not a replacement for the International Patent Classification (IPC), or other patent classifications, but complements other systems by providing a means for searching documents from different viewpoints.
- The F-term system is used by examiners in the JPO who give appropriate F-terms, together with IPC categories, to each patent document published by the JPO.
Searching Using Different Classification Systems - The Logic of Classification

JPO

- The F-term classification system consists of themes and terms.
- The coverage area of the IPC is divided into approximately 2900 themes with each theme spanning a range of IPC subgroups.
- A theme is identified by the title describing the range or the theme code which consists of five digits allocated uniquely to each theme; for example, a theme spanning IPC range A01K 87/00–87/06 is identified by its title "Fishing rods" and its theme code is 2B019.
- Some themes only span one IPC subgroup, such as theme 2F011, "Tape measures" which covers IPC G01B 3/10.
Searching Using Different Classification Systems - The Logic of Classification

JPO

Defensive Search

- Using text keywords as well as F-terms or IPCs;
- Calculating union rather than intersection of F-terms; and
- Using several F-term sheets that are different but describing similar technologies at the expense of additional time for browsing more documents
Searching Using Different Classification Systems - The Logic of Classification

* * FI Section / Broad-Facet Selection * *

A section or Broad-Facet can be chosen; Click on a section or Broad-Facet to display the lower hierarchy:

- **Asection** SECTION A - HUMAN NECESSITIES
- **Bsection** SECTION B - PERFORMING OPERATIONS; TRANSPORTING
- **Csection** SECTION C - CHEMISTRY; METALLURGY [Notes]
- **Dsection** SECTION D - TEXTILES; PAPER
- **Esection** SECTION E - FIXED CONSTRUCTIONS
- **Fsection** SECTION F - MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
- **Gsection** SECTION G - PHYSICS [Notes]
- **Hsection** SECTION H - ELECTRICITY [Notes]
Searching Using Different Classification Systems - The Logic of Classification

* * F-term Theme Selection * *

A Theme contained in the group "2K" can be chosen; Click on a theme to display the F-term list:

- **2K001** Variable absorption of light and electrochromic display elements (Remarks) (Not Translated)
- **2K002** LIGHT DEFLECTION; LIGHT DEMODULATION; NON-LINEAR OPTICS; OPTICAL LOGIC ELEMENTS
- **2K003** (Not Translated) (Remarks) (Not Translated)
- **2K004** Microreaders
- **2K005** Camera lens adjustment
- **2K006** Mixing and branching waveguides
- **2K007** Photo printing equipment in general
- **2K008** Holo graphy (Remarks) (Not Translated)
- **2K009** Surface treatment of optical elements
- **2K010** Optical elements and lens
- **2K011** Liquid crystal materials
- ...
Searching Using Different Classification Systems - The Logic of Classification

From each viewpoint, documents are classified into several groups and labeled with a four-digit code called the term or F-term.

For example, from the viewpoint "tape measures", which focuses on measuring tape itself rather than winding mechanism or housing of tape, all measuring tape documents are classified into eight groups such as:

- AA02 "scales for special applications"
- AA05 "tapes with cores containing synthetic resins", etc.

All terms concerning a theme are put into a tabular form called an F-term list, which are available online, e.g., 2B019 and 2F011
Searching Using Different Classification Systems - The Logic of Classification

* * F-term List * *

F-term list of the theme "2K002".

- LIGHT DEFLECTION; LIGHT DEMODULATION; NON-LINEAR OPTICS; OPTICAL LOGIC ELEMENTS
- Use AA00
- F-term AA05 – Optical Disks
- F-term AA06 – Printers, facsimiles, copying machines or cameras
- Function or Device AB00
- F-term AB24 - Optical flip-flop circuits
- F-term AB27 - Light sources, e.g. lasers
- Control Factor BA00
- F-term BA03 - Polarised light
- And so on…
Searching Using Different Classification Systems - The Logic of Classification

* * F-term Group of Theme Selection * *

A group can be chosen on this screen. Click on a group to display the F-term Theme Selection

- 2B2C2D2E2F2G2H
- 2K 2N
- 3B3C3D3E3F3G3H3J3K3L
- 4B4C4D4E4F4G4H4J4K4L4M
- 5B5C5D5E5F5G5H5J5K5L5M

Additional Code Selection

Searching Using Different Classification Systems

What is the relation between the Japanese FI and the IPC

- FI classifications are made up of an IPC subgroup, followed by an IPC subdivision symbol in the form of a three-digit number.
- These IPC subdivision symbols are unique to FI classes and are structured hierarchically; Optionally, a file discrimination symbol in the form of a letter can be added.
- With its various subdivisions, the File Index (FI) Classification has about 190,000 entries, whereas the IPC has 70,000.
- Like ECLA, the more detailed subdivision of the FI classification scheme also serves as a source for the future revision of the advanced level of the IPC, i.e. for the more detailed subdivision of the present IPC structure.

http://www.wipo.int/classifications/ipc/en/faq/index.html#G7
Searching Using Different Classification Systems - The Logic of Classification

Key Advantages – JPO Classification

- Access to Japanese technology
- Insight into examiner’s view of technology and inventive entity
USPTO

- A patent classification is a way the examiners of patent offices or other people arrange documents, such as patent applications, disclosing inventions according to the technical features of the inventions.

- They arrange documents using a patent classification so that they can quickly find a document disclosing the invention identical or similar to the invention for which a patent is claimed.

- The same document may be classified in several classes.
A variety of rationales have been developed over the years to subdivide the USPTO’s classified files into searchable units.

Collection of art is based on each of the following rationales:

<table>
<thead>
<tr>
<th>Industry of Use</th>
<th>The industry employing the art or the use to which a device is put.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximate Function</td>
<td>Similar processes or structures that achieve similar results by applying similar natural laws to similar substances are considered to have the same fundamental utility and are grouped together.</td>
</tr>
<tr>
<td>Effect or Product</td>
<td>The results produced by the art.</td>
</tr>
<tr>
<td>Structure</td>
<td>The structural configuration or physical makeup of the object. (such as chemical compounds)</td>
</tr>
<tr>
<td>Ornamental Appearance</td>
<td>Separate collection of Design classes. Classified based on function or intended use and subdivided by ornamental, appearance and structure.</td>
</tr>
</tbody>
</table>
A fundamental principle of the USPC system is that each class, or part thereof, was created by:
- analyzing the claimed disclosures of the U.S. patents;
- creating various divisions and subdivisions on the basis of that analysis rather than by making a theoretical arrangement or ordering, and, finally;
- classifying the patent documents into the arrangement.
Searching Using Different Classification Systems - The Logic of Classification

USPTO

Classes Arranged Numerically with Art Unit and Search Room Locations

- **Classes D01-100** (Textiles, Furnishing, Tools, Packages, etc.)
- **Classes 101-200** (Printing, Coating or Plastic, Engines, etc.)
- **Classes 201-400** (Distillation, Electrolysis, Land Vehicles, etc.)
- **Classes 401-494** (Joints, Alloys, Semiconductors, etc.)
- **Classes 501-600** (Catalysts, Superconductors, Perfumes, etc.)
- **Classes 601-987** (Surgery, Data Processing, Multicellular Living Organisms, etc.)
## Searching Using Different Classification Systems - The Logic of Classification

### USPTO

- **Class and Subclasses**
- **Classes Arranged Numerically with Art Unit and Search Room Locations Classes 401-494**

<table>
<thead>
<tr>
<th>CLASS</th>
<th>CLASS TITLE</th>
<th>SUB-CLASSES TO:</th>
<th>SUB-CLASSES FROM:</th>
<th>ART UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>424</td>
<td>DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS</td>
<td>1.11</td>
<td>10.4</td>
<td>1618</td>
</tr>
<tr>
<td>424</td>
<td>DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS</td>
<td>40</td>
<td>47</td>
<td>1616</td>
</tr>
<tr>
<td>424</td>
<td>DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS</td>
<td>48</td>
<td></td>
<td>1615</td>
</tr>
</tbody>
</table>
Searching Using Different Classification Systems

- Index to the United States Patent Classification (USPC) System

- Select D for Drug
Searching Using Different Classification Systems - The Logic of Classification

USPTO

Class and Subclasses
Searching Using Different Classification Systems - The Logic of Classification

USPTO

- Class and Subclasses

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Class and Subclasses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaffecting &amp; body treating compositions</td>
<td>514 285</td>
</tr>
<tr>
<td>Acronycines</td>
<td>514 285</td>
</tr>
<tr>
<td>Adenine</td>
<td>514 263.4</td>
</tr>
<tr>
<td>Allantoin</td>
<td>514 290</td>
</tr>
<tr>
<td>Amantadine</td>
<td>514 656</td>
</tr>
<tr>
<td>Amphetamine</td>
<td>514 654</td>
</tr>
<tr>
<td>Ampicillin</td>
<td>514 196</td>
</tr>
<tr>
<td>Amproterpine</td>
<td>514 534</td>
</tr>
<tr>
<td>Asparin</td>
<td>514 165</td>
</tr>
<tr>
<td>Atropine</td>
<td>514 304</td>
</tr>
<tr>
<td>Barbituric acid</td>
<td>514 270</td>
</tr>
<tr>
<td>Benzoic acid</td>
<td>514 525</td>
</tr>
<tr>
<td>Benzamorphans</td>
<td>514 298</td>
</tr>
<tr>
<td>Biotin</td>
<td>514 287</td>
</tr>
<tr>
<td>Capsaicin</td>
<td>514 627</td>
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<tr>
<td>Cephalosporins</td>
<td>514 200+</td>
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<tr>
<td>Chlorpheniramine</td>
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<tr>
<td>Cholecalciferol</td>
<td>514 167</td>
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<tr>
<td>Chrysanthenic acid</td>
<td>514 572</td>
</tr>
<tr>
<td>Cobalamin</td>
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<tr>
<td>Codone</td>
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<td>Colchicine</td>
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<tr>
<td>Cortisone</td>
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<td>Cupreline</td>
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</tr>
<tr>
<td>Cycloheximide</td>
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<tr>
<td>Cyproheptadine</td>
<td>514 325</td>
</tr>
<tr>
<td>Cycline ester</td>
<td>514 550</td>
</tr>
<tr>
<td>D D t</td>
<td>514 748</td>
</tr>
<tr>
<td>D D v B</td>
<td>514 136</td>
</tr>
<tr>
<td>Dextromethorphan</td>
<td>514 289</td>
</tr>
<tr>
<td>Diphenhyline</td>
<td>514 263.36</td>
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<tr>
<td>Ephedrine</td>
<td>514 653</td>
</tr>
<tr>
<td>Estradiol</td>
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<td>Flupirilene</td>
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<td>Glaucine</td>
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<td>Grisofulvin</td>
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<td>Guanine</td>
<td>514 263.37</td>
</tr>
<tr>
<td>Hexachlorophene</td>
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</tr>
<tr>
<td>Hydrocortisone</td>
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</tr>
<tr>
<td>Isoniazid</td>
<td>514 354</td>
</tr>
<tr>
<td>Malathion</td>
<td>514 122</td>
</tr>
<tr>
<td>Melatonin</td>
<td>514 415</td>
</tr>
</tbody>
</table>
OR and XR Documents

- The **Original** (OR) classification is based on the claims in the patents. Because claims define the novel disclosures in a patent, each claim is assigned a classification which is considered mandatory and primary.

- The remaining mandatory classifications are designated as **cross-references** (XR). Additional XR classifications may be designated for any unclaimed subject matter, which is novel and is of sufficient detail and clarity to be useful as a reference.
USPC Caveat

- The USPC system contains many foreign patents and pieces of non-patent literature
- Until October 1, 1995, the USPTO classified the received foreign patent documents into the USPC system
- Beginning in October 1995, newly published foreign patent documents were no longer classified onto USPC system
Searching Using Different Classification Systems - The Logic of Classification

To locate patents pertaining to a specific field of technology or science within the USPC System requires a good measure of judgment as well as the continuous and coordinated use of the following publications:

1. Index to the U.S. Patent Classification Systems
2. The Manual of Classification
3. Patent Classification Definitions
4. Classification Orders
Searching Using Different Classification Systems

1. The Index

- Useful for those lacking experience in using the classification system and those unfamiliar with the particular technology under consideration.
- It is arranged alphabetically with subheadings that can have four levels of indentation.
- Some headings will reference other related or preferred entries with a "(see…)") phrase.
Searching Using Different Classification Systems

2. Manual of Classification

- Contains a collection of the class schedules, a list of the class titles in numerical order by class number and in alphabetical order, a list of the classes by Examining Groups, and a theoretical organization of classes into major groups.

- It includes 500 classes and covers all technology categories with 100,000+ subclasses among them.
3. Patent Classification Definitions

- Comprise statements of the scope embraced by each of the official classes, subclasses, and cross-reference art collections
- Direction to related subject matter in other classes and subclasses is also included
Searching Using Different Classification Systems

4. Classification Orders

- Issued throughout the year and contain information relating to U.S. patent classifications that are established or abolished as a result of reclassification projects
- Used to bridge the gap between the time a project issues and the time that regular search tools are updated to include the new information
Searching Using Different Classification Systems

Key Advantages - USPTO

- The system comprises three main categories, chemicals, electricals and mechanicals, and the three groups from about 400 classes which are themselves subdivided into more than 125,000 individual subclasses
- The USPC can be consulted on the Internet
Searching Using Different Classification Systems

Key Advantages - USPTO

Concordance between IPC and USPC

<table>
<thead>
<tr>
<th>IPC</th>
<th>USPC</th>
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<tbody>
<tr>
<td>Section</td>
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<td>Class</td>
<td>Category of Classes (tools)</td>
</tr>
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<td>Subclass</td>
<td>Class</td>
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<tr>
<td>Group</td>
<td>Subclass</td>
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<tr>
<td>Main group</td>
<td>Mainline subclass</td>
</tr>
<tr>
<td>Subgroup</td>
<td>Indented subclass</td>
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</table>
Searching Using Different Classification Systems

Searching with Classifications

- WIPO
- EPO
- JPO
- USPTO
Searching Using Different Classification Systems - Identify Qualcomm Classes
Searching Using Different Classification Systems - Identifying Classes
Searching Using Different Classification Systems - IPC H04Q Qualcomm
Searching Using Different Classification Systems

Natural language search in the IPC - TACSY

- This tool is an interface of access to the International Patent Classification from a query in natural language.
- TACSY analyses the question, queries an indexed IPC base and then returns a list of codes.
- **1. Query**
  - Natural Language Query which will be analyzed by the TACSY engine.
- **3.2 IPC Code used as filter**
  - This optional field permits to limit the search to a part of the IPC: the user can indicate a section, a class or another level of the IPC. If this field is empty, the search covers the entire IPC.

http://www.wipo.int/tacsy/
Natural language search in the IPC - TACSY

- **Search language**
  This parameter permits to choose the language in which the search will be done: French or English.

- **Level of answer**
  1. **Sub-group:** answers are displayed at the deepest possible level of the IPC
  2. **Main Group:** search is still done in the entire IPC but answers are given at the main groups level
  3. **Sub-class:** search is done in the entire IPC, but answers are given at the sub-classes level
  4. **Automatic:** search is done at the sub-groups level. If results are not considered satisfying, they are raised up to the main group level and, if necessary to the sub-classes level

[http://www.wipo.int/tacsy/](http://www.wipo.int/tacsy/)
Searching Using Different Classification Systems - “Cell Phone” Codes

Natural language search in the IPC - TACSY

http://www.wipo.int/tacsy/
Searching Using Different Classification Systems - “Cell Phone” Codes

Natural language search in the IPC - TACSY

http://www.wipo.int/tacsy/
## Natural language search in the IPC - TACSY

Searching Using Different Classification Systems - H04M 11/10 Class Code

### WIPO Search Using Different Classification Systems - H04M 11/10 Class Code

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<td>H04M</td>
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<td>Telephonic Communication; units controlling other apparatus for telephone use and not involving telephone switching apparatus.</td>
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**Example:**

- **H04M 11/10**: Telephonic Communication; units controlling other apparatus for telephone use and not involving telephone switching apparatus.

[View the full list of classes at http://www.wipo.int/tacsy/](http://www.wipo.int/tacsy/).
Searching Using Different Classification Systems - H04M 11/10 Class Code

Drilling Down into H04M Class Code – all hyperlinked

- H04M 11/00 Telephonic communication systems specially adapted for combination with other electrical systems
- H04M 11/02 · with bell or annunciator systems
- H04M 11/04 · with alarm systems, e.g. fire, police or burglar alarm systems
- H04M 11/06 - · Simultaneous speech and data transmission, e.g. telegraphic transmission over the same conductors
- H04M 11/08 · specially adapted for optional reception of entertainment or informative matter
- H04M 11/10 - with dictation recording and playback systems
Searching Using Different Classification Systems

European Patent Office (EPO)
European Classification (ECLA)

- For best results, searches should consist of a combination of both IPC/ECLA and Abstract fields
- To view the text of a specific ECLA class, go to Classification Search, where you can navigate to any classification
- Type the relevant classification symbol in the "Find description for a symbol" field in the top right-hand corner of the screen and click "Go"
Searching Using Different Classification Systems

Practical exercise:

- Starting with key words, and expand search to encompass ECLA codes, locate documents for bicycle frames composed of alloys containing magnesium
- Is this invention novel?
Searching Using Different Classification Systems

European Patent Office (EPO)

http://v3.espacenet.com/eclarsrch?&locale=en_gb&classification=ecla
Searching Using Different Classification Systems

European Patent Office (EPO)

Searching Using Different Classification Systems

European Patent Office (EPO)

http://v3.espacenet.com/eclasrch?&locale=en_gb&classification=ecla
Searching Using Different Classification Systems

- (magnesium or Mg) AND alloy* AND bicycle* AND frame* and ECLA Code H

- RESULT LIST 0 results found in the Worldwide database for:(magnesium or Mg) AND alloy* AND bicycle* AND frame* in the title AND H as the European Classification and ECLA Code B

- RESULT LIST 1 result found in the Worldwide database for:(magnesium or Mg) AND alloy* AND bicycle* AND frame* in the title AND B as the European Classification

http://v3.espacenet.com/eclasrch?&locale=en_gb&classification=ecla
Searching Using Different Classification Systems

Result list:

- 19 results found in the Worldwide database for: (magnesium or Mg) AND alloy* AND bicycle* AND frame* AND A OR B OR C OR D OR E OR F OR G OR H as the European Classification

Searching Using Different Classification Systems

The Industrial Property Digital Library (IPDL) offers public access to IP Gazettes of the JPO free of charge through the Internet.

http://www.ipdl.inpit.go.jp/homepg_e.ipdl
Searching Using Different Classification Systems

** F-term List **

This screen shows the F-term list of the theme "2K002":

- LIGHT DEFLECTION; LIGHT DEMODULATION; NON-LINEAR OPTICS; OPTICAL LOGIC ELEMENTS
Searching Using Different Classification Systems

* * F-term List * *

F-term list of the theme "2K005":

- **2K005** Camera lens adjustment
- G03B5/00-5/08
- **2K004** Microreaders
- G03B21/11-21/11@Z
- **2K010** Optical elements and lens
- G02B1/00-1/08;3/00-3/14
Searching Using Different Classification Systems

Practical exercise:
- Locate Japanese art for patents only dealing with Liquid Crystals in 2010

* * F-term List * *
- F-term list of the theme "2K011"
- 2K011 Liquid crystal materials
- G02F1/13,500
# Searching Using Different Classification Systems

## JPO - Stored Data Information (FI/F-term Search)

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<td>2010-252628</td>
<td>(04/11/2010)</td>
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<td>1922-000007 -</td>
<td>1996-034772</td>
<td>(17/01/1986)</td>
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<td>(06/11/2008)</td>
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<td>(31/05/1994)</td>
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<td>(29/06/1948)</td>
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<td>2009/022374</td>
<td>(19/02/2009)</td>
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Searching Using Different Classification Systems

Data Type
This choice can be omitted. (When you have no check, all Data Types are chosen.)
- Patent
- Examined utility model registration
- Patent specification
- Examined utility model specification

Theme — e.g. 2C001
Enter a F-term Theme in the box below.

Publication Date — e.g. 20010101-20031231
You can specify a range of Publication Date to narrow your search.
This choice can be omitted.
From:
To:

F/T-term facet — e.g. AA01+[A63F9/22-ZAA]
Enter the query into the box below, up to 500 letters (essential requirement for searching).
Boolean operators: "+" means 'OR', "*" means 'AND', "-" means 'NOT'.

Display Type
- Drawings

Priority of search result display
Check the kind of document, which you want to indicate the Search Result (Document Number).
- unexamined applications
- examined applications

Search

http://www4.ipdl.inpit.go.jp/Tokujitu/tjftermena.ipdl?N0000=114
# Searching Using Different Classification Systems

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<tr>
<td><strong>Publication number:</strong> 2010-001368</td>
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<td><strong>Date of publication of application:</strong> 07.01.2010</td>
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<td><strong>(I) Int. Cl.</strong></td>
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<td>02B 8/30 (2006.01)</td>
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<td>03K 18/30 (2006.01)</td>
</tr>
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| **(I) Application number:** 2008109844 |
| **(2) Date of filing:** 19.06.2008 |
| **(I) Applicant:** FUJIFILM CORP  |
| **(2) Inventor:** UDAKAWA HIDESATU  |
| **(2) Inventor:** MORISHIMA SHINICHI  |

**Abstract**

PROBLEM TO BE SOLVED: To provide a liquid crystal composition having high dichroism, especially a liquid crystal composition having nematonic liquid crystallinity, smectic liquid crystallinity, above all especially, smectic B liquid crystallinity.

SOLUTION: The liquid crystal composition comprises a rod-like liquid crystal monomer that can be aligned and polymerized as a main component and at least one kind of dichroic pigment satisfying following formula (1): 1.0L < L < 1.0L where \( L \) is a molecular length of molecular monomer and \( L \) is a molecular length of dichroic pigment.
Searching Using Different Classification Systems

Validity / FTO Search Example - USPTO

Recall Case Study – “Virocillin”

1. A pharmaceutically acceptable tablet of Virocillin comprising,
   - A core selected from the group consisting of carboxymethyl cellulose, lactose, sucrose [core material]
   - Coated on said core are particles comprising Virocillin and a suitable excipient selected from the group consisting of carboxymethyl cellulose, ethyl cellulose, methyl cellulose and lactose and said particles are coated with a mixture of sodium stearate and hydroxypropylmethyl cellulose;
   - At least one layer of one of the more basic substances selected from the group consisting of sodium carbonate, potassium carbonate, Mg(OH)2, Ca(OH)2 encasing said core and said particles to form a pill;
   - Coating said pill with an enteric coating

2. The tablet of claim 1 wherein said core is carboxymethyl cellulose
3. The tablet of claim 1 where in said enteric coating is favorite enteric coating’.
4. The tablet of claim 1 where in said basic substance is sodium carbonate.
Searching Using Different Classification Systems

USPTO

http://www.uspto.gov/web/patents/classification/
Searching Using Different Classification Systems

Advanced Search Results

- **Recall – Step 4.** Be sure you know why you are rejecting a reference and think twice about it

- The following documents show all components:
  - US 200126804 – “Compressed Microparticles for Dry Injection”
  - US 5686104 – “Stable Oral Cl-981 Formulation…”
  - US 5350582 – “Stable Formulation of Enalapril…”
  - US 5780057 – “Pharmaceutical Tablet Character…”
  - US 5225202 – “Enteric Coated Pharmaceutical…”
  - And 50 others…
Searching Using Different Classification Systems

Among the list of 50 some patents and published applications, a few stand out as being very close to the proposed claims provided by the client:


- **Current U.S. Class:** 424/475; 424/495; 424/683; 424/686; 424/692; 514/394; 514/395; 514/925; 514/927

- **Current International Class:** A61K 9/16 (20060101); A61K 9/20 (20060101); A61K 9/50 (20060101); A61K 47/02 (20060101); A61K 31/44 (20060101); C07D 401/00 (20060101); C07D 401/12 (20060101); A61K 009/30; A61K 009/16; A61K 033/12(); A61K 033/10

- **Field of Search:** 514/970,338,155,156,157,394,395,925,927, 424/475,495,683,686,692
Searching Using Different Classification Systems

- Using the classifications from US 5045321 (‘321 Patent) reveals the following critical document:
  - US 4853230 (‘230 Patent) – “Pharmaceutical Formulations of Acid Labile Substances for Oral Use” – Aktiebolaget Hassle, Molndal, Sweden

- **Current U.S. Class:** 424/466; 424/456; 424/468; **424/475;** 424/479; 424/480; 424/482

- **Current International Class:** A61K 9/20 (20060101); A61K 9/28 (20060101); **A61K 9/50** (20060101); A61K 009/46

- **Field of Search:** 424/470, **495, 468, 480, 482, 466, 471, 472**
Searching Using Different Classification Systems

- **US 4853230 (‘230 Patent)**

**We claim:**

1. A pharmaceutical preparation comprising:
   - (a) an alkaline reacting core comprising an acid-labile pharmaceutically active substance and an alkaline reacting compound different from said active substance, an alkaline salt of an acid labile pharmaceutically active substance, or an alkaline salt of an acid labile pharmaceutically active substance and an alkaline reacting compound different from said active substance;
   - (b) an inert subcoating which rapidly dissolves or disintegrates in water disposed on said core region, said subcoating comprising one or more layers comprising materials selected from the group consisting of tablet excipients, film-forming compounds and alkaline compounds; and
   - (c) an enteric coating layer surrounding said subcoating layer, wherein the subcoating layer isolates the alkaline reacting core from the enteric coating layer such that the stability of the preparation is enhanced.
Searching Using Different Classification Systems

- **US 4853230 (‘230 Patent)**

- 3. A preparation according to claim 1 wherein the subcoating layer comprises one or more of magnesium oxide, magnesium hydroxide or composite substance \([\text{Al.sub.2 O.sub.3.6MgO.CO.sub.2.12H.sub.2 O or MgO.Al.sub.2 O.sub.3.2SiO.sub.2.nH.sub.2 O}],\) wherein \(n\) is not an integer and less than two.

- 4. A preparation according to claim 2 wherein the subcoating comprises two or more sub-layers.

- 5. A preparation according to claim 4 wherein the subcoating comprises hydroxypropyl methylcellulose, hydroxypropyl cellulose or polyvinylpyrrolidone.
Searching Using Different Classification Systems

US 4853230 (‘230 Patent)

8. A preparation according to claim 1, wherein the alkaline core comprises an alkaline salt of the acid labile compound such as the sodium, potassium, magnesium calcium or ammonium salt.

9. A preparation according to claim 7 wherein the alkaline core comprises an alkaline salt of the acid labile compound mixed with an inert, alkaline compound.

10. A preparation according to claim 1, wherein the enteric coating comprises hydroxypropyl methylcellulose phthalate, cellulose acetate phthalate, co-polymerized methacrylic acid/methacrylic acid methyl ester or polyvinyl acetate phthalate, optionally containing a plasticizer.
Searching Using Different Classification Systems

US 4853230 (‘230 Patent)

Limitations – Ways of getting around the ‘230 Patent

- 6. A preparation according to claim 1, wherein an alkaline core comprises the acid labile compound and a pH-buffering alkaline reacting compound which renders to the micro-environment of the acid labile compound a pH of 7-12.

- 11. A preparation according to claim 1, wherein the water content of the final dosage form containing the acid labile compound does not exceed 1.5% by weight.

- 15. A preparation according to claim 1, wherein the subcoating further comprises an alkaline buffering compound.
Searching Using Different Classification Systems

Patent Concordance

http://www.uspto.gov/web/patents/classification/
Searching Using Different Classification Systems

424 Class To Locate IPC Codes
Searching Using Different Classification Systems

CLASS 424

DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS

SECTION I - CLASSIFICATION

STATEMENT OF CLASS SUBJECT MATTER

The class includes the following subject matter, not provided for elsewhere, when a utility is set forth below is either (a) claimed or (b) solely disclosed.

A. DRUG AND BIO-AFFECTING COMPOSITIONS which are generally capable of:

1. Preventing, alleviating, treating, or curing abnormal and pathological conditions of the living body by such means as: (a) destroying a parasitic organism; (b) limiting the effect of the disease or abnormality by chemically altering the physiology of the host or parasite.

2. Maintaining, increasing, decreasing, limiting, or destroying a physiologic body function; e.g., vitamin compositions, sex stimulants, fertility inhibitors, growth promoters, etc.

3. Diagnosing a physiological condition or state by an in vivo test; e.g., X-ray contrast, etc.

4. Controlling or protecting an environment or living body by attracting, disabling, inhibiting, killing, modifying, repelling or retarding an animal or micro-organisms. For example: (a) Nonfood baits, attractants, and lures; (b) Biocides including antibiotics of undetermined structure; (c) Warfare gases such as lethal gases, stimulants, etc.; (d) Chemical pest repelents and adhesive trapping agents.

B. BODY TREATING COMPOSITIONS generally intended for deodorizing, protecting, embalming, or grooming a body; e.g., cosmetics, dentifices, embalming fluids, etc.

C. FERMENTATIVES (e.g., antibiotics, etc.). PLANT AND ANIMAL EXTRACTS, OR BODY FLUIDS OR MATERIAL CONTAINING PLANT OR ANIMAL CELLULAR STRUCTURE, PER SE, INTENDED TO BE USED FOR THE PURPOSES SET FORTH IN A. AND B. ABOVE, AND WHOSE CHEMICAL STRUCTURE IS NOT SUFFICIENTLY KNOWN TO BE CLASSIFIED ELSEWHERE.

D. COMPOSITIONS OF THIS CLASS DEFINED IN TERMS OF SPECIFIC STRUCTURE; E.G., LAYERED TABLET, CAPSULE, ETC.

The lines generally prevailing between the composition classes and the article classes are applicable to Class 424, unless otherwise indicated, with the exception that Class 424 provides for a composition, per se, defined in terms of specific structure having a utility for Class 424 (see subclasses 409+)

E. PROCESSES OF USING the subject matter of the Class Definition, A through C above, and in Lines With Other Classes or Within This Class, Compositions Of This Class Defined In Terms Of Specific Structure; e.g., Layered Tablet, Capsule, Etc. A, above, or compounds, per se, for the purposes set forth in A and B of the Class Definition; (See References to Other Classes, below, for those classes that have material or processes that may be used in connection with materials or processes of this class), especially those materials which are related to processes involving Class 424 subject matter classified elsewhere.

F. PROCESSES OF PREPARING subject matter of the Class Definition, A through C, and in Lines With Other Classes or Within This Class, Compositions Of This Class Defined In Terms Of Specific Structure; e.g., Layered Tablet, Capsule, Etc., part A.

G. ADJUNCT OR CARRIER COMPOSITIONS, PER SE, FOR PERFECTING COMPOSITIONS FOR THIS CLASS.

(1) Note. This class is the generic home for compositions for treating a living body and for controlling a pest.

(2) Note. The term "more use" or "more application" as employed in the definitions of Class 424 and the search notes in other classes which refer to Class 424 is defined to encompass only a single step process and include expressions such as applying, contacting, dipping, spraying, injecting, combusting, administering orally, etc., which are either single or with recitations such as dosage amount or the treatment of a specific environment, organically, or body part. Examples of expressions considered more use or more application are "injecting 5 cc of compound x into a vein" and "burning 20 grams of a sulfur fungicid in a room."

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

CLASSIFICATION GUIDELINES FOR THIS CLASS

A. In this class the chemical structure of the ingredient disclosed as having a utility set forth in the class definition above, is used as the primary basis of classification. Processes of using compositions or compounds, per se, and processes of making compositions, not provided for elsewhere, are classified in the first appearing subclass providing for the particular active ingredient being employed or prepared.

Compositions containing a biologically or pharmacologically active ingredient which generally, for example, control, cure, disable, inhibit, kill, modify, protect, repel, retard, stabilize or stimulate a living animal body; or inhibit or kill micro-organisms other than algae, etc., are provided for primarily in subclasses 33.1 and Class 404 appropriate subclasses. Compositions, intended for topical application, containing ingredients having other utilities under the class definition; e.g., grooming, enhancing, etc., which are not provided for in the Special subclasses 1.1-84, 125 and
Searching Using Different Classification Systems

US-to-IPC8 Concordance

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Searching Using Different Classification Systems - Conclusions

- Patent classification systems are powerful tools, and intelligent use of patent classification (either alone, or in combination with other keyword searches) is extremely effective for relevant patent retrieval.

- The IPC is used universally all over the world which enables you to search, for example, both US and JP documents.

- There is no universal classification system - to reclassify each of foreign patent documents according to its own national classification is inefficient.
Searching Using Different Classification Systems - Conclusions

- Understand the Hierarchical Structure of classification schema found in WIPO, EPO, JPO, and USPTO searchable databases
- Understand when to broaden or narrow search results using class codes with key word searching
- Understand the value for class codes searching for validity or freedom-to-operate (FTO) searching
Searching Using Different Classification Systems – Useful Links

- **World Intellectual Property Organization (WIPO)**

- **European Patent Office (EPO)**

- **U. S. Patent & Trademark Office (USPTO)**

- **Japan JPO IPDL**
  - [http://www.ipdl.inpit.go.jp/](http://www.ipdl.inpit.go.jp/)
Searching Using Different Classification Systems – Useful Links

Catchword Index

- http://www.wipo.int/ipcpub/#!/level=a&version=20110101&notion=cw

IPC internet publication as from IPC version 2011.01.

- http://www.wipo.int/ipcpub/#!refresh=page#!level=a&version=20110101
Searching Using Different Classification Systems – Useful Links

European Patent Office (EPO)
- Access esp@cenet via the EPO at http://ep.espacenet.com/ English, French and German language support
- Choose your esp@cenet gateway
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Searching Using Different Classification Systems – Useful Links

USPTO Classification Searching
- Searching Using Different Classification Systems
- US-to-IPC8 Concordance
Searching Using Different Classification Systems – Useful Links

* * FI Section / Broad-Facet Selection * *

http://www5.ipdl.inpit.go.jp/pmgss1/pmgss1/!frame_E?hs=1&gb=1&dep=1&sec=&cls=&scls=&mgrp=&idx=&sgrp=&sf=&bs=&dt=0&wrd=&nm=

* * F-term Group of Theme Selection * *

http://www5.ipdl.inpit.go.jp/pmgss1/pmgss1/!frame_E?hs=1&gb=2&dep=1&sec=&cls=&scls=&mgrp=&idx=&sgrp=&sf=&bs=&dt=0&wrd=&nm=