

# Patent Classification on

# STN<sup>®</sup>

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# Agenda

- Overview of patent classification systems
- International Patent Classification (IPC)
- National/Regional Classification Systems
  - European Classification (ECLA)
  - US National Classification (NCL)
  - Japanese File Index (FI)
  - Japanese File Forming Terms (F-Terms)
- Derwent Classification
- Chemical Abstracts Classification

# What is Patent Classification?

- A patent classification system is a formalized way to describe the contents of patent documents
  - hierarchical
  - alphanumerical code ('symbol')
  - designed to facilitate retrieval by content

# Why use Patent Classification?

- The patent Classification
  - provides a concise subject code for the technology described in a patent document
  - is independent of language and wording
- The classification symbol
  - represents a searchable identifier for patents grouped together according to similarity of claimed subject matter
  - allows to gradually adjust precision by following the hierarchy in either direction
  - is assigned by the examiner, not the applicant

# How to use Patent Classification?

## (1) Identify the appropriate classification system(s)

- depending on the documents of interest, not all classification systems may be applicable
- different classification systems offer different degrees of detail

## (2) Identify the appropriate classification symbols

- use the online thesaurus
- research on patent offices' websites
- ANALYZE answer sets

# How to use Patent Classification?

## Researching Patent Offices' Websites

- Most patent offices offer web-based tools to navigate and search 'their' classification system

### - IPC

<http://www.wipo.int/classifications/ipc/ipc8/?lang=en> (EN, FR)

### - ECLA

[http://v3.espacenet.com/eclasrch?locale=en\\_EP](http://v3.espacenet.com/eclasrch?locale=en_EP) (EN, DE, FR)

### - US NCL (USPC)

<http://www.uspto.gov/go/classification/> (EN)

### - JP FI & F-Term

[http://www5.ipdl.inpit.go.jp/pmgs1/pmgs1/pmgs\\_E](http://www5.ipdl.inpit.go.jp/pmgs1/pmgs1/pmgs_E) (JP, EN)

# How to use Patent Classification?

(3) Use classification symbols or ranges to complete your search strategy.

- use classification symbols as catchall for different languages, spellings and synonyms
- use classification symbols to minimize false hits and defuse homonyms
- ANALYZE the technological focus of an answer set

# How to use Patent Classification? Catchall Functionality (OR)

## **Search Question:**

We're looking for vehicle headlights.



# How to use Patent Classification?

## (3) Use classification symbols or ranges to complete your search strategy.

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# How to use Patent Classification?

## Removing False Hits (AND)

...(lamp# or light#)(2A)(automobile# or vehicle# or car#)...

**Will retrieve:**

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN  
USE. . . . lamp used as front illuminating lamp of vehicles.

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN  
TI. . . high-intensity discharge vehicle lamp, has mounting module connected. . .

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN  
NOV NOVELTY - The motor vehicle driving light device has a driving light.. . .

# How to use Patent Classification?

## Removing False Hits (AND)

...(lamp# or light#)(2A)(automobile# or vehicle# or car#)...

but also:

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
STN

TI Vehicle rear light has reflectors and plates which . . .

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
STN

NOV. . . . a roof carrier of the vehicle. A UV lamp is installed inside the housing.

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
STN

TI Display device for motor vehicle, has light-guide plate having lens that guides. . .

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
STN

TI. . . drum brake apparatus for light vehicle e.g. bicycle, wheelchair has elastic. . .



# How to use Patent Classification?

## Removing False Hits (AND)

...((lamp# or light#)(2A)(automobile# or vehicle# or car#) and B60Q0001-04+NT/IPC)...

**Removes hits that are not classified as headlights.**

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
 S1 **F21V0029-00**  
 T1 **vehicle** rear **light** has reflectors and plates which . . .

L2 ANSWER X OF 52649 W **B60H0003-00** 2009 THOMSON REUTERS on  
 STN  
 NOV. . . . a roof carrier of the **vehicle**. A UV **lamp** is installed inside the housing.

L2 ANSWER X OF 52649 **B60K0035-00** WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
 STN

T1 Display device for motor **F16D0051-00** guide plate having lens that guides. . .

L2 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on  
 STN  
 T1. . . drum brake apparatus for **light vehicle** e.g. bicycle, wheelchair has elastic. . .

# How to use Patent Classification?

## Removing False Hits (AND)

...((lamp# or light#)(2A)(automobile# or vehicle# or car#) and B60Q0001-04+NT/IPC)...

### **CAVEAT:**

**Removing hits always harbors the risk of losing relevant results!**

B60Q0001-22 (lights) for reverse drive  
B60Q0001-24 (lights) for lighting other areas than only the way ahead  
H01K0007-02 (lamps) for producing a narrow beam of light,...  
i.e. searchlights

are not covered by B60Q0001-04+NT, but may prove relevant.

# How to use Patent Classification?

## (3) Use classification symbols or ranges to complete your search strategy.

- use classification symbols as catchall for different languages, spellings and synonyms
- use classification symbols to minimize false hits and defuse homonyms
- ANALYZE the technological focus of an answer set

# How to use Patent Classification? Homonym Disposal (AND)

## **Search Question:**

We're looking for vehicle antilock braking systems.

# How to use Patent Classification? Homonym Disposal (AND)

```
=> s (((antilock or anti(w)lock)
      (2a)brak?(2a)system#) or abs)/ti,ab
```

```
L3      18877  (((ANTILOCK OR ANTI(W)LOCK)(2A)BRAK?(2A)SYSTEM#...
```

```
=> s L3 and B60T/ipc
```

```
L4      2928  L3 AND B60T/IPC
```

B60T

VEHICLE BRAKE CONTROL SYSTEMS OR PARTS THEREOF; BRA  
of electrodynamic brake systems B60L 7/00; conjoint control of brakes and othe  
ELEMENTS ON VEHICLES IN GENERAL; PORTABLE DEVICES FOR  
MODIFICATIONS TO FACILITATE COOLING OF BRAKES [1.81

```
=> s l3 not l4
```

```
L5      15949  L3 NOT L4
```

L5 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN  
NOV. . . . (PA66) or acrylonitrile butadiene styrene (ABS) plastic.

L5 ANSWER X OF 52649 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN  
USE. . . . (I) comprises neutralising egg yolk antibodies (ABs) specific for the infectious  
agent. . .

# How to use Patent Classification?

(3) Use classification symbols or ranges to complete your search strategy.

- use classification symbols as catchall for different languages, spellings and synonyms
- use classification symbols to defuse homonyms
- ANALYZE the technological focus of an answer set

# How to use Patent Classification?

## Analyzing answer sets

### **Search Question:**

What's the technological focus of the company  
Novo Nordisk AS?

# How to use Patent Classification? Portfolio Analysis

=> file wpindex

=> s novo-c/paco

L1                    3429 NOVO-C/PACO

=> ana l1 mc len 7

L2                    ANALYZE L1 1- MC LEN 7 :        1628 TERMS

=> d

L2                    ANALYZE L1 1- MC LEN 7 :        1628 TERMS

TERM #	# OCC	# DOC	% DOC	MC	
1	1310	706	20.59	D05-H12	DEF DNA, CDNA, TRANSFER VECTORS, RNA
2	806	678	19.77	D05-H17	DEF RECOMBINANT PROTEIN/POLYPEPTIDE PRODUCTIO
3	753	665	19.39	D05-A02	DEF OTHER ENZYME PROCESS
4	699	615	17.94	D05-H14	DEF RECOMBINANT CELLS
5	501	482	14.06	D05-C03	DEF ENZYMES BY FERMENTATION
6	451	280	8.17	B14-J01	DEF CNS ACTIVE DRUGS
7	432	380	11.08	B04-C01	DEF POLYPEPTIDES (GENERAL)



# Agenda

- Overview of patent classification systems
- **International Patent Classification (IPC)**
- National/Regional Classification Systems
  - European Classification (ECLA)
  - US National Classification (NCL)
  - Japanese File Index (FI)
  - Japanese File Forming Terms (F-Terms)

# The International Patent Classification IPC

- Introduced in 1968
- Used by >100 patent authorities
  - Most widely used classification system
  - CORE and ADVANCED-level
- Hierarchical
  - non-expressive

# IPC Core and Advanced Levels

## Advanced level

### G02C SPECTACLES

#### 5/00 Constructions of non-optical parts

5/02 . Bridges; Browbars; Intermediate bars  
(nose-engaging surfaces 5/12)

5/04 . . with adjustable means

5/06 . . with resilient means

5/08 . . foldable

5/10 . . Intermediate bar or bars between  
bridge and side-members

5/12 . Nose pads; Nose engaging surfaces  
of bridges or rims

5/14 . Side-members

5/16 . . resilient or with resilient parts

5/18 . . reinforced

5/20 . . adjustable, e.g. telescopic

5/22 . Hinges (pivotal connection in  
general F 16 C 11/00)

## Core level

### G02C SPECTACLES

#### 5/00 Constructions of non-optical parts

5/14 . Side-members

5/22 . Hinges (pivotal connection in  
general F 16 C 11/00)

From January 2006, many patent offices assign IPCs at the *Advanced Level*, while others assign IPCs at the *Core Level*.

# The International Patent Classification IPC

- Introduced in 1968
- Used by >100 patent authorities
  - Most widely used classification system
  - CORE and ADVANCED-level
- Hierarchical
  - non-expressive
- Revised on a regular basis
  - Reclassification of existing documents

Now available in  
INSPEC on STN!

# The International Patent Classification IPC

- 8 Sections

**A**  
Human  
Necessities

**B**  
Performing  
Operations,  
Transporting

**C**  
Chemistry;  
Metallurgy

**D**  
Textiles; Paper

**E**  
Fixed  
Constructions

**F**  
Mechanical  
Engineering; Lighting  
Heating; Weapons;  
Blasting

**G**  
Physics

**H**  
Electricity

# The International Patent Classification IPC

- Format
  - Alphanumerical code

**A**    **NN**    **A**    **NNNN**    /    **NNNNN**  
Section    Class    Subclass    Group    Subgroup

# The International Patent Classification IPC

- Format
  - Example

(19) World Intellectual Property Organization  
International Bureau



PCT



(43) International Publication Date  
24 April 2008 (24.04.2008)

(10) International Publication Number  
**WO 2008/046897 A**

(51) International Patent Classification:

**B65D 83/14** (2006.01)      B65D 83/16 (2006.01)

DesignBureau Geiberger, Eduard-Rhein-Str.  
Konigswinter (DE).

(21) International Application Number:

PCT/EP2007/061173

(74) Agents: WALKER, Ralph, Francis et al.; G  
line, Corporate Intellectual Property (CN925.  
West Road, Brentford Middlesex TW8 9GS (

**B**

**65**

**D**

**83**

**/**

**14**

Performing  
Operations,  
Transporting

Conveying, packing,  
storing, handling thin  
or filamentary  
material

Containers for  
storage or transport  
of articles or  
materials, e.g. bags,  
barrels, bottles, (...)

Containers or  
packages with  
special means for  
dispensing contents

for delivery of liquid  
or semi-liquid  
contents by internal  
gaseous pressure,  
i.e. aerosol  
containers (...)

# Searching with IPC codes

## Format

```
=> S B65D83/14/IPC
L1      6157 B65D83/14/IPC
          (B65D0083-14/IPC)
```

```
=> S B65D83-14/IPC
L2      6157 B65D83-14/IPC
          (B65D0083-14/IPC)
```

```
=> S B65D0083-14/IPC
L3      6157 B65D0083-14/IPC
```

```
=> S B65D008314/IPC
L4      0 B65D008314/IPC
```

```
=> S B65D8314/IPC
L5      0 B65D8314/IPC
```

For searching STN, IPC-codes are used full-length; the system accepts and automatically resolves different input formats.

Not all formats are accepted, though.

# Searching with IPC codes

## Truncation

```
=> S B65D/IPC
```

```
L6          319413 B65D/IPC
```

```
=> S B65D0083/IPC
```

```
L7          27650 B65D0083/IPC
```

```
=> S B65D83/IPC
```

```
L8          0 B65D83/IPC
```

IPC symbols are automatically truncated at the subclass and the group level.

For group level truncation, the IPC code has to be used full length (8 digits).  
(Automatic truncation works only if the symbol stem is unambiguous.)

# Searching with IPC codes

## Utilizing the Online Thesaurus

### **Search Question:**

What classification symbols are used to describe antilock braking systems?

# Searching with IPC codes

## Utilizing the Online Thesaurus

Step 1: Expand a keyword of interest in the /IPC-field.

=> e abs/ipc

E#	FREQUENCY	AT	TERM
--	-----	--	----
E1	0	1	ABRASIVE(S) * SELECTION OF ABRASIVE(S) PARTICLES FOR B LASTING/IPC
E2	0	1	ABRASIVE(S) * SOAPS AND DETERGENTS CONTAINING ABRASIVE (S)/IPC
E3	0	-->	ABS/IPC
<b>E4</b>	<b>0</b>	<b>1</b>	<b>ABS (ANTILOCK BRAKING SYSTEM)/IPC</b>
E5	0	1	ABSORBENTS/IPC
...			

=> e e4+kt

E1	0	-->	ABS (Antilock Braking System)/
E2	305	KT	B60T0008-176/IPC
***** END *****			

Type HELP RCODE to learn about the relationship codes available.

KT : Keyword Term

# Searching with IPC codes

## Utilizing the Online Thesaurus

=> e e2+all

```
E1      0    BT6    B/IPC
          SECTION B - PERFORMING OPERATIONS
E2      0    BT6    TRANSPORTING/IPC
E3      0    BT5    B6/IPC
E4      0    BT4    B60/IPC
```

VEHICLES IN GENERAL

Note

(1) In this class, the following term is used with the meaning indicated:

- "vehicle" means all vehicles except those restricted to one of the following types of vehicles: rail vehicles, waterborne vessels, aircraft, space vehicles, hand carts, cycles, animal-drawn vehicles, and sledges, which are covered by the relevant subclasses of B61 to B64.

(a) Thus the term "vehicle" includes:

#3# vehicular characteristics which are common to more than one of the above-listed types;

#3# certain characteristics restricted to automobiles,

The relationship code ALL results in a rather lengthy display.

# Searching with IPC codes

## Utilizing the Online Thesaurus

B63B0059-00;  
 #4# subclass B60T includes brake control systems in general applicability, and in particular, systems limited to vehicles. It also includes systems for power-brake systems and some systems for rail-vehicle brake systems;  
 #4# subclass B60V embraces air-cushion vehicles per se and land vehicles, waterborne vessels or aircraft combined with features allowing them to alternatively operate as air-cushion vehicles or to be partially supported by an air cushion.

E5            62385    BT3    B60T/IPC  
 VEHICLE BRAKE CONTROL SYSTEMS OR PARTS THEREOF; BRAKE CONTROL SYSTEMS OR PARTS THEREOF, IN GENERAL (control of electrodynamic brake systems B60L0007-00; conjoint control of brakes and other drive units of vehicles B60W); ARRANGEMENT OF BRAKING ELEMENTS ON VEHICLES IN GENERAL; PORTABLE DEVICES FOR PREVENTING UNWANTED MOVEMENT OF VEHICLES; VEHICLE MODIFICATIONS TO FACILITATE COOLING OF BRAKES

Note  
 (1) In this subclass, the following expression is used

The relationship code ALL results in a rather lengthy display.

# Searching with IPC codes

## Utilizing the Online Thesaurus

with the meaning indicated:

- "brake control systems" incl  
systems for vehicles or of gen  
IMMOBILISATION

Portable devices B60T0003-00

BRAKING

Kind of braking and corresponding arrangements

B60T0001-00

Vehicle modifications for cooling brakes B60T0005-00

Kinds of brake control

initiating means; varying braking force or its  
distribution according to road or load conditions

B60T0007-00, B60T0008-00

continuous braking B60T0010-00

transmission of control between initiating means and  
brakes B60T0011-00, B60T0013-00

Parts or accessories for fluid-pressure brake control:  
valve structure, disposition, and operation B60T0015-00

other parts or accessories B60T0017-00

-----

The relationship code ALL  
results in a rather lengthy  
display.

E6

6168

BT2

B60T0008-00/IPC

Arrangements for adjusting wheel-braking force to meet

# Searching with IPC codes

## Utilizing the Online Thesaurus

			limiting or varying distribution of braking force (by changing number of effective I brake systems B60T0017-10) CORE VALID FROM 19680901 TO PRESENT
E7	10765	BT1	B60T0008-17/IPC . Using electrical or electronic regulation means to control braking CORE VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 ) Note (1) When classifying in group B60T0008-17, classification is also made in appropriate places in groups B60T0008-18, B60T0008-24, B60T0008-26 or B60T0008-32 if other aspects than electronic control are of interest.
E8	305	-->	B60T0008-176/IPC . . Brake regulation specially adapted to prevent excessive wheel slip during vehicle deceleration, e.g. ABS (B60T0008-1755 takes precedence) ADVANCED VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )

The relationship code ALL results in a rather lengthy display.

# Searching with IPC codes

## Utilizing the Online Thesaurus

E9	2351	NT1	B60T0008-1761/IPC . . . responsive to wheel or slip, wheel acceleration or fluid pressure ADVANCED VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )	<div style="border: 2px solid blue; padding: 5px;">           Sub-classification is denoted with the relationship code NT (Narrower Terms).         </div>
E10	968	NT1	B60T0008-1763/IPC . . . responsive to the coefficient of friction between the wheels and the ground surface (B60T0008-1764 takes precedence) ADVANCED VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )	
E11	649	NT1	B60T0008-1764/IPC . . . Regulation during travel on surface with different coefficients of friction, e.g. between left and right sides, mu-split ADVANCED VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )	
E12	628	NT1	B60T0008-1766/IPC . . . Proportioning of brake forces according to vehicle axle loads, e.g. front to rear of vehicle ADVANCED	

# Searching with IPC codes

## Utilizing the Online Thesaurus

```
VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )
E13      207    NT1    B60T0008-1769/IPC
          . . . specially adapted for vehicles having more than
          one driven axle, e.g. four-wheel drive vehicles
          ADVANCED
          VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )
***** END *****
```

# Searching with IPC codes

## Utilizing the Online Thesaurus

```

VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )
E13      207      NT1      B60T0008-1769/IPC
          . . . specially adapted for vehicles having more than
          one driven axle, e.g. four-wheel drive vehicles
          ADVANCED
          VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )
***** END *****

```

Relationship codes can be used for searching as well.

=> **s e8+nt,core**

```

L1      10765 B60T0008-176+NT,CORE/IPC (7 TERMS)

```

=> **d ti ...**

```

L1      ANSWER 1 OF 10765 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN
TI      Braking force control apparatus for hybrid vehicle, has control unit that...

```

```

L1      ANSWER 10 OF 10765 WPINDEX COPYRIGHT 2009 THOMSON REUTERS on STN
TI      Vehicle control apparatus e.g. anti-lock brake system (ABS) for...

```

# Searching with IPC codes

## Analyzing answer sets

### **Search Question:**

What classification symbols are used to describe laser welding techniques?

# Produce a highly significant answer set

```
=> s (laser and welding)/ti
      193917 LASER/TI
      107852 WELDING/TI
L1    6070 (LASER AND WELDING)/TI
```

The enhanced titles in WPI offer an excellent way to produce relevant answer sets instantaneously.

# Analyze the answer set for the classification used

```
=> ana l1 ipc
```

```
L2          ANALYZE L1 1- IPC :      3643 TERMS
```

```
=> d
```

```
L2          ANALYZE L1 1- IPC :      3643 TERMS
```

TERM #	# OCC	# DOC	% DOC	IPC
1	6667	3540	58.32%	B23K0026-00
2	2478	2319	38.20	B23K0026-20
3	1512	721	11.88	B23K0026-06
4	1284	546	9.00	B23K0026-14
5	1206	566	9.32	B23K0026-08

# Review the top results in the thesaurus

=> e B23K0026-00+NT/IPC

E1	25277	-->	B23K0026-00/IPC Working by <b>laser</b> beam, e.g. <b>welding</b> , cutting, boring (lasers H01S0003-00) CORE VALID FROM 19740701 TO PRESENT (IPC EDITION: 2-8)
E2	3712	NT1	B23K0026-02/IPC . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam CORE VALID FROM 19800101 TO PRESENT (IPC EDITION: 3-8)
E3	1507	NT2	B23K0026-03/IPC . . Observing the workpiece ADVANCED VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)
E4	2795	NT2	B23K0026-04/IPC

# Review the top results in the thesaurus

E14	4696	NT1	<p>VALID FROM 19800101 TO PRESENT (IPC EDITION: 3-8)</p> <p>B23K0026-20/IPC ←</p> <p>. Bonding, e.g. <b>welding</b> (soldering by means of radiant energy B23K0001-005; joining of preformed plastic parts by heating using laser beam B29C0065-16)</p> <p>ADVANCED ←</p>
E15	201	NT2	<p>VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)</p> <p>B23K0026-22/IPC</p> <p>. . Spot welding</p> <p>ADVANCED</p>
E16	687	NT2	<p>VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)</p> <p>B23K0026-24/IPC</p> <p>. . Seam welding</p> <p>ADVANCED</p>
E17	415	NT3	<p>VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)</p> <p>B23K0026-26/IPC</p> <p>. . . of rectilinear seams</p> <p>ADVANCED</p> <p>VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)</p>

# Review the top results in the thesaurus

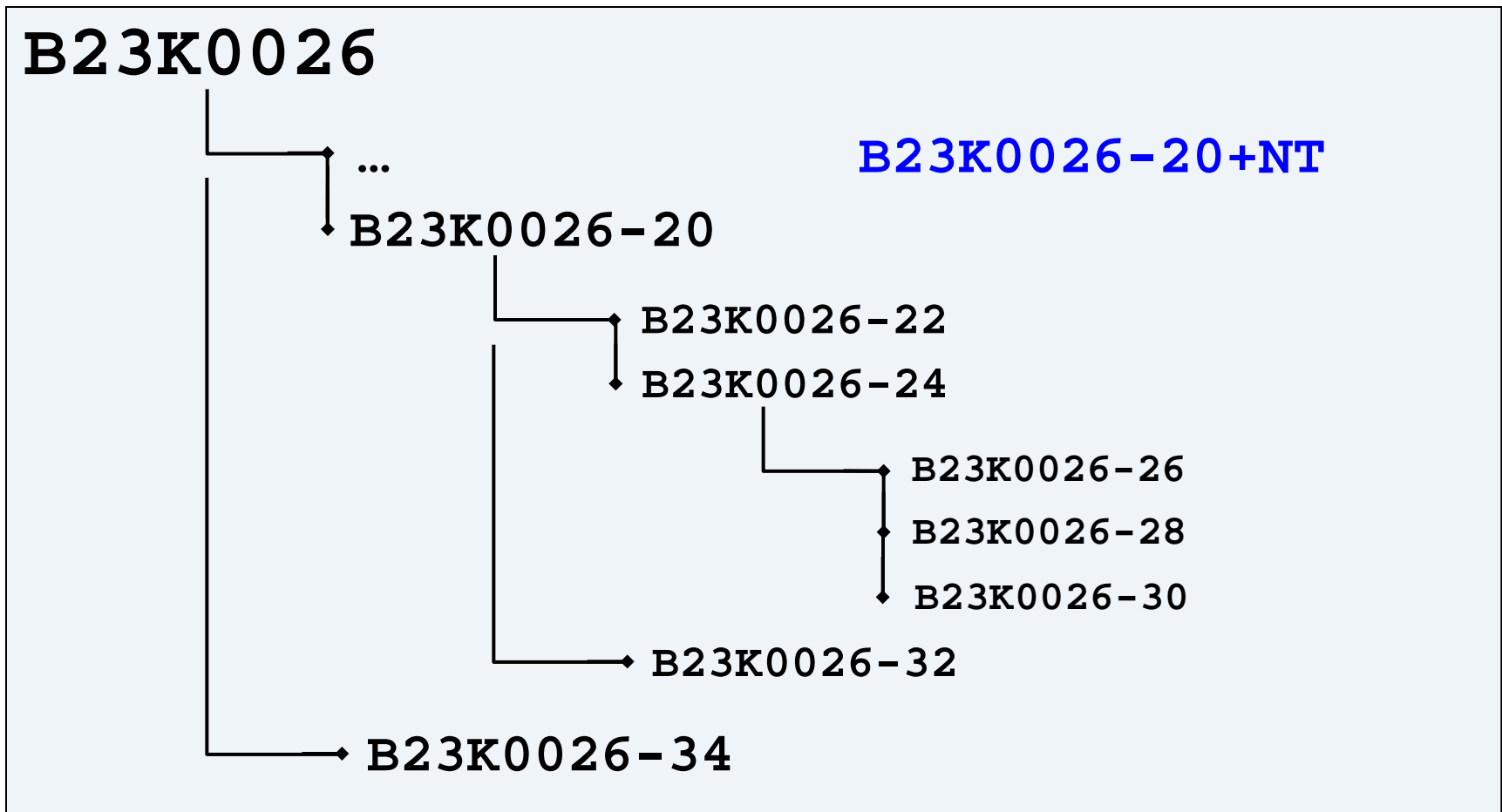
E18	339	NT3	B23K0026-28/IPC . . . of curved planar seams ADVANCED VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)
E19	40	NT3	B23K0026-30/IPC . . . of three-dimensional seams ADVANCED VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)
E20	1211	NT2	B23K0026-32/IPC . . taking account of the properties of the material ADVANCED VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)
E21	1026	NT1	B23K0026-34/IPC . Welding for purposes other than joining, e.g. build-up welding ADVANCED VALID FROM 20000101 TO PRESENT (IPC EDITION: 7-8)
E22	1224	NT1	B23K0026-36/IPC . Removing material

# Review the top result(s) in the thesaurus or on the website

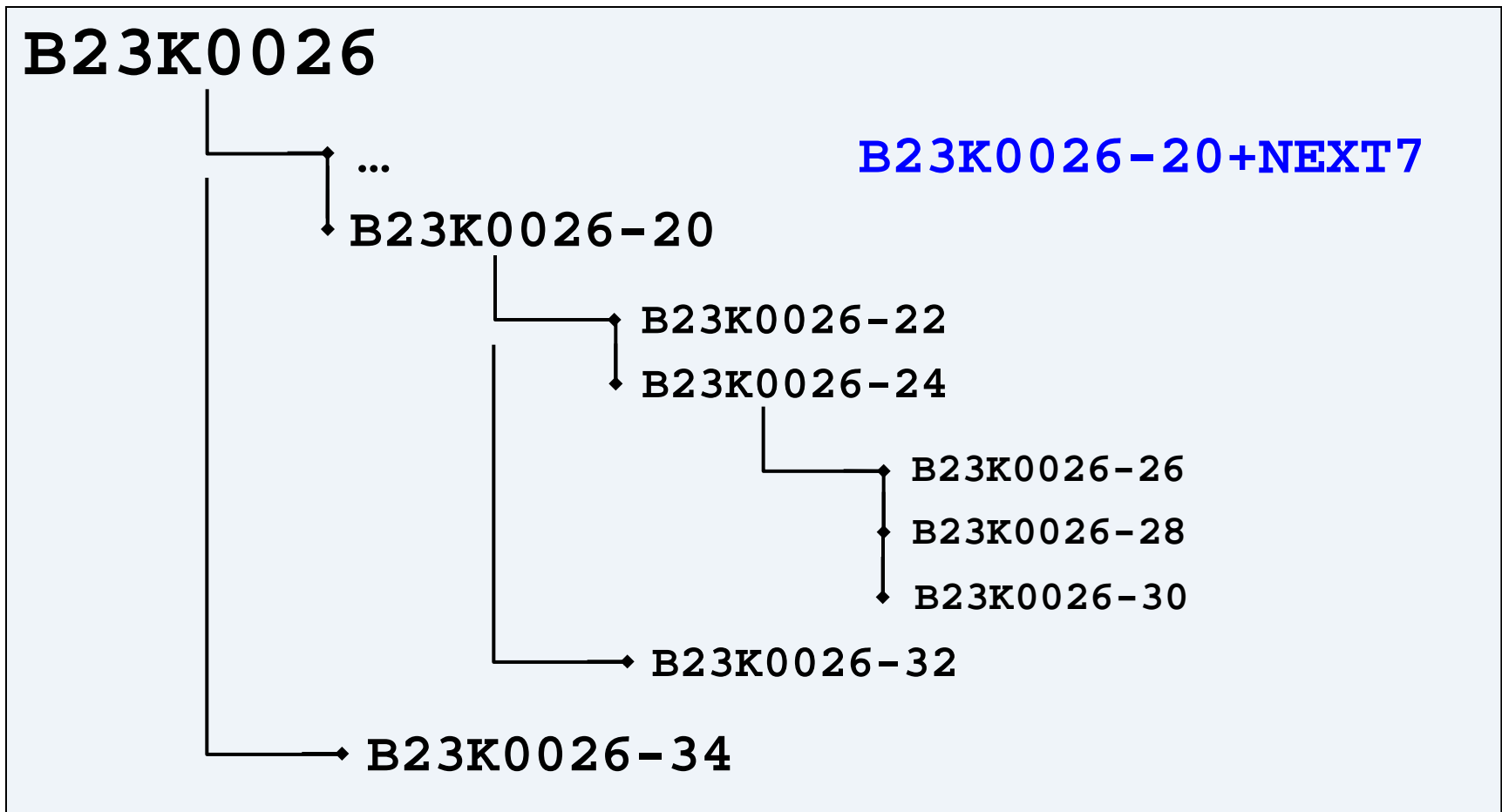
[To the IPC official web site](#)

IPC	Definitions	Illustrations	RCL	Catchwords	Compilation	Help	Options	2009.01
<b>B</b>	<b>SECTION B — PERFORMING OPERATIONS; TRANSPORTING</b>							
<b>B23</b>	<b>MACHINE TOOLS; METAL-WORKING NOT OTHERWISE PROVIDED FOR</b> (punching, perforating, making articles by processing sheet metal, tubes, or profiles <b>B21D</b> ; wire-working <b>B21F</b> ; making pins, needles, or nails <b>B21G</b> ; making chains <b>B21L</b> ; grinding <b>B24</b> )							
<b>B23K</b>	<b>SOLDERING OR UNSOLDERING; WELDING; CLADDING OR PLATING BY SOLDERING OR WELDING; CUTTING BY APPLYING HEAT LOCALLY, e.g. FLAME CUTTING; WORKING BY LASER BEAM</b> (making metal-coated <b>products</b> by extruding metal <b>B21C 23/22</b> ; building up linings or coverings by casting <b>B22D 19/08</b> ; casting by dipping <b>B22D 23/04</b> ; manufacture of composite layers by sintering metal powder <b>B22F 7/00</b> ; arrangements on machine tools for copying or controlling <b>B23Q</b> ; covering metals or covering <b>materials</b> with metals, not otherwise provided for <b>C23C</b> ; burners <b>F23D</b> )							
Note(s)								
<ol style="list-style-type: none"> <li>1. This subclass <b>covers</b> also electric circuits specially adapted for the purposes covered by the title of the subclass.</li> <li>2. In this subclass, the following term is used with the meaning indicated: <ul style="list-style-type: none"> <li>• "soldering" means uniting metals using solder and applying heat without melting either of the parts to be united. [5]</li> </ul> </li> </ol>								
Note(s)								
In groups <b>B23K 1/00-B23K 31/00</b> , it is desirable to add the indexing codes of groups <b>B23K 101/00</b> or <b>B23K 103/00</b> . [5]								
<b>Other welding or cutting; Working by laser beam</b> [3]								
<b>B23K 26/00</b>	<b>Working by laser beam, e.g. welding, cutting, boring</b> (lasers <b>H01S 3/00</b> ) [2,3]							
<b>B23K 26/02</b>	• Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3]							
<b>B23K 26/08</b>	• Devices involving relative movement between laser beam and workpiece [3]							
<b>B23K 26/12</b>	• in a special atmosphere, e.g. in an enclosure [3]							
<b>B23K 26/14</b>	• using a flow, e.g. a jet of gas, in conjunction with the laser beam ( <b>B23K 26/12</b> takes precedence) [3]							
<b>B23K 26/16</b>	• Removing of by- <b>products</b> , e.g. particles or vapours produced during <b>treatment</b> of a workpiece (by a flow of gas <b>B23K 26/14</b> ) [3]							
<b>B23K 26/18</b>	• using absorbing layers on the <b>material</b> being worked, e.g. for marking or protecting purposes [3]							
<b>B23K 26/20</b>	• Bonding, e.g. welding (soldering by means of radiant energy <b>B23K 1/005</b> ; joining of preformed plastics parts by heating using laser beam <b>B29C 65/16</b> ) [7]							
<b>B23K 26/34</b>	• Welding for purposes other than joining, e.g. build-up welding [7]							
<b>B23K 26/36</b>	• Removing <b>material</b> [7]							
<b>B23K 26/42</b>	• Preliminary <b>treatment</b> ; Auxiliary operations or equipment ( <b>B23K 26/16</b> takes precedence) [7]							

# Use relationship codes for perfect retrieval



# Use relationship codes for perfect retrieval



# Use relationship codes for perfect retrieval

=> **s B23K0026-30/IPC**

**L3 40 B23K0026-30/IPC**

=> **s B23K0026-20+NEXT7,CORE/IPC**

**L4 25430 B23K0026-20+NEXT7,CORE/IPC (9 TERMS)**

Very restrictive:

- + few, very concise hits
- misses relevant documents
- > OR

Very broad:

- + comprising, still specific
- + lower risk of dropping relevant documents
- large number of hits
- relies on classification alone
- > combine with search terms

# Combine classification and keywords for better results

=> **s laser# or B23K0026/IPC**

**L5            329267 LASER# OR B23K0026/IPC**

Covers the aspect 'laser'  
+ very comprising  
+ classification as  
catchall  
- retrieves 'laser in  
other contexts, too

=> **s laser# and B23K/IPC**

**L6            31429 LASER# AND B23K/IPC**

Covers the aspect 'laser'  
in the context of  
machining metals  
+ no out-of-context  
lasers  
- misses documents  
without the term  
'laser'

# Combine classification and keywords for better results

```
=> s (laser# and B23K/IPC) or B23K0026-20+NEXT7,CORE/IPC
L7      35112 (LASER# AND B23K/IPC) OR B23K0026-
        20+NEXT7,CORE/IPC
```

'laser' still too generic

```
=> s (laser# and (weld? or bond?) and B23K/IPC) or
      B23K0026-20+NEXT7,CORE/IPC
L8      27757 (LASER# AND (WELD? OR BOND?) AND B23K/IPC)
        OR B23K0026-20+NEXT7,CORE/IPC
```

keywords not independent of classification

# Combine classification and keywords for better results

And the winner is...

```
=> s (laser# (2a) (weld? or bond?)) or  
    (laser# and (weld? or bond?) and B23K/IPC) or  
    B23K0026-20+NEXT7,CORE/IPC
```

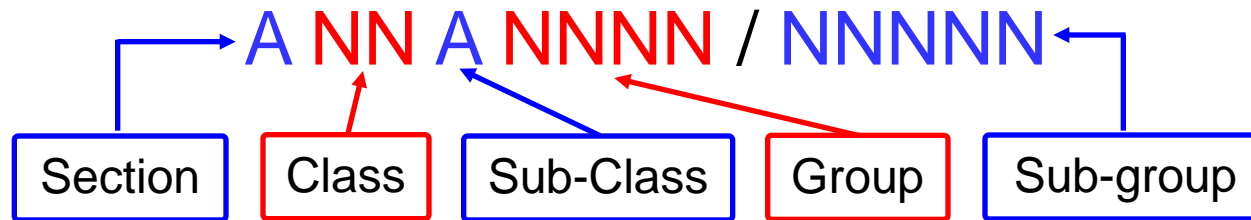
```
L9      32063 (LASER# (2A) (WELD? OR BOND?)) OR  
        (LASER# AND (WELD? OR BOND?) AND B23K/IPC,ECLA) OR  
        B23K0026-20+NEXT7,CORE/IPC
```

# European Classification (ECLA) is assigned by the European Patent Office (EPO)

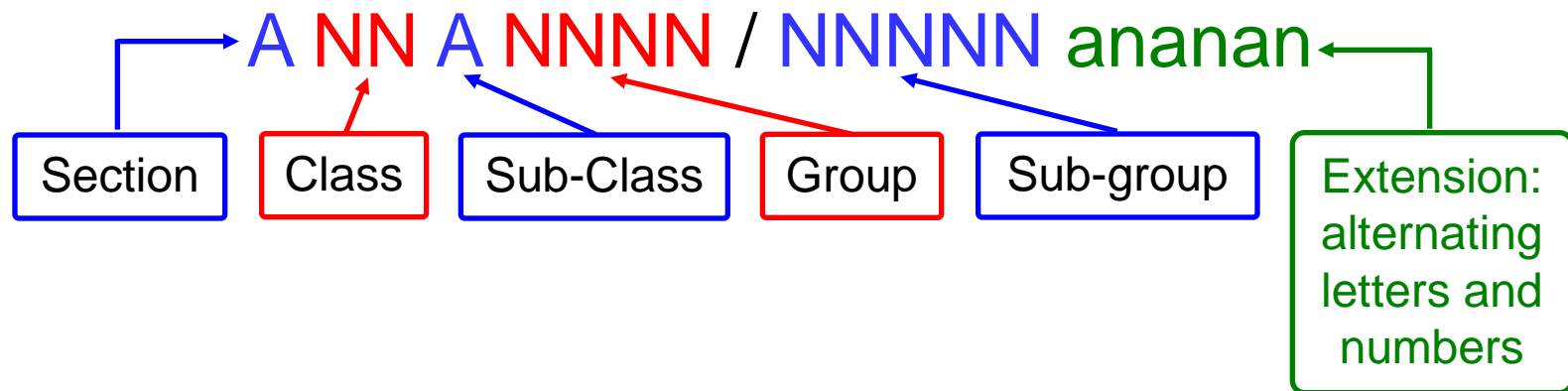
- Based heavily on the 4<sup>th</sup> edition of IPC (IPC4)
  - Approximately twice as large as IPC8-Advanced
    - 135000 Ecla codes vs 70000 IPC codes
- Maintained by EPO and continuously updated
  - New classifications added
  - Old documents reclassified
  - New documents classified
- Electronic system only
  - ECLA are not printed on published documents

# Structure of IPC and ECLA codes

- International Patent Classification (IPC)



- European Classification (ECLA)



# Indexing philosophy evolved for both ECLA and IPC

- IPC

- Pre-reform IPC focused primarily on the claimed invention that was indicated by the “Main IPC”
- Might also index non-claimed concepts
- Reformed IPC has moved away from “claims-only” to become more like ECLA

- ECLA

- **All** new inventive concepts, whether claimed or not
- Might also index additional information
  - Moving toward using ICOs for this information

“In Computer Only” (ICO) codes are based on ECLA and are also applied by the EPO

- There are two types of ICO
  - Identical to ECLA except for the first letter
    - **A B C D E F G H** → **K L M N P R S T**
    - Captures “additional information”, secondary features
  - Additional subdivisions of ECLA
    - Captures emerging technology
    - Often will be added to ECLA 2-3 revision cycles later

**Note:** A comprehensive PDF file of ICO definitions is available via a link in the INPAFAMDB file entry banner.

# Advantages of ECLA over IPC

- More consistently applied
  - EPO examiners for that technology area ONLY
  - IPC applied by variety of people/patent offices, including publishing national patent office, the PCT ISA, the International Bureau, and the applicant
- More stringent training
  - EPO examiners are required to have two years of training in ECLA before applying a single code

# ECLA is much more specific than IPC in several technology areas

A: Human necessities

C: Chemistry and metallurgy

D: Textiles and paper

E: Fixed constructions

F: Mechanical engineering, lighting, heating, weapons, blasting

**Note:** Always take time to compare ECLA and IPC definitions before using them in your patent search.

ECLA: <http://v3.espacenet.com/eclarsearch>

IPC: [www.wipo.int/classifications/ipc/ipc8/](http://www.wipo.int/classifications/ipc/ipc8/)

# Example: extending an IPC search with ECLA (/EPC) to identify additional answers

=> **FILE INPAFAMDB**

**H01J0037-34 = sputtering cathode discharge tubes.**

=> **S (H01J0037-34?/EPC OR T01J0037-34?/ICO) NOT H01J0037-34/IPC**  
**L1 152 (H01J0037-34?/EPC OR T01J0037:34?/ICO) NOT H01J0037-34/IPC**

=> **D BRIEF**

**L1 ANSWER 1 OF 152 INPAFAMDB COPYRIGHT 2008 EPO/FIZ KA on STN**  
**AN 36876407 INPAFAMDB EDF 20080626 EWF 200826 UPFB 20080626 UWF 200828**  
**TI RF SUBSTRATE BIAS WITH HIGH POWER IMPULSE MAGNETRON SPUTTERING (HIPIMS).**

. . . .

**INS KADLEC STANISLAV, CZ; WEICHART JURGEN, LI**

**- WEICHART JUERGEN, LI**

**PAS OC OERLIKON BALZERS AG, LI**

**- WEICHART JUERGEN, LI; KADLEC STANISLAV, CZ**

**IPCI C23C0014-35 [I,A ]; C23C0014-35 [I**

**EPC H01J0037-34M2A**

**AB (US 20080135401 A1)**

**An ECLA search will often add additional relevant answers to an IPC search.**

**An apparatus for generating sputtering of a target to produce a coating on a substrate with a current density on a cathode**

. . . .

## European Classification (ECLA) is assigned by the European Patent Office (EPO)

- Based heavily on the 4<sup>th</sup> edition of IPC (IPC4)
  - Approximately twice as large as IPC8-Advanced
    - 135000 Ecla codes vs 70000 IPC codes
- Maintained by EPO and continuously updated
  - New classifications added
  - Old documents reclassified
  - New documents classified
- Electronic system only

# The EPO applies ECLA to a list of resources known as “The PCT Minimum Documentation”

- Patent Co-operation Treaty (PCT) International Search Authorities (ISAs) are required to discover as much of the prior art as possible
- PCT Rule 34.1 defines the *minimum* patent and non-patent document collections which are required in order to meet this requirement
- This collection of resources is typically referred to as the as *The PCT Minimum Documentation*

Learn more about *The PCT Minimum Documentation* at:  
[www.wipo.int/standards/en/part\\_04.html](http://www.wipo.int/standards/en/part_04.html)

# ECLA coverage

<b>Regional system</b>	<b>Begin Date</b>	<b>National Authority</b>	<b>Begin Date</b>
EP	1978 (start)	CH	1920*
WO	1978 (start)	DE	1920*
EA	1996	DE-U	1985
OA	1962	FR	1920*
(* or earliest date)		GB	1920*
		US	1920*

About 10% of JP cases are covered, but RU and SU are not covered at all.

# Timeliness of ECLA

- About 90% of these documents have ECLA assigned within 8 months of publication
- For major countries, generally available within days to a month of publication
- EPs are always the fastest
- ECLA is not suitable for true “current awareness” searching.

# ECLA Thesaurus (/EPC)

=> E A01B0035-00+ALL/EPC

E1	0	BT5	A/EPC
E2	0	BT4	A01-/EPC Agriculture
E3	0	BT3	A01/EPC AGRICULTURE; FORESTRY; TRAPPING; FISHING
E4	13289	BT2	A01B/EPC SOIL WORKING IN AGRICULTURE OR FORESTRY; PARTS, DETAILS, OR ACCESSORIES OF AGRICULTURAL MACHINES OR IMPLEMENTS, IN GENERAL explanation: making or covering furrows or holes for sowing, planting, etc
E5	58	BT1	A01B0027/EPC Other machines for working soil
E6	27	-->	A01B0035-00/EPC Other machines for working soil comment: not specially adapted for working soil on which crops are growing explanation: A01B0037-00, A01B0039-00, A01B0077-00 take precedence; comment: hand tools
E7	4	NT1	A01B0035-02/EPC with non-rotating tools

Use the ECLA Thesaurus like the IPC Thesaurus to view definitions, and to search codes from within their respective hierarchies.

Coming soon!

## Japanese Patent Office (JPO) FI (/FCL) and F-Term (/FTERM) patent classification

- In-depth classification assigned by the JPO to Japanese patent publications
- File Index (FI) codes have a similar structure to IPCs, but provide more detailed subdivisions
- File Forming (F) Terms are used to index the various technical fields within an invention, not just the main inventive feature (indexed by IPC)
  - 320000 Fterms codes
- Japanese FI and F-Term classifications are searchable in DWPI back to 1963 and in CAPLUS back to 2005
- Applied only to japanese patents

# Using the new Japanese F-Term and FI classification thesauri in DWPI

- Hierarchies of terms in the two thesauri can be displayed using EXPAND followed by a plus symbol (+), a Relationship Code and /FTERM or /FCL:
  - e.g., **E 2B002/AA09+TI/FTERM**
  - e.g., **E H01L0033+ALL/FCL**
- To automatically include additional Narrower, Broader, Related, and other terms in a search, the SEARCH command should be entered with a term followed by a plus symbol (+), a Relationship Code, and /FTERM or /FCL:
  - e.g., **S 2B002/AA09+NT/FTERM**
  - e.g., **S H01L0033+NT/FCL**

# F-Term Thesaurus (/FTERM)

=> E 5F041+DEF/FTERM

E1 31628 --> 5F041/FTERM  
Light-emitting diodes

=> E 5F041+ALL/FTERM

E1 31628 --> 5F041/FTERM  
Light-emitting diodes

RFI H01L33/00-33/00@Z

E2 3 NT1 5F041/AA00/FTERM  
purpose

E3 17 NT2 5F041/AA01/FTERM  
Optical purposes

E4 651 NT3 5F041/AA02/FTERM  
Improved high-speed operation, transient response, or  
the like

E5 6129 NT3 5F041/AA03/FTERM  
Improved light-emission efficiency

E6 3401 NT3 5F041/AA04/FTERM  
Increased optical output

E7 1638 NT3 5F041/AA05/FTERM  
Uniform distribution of the intensity of light emissions

. . . .

The F-Term Thesaurus allows to view the definitions of the codes in their respective hierarchy.

The Relationship Code RFI (Related File Index) refers to the related File Index classification: H01L0033-00 to H01L0033-00 Z.

**Tip:** To learn more about Relationship codes in DWPI type [HELP RCODE](#) at the STN prompt (=>).

# FI Thesaurus (/FCL)

=> E H01L0033-00+ALL/FCL

E1	3	BT3	H/FCL
		DEF	SECTION H - ELECTRIC
E2	0	BT2	H01/FCL
		DEF	BASIC ELECTRIC ELEM
E3	682337	BT1	H01L/FCL
		DEF	SEMICONDUCTOR DEVICES; ELECTRIC SOLID STATE DEVICES NOT OTHERWISE PROVIDED FOR; semiconductors; semiconductor wafers
E4	33925	-->	<a href="#">H01L0033-00/FCL</a>
		DEF	Semiconductor device with a potential-jump barrier or surface barrier specially adapted for light emission, e.g. infra-red; Processes or apparatus specially adapted for the manufacture or treatment thereof . . . .
E5	5727	NT1	H01L0033-00 A/FCL
		DEF	characterised by bodies (GaAs, AlGaAs, Group 4 (Si, Ge), etc.)
E6	1367	NT2	H01L0033-00 B/FCL
		DEF	. GaP system (also including GaAsP system and InGaP system)

Use the FI Thesaurus like the IPC Thesaurus to view definitions, and to search codes from within their respective hierarchies.

**Note:** Where no translation is available, FI codes are not included in the STN Thesaurus.

. . . .

# Patent Classification on

# STN<sup>®</sup>

[www.stn-international.com](http://www.stn-international.com)

[www.cas.org](http://www.cas.org)

[www.capadoc.com](http://www.capadoc.com)

