



# IPC - International Patent Classification

## Basics

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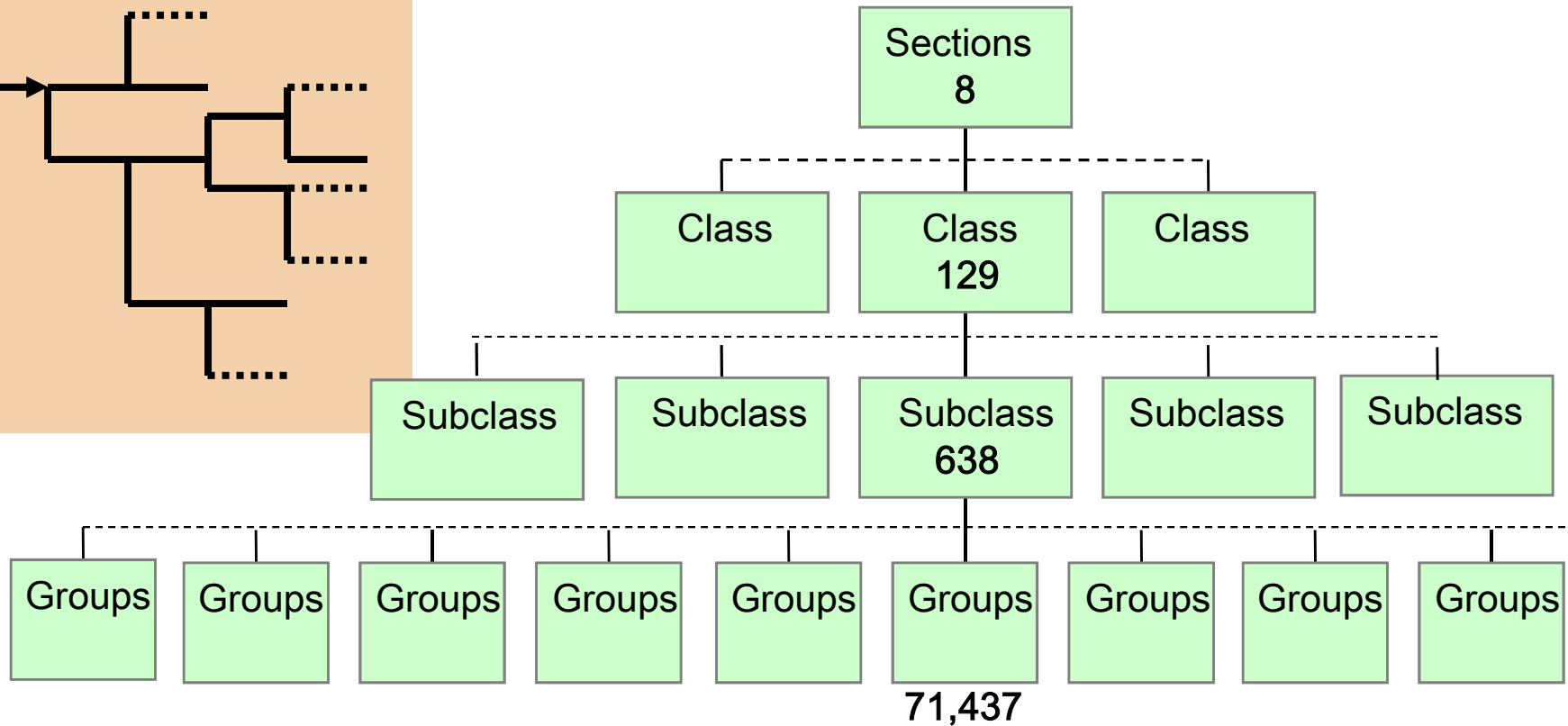
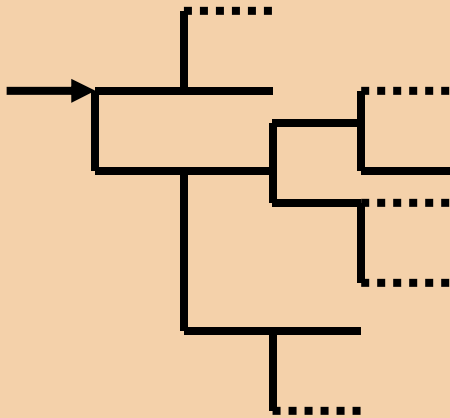
# Basics of the IPC

This presentation contains:

- ✓ Elements of the IPC scheme:
  - Symbols, Titles, Hierarchy
  - Other elements of IPC scheme (References, Notes, etc.)
  
- ✓ Some terminology:
  - Scope, File scope of IPC places

# IPC hierarchical structure

Tree-like  
hierarchy



# Symbols and Titles

- ✓ Each IPC place/entry (section, class, subclass, group) is characterized by **Symbol** and **Title**

**Symbol** = succession of upper case letters and numbers

**Title** = phrase describing the technical content (scope)

Example:

A	Human Necessities
A47H	Furnishings for windows or doors
A01J	Manufacture of dairy products
A01K 31/00	Housing birds

# Symbols and Titles

Symbols

Titles



IPC Home Page - Help

Version

2013.01

Current symbol

A01B

Go to

Language

English

French

English/French

View mode

path

full

hierarchic

Standardized sequence

Deleted entries

Subclass indexes

Guidance Headings

Notes

Search

Terms

Cross-references

Assistance

STATS

Text categorization  
(IPCCAT)

Scheme	RCL	Compilation	Catchwords	Corrigendum
<a href="#">D PDF</a>	<b>A01B</b>	<b>SOIL WORKING IN AGRICULTURE OR FORESTRY; PARTS, DETAILS, OR ACCESSORIES OF AGRICULTURAL MACHINES OR IMPLEMENTS, IN GENERAL</b> (making or covering furrows or holes for sowing, planting or manuring <a href="#">A01C 5/00</a> ; machines for harvesting root crops <a href="#">A01D</a> ; mowers convertible to soil working <a href="#">apparatus</a> or capable of soil working <a href="#">A01D 42/04</a> ; mowers combined with soil working implements <a href="#">A01D 43/12</a> ; soil working for engineering purposes <a href="#">E01</a> , <a href="#">E02</a> , <a href="#">E21</a> )		
<a href="#">↗</a>	<a href="#">A01B 1/00</a>	<b>Hand tools</b> (edge trimmers for lawns <a href="#">A01G 3/06</a> )		
<a href="#">↗</a>	<a href="#">A01B 1/02</a>	· Spades; Shovels		
<a href="#">↗</a>	<a href="#">A01B 1/04</a>	· · with teeth		
<a href="#">↗</a>	<a href="#">A01B 1/06</a>	· Hoes; Hand cultivators		
<a href="#">↗</a>	<a href="#">A01B 1/08</a>	· · with a single blade		
<a href="#">↗</a>	<a href="#">A01B 1/10</a>	· · with two or more blades		
<a href="#">↗</a>	<a href="#">A01B 1/12</a>	· · with blades provided with teeth		
<a href="#">↗</a>	<a href="#">A01B 1/14</a>	· · with teeth only		
<a href="#">↗</a>	<a href="#">A01B 1/16</a>	· Tools for uprooting weeds		
<a href="#">↗</a>	<a href="#">A01B 1/18</a>	· · Tong-like tools		
<a href="#">↗</a>	<a href="#">A01B 1/20</a>	· Combinations of different kinds of hand tools		
<a href="#">↗</a>	<a href="#">A01B 1/22</a>	· Attaching the blades or the like to handles (handles for tools, or their attachment, in general <a href="#">B25G</a> ); Interchangeable or adjustable blades		
<a href="#">↗</a>	<a href="#">A01B 1/24</a>	· for treating meadows or lawns [2]		
		<u>Ploughs</u>		
<a href="#">↗</a>	<a href="#">A01B 3/00</a>	<b>Ploughs with fixed plough-shares</b>		
<a href="#">↗</a>	<a href="#">A01B 3/02</a>	· Man-driven ploughs		
<a href="#">↗</a>	<a href="#">A01B 3/04</a>	· Animal-drawn ploughs		
<a href="#">↗</a>	<a href="#">A01B 3/06</a>	· · without alternating possibility, i.e. incapable of making an adjacent furrow on return journey		
<a href="#">↗</a>	<a href="#">A01B 3/08</a>	· · · Swing ploughs		
<a href="#">↗</a>	<a href="#">A01B 3/10</a>	· · · Trussed-beam ploughs; Single-wheel ploughs		
<a href="#">↗</a>	<a href="#">A01B 3/12</a>	· · · Two-wheel beam ploughs		
<a href="#">↗</a>	<a href="#">A01B 3/14</a>	· · · Frame ploughs		

# Sections

✓ Hierarchical top level: **8 Sections**

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

# Classes

Class = Second hierarchical level under the section

**Class symbol** = Section symbol followed by two digits

**Class Title** gives a **broad indication** of the content of the class

## Example:

Section	A	HUMAN NECESSITIES
Class	A01	AGRICULTURE; FORESTRY; ANIMAL;
	A21	BAKING; EDIBLE DOUGHS
	A22	BUTCHERING; MEAT TREATMENT; ...

# Subclasses

**Subclass Symbol** = Class symbol followed by a letter

**Subclass Title** indicates the content **as precisely as possible**

## Example:

Class	A47	FURNITURE; DOMESTIC ARTICLES OR APPLIANCES; COFFEE MILLS; SPICE MILLS; SUCTION CLEANERS IN GENERAL
Subclass	A47B	Tables; Desks; Office furniture; Cabinets; Drawers; General details of furniture
	A47C	Chairs; Sofas; Beds
	A47D	Furniture specially adapted for children



# Main groups and Subgroups

**Group symbol** = Subclass symbol followed by one to three digits + "/" + two to six digits

Example:

A01K 31/00 Housing birds

Main group (XX/00)

A01K 31/02 • Door appliances; Automatic door-openers

A01K 31/04 • Dropping-boards; Devices for removing excrement

A01K 31/06 • • Cages

A01K 31/07 • • Transportable cages

A01K 31/08 • • Collapsible cages

Subgroups (XX/yy)



# Complete Symbol

## A23G 9/02

✓ Complete symbol; consists of different components

A ..... Section (A, B, ... H)

A23 ..... Class (+any 2 digits)

A23G ..... Subclass (+any letter)

A23G 9/02 ..... Group

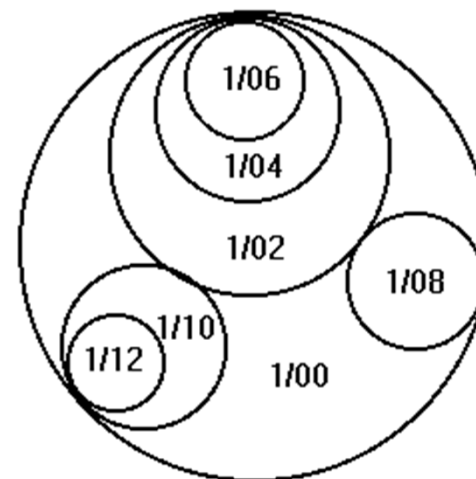
**Main group part**

**Subgroup part**

# Hierarchical Structure of Groups

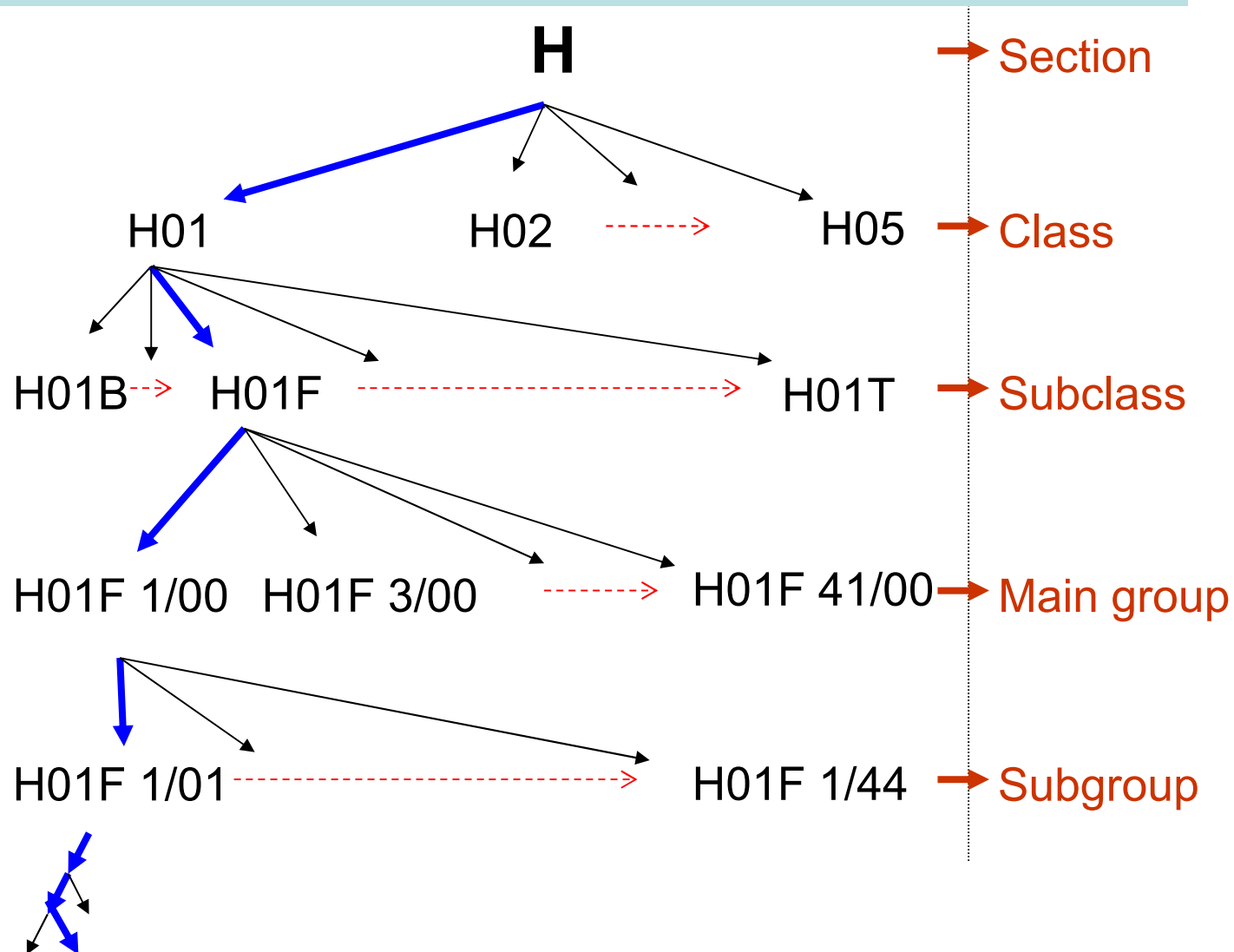
- ✓ Hierarchical level of groups indicated by number of dots (indentation level) not by the group symbol

1/00 T  
 1/02 • T<sup>1</sup>  
 1/04 • • T<sup>2</sup>  
 1/06 • • • T<sup>3</sup>  
 1/08 • T<sup>4</sup>  
 1/10 • T<sup>5</sup>  
 1/12 • • T<sup>6</sup>



- ✓ Group 1/12 (2-dot group) should be a subset of group 1/10 (1-dot group) which is a subset of group 1/00 (main group)
- ✓ Group 1/12 is **not** a subset of group 1/02 nor of group 1/08

# IPC hierarchical structure



Example:

31,719 documents

H	SECTION H — ELECTRICITY
H01	BASIC ELECTRIC ELEMENTS
H01F	MAGNETS; INDUCTANCES; TRANSFORMERS; SELECTION OF MATERIALS FOR THEIR MAGNETIC PROPERTIES (ceramics based on ferrites C04B 35/26; alloys C22C; thermomagnetic devices H01L 37/00; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers H04R) [2]
H01F 1/00	Magnets or magnetic bodies characterised by the magnetic materials thereof; Selection of materials for their magnetic properties (thin magnetic films characterised by their composition H01F 10/10)
H01F 1/01	· of inorganic materials (H01F 1/44 takes precedence) [6]
H01F 1/03	·· characterised by their coercivity [6]
H01F 1/032	... of hard-magnetic materials [6]
H01F 1/04	.... metals or alloys [6]
H01F 1/047	..... Alloys characterised by their composition [6]
H01F 1/053	..... containing rare earth metals [6]
H01F 1/055	..... and magnetic transition metals, e.g. SmCo <sub>5</sub> [6]
H01F 1/057	..... and IIIa elements, e.g. Nd <sub>2</sub> Fe <sub>14</sub> B [6]
H01F 1/058	..... and IVa elements, e.g. Gd <sub>2</sub> Fe <sub>14</sub> C [6]
H01F 1/059	..... and Va elements, e.g. Sm <sub>2</sub> Fe <sub>17</sub> N <sub>2</sub> [6]

Section

Class

Subclass

Main group

Subgroups



12<sup>th</sup> level

170 docs

► sufficiently small numbers

# Hierarchy of Subgroups

- ✓ Level of hierarchy:
  - Indicated by dots
  - Number of dots > indentation/hierarchical level
  - Independent of numbering of subgroups!

## Example:

G01N 33/483 •• Physical analysis of biological material  
33/487 ••• of liquid biological material  
33/49 •••• blood  
33/50 •• Chemical analysis of biological material, e.g. blood

➤ Hierarchical level is independent of the symbol

# Numbering of subgroups

- ✓ Numbering does not determine hierarchical level
- ✓ Numbering determines **sequential/presentation order of subgroups**

„ / “ can be interpreted as a decimal point

Example:      1/23                      > 1.23  
                         34/02                      > 34.02

G01N	33/483	•• Physical analysis of biological material	(33.483)
	33/487	••• of liquid biological material	(33.487)
	33/49	•••• blood	(33.49)
	33/50	•• Chemical analysis of biological material, e.g. blood	



# Titles

## Example:

A 47 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY;  
HUNTING; TRAPPING; FISHING

A01J Manufacture of dairy products

A01C Planting; Sowing; Fertilising

A47D Furniture specially adapted for children

Single part title

Multipart titles separated by “;” (semicolons)  
> accumulation of different subject matter

# Subgroup Titles

## Example:

A01K 31/00	Housing birds
:	
31/06	• Cages
31/07	• • <b>T</b> ransportable cages
31/08	• • <b>C</b> ollapsible cages

### ✓ Upper case first letters:

- Titles can be read independently
- Always within the scope of hierarchy

H01S	3/00 Lasers
	3/14 • <b>c</b> haracterised by the material used as the active medium

### ✓ Lower case first letter:

- Titles read as continuation of hierarchically higher title

# Dots and titles

- ✓ **Dots** also used in place of titles of hierarchically superior groups to avoid repetitions

## Example:

B64C AEROPLANES; HELICOPTERS

5/00 Stabilising surfaces

5/06 • Fins

5/08 • mounted on, or supported by, wings

5/10 • adjustable

## Combined titles:

5/08 • **Stabilising surfaces** mounted on, or supported by, wings

5/10 • Adjustable **stabilising surfaces**

# Title and Scope

✓ Some terminology:

- Symbol + Title build/form **IPC entry**  
**IPC place**  
**Classification place** ) synonyms
- **Scope** of **IPC entry/place** is:

the technical subject matter that is covered by this place

# Scope of IPC Group

- ✓ **Scope** (content) is defined by titles
  - **Sections, Classes:** titles give **broad indication** of the contents
  - **Subclasses, groups:** titles define the content **as precisely as possible**

N.B. Scope is always defined by the title of the group  
+ scope of hierarchically higher place

e.g.	H01S	3/00	Lasers
	:		
	H01S	3/05	• Construction or shape of optical resonators

# Scope of IPC Group

## Example:

Section:	A	HUMAN NECESSITIES
Class:	A47	FURNITURE ...
Subclass:	A47C	CHAIRS
Main group:	A47C1/00	Chairs adapted for special purposes
one-dot subgroup:	1/02	• Reclining or easy chairs
two-dot subgroup:	1/022	• • having independently-adjustable supporting parts
three-dot subgroup:	1/028	• • • for changing a straight chair into an easy chair
four-dot subgroup:	1/029	• • • • by changing the length or the inclination of the legs

A47C1/029 reads

“Reclining or easy chairs

having independently-adjustable supporting parts

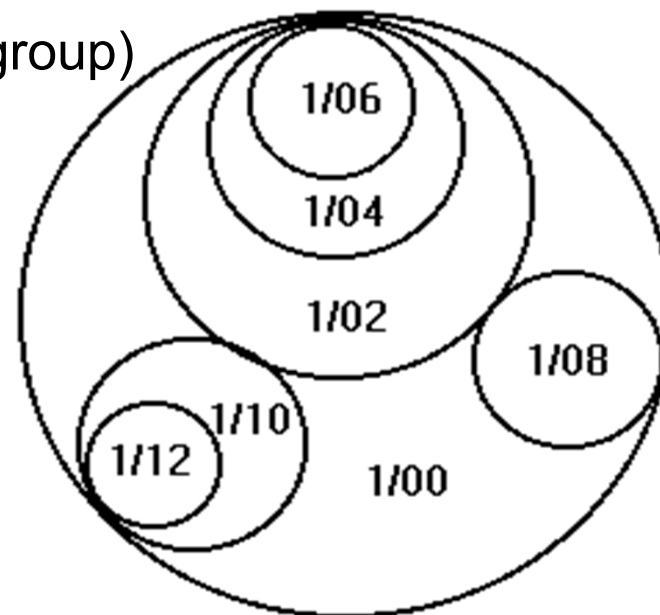
for changing a straight chair into an easy chair

by changing the length or the inclination of the legs”

# Scope of IPC Group

Example: (circles symbolize scope,  
i.e. technical area covered by group)

1/00 T  
 1/02 • T<sup>1</sup>  
 1/04 • • T<sup>2</sup>  
 1/06 • • • T<sup>3</sup>  
 1/08 • T<sup>4</sup>  
 1/10 • T<sup>5</sup>  
 1/12 • • T<sup>6</sup>



Here: Scopes at same hierarchy are mutually exclusive,  
i.e. no overlap

# Scope of IPC Group

## Example:

A23N 4/00 Machines for stoning fruit or removing seed-containing sections from fruit, characterised by their stoning or removing device

A23N 4/02 • for stoning fruit

A23N 4/04 • • for peaches, plums, apricots or the like

A23N 4/06 • • for cherries or the like

A23N 4/08 • • for dates, olives or the like  
oblong fruits

A23N 4/10 • • for fruit with very small pips, e.g. raisins

A23N 4/12 • for coring fruit

A23N 4/14 • • for apples, pears or the like

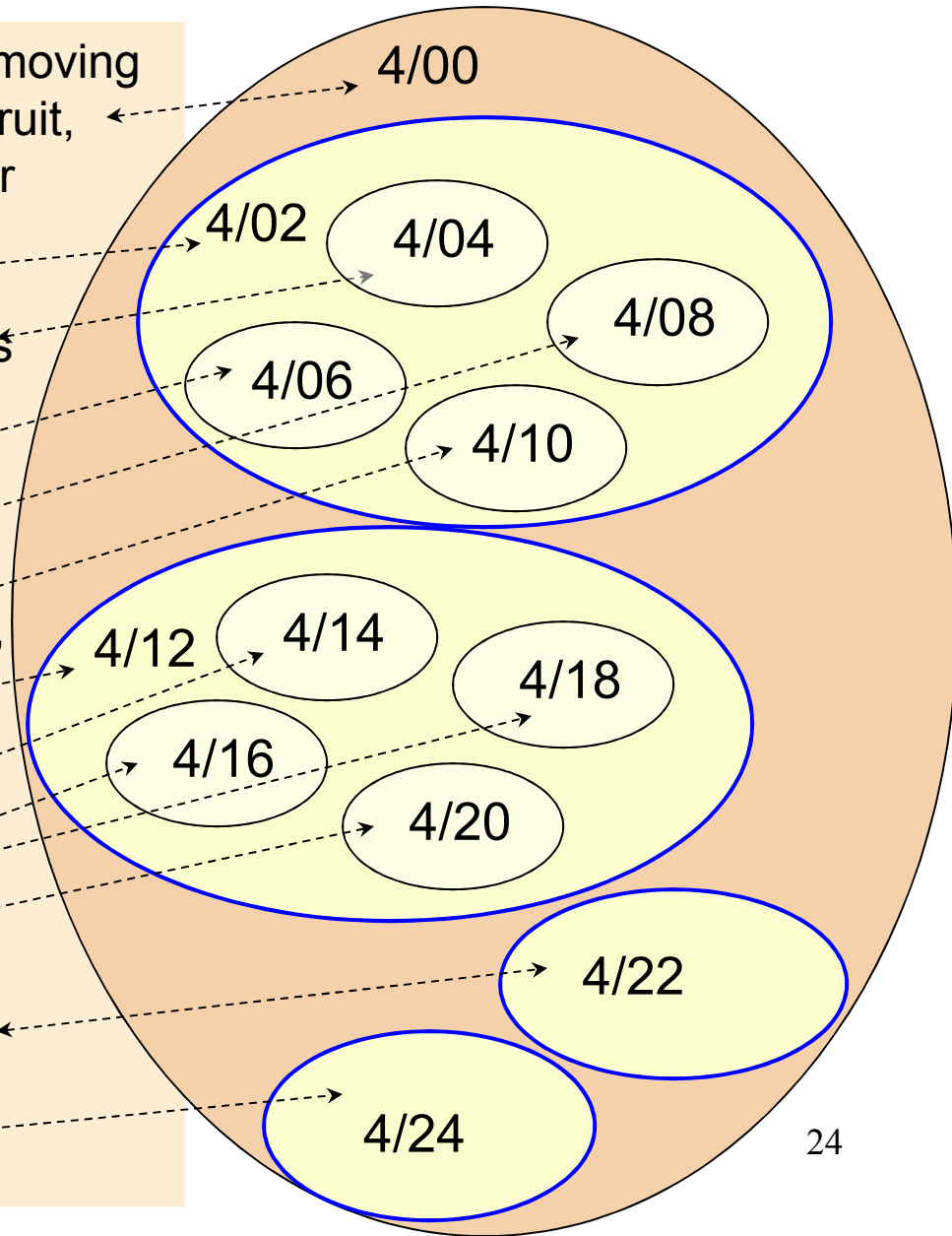
A23N 4/16 • • for tomatoes or the like

A23N 4/18 • • for citrus fruits

A23N 4/20 • • for pineapples

A23N 4/22 • for both splitting and stoning

A23N 4/24 • for removing seed-containing sections from cut fruit



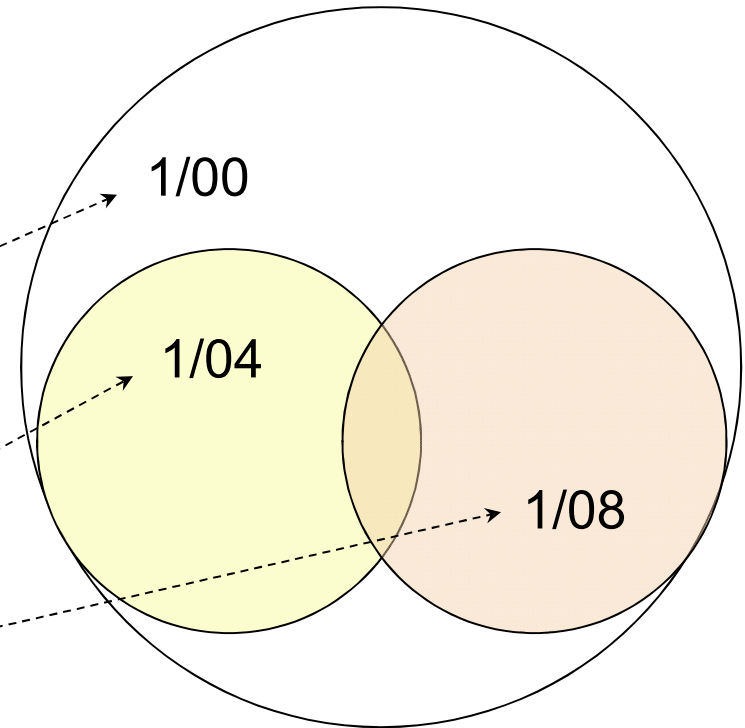


# Scope of IPC Group

- ✓ Mutually exclusive scopes are **ideal** situations
- ✓ Overlap is possible

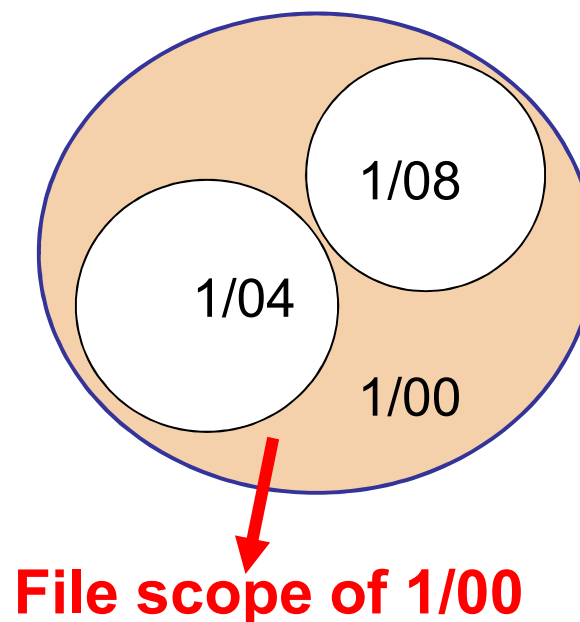
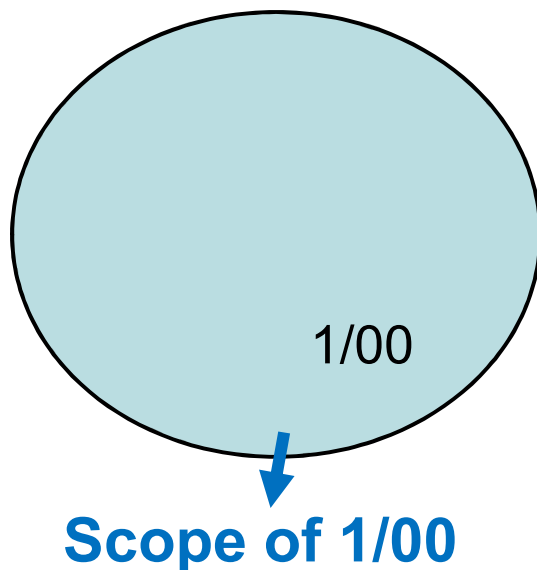
## Example:

G02B	1/00	Optical elements
	1/02	
	1/04	• made of organic materials
	1/06	
	1/08	• made of polarising materials



# File scope

- ✓ Some more terminology:
  - **File scope** of IPC group:
    - > Scope of the group **minus** the scope of all its subgroups
    - > i.e. represents documents actually classified in a particular IPC group



# Elements of IPC scheme

- ✓ Classification places:
  - Symbol + Title + Hierarchy
  
- ✓ References:
  - Statements in brackets “( )” referring to another place in the Classification
  - Show that the subject matter indicated by the reference is covered by the place referred to
  - Apply to the place where they appear and to all hierarchically lower places

# References

## Example:

B64C AEROPLANES; HELICOPTERS (*air-cushion vehicles B60V*)

*References*

A01D 69/00 Driving mechanisms or parts thereof for harvesters or mowers (*driving mechanisms for the cutters of mowers or harvesters A01D 34/00*)

A01B 35/00 Other machines for working soil (*A01B 37/00, A01B 39/00, A01B 77/00 take precedence*)

# References

✓ Two types of references

## 1. Limiting references

References of the two categories below:

(1a) Scope-limitation reference

(2b) Precedence reference

## 2. Non-limiting references

References of the three categories below:

(2a) Application-oriented reference

(2b) Reference out of a residual place

(2c) Informative reference

# 1. Limiting references

## (1a) Scope-limitation reference

- ✓ Excludes specified subject matter from the scope of this classification place
- ✓ Indicates the place(s) where this subject matter is classified

Example:

A47B 25/00 Card tables; Tables for other games (*billiard tables*  
*A63D15/00*)

## (1b) Precedence reference

- ✓ References stating that another place “*takes precedence*”
- ✓ Used when subject matter is **classifiable in two places**, or when **different aspects are covered by different places**, and it is desired that such subject matter **should be classified in only one of those places** (see next slide)

# 1. Limiting references

## (1b) Precedence reference

Example:

G02B1/00 Optical elements

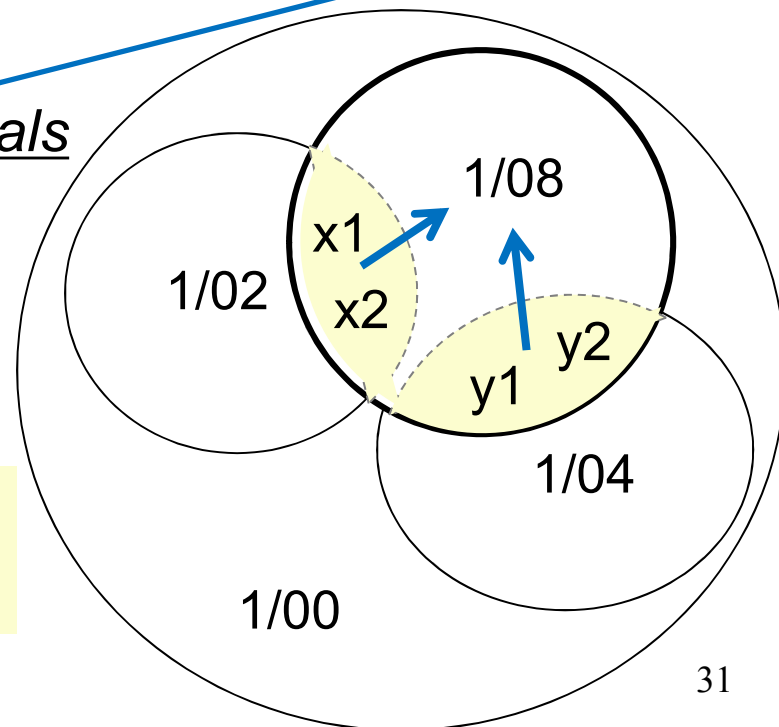
1/02 • made of crystals (*G02B1/08 takes precedence*)

1/04 • made of organic materials, e.g. plastics (*G02B1/08 takes precedence*)

1/06

1/08 • made of polarising materials

Overlap excluded by  
precedence references



## 2. Non-limiting references

✓ References of the three categories below:

**(2a) Application-oriented reference**

**(2b) Reference out of a residual place**

**(2c) Informative reference**



## 2. Non-limiting references

### (2a) Application-oriented reference

- ✓ References from function-oriented (general) places to application-oriented places (places where the subject matter is covered if it is specially adapted, used for a particular purpose or incorporated in a larger system)

#### Example:

H01S	Devices using stimulated emission
H01S 3/00	Lasers

The following are application-oriented places:

A61F 9/008	Eye surgery using laser
B41J 2/44, 2/455	Laser printers
G11B 7/125	Laser heads for recording or reproducing

## 2. Non-limiting references

### (2b) Reference out of a residual place

- ✓ References appearing in a residual place, illustrating places which cover the subject matter

Example:

F21K            Light sources not otherwise provided for

F21K is residual to the whole of the IPC, and the following are examples of references to other places:

C11C            Candles

H01K            Electric incandescent lamps

H01L 33/00    LEDs

## 2. Non-limiting references

### (2c) Informative reference

- ✓ References indicating the location of subject matter that could be **of interest for searching**, but which subject matter is **not within the scope**
- ✓ Fulfils the following requirements:
  - the subject matter “**does not fit**“ in the place, but
  - that subject matter is still **interesting for search**
- ✓ In the IPC definitions, informative references are listed in tabular form

#### Example:

H01S 3/00      Lasers

#### Informative references:

G02F              Control of light beams in general

G02B 27/48      Laser speckle optics

# Removal of non-limiting references from the scheme

- ✓ To maintain the readability of schemes, non-limiting references (application-oriented, informative references, etc.) are progressively being removed from the scheme and transferred to Definitions of the IPC
- ✓ This will abolish ambiguity; any references in the scheme will in the future be regarded as limiting references

# Elements of IPC scheme

- ✓ Classification places: Symbol + Title + Hierarchy
  - ✓ References
  - ✓ Notes
- 
- ✓ Subsections
  - ✓ Guidance headings
  - ✓ Subclass and class indexes



Determine effective scope of groups

# Notes

- ✓ Define the scope of places
  - This place covers ...*
  - This place does not cover ...*
- ✓ Define terminology (e.g. B22F, G02)
- ✓ Indicate classification rules (e.g. note 5 after G01R)
- ✓ Separate statements after entries
- ✓ Apply only to the place where they are, including all hierarchically lower places

# Notes

## Example:

F42

### *Note(s)*

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

B22F

### *Note(s)*

- 1. This subclass covers the making of metallic powder only insofar as powder with specific physical characteristics is made.*

# Elements of IPC scheme

- ✓ Classification places: symbol + title + hierarchy
- ✓ References
- ✓ Notes
- ✓ Subsections
- ✓ Guidance headings
- ✓ Subclass and class indexes



Facilitate use of IPC



# Subsections

- ✓ **Subsections** are **informative headings** without symbol separating Classes of similar content

## Example:

Section A	HUMAN NECESSITIES
<i>Subsection</i>	<u>AGRICULTURE</u>
Class A 01	AGRICULTURE; FORESTRY; ANIMAL ...
<i>Subsection</i>	<u>FOODSTUFFS; TOBACCO</u>
Class A 21	BAKING; EDIBLE DOUGHS
Class A 22	BUTCHERING; MEAT TREATMENT; ...
Class A 24	TOBACCO; CIGARS; CIGARETTES

# Guidance Headings

- ✓ **Guidance Headings** are underlined titles indicating the common subject matter of the following groups until the next guidance heading or horizontal line

Example:

A24F

**Tobacco pipes**

1/00 Tobacco pipes

3/00 Tobacco pipes combined with other objects

**Component parts or accessories for pipes; Mouthpieces**

5/00 Bowls for pipes

7/00 Mouthpieces for pipes; Mouthpieces for cigar or cigarette holders

...

# Guidance Headings

## Example:

A63B 43/00	Balls with special arrangements
A63B 45/00	Apparatus or methods for manufacturing balls (working of plastics or substances in a plastic state B29)
A63B 47/00	Devices for handling or treating balls
	<u>Rackets, bats, or other accessories for ball games</u>
A63B 49/00	Tennis, badminton, or like rackets
A63B 51/00	Stringing tennis rackets
A63B 53/00	Golf clubs
A63B 55/00	Bags for golf clubs; Stands for golf clubs for use on the course
A63B 57/00	Golf game accessories, e.g. golf cups, golf tees
A63B 59/00	Bats, rackets, or the like, for other games (bats with a ball tethered thereto A63B 67/20)
A63B 61/00	Tennis nets or accessories for tennis or like games
A63B 63/00	Targets or goals for ball games (golf cups A63B 57/00)
A63B 65/00	Implements for throwing (throwing toys A63H 33/18)
A63B 67/00	Sporting games not provided for in groups A63B 1/00-A63B 65/00
A63B 69/00	Training appliances or apparatus for special sports (training of parachutists B64C 23/00)
A63B 71/00	Games or sports accessories not covered in groups A63B 1/00-A63B 69/00 (starting appliances A63K 3/02)

← Guidance heading

Horizontal line

# Subclass Index

- ✓ **Subclass Index** is an informative summary giving a broad survey of the content of the subclass.

## Example:

**A62B**

**DEVICES, APPARATUS OR METHODS FOR LIFE-SAVING** (valves specially adapted for medical **use A61M 39/00**; composition of chemical substances used in respirators, gas-masks, breathing **apparatus** or the like **A62D**; rescuing from mountains or trees **A63B 27/00, A63B 29/00**; life-saving devices, **apparatus** or methods specially adapted for **use** in water **B63C 9/00**; divers' equipment **B63C 11/00**; specially adapted for **use** with aircraft, e.g. parachutes or ejector seats, **B64D**; rescue devices peculiar to mining **E21F 11/00**)

### Subclass indexes

RESCUING, e.g. IN CASE OF FIRE

Means for escape or protection

**1/00, 3/00, 5/00**

Breathing containers

**31/00**

Safety means for seemingly-dead persons

**33/00**

INDIVIDUAL BREATHING MASKS OR **APPARATUS**

Types

**7/00, 18/00**

Details

**9/00, 18/08**

Cartridges, oxygen generators, filters

**19/00, 21/00, 23/00**

Storing, testing

**25/00, 27/00**

PROTECTIVE CLOTHING, SAFETY BELTS

**17/00, 35/00**

COLLECTIVE DEVICES FOR BREATHING PROTECTION OR FOR PROTECTION AGAINST CHEMICAL AGENTS

Air conditioning or ventilation in sealed rooms

**11/00, 13/00**

Other protection

**15/00, 29/00**

OTHER LIFE SAVING

**99/00**

# Guide to the IPC

The official **Guide to the IPC** provides comprehensive information on the IPC. It is available for download on the WIPO website of the IPC at:

<http://www.wipo.int/classifications/ipc/en/general/>