

International Patent Classification (IPC) reform - What has been and what will be the real impact?

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Thomson Scientific

- Background on IPC and the need for reform
- How IPC has been reformed
- How the reform impacts searchers
- Tracking emerging technologies
- Adequacy of classification systems in describing complex technologies
- Conclusions

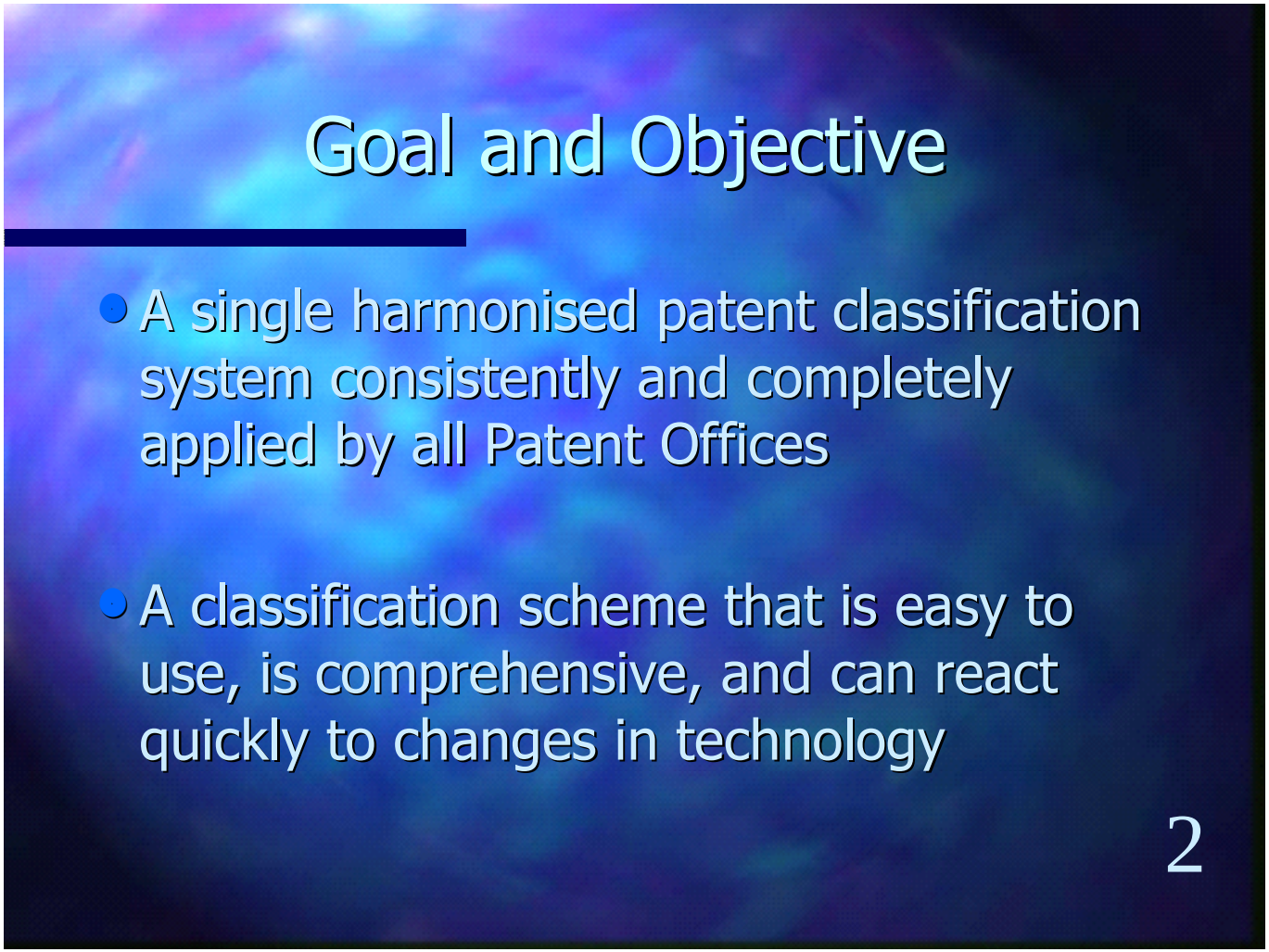
The International Patent Classification

- Internationally agreed classification system for patents administered by the World Intellectual Property Organisation (WIPO)
- 30+ years old, the latest edition comprises around 70,000 classes
- Covers all technology
- Uses:
  - ***Search*** - Primary purpose is to provide a tool for patent offices and other users to retrieve prior art to determine novelty & inventiveness
  - ***Alert*** - Also used for selective dissemination
  - ***Analysis*** - Also used for IP statistics to assess technology development, country trends, competitive intelligence etc.

IPC Reform

- Why?
  - Allow for more detailed classification of greater volumes
  - Simplify use & reduce burden for smaller patent offices
  - Keep pace with rapidly changing technology
- What?
  - Two tier system – Core and Advanced
  - Core revised every 3 yrs, Advanced every 3 months
  - Allow for the possibility of searching using only the current version of the IPC – backfile reclassification of newly created Master Classification Database (MCD).
  - Modified classification philosophy (new categories of invention and additional information)
- When?
  - Live from Jan 1st 2006

Jim Calvert, Senior Examiner UK Patent Office, Dec 1998



Achievements against objectives

- Single, harmonised system
  - Single system with two levels
- Consistently and completely applied
  - More detailed instructions for applying with examples
- Easy to use
  - Improved guidance
  - Additional definitions
  - Backfile re-classification
- Comprehensive
  - 70,000 Advanced codes
- Reacts quickly to changes in technology
  - Rapid revision cycles - 3 year core/3 month advanced

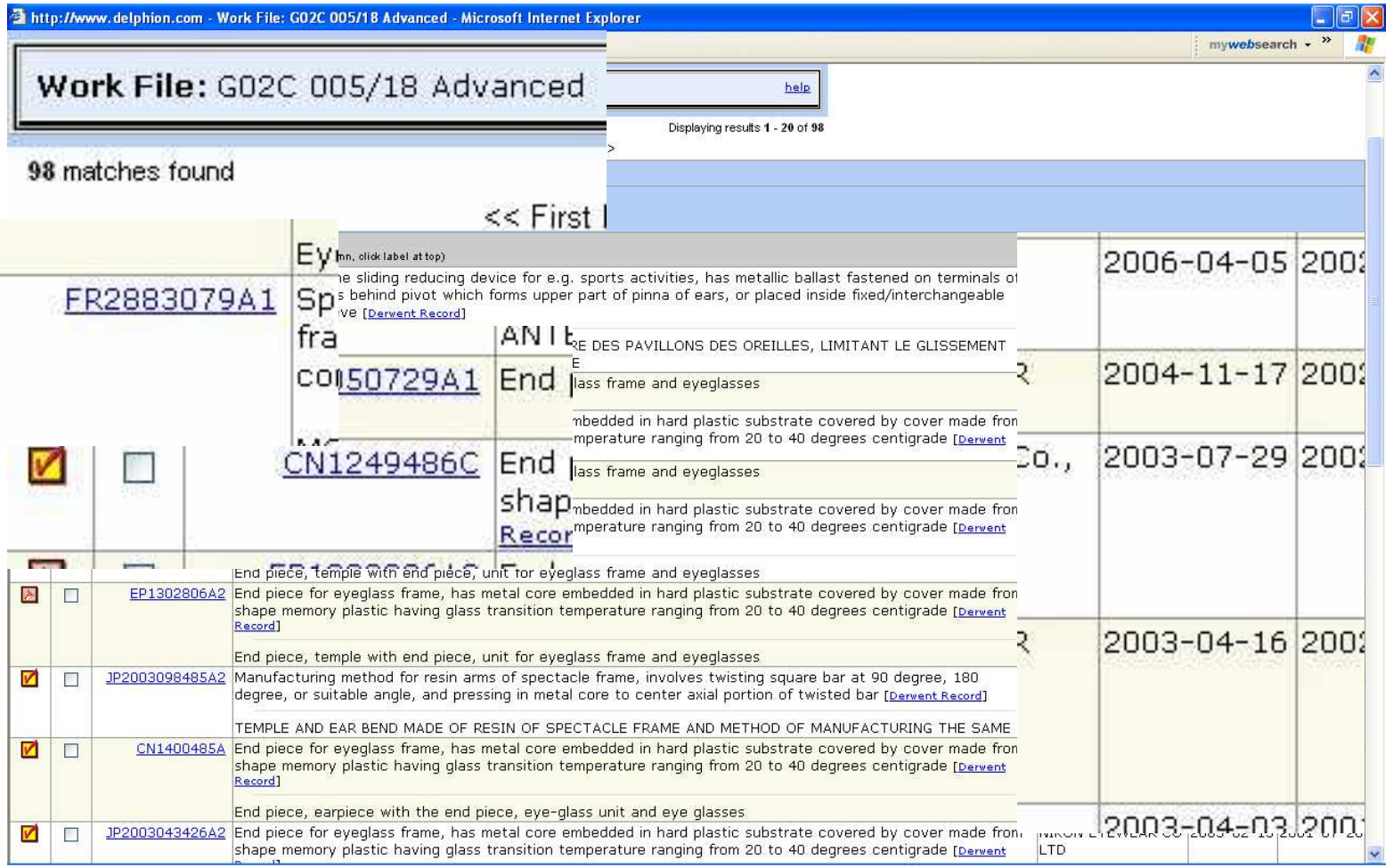
Impact on searchers

- Search
  - A continuously updated system that can be used to search the whole patent collection through the advanced level
- Alert
  - A stable system that can be used for broader queries through the core level
- Analysis
  - A more consistent system that can be used to produce statistics with a common key

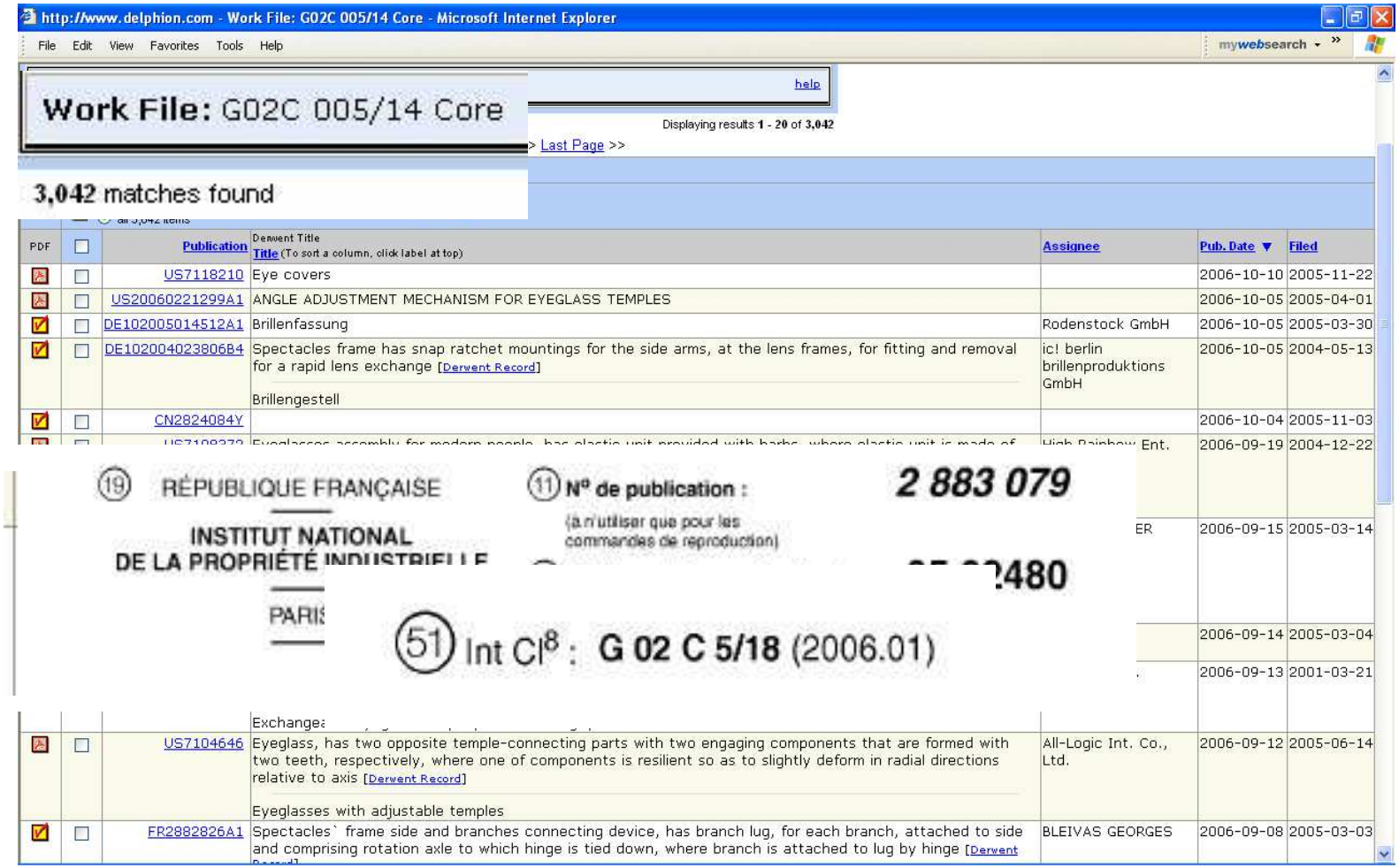
Impacts on searching

- Back file reclassification
  - Need only use one classification for complete retrieval back to 1975
- Two levels
  - Need to use modified strategy
  - **G02C 5/18** Spectacles with reinforced side-members
    Advanced code
    Valid since IPC[1]
    Subset of G02C 5/14 - Spectacles, side-members (Core code)
  - Published before 1st Jan 2006
    - complete retrieval using G02C 5/18 (code was valid IPC[1-7])
  - Published after 1st Jan 2006
    - complete retrieval from all advanced authorities (advanced code)
    - for core authorities, use core code (G02C 5/14) and eliminate those already retrieved with advanced code (autoposted to core)

Advanced

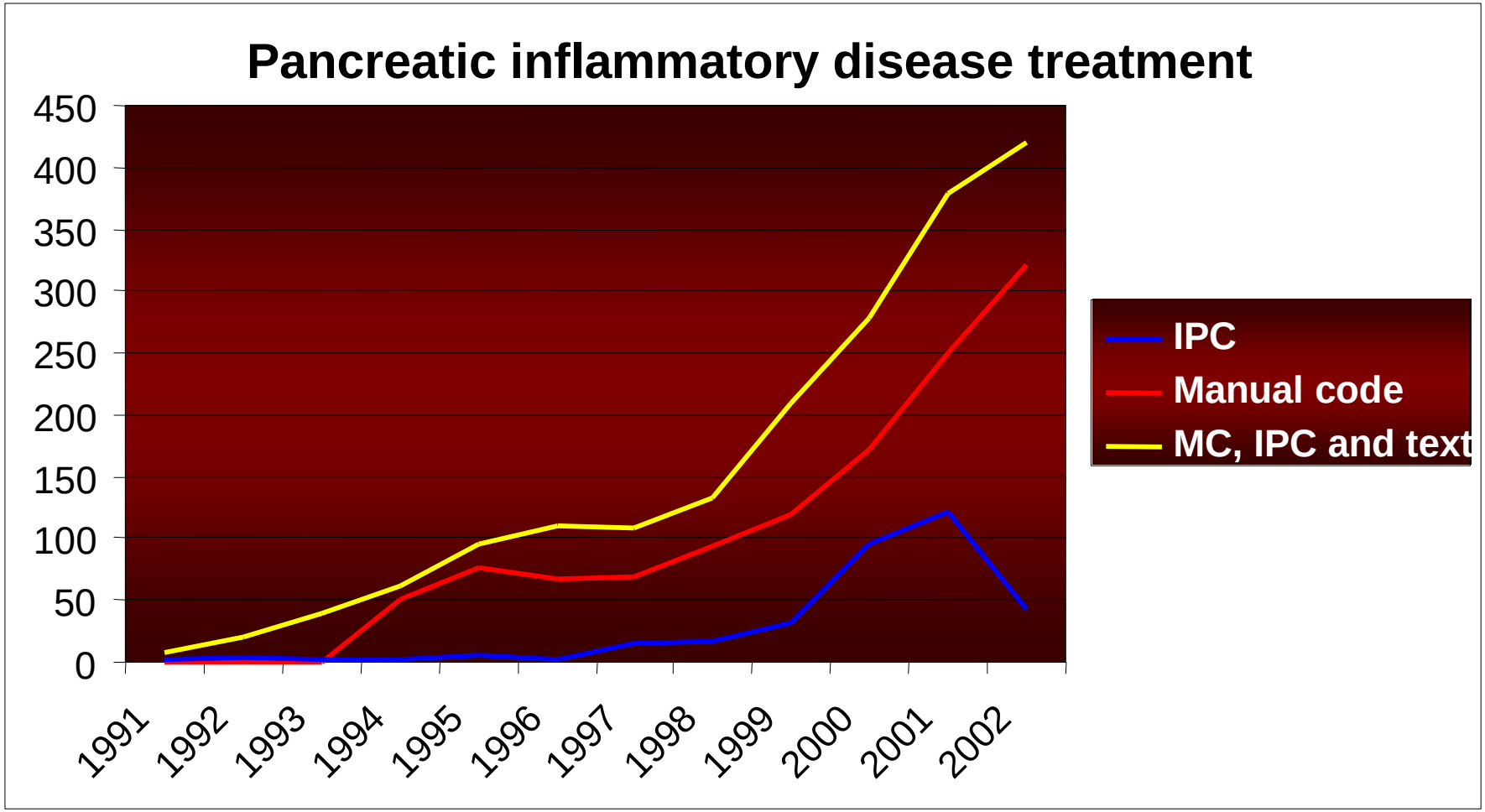


Core



Core not Advanced, Core authority

Using classification to track emerging technology



Using classification to track emerging technology

- C40B Combinatorial chemistry; Libraries
  Valid IPC[2006.01]

- Published after 1st Jan 2006 - complete retrieval of all advanced and core level documents
- Published before 1st Jan 2006 - retrieval of all documents re-classified in C40B through machine concordance against different national collections (ECLA, DE, JP, RU) which have been re-classified through time

Emergence of combinatorial library technology

Snapshot

Result Set for Query: ((C40B) <in> IC) sample pricing help

Summarize by:
Default (set of 4)
Assignee
Assignee City
Assignee State
Assignee Country
Designated Country
Application Year

Sort by: Item count / Field values
Display Results: Single column / Double column
Display Parameters: 1 Min Item Count; 10 Max Rows Shown

Summarize

To use this tool:
1. Refine by changing field selections or sort and display options
2. Select items in bar charts to limit new summary
3. Click SUMMARIZE to generate new Snapshot
4. Click View documents for list view of selected documents

View items selected below View documents

Select	Publication Year	Items	%	Bar Chart
☐	2006	362	81.7%	
☐	2005	56	12.6%	
☐	2004	21	4.7%	
☐	2003	2	0.4%	
☐	2001	1	0.2%	
☐	1997	1	0.2%	

6 rows shown

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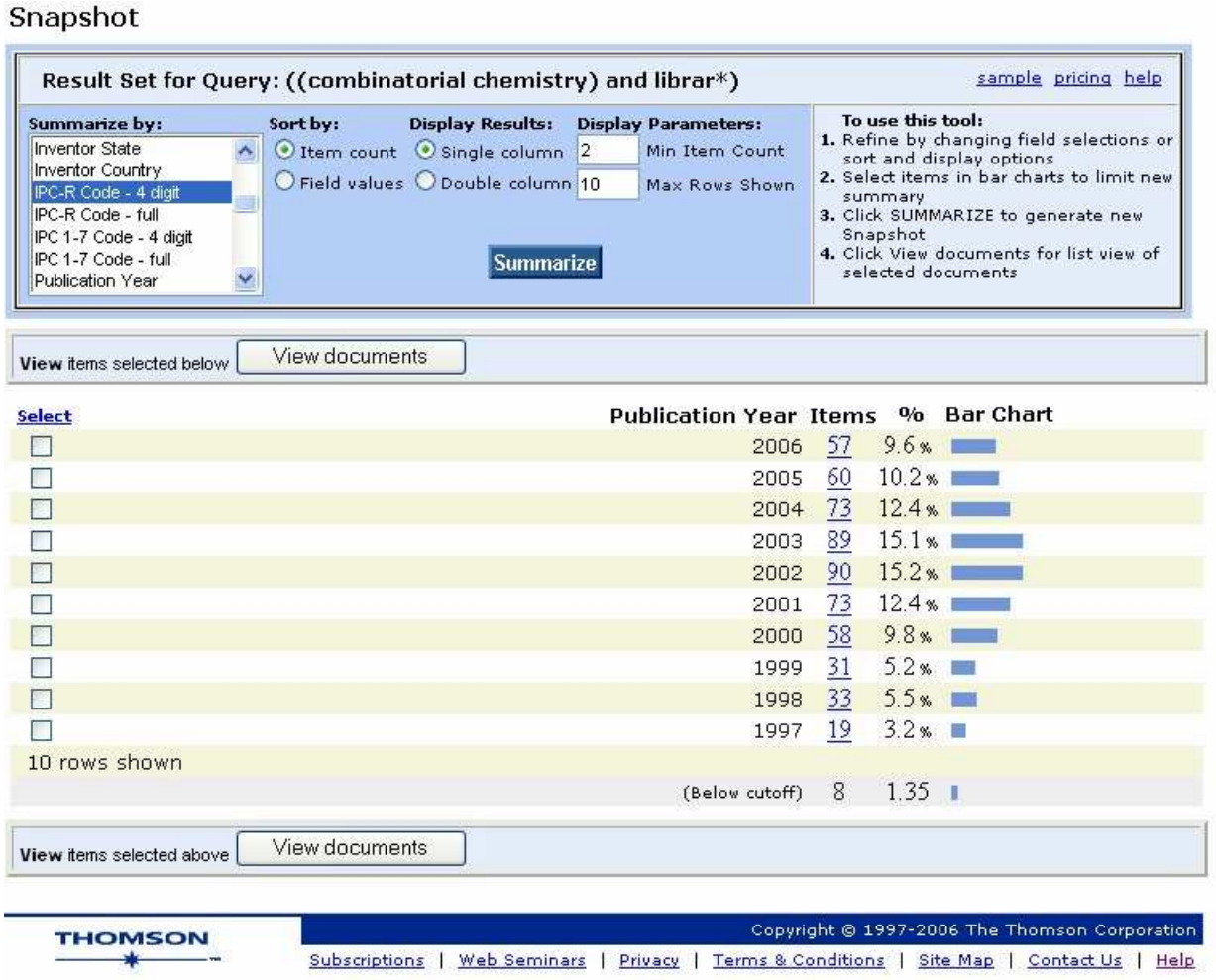
(combinatorial chemistry) and librar*



Snapshot

Result Set for Query: ((combinatorial chemistry) and librar*)

sample pricing help

Summarize by: Inventor State, Inventor Country, IPC-R Code - 4 digit, IPC-R Code - full, IPC 1-7 Code - 4 digit, IPC 1-7 Code - full, Publication Year

Sort by: Item count / Field values

Display Results: Single column / Double column

Display Parameters: Min Item Count 2, Max Rows Shown 10

Summarize

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Select	Publication Year	Items	%	Bar Chart
☐	2006	57	9.6%	
☐	2005	60	10.2%	
☐	2004	73	12.4%	
☐	2003	89	15.1%	
☐	2002	90	15.2%	
☐	2001	73	12.4%	
☐	2000	58	9.8%	
☐	1999	31	5.2%	
☐	1998	33	5.5%	
☐	1997	19	3.2%	
10 rows shown				
	(Below cutoff)	8	1.35	

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IPCs for (combinatorial chemistry) and librar*

Snapshot

Result Set for Query: ((combinatorial chemistry) and librar*) sample pricing help

Summarize by: Default (set of 4), Assignee, Assignee City, Assignee State, Assignee Country, Designated Country, Application Year

Sort by: Item count / Field values

Display Results: Single column / Double column

Display Parameters: Min Item Count 2; Max Rows Shown 10

Summarize

To use this tool:
1. Refine by changing field selections or sort and display options
2. Select items in bar charts to limit new summary
3. Click SUMMARIZE to generate new Snapshot
4. Click View documents for list view of selected documents

View items selected below — View documents

Select	IPC-R Code- 4 digit	Items	%	Bar Chart
☐	G01N G — Physics; Measuring (counting G06M;	224	15.0 %	
☐	C07B C — Chemistry; Metallurgy; Organic Chemistry	167	11.2 %	
☐	C07K C — Chemistry; Metallurgy; Organic Chemistry	156	10.4 %	
☐	B01J B — Performing Operations; Transporting; Physical or CH	149	9.9 %	
☐	C12Q C — Chemistry; Metallurgy; Biochemistry;	94	6.2 %	
☐	C07D C — Chemistry; Metallurgy; Organic Chemistry	85	5.6 %	
☐	A61K A — Human Necessities; Medical or Veterinary Science; H	81	5.4 %	
☐	C07H C — Chemistry; Metallurgy; Organic Chemistry	69	4.6 %	
☐	C12N C — Chemistry; Metallurgy; Biochemistry;	67	4.4 %	
☐	B01L B — Performing Operations; Transporting; Physical or CH	45	3.0 %	
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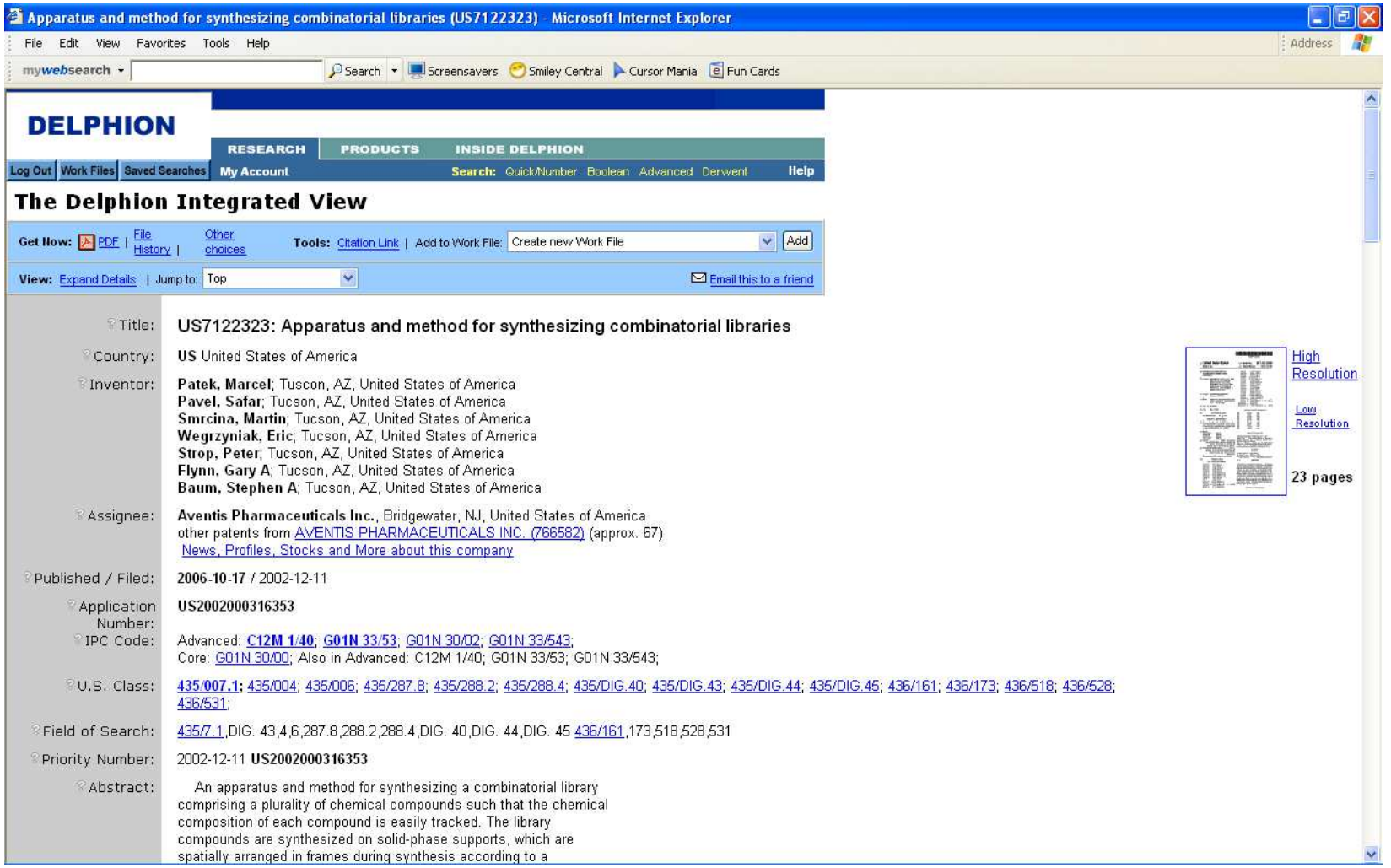
US7122323 classified in G01N



C40B COMBINATORIAL CHEMISTRY; LIBRARIES, e.g. CHEMICAL LIBRARIES, IN SILICO LIBRARIES [8]

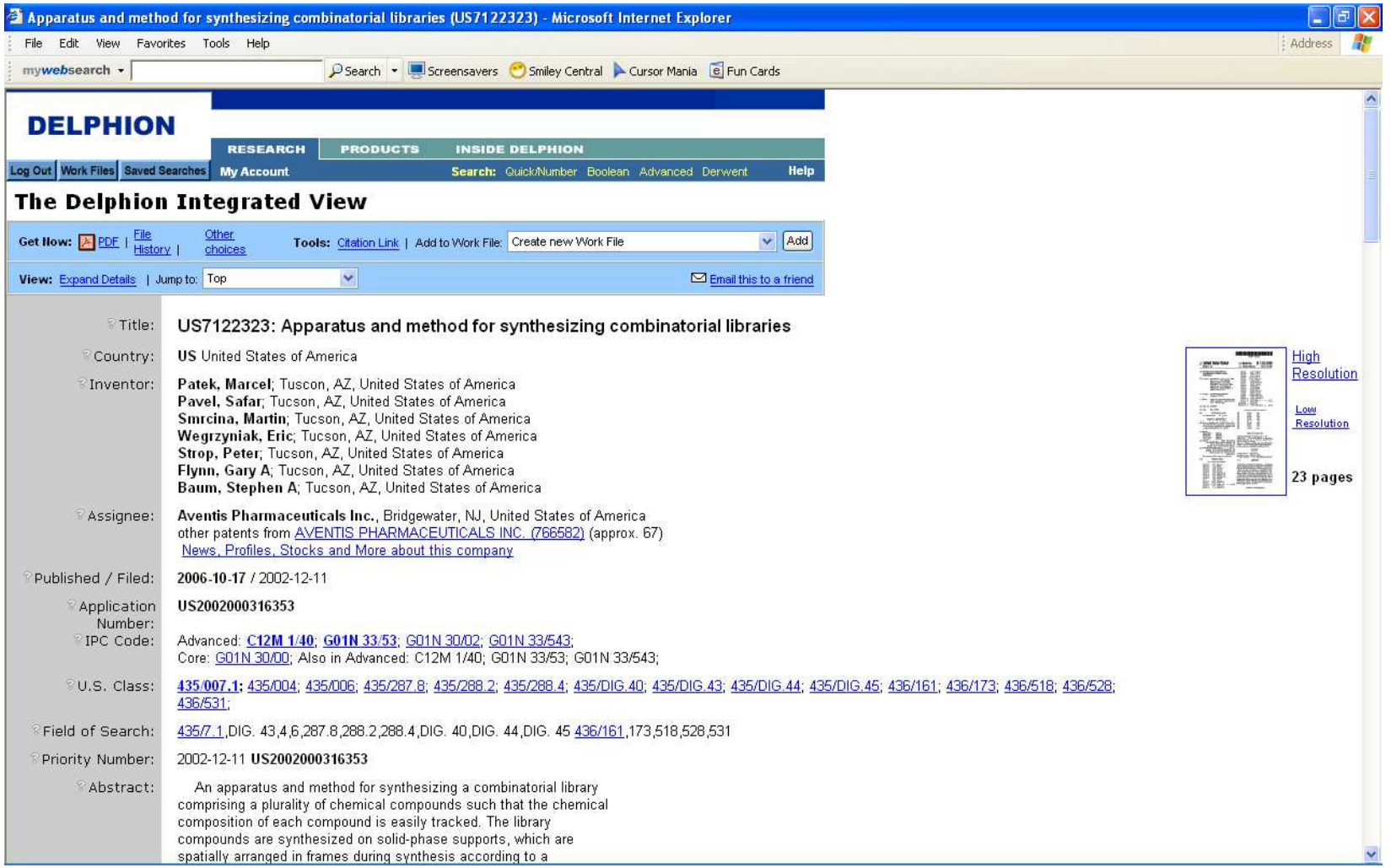
Note(s)

In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, classification is made in the first appropriate place. When classifying in this subclass, subject matter of interest is **also classified in other appropriate places**:

library members are also classified in the appropriate places elsewhere in the IPC (e.g. in section C) according to established procedure relating to "Markush"-type formulae (see paragraphs 100 and 101 of the Guide); [8]

methods or apparatus covered by this subclass **are also classified** for their biological, chemical, physical or other features in the appropriate places in the IPC, if such features are of interest, e.g. [8] G01N Chemical or physical analysis [8]

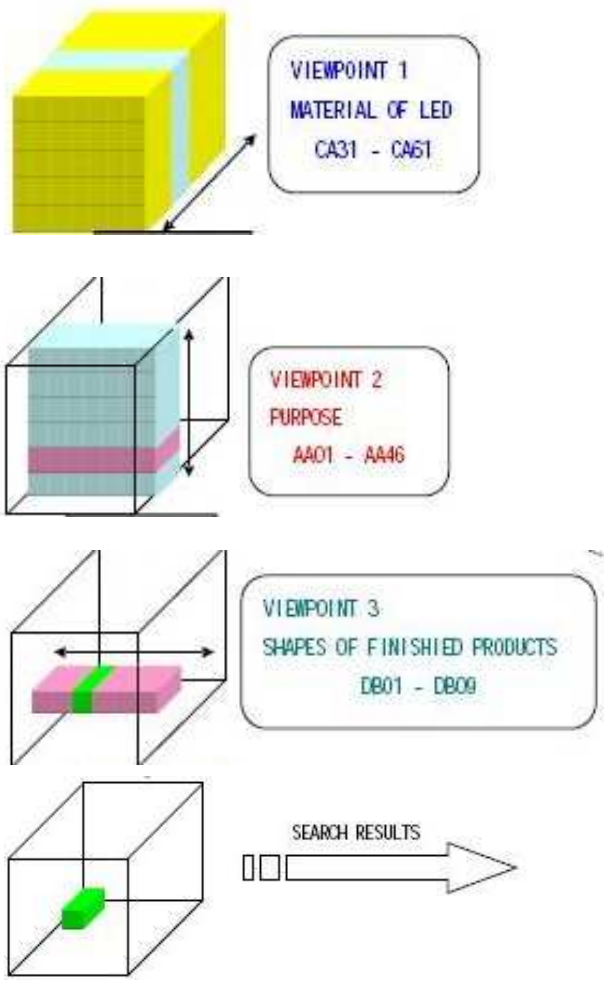
US7122323 classified in G01N

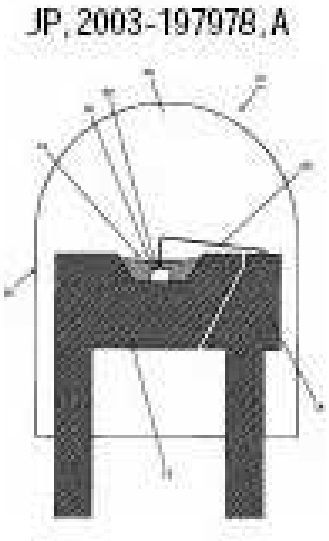


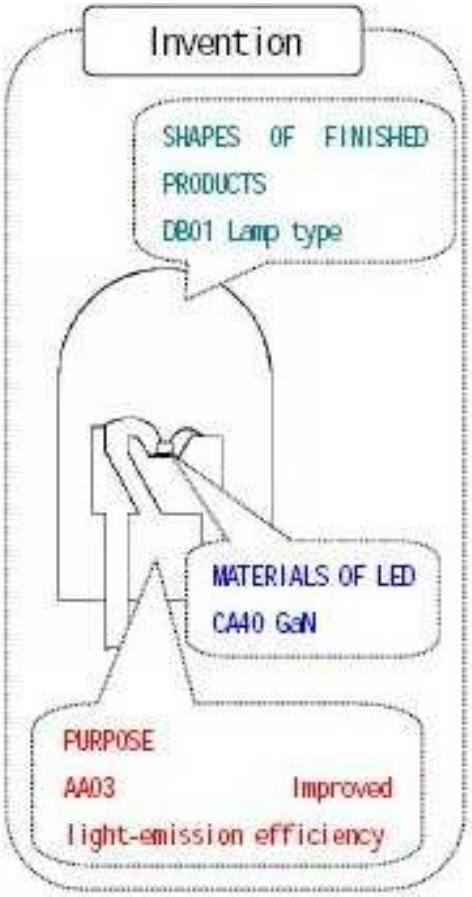
Adequacy of classification systems

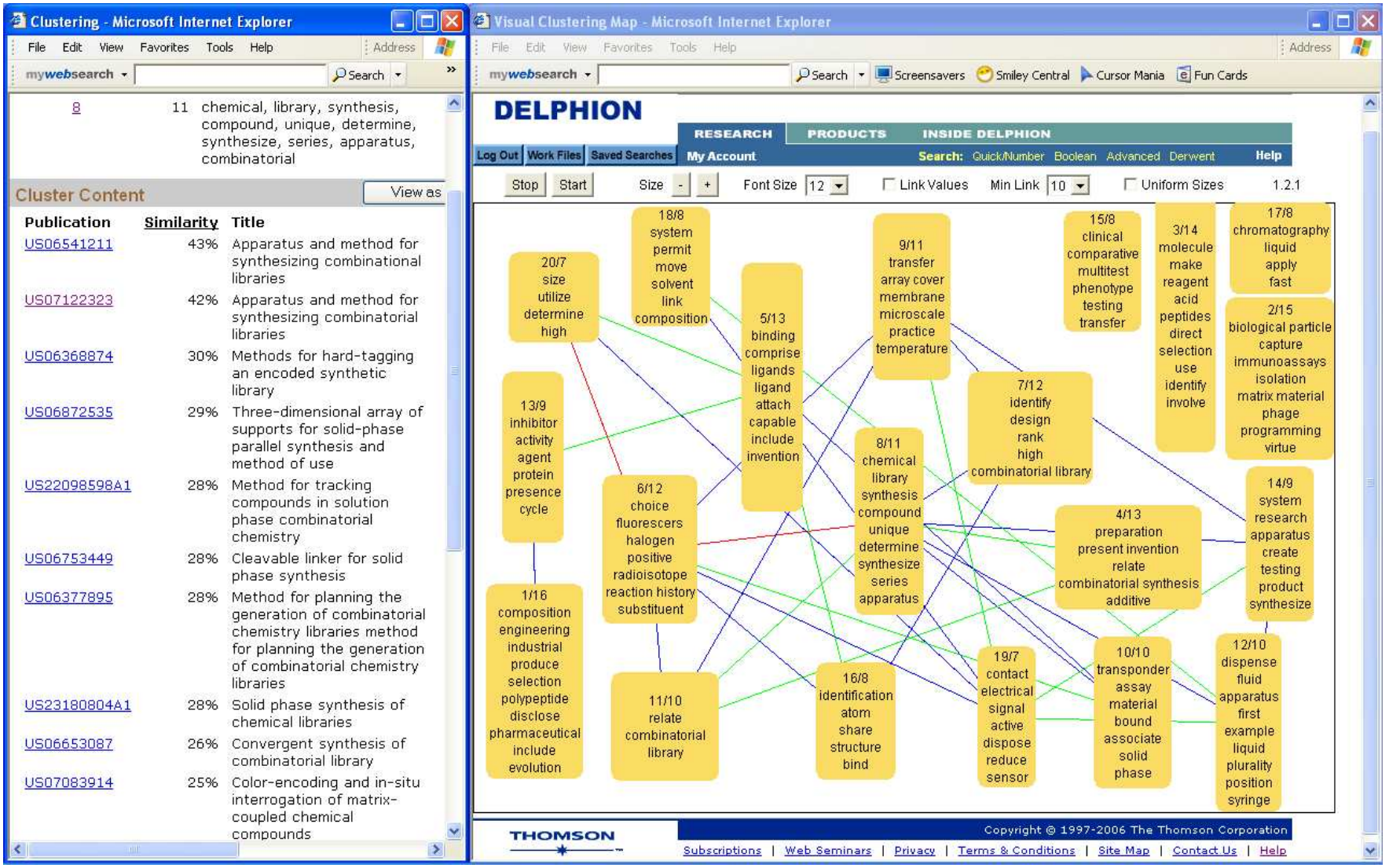
- Agreement between classifier and searcher?
- High precision with high recall?
- Hierarchical vs thematic
  - IPC, ECLA
  - Derwent Manual Codes
  - Japanese F-terms
  - API thesaurus

Japanese F-terms









Conclusions

- IPC reform has addressed some shortcomings of the old system
  - Better consistency – more guidance in applying
  - Easier to use – only one version with back file reclassification
  - Keeping better pace with technology developments
- For comprehensive retrieval, use of core and/or advanced by different offices introduces a new layer of complexity
- Does this reform truly address the ability to adapt as the technology develops?

Thank you!