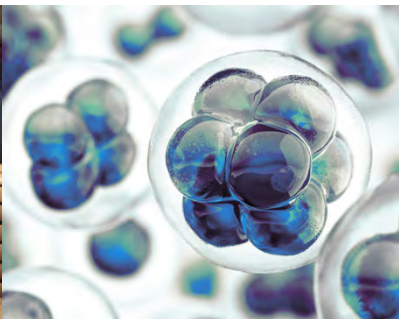


Business use of patent information PATSTAT

BS08-2021



Content

- **PATSTAT for more advanced statistics**
 - What is PATSTAT?
 - Name Harmonisation
 - Patent indicators
 - Most important applicants
 - Analysis of the filing strategy
 - Identification of new trends
 - Analysis of legal events

PATSTAT

- the *EPO Worldwide Patent Statistical Database*
- tailored to facilitate statistical analysis, not your classical prior art search



cc: Forest & Kim Starr



cc: Crusier

Focus on forest, not the tree: discover trends and relationships

- EPO provides data and database model (table format)
- updated twice per year

PATSTAT is available in 2 flavours

PATSTAT Global → bulk data

- subscription product
- must be loaded into your DB
- full control over your data

```
appln_id,appln_auth,appln_nr,appln  
0,"ZZ","","D ",9999-12-31,"","PI",  
1,"EP","00103094","A ",2000-02-15,  
2,"EP","00107845","A ",1992-12-02,  
3,"EP","00202556","A ",2000-07-17,  
4,"EP","00300208","A ",2000-01-13,  
5,"EP","00310305","A ",2000-11-20,  
6,"EP","00310786","A ",2000-12-05,
```

PATSTAT Online (hosted by the EPO)

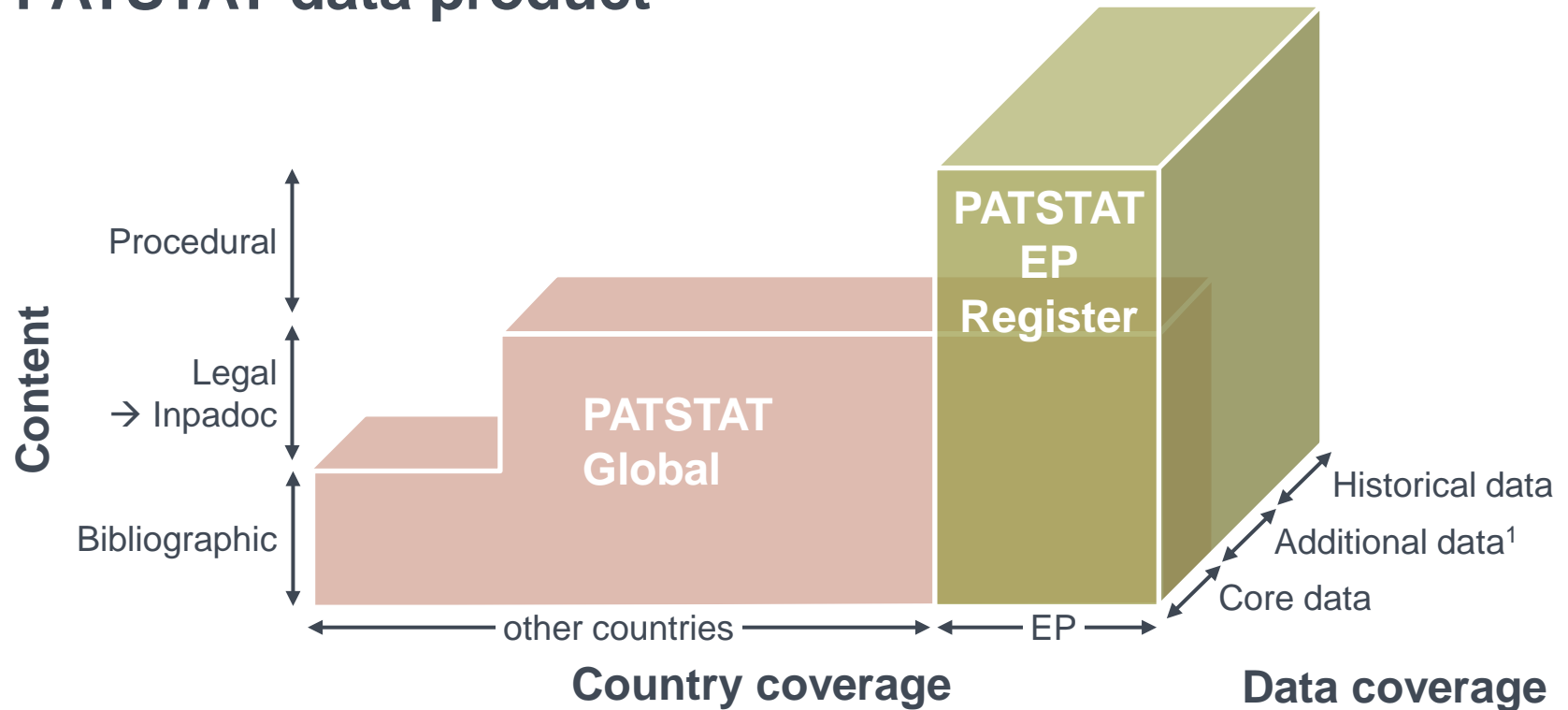
- ready to use (subscription product !)
- read only database
- additional functions (downloads, charts)

The screenshot displays the PATSTAT Online web interface. At the top, there are navigation tabs: Preferences, Download, Print, Help, Search, Table, Application, and Statistics. The status bar indicates 'gboedt is using PATSTAT 2019 Autumn' and a 'Log out' link. Below the navigation, there are two main sections: 'Beginner' and 'Expert'. The 'Beginner' section is active, showing a list of tables on the left and a query editor on the right. The query editor contains the following SQL query:

```
SELECT *  
FROM tls201_appln  
WHERE appln_auth = 'EP'
```

The query results are displayed in a table with the following columns: ID, Dat..., Re..., and Query. The results show two queries, with the first query (ID 14) being the one executed. The status bar at the bottom of the query editor indicates '3 647 809 rows'.

PATSTAT data product



¹ Additional data: Professional representatives, status of the application, opponent, appeal, petition, limitations, procedural data, multiple language titles,

Name harmonisation

Result table 52 / 648			
Row	Original_name	Occurrences	PATSTAT_Standardised_Name
29	国立研究開発法人理化学研究所	1	NOVARTIS
30	노파르티스 파르마 아게	2	NOVARTIS PHARMACEUTICALS
31	노파르티스 아게	2	NOVARTIS
32	노바티스 티어게존트하이트 아게	2	NOVARTIS TIERGESUNDHEIT
33	노바르티스 아게	2	NOVARTIS
34	ノバルティスヴァクシNZアヅド ダイアグノスティクス エスアールエル	2	NOVARTIS VACCINES AND DIAGNOSTICS
35	ノバルティスアージェー	2	NOVARTIS
36	ノバルティス・フォルシュングスシュティフトゥング・ツヴァイクニ...	1	NOVARTIS FORSCHUNGSSTIFTUNG ZWEIGNIEDERLASSUNG FRIEDRICH MIESCHER INST FOR BIOMEDIC
37	ノバルティス バクシNZ アヅド ダイアグノスティックス, インコーポ...	2	NOVARTIS VACCINES AND DIAGNOSTICS
38	ノバルティス エージェー	2	NOVARTIS
39	ノバルティス ヴァクシNZ アヅド ダイアグノスティクス ゲーヱムベ...	1	NOVARTIS VACCINES AND DIAGNOSTICS
40	ノバルティス ヴァクシNZ アヅド ダイアグノスティクス エスアール...	2	NOVARTIS VACCINES AND DIAGNOSTICS
41	ノバルティス アージェー	1	NOVARTIS
42	ノバルティス アージェー	2	NOVARTIS
43	نوفارتيس فاكسينز آند دياجنوستيكس اينك	1	NOVARTIS VACCINES AND DIAGNOSTICS
44	نوفارتيس فارما جي ام بي النش	1	NOVARTIS
45	نوفارتيس سينس بي في	1	NOVARTIS SEEDS
46	نوفارتيس ايه جي	5	NOVARTIS
47	نوفارتيس ايه جي	1	NOVARTIS
48	نوفارتيس ايه جي	1	NOVARTIS
49	НОВАРТИС АГ	3	NOVARTIS
50	НОВАРТИС ФАРМА АГ (СН)	1	NOVARTIS PHARMACEUTICALS
51	НОВАРТИС ФАРМА АГ	2	NOVARTIS PHARMACEUTICALS

More than 600 variants of the applicant name NOVARTIS

Statistics on A61P35

Original Applicant name



PATSTAT Standardised Name (PSN)



PATSTAT Online

Built-in patent indicators and cross reference charts

- What is the most important patent filed in Australia in the field of "solar energy" ?
- Who are the most prolific Australian applicants (or inventors) filing "solar energy patents" in Australia?

Patent indicator

Parameters for patent indicator ✕

Filter by technical field all ▼

Sort by User defined score ▼

Coefficients for

A-Number of DOCDB families which cite this family	<input type="text" value="1"/>
B-size of family	<input type="text" value="1"/>
C-number of applicants	<input type="text" value="0"/>
D-number of inventors	<input type="text" value="0"/>
E-grant	<input type="text" value="0"/>

Score calculation

$$1*A + 1*B + 0*C + 0*D + 0*E$$

Save parameters

Load parameters

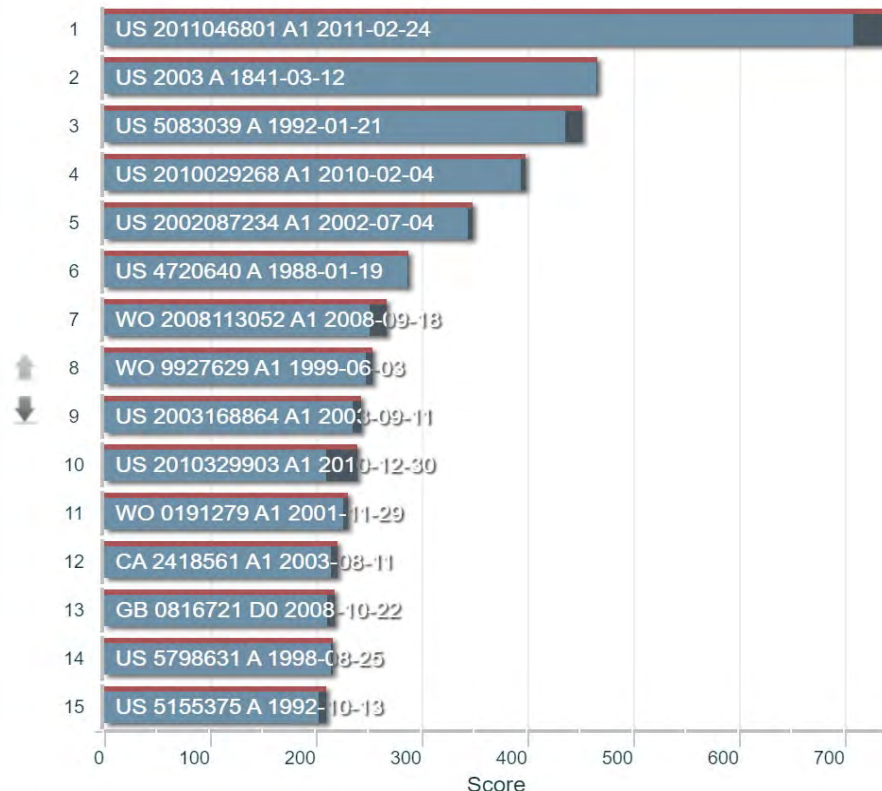
Calculate

Cancel

Help

Coefficients can be given weights

Forward citation and family size in wind energy



Publication: US 2011046801 A1 2011-02-24
 Score: 742
 Score A: 709
 Score B: 33
 Score C: 0
 Score D: 0
 Score E: 0

Parameters for Patent indicator

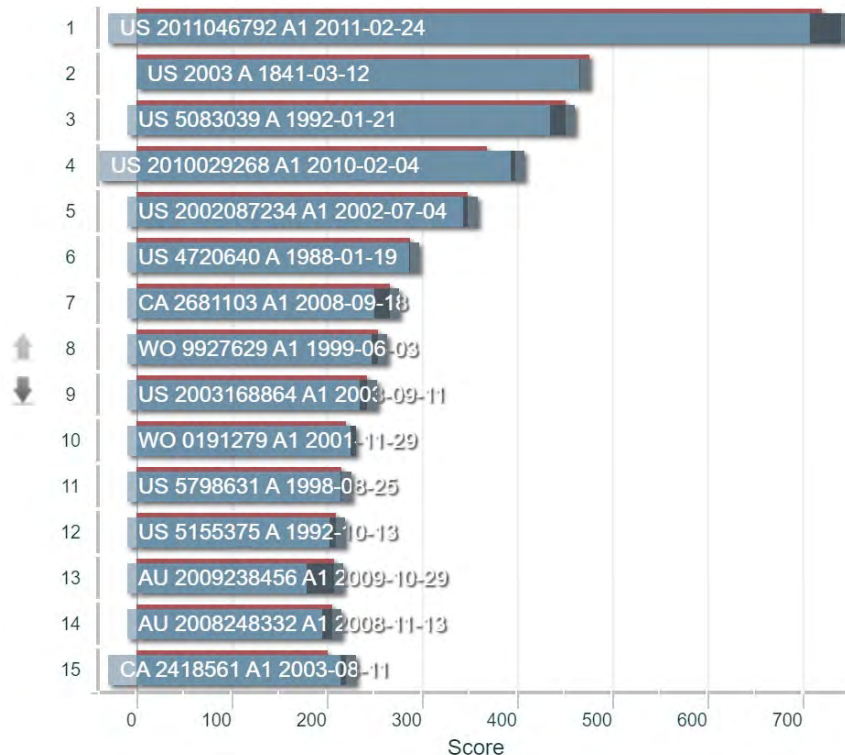
Sort by

User defined score

Coefficients for

- A-Number of DOCDB families which cite this family: 1
- B-size of family: 1
- C-number of applicants: 0
- D-number of inventors: 0
- E-grant: 0

Forward citation, family size, applicants and grant in wind energy



Publication: US 2011046792 A1 2011-02-24

Score: 722

Score A: 709

Score B: 33

Score C: -30

Score D: 0

Score E: 10

Parameters for Patent indicator

Sort by

User defined score

Coefficients for

- A-Number of DOCDB families which cite this family: 1
- B-size of family: 1
- C-number of applicants: -10
- D-number of inventors: 0
- E-grant: 10

Cross-reference charts

Composition of the cross reference

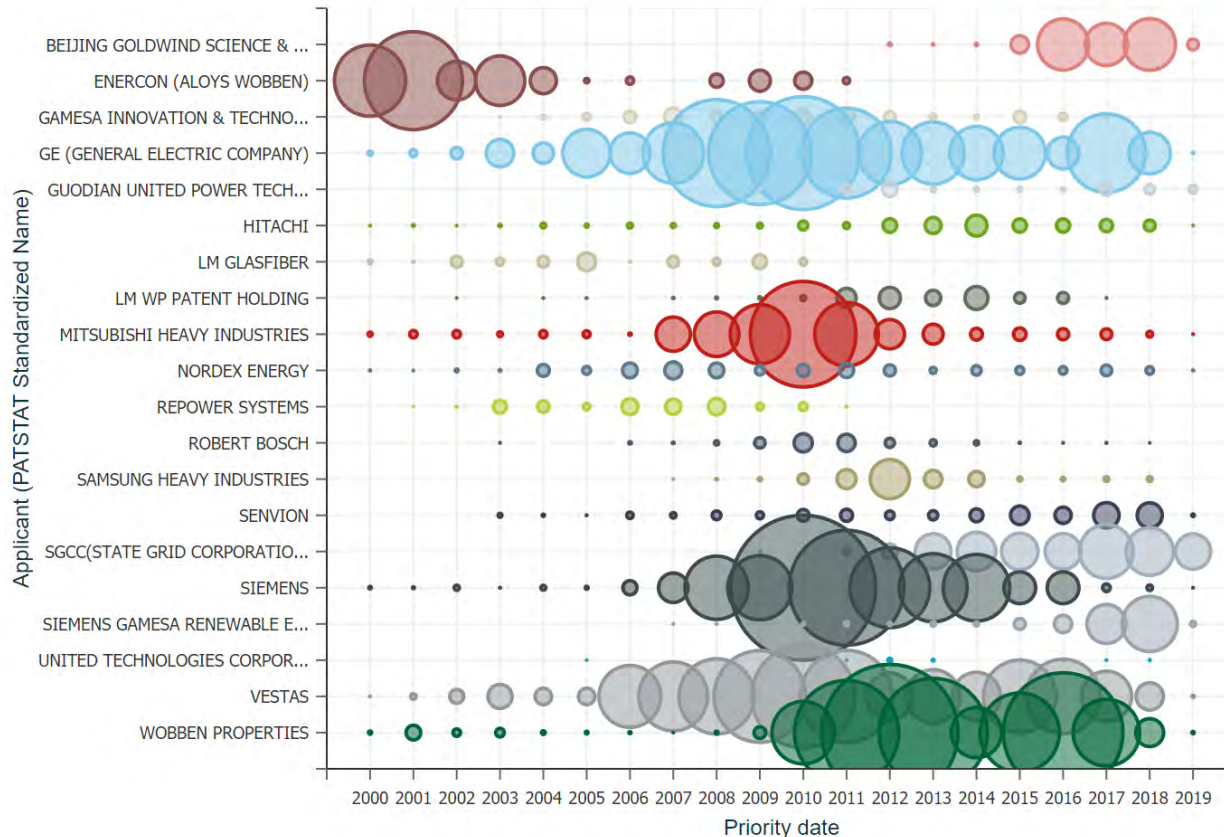
- Define X-axis parameter
- Define Y-axis parameter

Which one's do you take ?

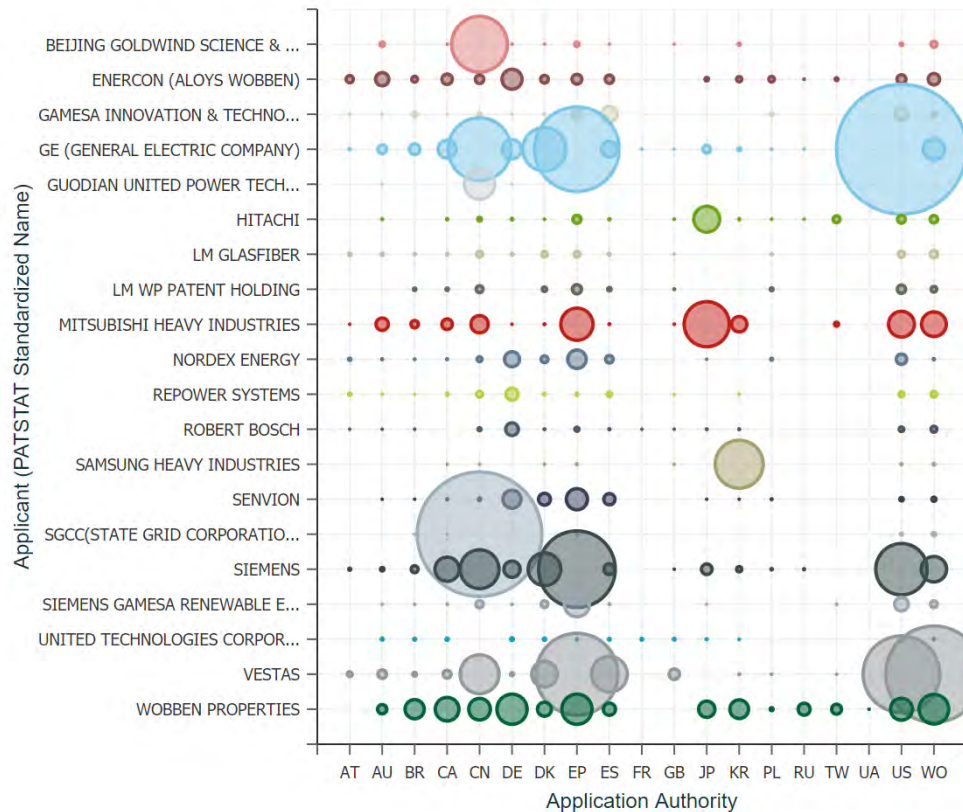
The screenshot shows a software dialog box titled "Parameters for Cross-reference". It contains the following fields and options:

- Parameter 1 (X axis):** A dropdown menu set to "Priority date". Below it are radio buttons for "Year" (selected) and "Month", followed by "from" and "to" text boxes each containing "YYYY".
- Parameter 2 (Y axis):** A dropdown menu set to "Applicant (PATSTAT Standardize...". Below it are radio buttons for "top 20 of the search result list" (selected), "industry" (with a dropdown set to "10" and "Manufacture of Food Prod..."), and "user-defined list" (with a text box and a "load" button).
- Harmonisation type:** A dropdown menu set to "PATSTAT Standardized Name".
- Comparison:** Radio buttons for "No comparison" (selected) and "time".
- Buttons:** "Calculate", "Cancel", and "Help" at the bottom right.

Most important applicants in wind energy



Filing strategy in wind energy



Potential statistical uses of patent data

- Where do my competitors file their applications?

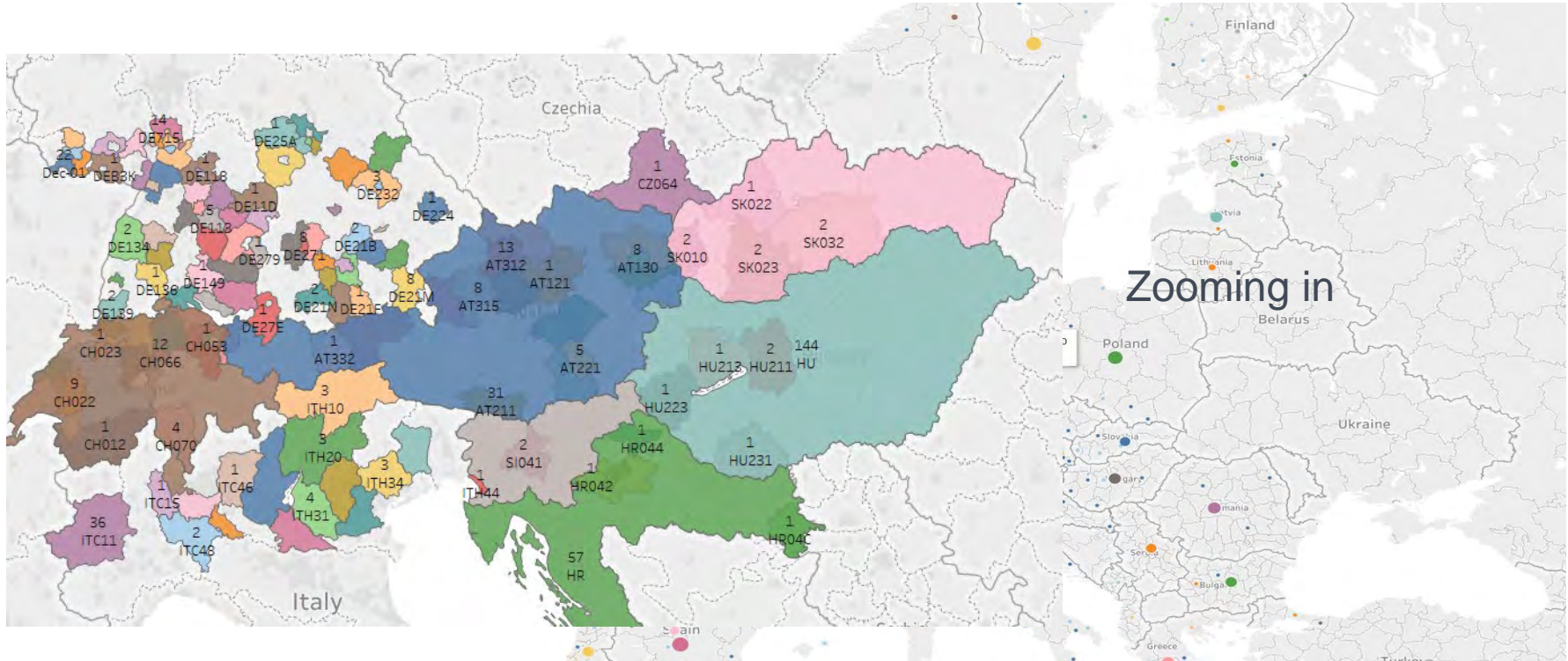
appln_auth	Nordex	Vestas	Our_portfolio
US	94	597	72
EP	136	554	39
ES	81	395	10
CN	33	305	27
DK	71	171	4
DE	97	15	0
AU	6	81	8
AT	27	59	0
CA	4	59	7
JP	2	0	59
TW	0	0	42
MX	0	31	0
GB	0	20	1
WO	1	13	0
PT	2	6	0
KR	0	4	3
NO	4	1	0
PL	0	3	1
AR	0	3	0
BR	0	3	0

Are we making the right decisions by not having our inventions protected in DE, AT and MX ?

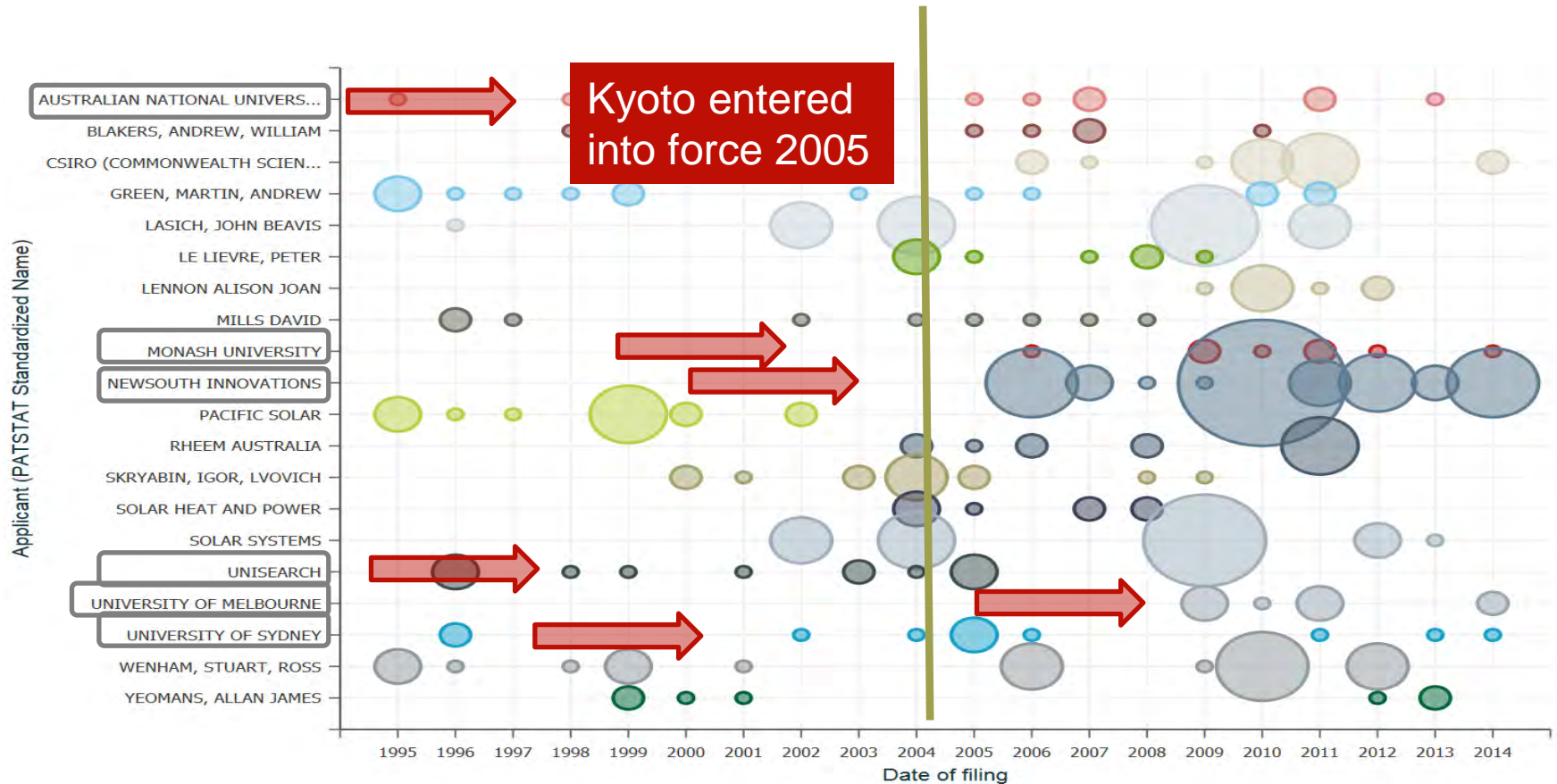
Why does VESTAS protect in Mexico and Great Britain ?

Potential statistical uses of patent data

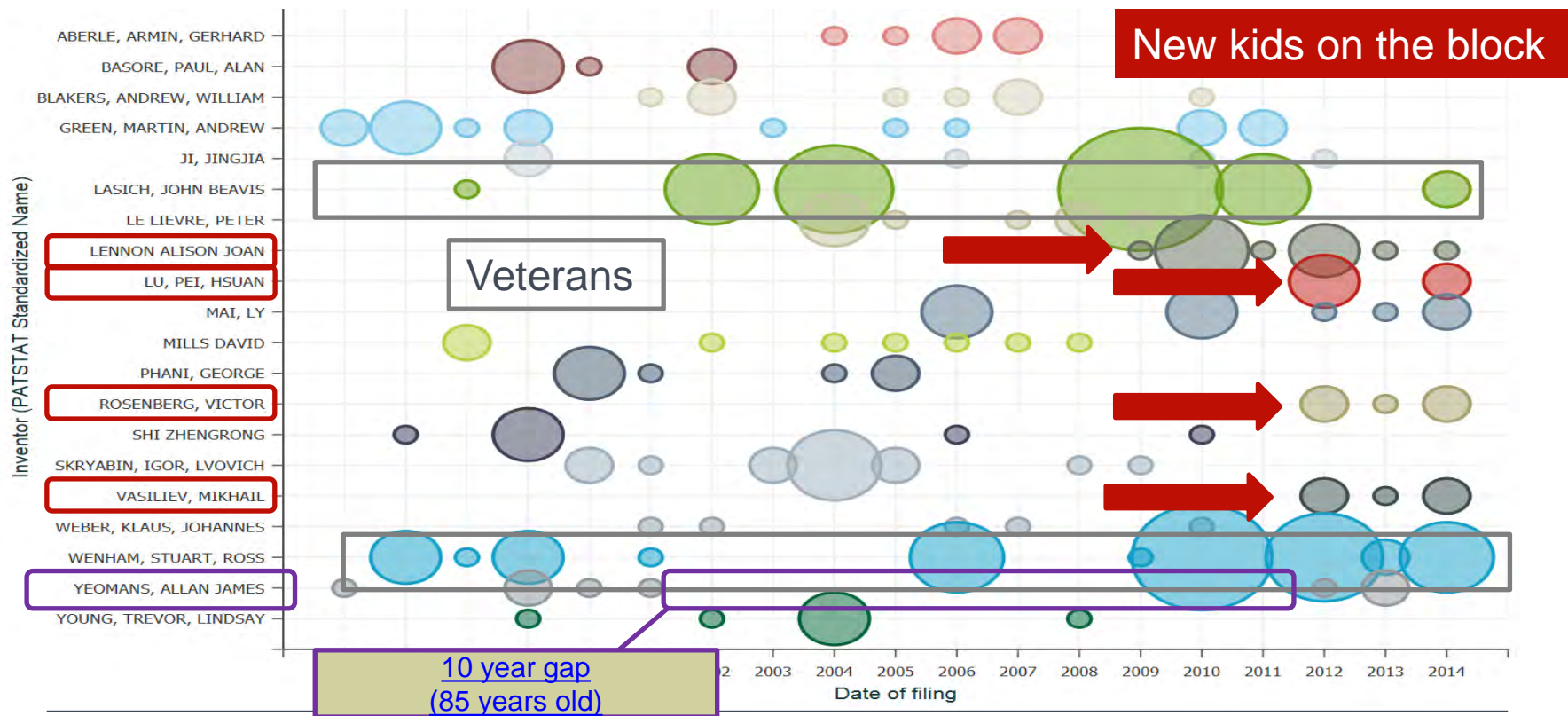
- In which NUTS regions in Europe do we find the wind energy applicants?



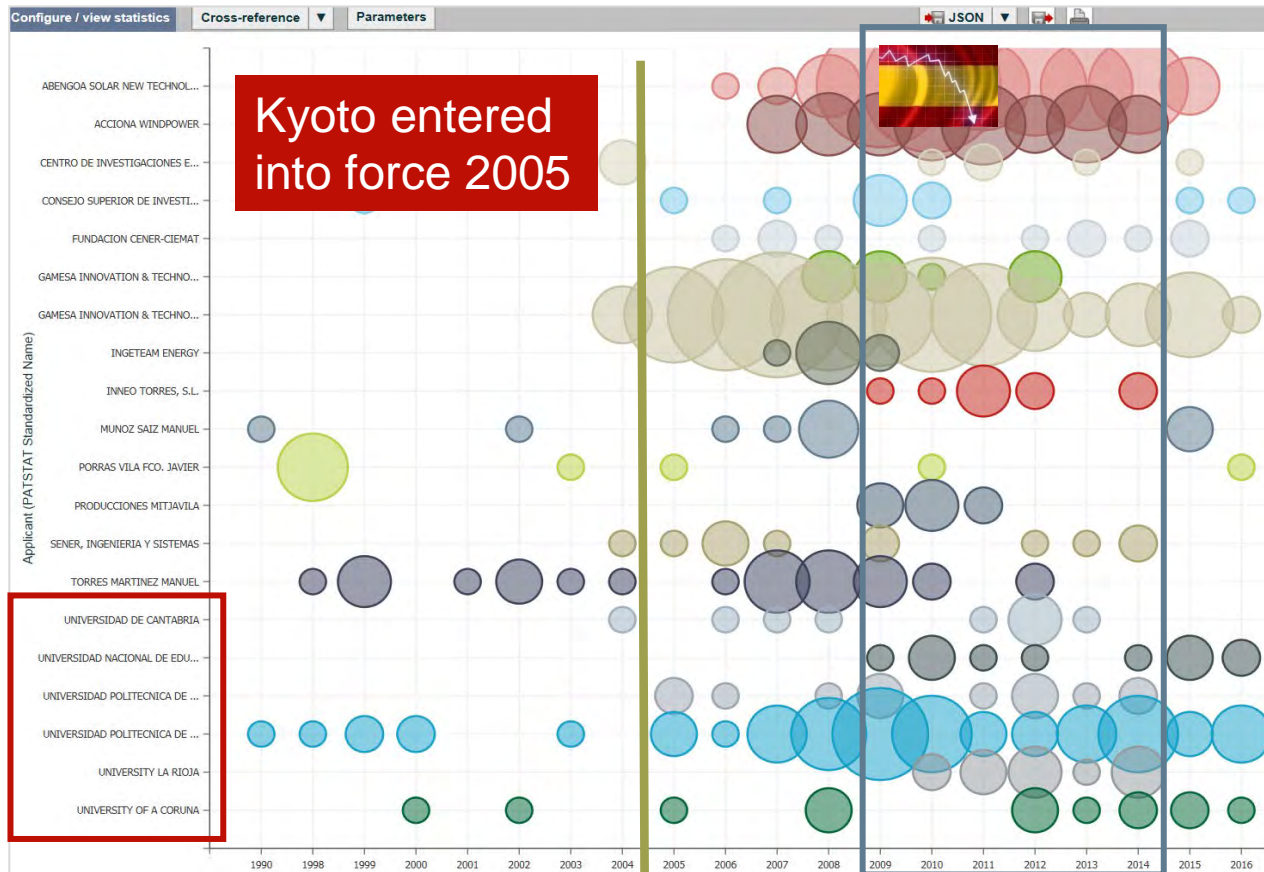
Top Australian applicants



Top Australian inventors



Top Spanish applicants

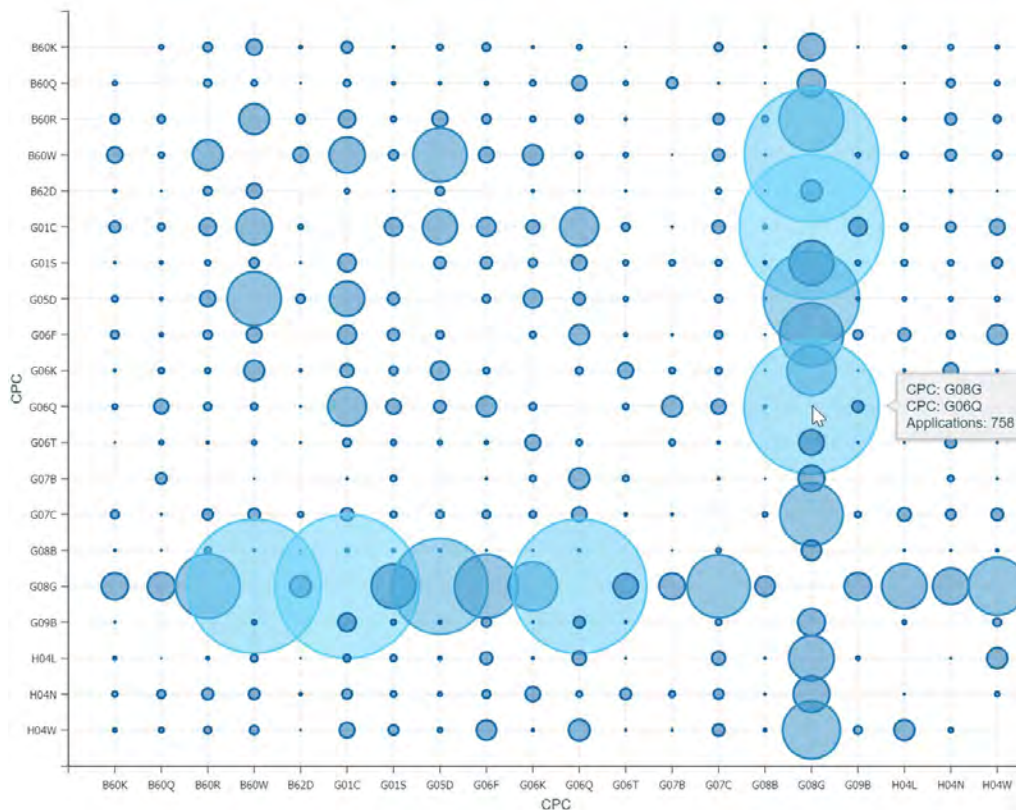


Identification of new trends with classification codes?

- New classification codes are generated by examiners when technical areas become larger
- Time lag between filings and the emergence
- Hower: New trends are often combinations of existing technology

PATSTAT: CPC co-assignments to detect new trends

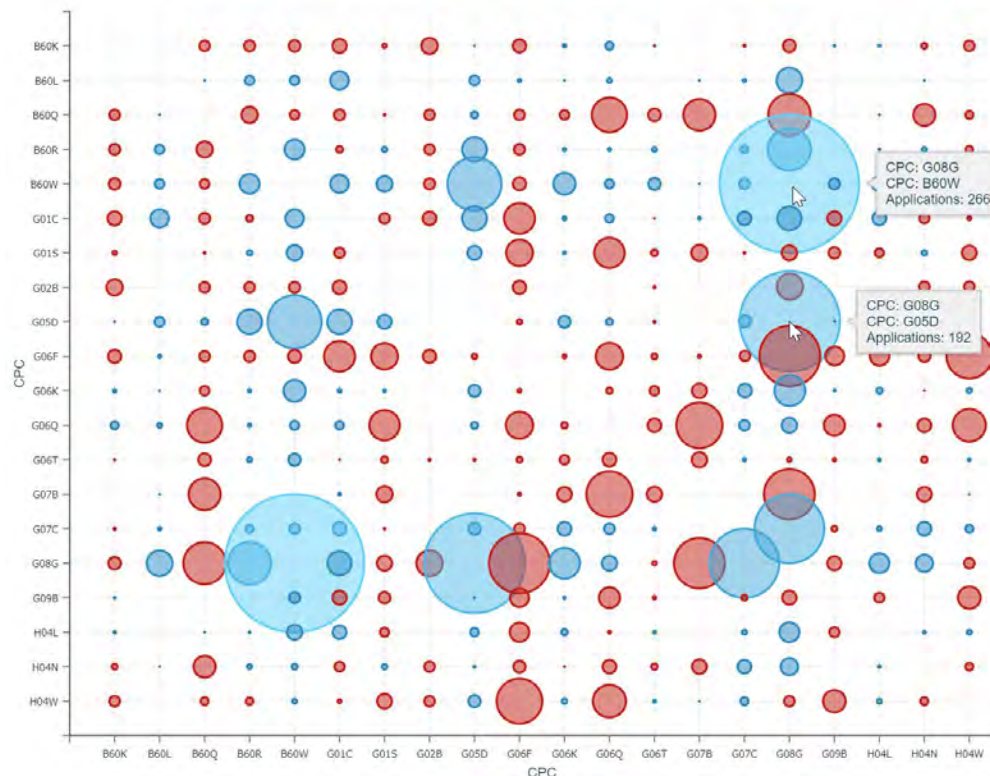
Example: Traffic control for road vehicles: G08G1/00



Noise due to
„classic“ connections e.g.
with G06Q: Data
processing for payment...

PATSTAT: CPC co-assignments – time comparison

Example: Traffic control for road vehicles: G08G1/00



Compare*

from 2000-01 to 2016-05

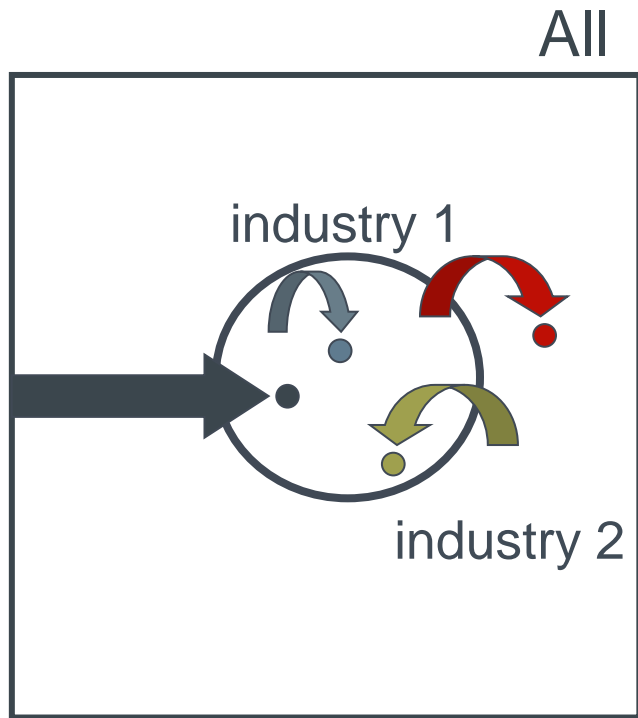
versus

from 2016-06 to 2019-12

**Growing combinations
with e.g.
autonomous vehicles
in B60W60/00
and
navigation systems
in G05D1/00**

*(substraction of numbers)

Citation flows



A: What are most influential patents of the industry?

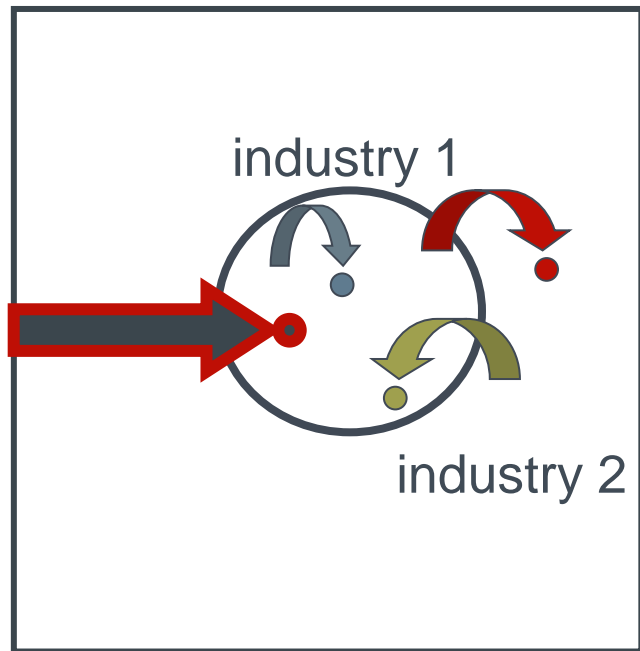
B: Where is the industry's technology mostly used

C: Which technology does the industry build on?

D: What are the most influential patents used in the industry

Example: Atomic clocks (in G04F5/14)

All



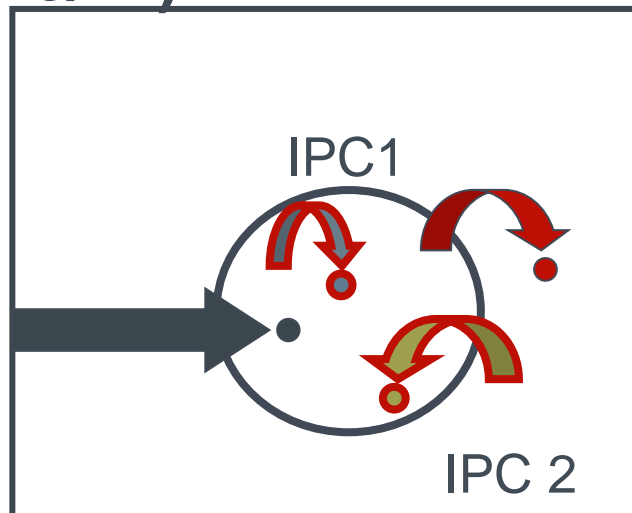
Top cited publications (family-family citation)



Example: Atomic clocks (in G04F5/14)

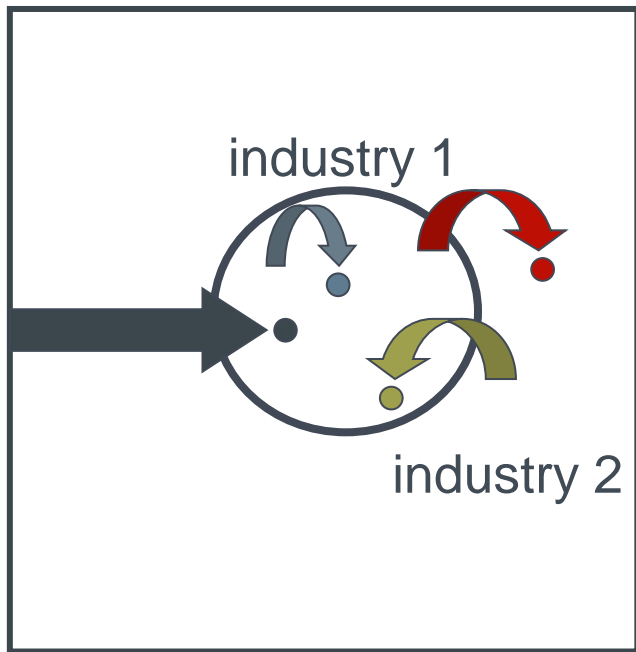
Top citing classes

citing IPC	publications	applications
G04F 5/14	1774	557
H03L 7/26	1694	594
H03B 17/00	670	143
H01S 1/06	624	208
G01R 33/26	237	77
G01R 33/032	195	81
H01S 5/183	170	62
H01S 5/0687	125	42
H01S 5/00	122	38
H01S 3/13	106	56
H01S 3/10	104	54
B81C 1/00	104	34
H01S 1/00	98	61
G01V 3/00	91	32



Electric or magnetic prospecting or detecting; Measuring magnetic field characteristics of the earth, e.g. declination, deviation

Example: Atomic clocks (in G04F5/14)



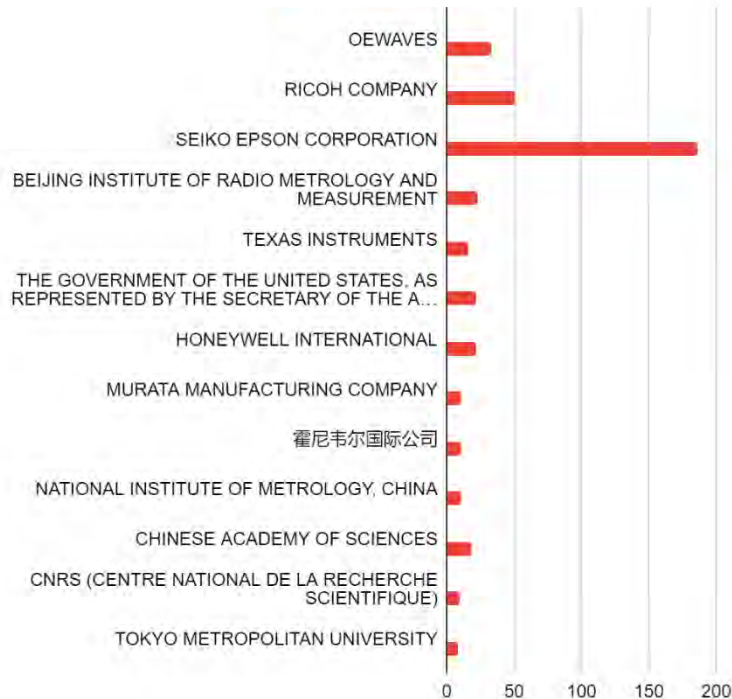
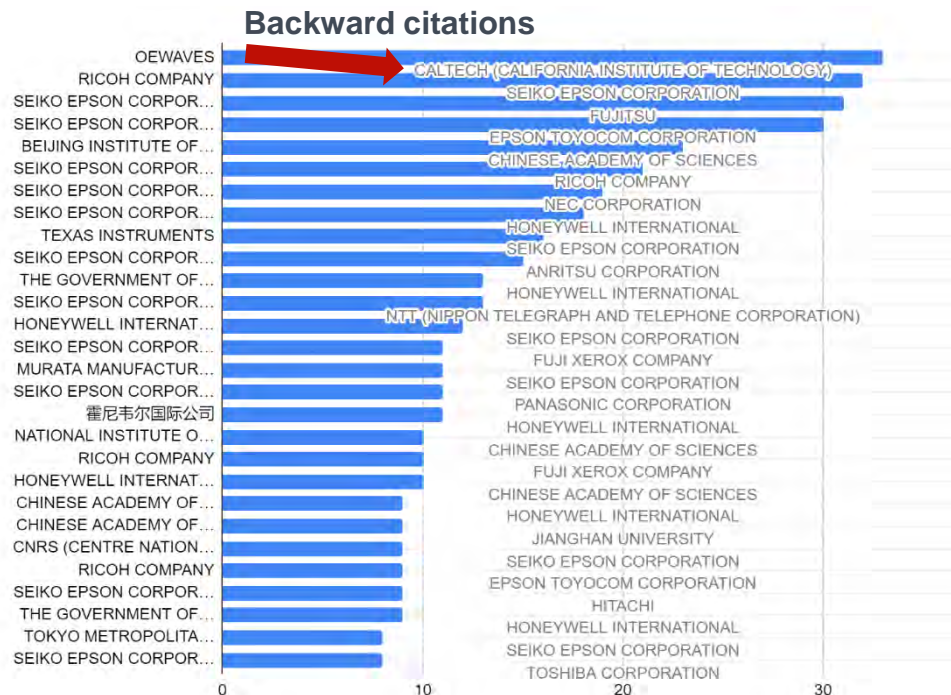
Top cited technology fields:

- Manufacture of Communication Equipment
- Manufacture of Consumer Electronics
- Manufacture of Instruments and Appliances for
Measuring, Testing and Navigation; Watches and Clocks
- Manufacture of Watches and Clocks
- Manufacture of Electronic Components and Boards

Example: Atomic clocks (in G04F5/14)

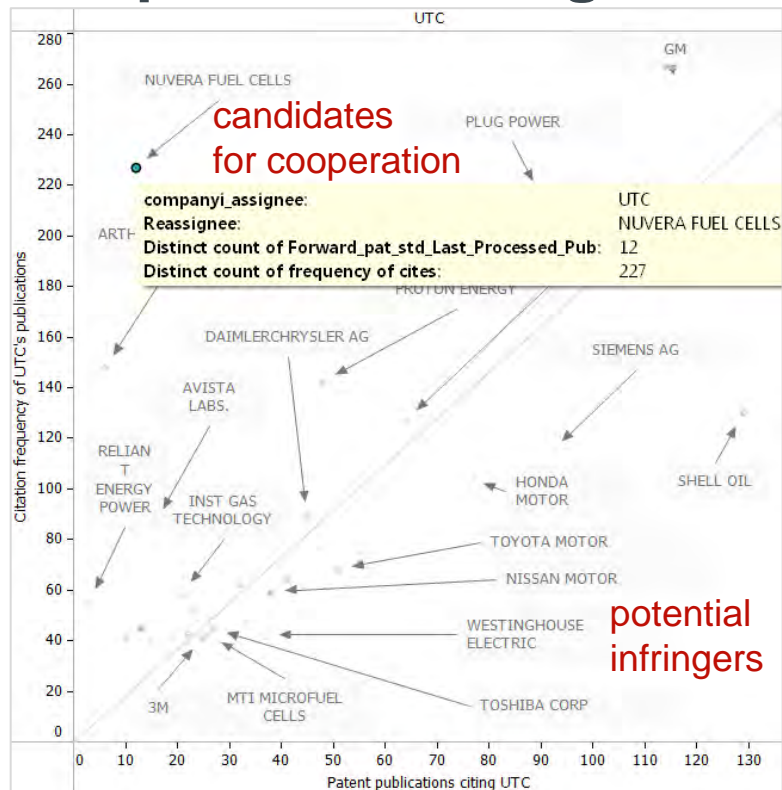
Companies citing other companies

Top citing companies (aggregate)



Citation analysis on company level

Cooperation or litigation in the fuel cell industry?



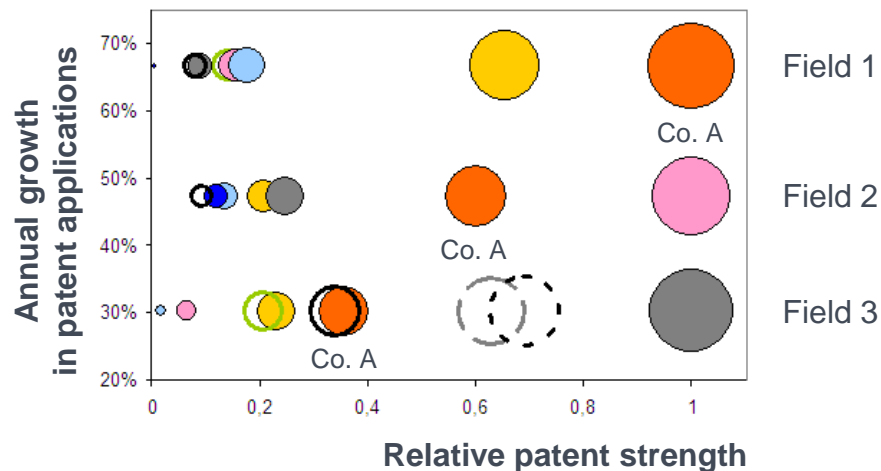
What advice can be given to UTC?

What are UTC's dependencies?

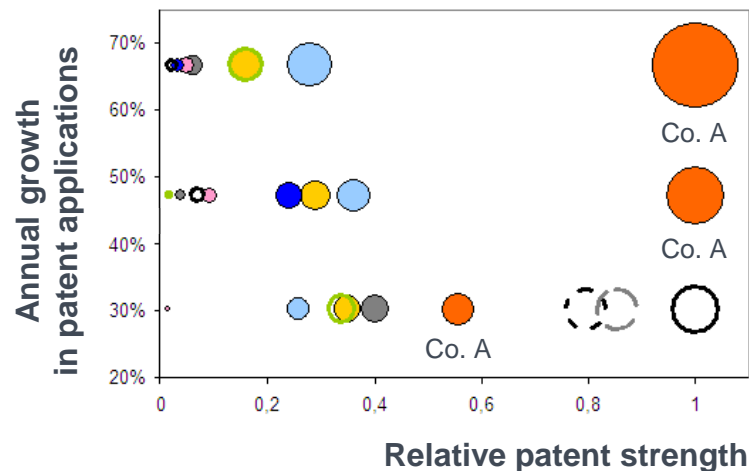
Who is dependent from UTC?

Which company to acquire? When to stop a merger?

2015



2020, only new patents 2016–2020

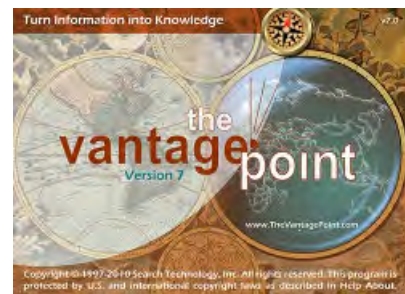
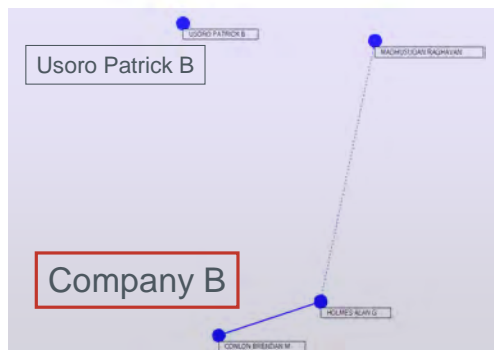
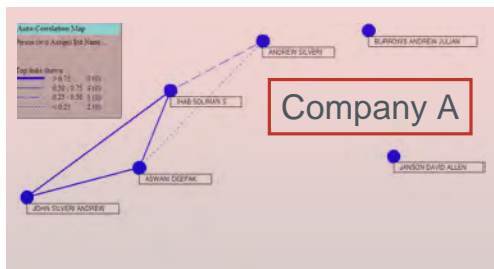


► **Steady patenting activity is needed for sustainable patent portfolios**

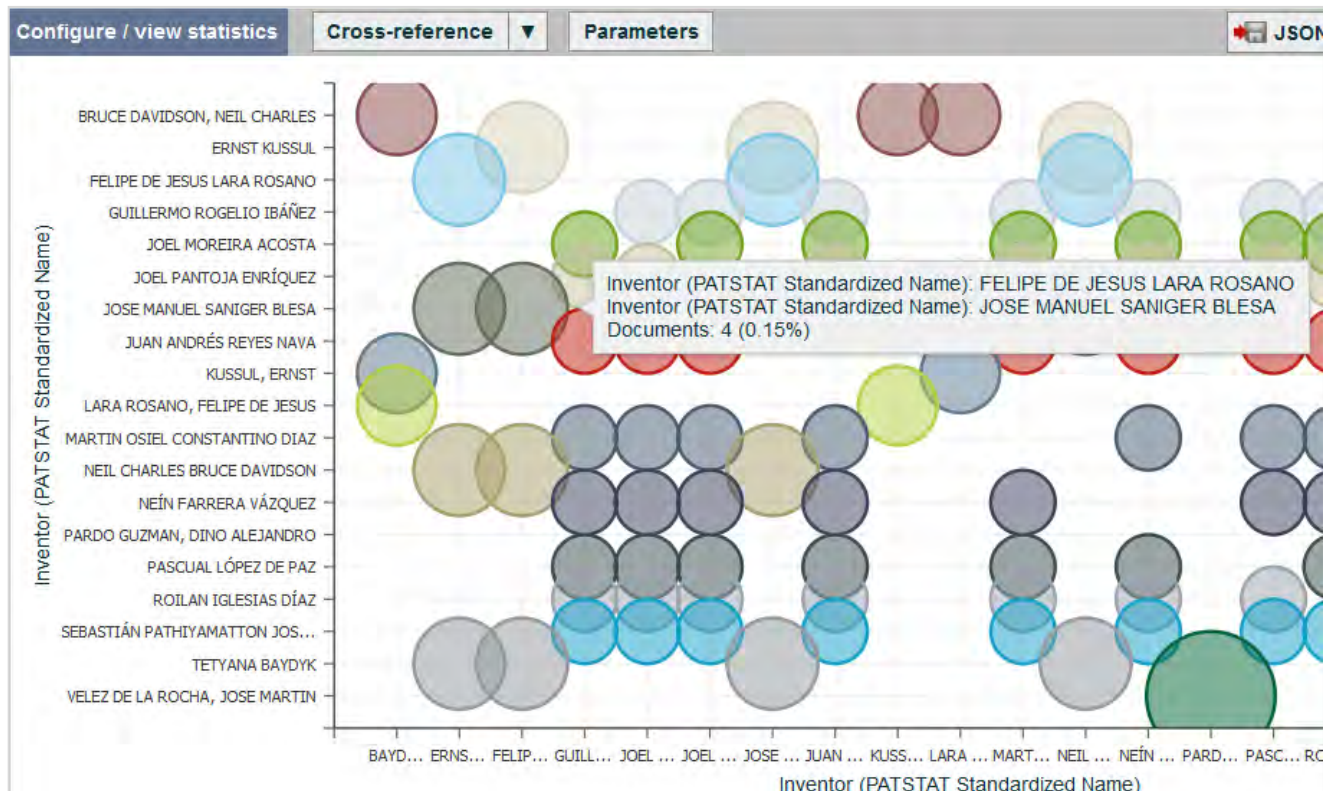
Adapted from Source: PatentSight GmbH

Assessment of potential co-operation in Mergers and Acquisitions

Auto-correlation: Co-inventors (top10)



PATSTAT Cross reference chart: Inventor networks



Statistical Analysis of renewal fee payments

- In what member states does 'Nordex Energy' renew its EP patents?

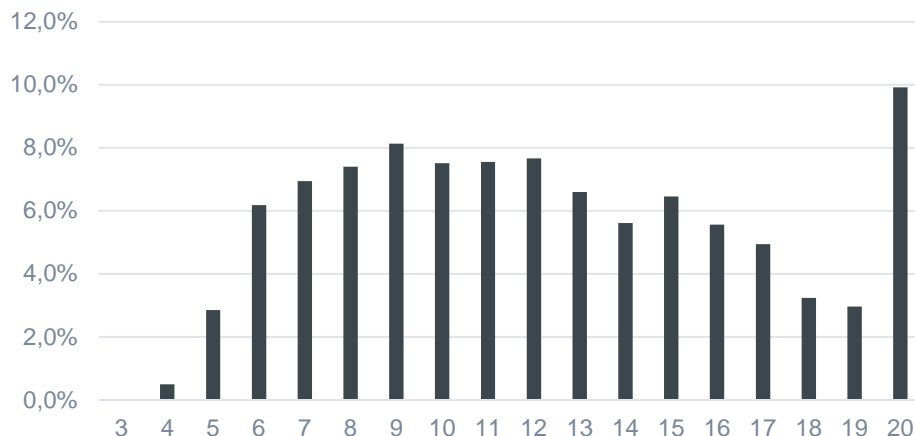
appln_nr_epodoc	appln_filing_year	B1_year	DE	GB	FR	DK	ES	appln_title
EP20010980190	2001	2007	9	9	9	NULL	9	A METHOD OF PLACING A CRANE IN CONNECTION WITH A WINDMILL
EP20030702539	2003	2008	10	10	10	NULL	10	ROTOR BLADE FOR A WIND POWER INSTALLATION WITH A DAMPING DEVICE
EP20030732313	2003	2007	10	10	10	NULL	10	GROUP OF WIND POWER INSTALLATIONS HAVING DIFFERENT NOMINAL POWERS FOR AN IDENTICAL DRIVE TRAIN
EP20050001793	2005	2010	14	13	13	NULL	13	Epicyclic gear train transmission for wind power plant
EP20050011578	2005	2011	8	8	8	8	8	Rotor blade for wind turbine
EP20060024888	2006	2015	12	12	12	12	12	Method of operating a wind power station
EP20070022334	2007	2011	NULL	NULL	NULL	NULL	NULL	Wind farm tower
EP20080005546	2008	2012	11	10	10	NULL	10	Method for running in a wind energy power train component and wind energy device for carrying out this method
EP20080005547	2008	2013	11	10	10	NULL	10	Method for starting a wind turbine after a stoppage and wind turbine for carrying out this method
EP20080012746	2008	2015	11	11	11	NULL	NULL	Method and device for determining a characteristic curve for an electric variable of a wind turbine
EP20090000998	2009	2015	10	9	9	9	9	Wind turbine with pitch controller
EP20090000999	2009	2017	10	10	NULL	NULL	NULL	Method of controlling a wind turbine and wind turbine
EP20090001016	2009	2015	10	9	9	9	9	Device for monitoring the rotational speed of a wind turbine
EP20090001056	2009	2016	10	9	9	9	9	Regulator for a blade configuration angle of at least one rotor blade of a wind energy assembly
EP20090726921	2009	2012	10	10	10	NULL	10	METHOD FOR OPERATING A WIND POWER PLANT HAVING A DOUBLY-FED ASYNCHRONOUS MACHINE AND WIND POWER PLANT HAVING A DOUBLY-FED ASYNCHRONOUS MACHINE
EP20100000294	2010	2012	9	8	8	8	8	Wind turbine with an azimuth system and method for adjusting the azimuth of a wind energy plant
EP20100004050	2010	2018	NULL	NULL	NULL	NULL	NULL	Wind farm with multiple wind energy assemblies and method for regulating the feed-in from a wind farm
EP20110007254	2011	2015	7	8	8	NULL	NULL	Wind energy facility with a nacelle on a tower comprising a passage-way from the roof of the nacelle in the rotor hub for service personnel
EP20120008157	2012	2016	6	NULL	NULL	NULL	NULL	Wind energy system
EP20140164235	2014	2016	5	NULL	NULL	NULL	NULL	Belt assembly for a wind energy assembly rotor blade
EP20140172445	2014	2018	NULL	NULL	NULL	NULL	NULL	Method for controlling a wind energy turbine during an asymmetric network fault
EP20140173114	2014	2016	5	NULL	NULL	NULL	NULL	Wind energy plant rotor blade with an electrical heating element

Limited extraction of NordexEnergy portfolio

Analysis of annual fees with PATSTAT

Novartis EP patents

Distribution of renewal fee payments
up to the year

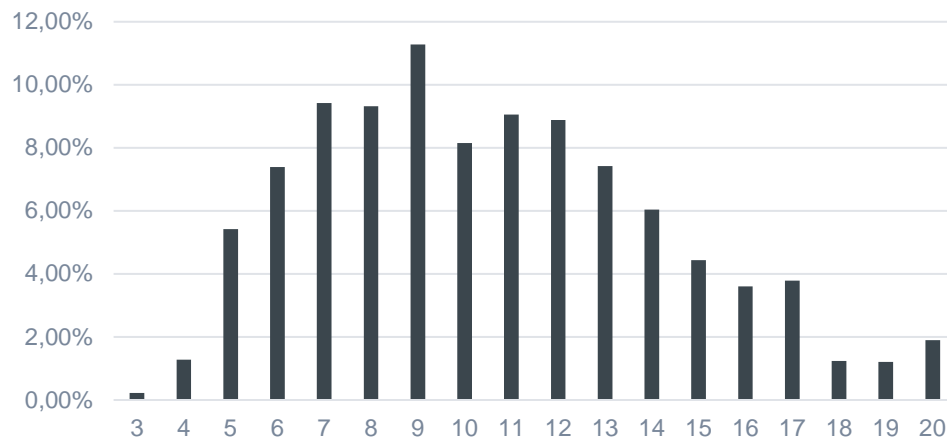


Based on post grant data, reported
from national patent offices to the
EPO

Analysis of annual fees with PATSTAT

EP patents from Autoliv

Distribution of renewal fee payments
up to the year



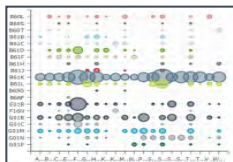
Based on post grant data, reported
from national patent offices to the
EPO

The maintenance time depends on the owner and on the industry

Download of PATSTAT query results for local analysis and visualization



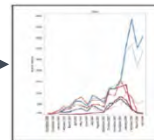
PATSTAT Online



Download
graphs (pdf)
on user's PC

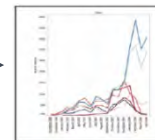


Download
PATSTAT subset
on user's PC



local analysis / visualization
**(multiple tables in
PATSTAT data structure)**

Download
Result Table
on user's PC



local analysis / visualization
(single table)

Quiz 1: Which factors are used as statistical indicators for importance of inventions?

A: Backward citation

B: Family size

C: Both A and B

D: None: A nor B

Quiz 2: Which applicant name would you use for statistical analyses?

- A: The original name as filed by the applicant
- B: The harmonised applicant name
- C: Both A and B
- D: Neither A nor B

Quiz 3: Classification symbols cannot be used for early detection of new trends since they emerge to late

A: true

B: Unless combinations are analysed

C: With combination of key words

D: B and C

Quiz 4: Inventors can be linked in PATSTAT by

- A: Applicants
- B: Co-inventors
- C: Classifications or technical domains
- D: All of the above

Quiz 5: A proxy for the value that the applicant sees in an invention can be...

- A: duration renewal fees paid.
- B: size of the patent family.
- C: number of classification symbols.
- D: A and B

Quiz 6: The PATSTAT database can be linked with other data

- A: EP Fulltext
- B: Age of the inventor
- C: Data from other organisations like OECD
- D: A and C

Quiz 7: PATSTAT Online supports download of

- A: Data subsets
- B: Graphics
- C: Result lists
- D: All of the above

Content

- Introduction
- Use Espacenet to filter and analyse your search results
- Make the best out of Global patent index
- PATSTAT for more advanced statistics
- **Questions and conclusions**

Take away message

Espacenet, Global Patent Index und PATSTAT

are at your disposal to monitor and analyse

- Key technologies
- Competitors
- Technology trends

Find more information

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Social media:



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twitter.com/EPOorg



youtube.com/EPOfilms



linkedin.com/company/european-patent-office

Contact: epo.org/contact

Thank you for your attention!

Johannes Schaaf

jschaaf@epo.org

Geert Boedt

gboedt@epo.org

Patent Information Marketing

[*pim@epo.org*](mailto:pim@epo.org)

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