PATSEER

Second Edition

Guide to Practical Patent Searching and how to use PatSeer for Patent Search and Analysis

A contemporary guide to creating effective Patent Search Strategies

Manish Sinha
Abhishek Pandurangi

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www.gridlogics.com

Gridlogics Technologies Pvt. Ltd.
4th Floor, Sunflower Commercial,
77/1 Baner Road, Baner,
Pune – 411 045 INDIA

About Gridlogics

Gridlogics is a patent and Intellectual property software solution company for the legal and business community. The company has been involved in provided specialized patent search and analysis software solutions to the Intellectual Property community over the last decade.

PatSeer is a complete online global patent database and research platform containing the world's most comprehensive full-text Patent collection along with integrated analytics, project workflow, and collaboration capabilities. It provides the following business benefits to users:

- Coverage includes 42+ countries full-text coverage and 104+ countries Bibliography, Corporate Tree, Machine translations, Legal Status, and more
- Hybrid Search Engine that brings the best of Publication wise/Family wise searching. PatSeer Supports both Simple (EPO) Families and INPADOC (Extended Families).
- Feature-rich syntax as needed by professional searchers with support for advanced search-scripting capabilities
- Multiple views to quickly scan through large result sets or dig deeper into details of each record thus reducing time to analyze
- Powerful analytics capabilities built from feedback of reputed analysts across industries, solving complex IP questions with ease
- Easily involve stakeholders, implement project workflows, and reduce your collaboration and project management costs with PatSeer Project Sharing

Gridlogics patent analytics product Patent iNSIGHT Pro is a comprehensive patent research and analysis platform. It provides the following business benefits to users:

- Gain intelligence about a product or an industry and align your research accordingly
- Identify most active competitors and understand their strategies
- Identify key inventors within a particular organization or technology space
- Identify potential partners for in-house IP
- Identify new licensing, research, and growth opportunities
- Strengthen your patent portfolio by filling up unidentified gaps
- Keep a close watch on the industry trend and make reliable predictions

Gridlogics has more than 100 man- years of experience in Intellectual Property Software and has a strong in-house team of developers and engineers who understand the complexities involved in designing very large patent databases, patent management systems, and searchable index with all associated features around it. For more information visit: www.gridlogics.com

Overview

This book has been written to serve as a guide to the art of Patent Searching and how you can use PatSeer for your patent research.

This book is divided in two sections: Section I covers basics and importance of patent searching, types of patent searching, and example of different search strategies whereas Section II talks about PatSeer as a patent database, its content, different search aids, result view features, analysing results, and other project management and sharing features.

The book includes details about PatSeer's many unique capabilities that make it an extremely powerful research platform for patent professional. This guide has been edited by the Gridlogics team with notable contributions from Harshad Karmarkar.

New to this edition

Since the first edition of the book, our focus has been to substantiate the theoretical discussion with practical examples. To this effect, in the second edition, not only some of the examples have ben elaborated upon but also a set of exercises with answers have been added at the end of the each chapter in first section. Further, as there were many improvements in PatSeer's Patent research platform, Section II has been updated to reflect the latest capabilities of the solution.

We received a good number of appreciation messages and some improvement feedback to the first edition. We have tried to incorporate most of the feedback received such as Addition of sample exercises, a patent term glossary to name a few. We look forward to your feedback and comments to the second edition of this book.

PATSEER

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PART I – GUIDE TO PRACTICAL SEARCHING

CHAPTER 1 PATENT SEARCHING - AN OVERVIEW

The word ‘patent’ etymologically means ‘known’ as opposed to latent (hidden), that has transcended into an ever-growing repository of documents covering technical inventions made ‘known’ to public, aimed at incentivizing research and development. This repository is a sea of technical literature, mostly available for free, with different businesses and scientific elements floating. This information can be located by what is called as ‘patent searching’. A patent search typically deals with search/ research/ data mining which involve patents in one way or the other, either directly or indirectly. Contrary to a myth, patent searchers don’t just involve searching patents, but also comprise scouting of non-patent and legal literature searches which are linked to certain patent oriented projects.

Patent searching is a key tool for organizations across the globe, which is now increasingly sensitive to innovation as a parameter to success and growth. To keep an upper edge, an organization evolves its road map on multiple factors where patent searching is used as a strategic tool to provide strategic inputs, thereby making patent searching itself as one end of the strategy.

Let us take an example of an electronics innovation driven company EXTC-I who want to expand their business in wireless internet modems

- The IP team will first search and analyze patent and non-patent data in the field of wireless internet modems published in the last 7 years and come out with a report to help the R&D team get a direction

- The same report can be given to the business strategy makers, providing them with information on other active patent filers in wireless internet modems. They may use this information to map out competitors or look at mergers, acquisition, or licensing as an option in that field

- The R&D team will then conduct internal exercises and list down a set of inventions that will be feasible and relevant to the company’s strategy. Then they provide the list to the IP team, who will perform searches to identify whether the proposed inventions are new and inventive and have the merit for a patent registration

- The IP team will further verify whether the company's inventions are infringing any other live or granted patent to ensure no legal matters will create barriers for the invention

- At the time of drafting patents, identifying other patents and disclosing technologies shall be useful in drawing out unique features of the company's invention to draft a strong patent application

- The IP team will also report to the R&D and strategy team constantly of ongoing patents being published from time to time for all of the above inputs

- The company may also choose to invalidate or oppose a competitor's patent or patent application to gain a strategic advantage in the business for which again the IP team will conduct patent and non-patent searches keeping the patent invalidated as a reference

- The company shall carry out patent searches to audit or valuate their patent portfolio at a later stage of a patent lifecycle

Let us take an example of a pharmaceutical generic manufacturer in India without primary focus on Research & Development

- The company carries out regular research to identify key patented products or processes concerning their product areas. This information may be used by the company to define their product pipeline

- The company carries out a search to locate patents set to expire in the coming two years concerning their product line to manufacture generic versions of the drug

- The company conducts patent alerts to identify patents or published patent applications that may be opposed / invalidated by them to gain a business advantage

- The company carries out family member/equivalent search in India to ascertain whether a US patent with a blockbuster drug has an equivalent family member in India, and if not then the company is free to manufacture generic versions without any legal barrier

To sum-up, we can observe through above examples that patent searches provide strategic inputs on multiple fronts and enable different decisions in an organization. It should be noted however, that other than the above mentioned examples, many other case by case situational decisions can be empowered by a relevant patent search and this extends to not just companies but academic institutions, students, Government agencies and individual inventors.

EXERCISE 1

If you are able to correctly answer more than three of the following, you can move to the next chapter:

1. What is the etymological meaning of the word patent?

2. Patent search as the name suggests involves searching patents and not other literature - True or False?

3. Patent searches can be directly used for?
    a) providing a direction to R&D team in identifying research projects
    b) identifying potential parties for mergers and acquisition
    c) arriving at a budget for marketing and advertising
    d) all of the above
    e) options a and b

4. Companies without any active research and development and patent filings also benefit from patent searches. True or False?

5. How can patent searches help in patent drafting?

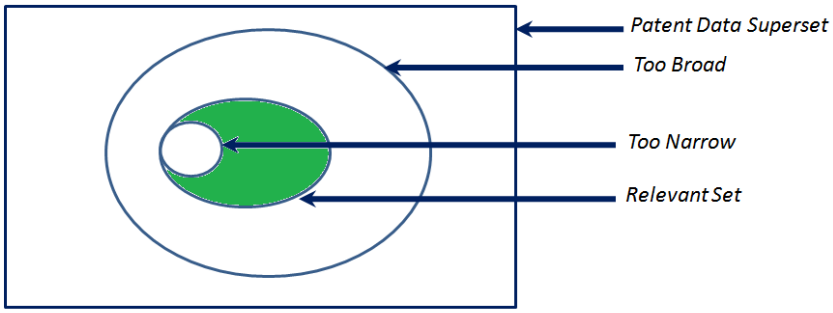
→ *For Answers to above questions, click here or visit end of chapter 2*

CHAPTER 2 THE ART OF PATENT SEARCHING

We have touched on the significance of patent searching in strategy. Now, we shall discuss why patent searching is a skill and art in itself which requires continuous practice, creativity, and a holistic approach. A good search is a combination of exhaustive search and extensive search wherein a combination of good search strategy used on a good and relevant database.

2.1 EXHAUSTIVE SEARCHES AND SEARCH OPTIMIZATION

The below Venn diagram shall give an indicator of Search Strategy Variation and the thin line between a great search, a poor search, and a bad search.



A good search is a combination of broad and narrow approaches to ensure that the relevant set is covered as far as possible.

If the search does not cover spelling variations, keyword synonyms, parallel search strategies (discussed in later chapters), or if too specific terms are used in the searches, then the search is too narrow and the searcher may miss out on relevant documents. It is important to understand that even a single relevant document missed, might be harmful to the focus of the project.

On the other hand, if searchers use too generic terms to make the search broad, a large number of non-relevant results will be retrieved and will be time consuming to analyze.

Another important skill of an expert searcher is playing with parallel strategies involving search fields and operators (discussed in later chapters) which defines the quality of the search. A series of searches and parallel search strategies is usually referred to as search optimization.

Example:

For a ‘mobile phone’, a good searcher will search for terms ‘mobile phone’, ‘cell phone’, ‘cellular phone’, ‘hand phone’, ‘portable telecommunication device’, ‘portable electronic device’, ‘handheld communication device’, ‘handheld electronic device’, and their plurals such as ‘mobile phones’, etc. in a combination of Patent Title, Abstract, Claims, and Full Specification. All of these terms/keywords form an exhaustive type of search query, which means we have used all possible variations for ‘mobile phone’.

For the same idea a poor searcher with too broad a search, will search only ‘electronic device’ in title, abstract or ‘mobile phone’ in full text, which will lead to a non-analyzable number of results and cannot be possibly analyzed to find the relevant patents.

A bad searcher with a narrow approach will search only ‘mobile phone’ in title and abstract to miss out on the other keywords based patents.

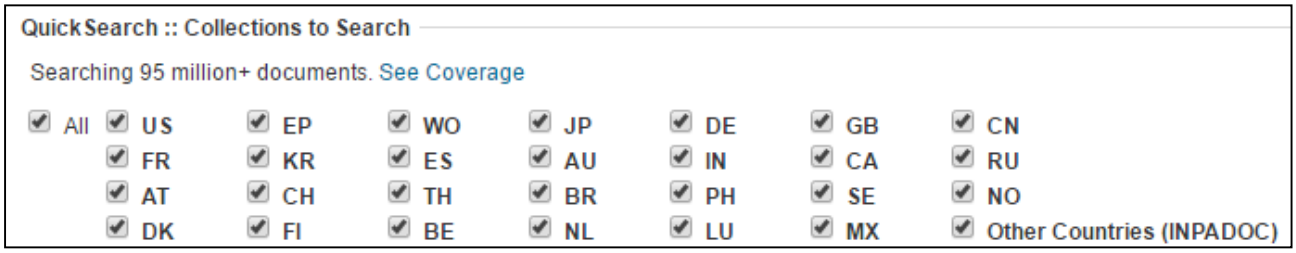
2.2 EXTENSIVE SEARCHES AND DATABASES

Apart with being exhaustive, a good search also has to be extensive, which means using maximum data coverage.

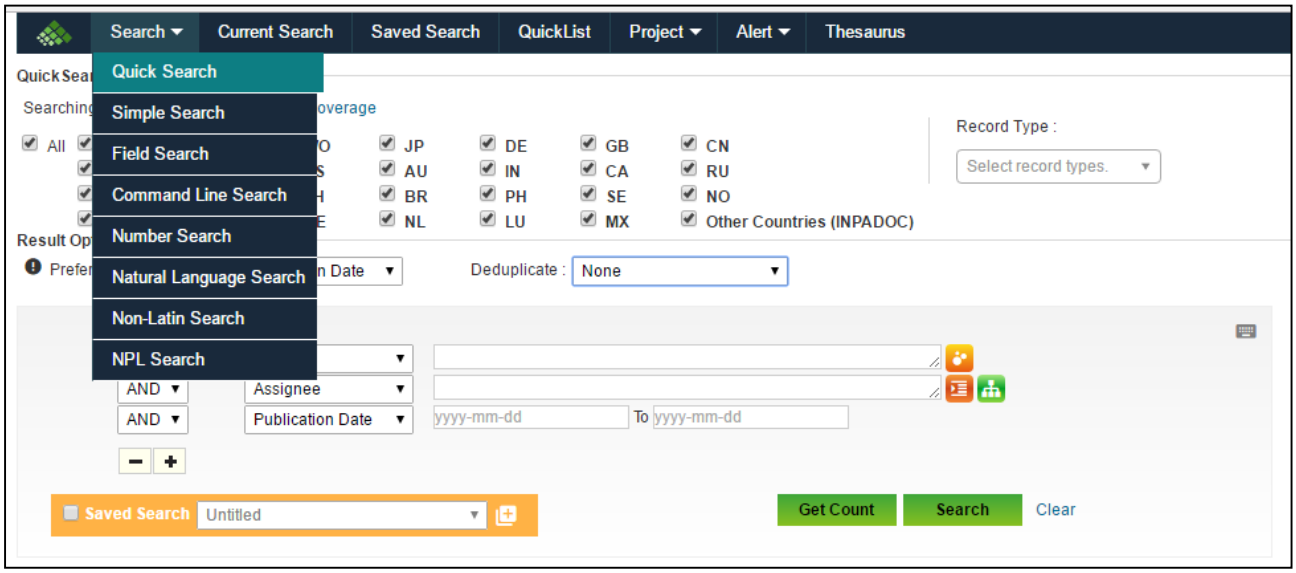
Thus, the choice of the correct database and understanding the working of such a database is extremely significant to uncover relevant results for a project.

Patent searching databases form an integral part of patent search strategies. A patent database is meant to be a single platform search interface for an aggregated cluster of patent documents from different resources. A good patent database provides and is ranked on multiple features such as multijurisdictional access, search facilities, multilingual searches, and translations, a few examples of which are shown below

Searching across multiple geographical jurisdictions at a time via in a single search



Different types of search field options may be provided by a database, allowing a searcher to use different interfaces to carry out a search viz. Quick search, Simple search, Fields based search, Number search, etc.



2.3 BROAD HEADS OF SEARCHES: KEYWORDS, IMAGE, CLASSIFICATION, STRUCTURE AND SEQUENCE

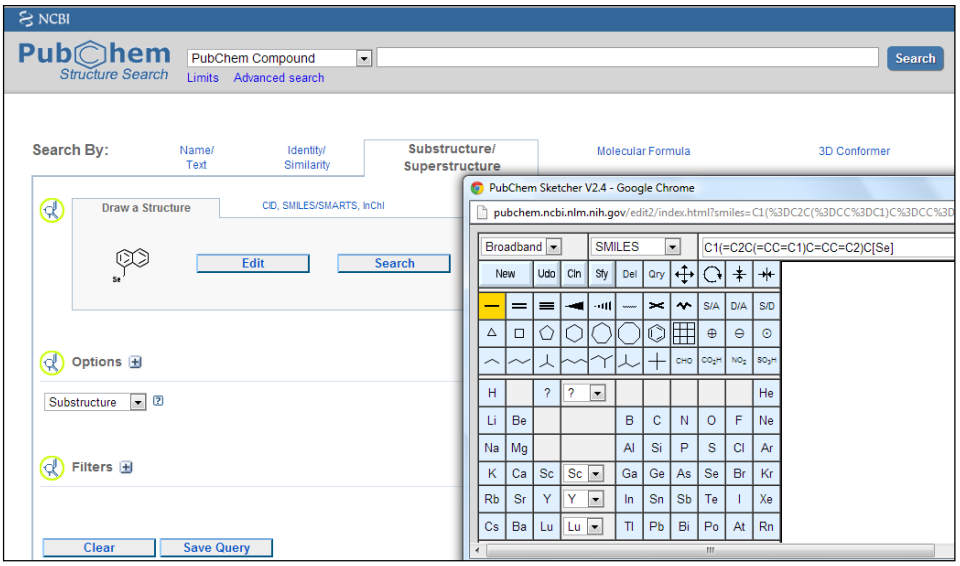
Patent searches can be categorized under broad classifications and heads such as keyword searches, classification searches, structure searches, sequence searches, and image searches.

***Keyword Searches*:** Use of concepts and terms related to the invention or domain of interest by inserting text characters as search terms. Using alternative terms like synonyms, spelling variations, acronyms also helps in finding records related to similar technology area. This is the most widely used and basic search category for patent searching

***Classification Searches*:** Specific codes have been adopted to categorize different technical areas which are used to categorize patent documents. Patent documents are categorized as per the subject matter of claims. Classification search helps in identifying patents to a specific technical area. This search is particularly helpful to uncover patents not having specific keywords used in searches but belonging to the specific technology relating to the missing keywords. Typical classification systems are International Patent Classification (IPC), United States Patent Classification (USPC), Cooperative Patent Classification (CPC), Japanese FI and F term classification. However, it is to be noted that classification search cannot be relied on as a standalone search strategy since a number of patents may be incompletely classified or misclassified with respect to the search being conducted by a searcher for a particular technical area.

Structure Searches: Chemical structures can be searched on certain databases where atom to atom and fragment to fragment indexing of chemical structures is done. The searches are typically useful since keyword searches are often inadequate to retrieve relevant structures or broader versions of the structure of interest to the searcher.

Below is an image of a structure search interface



Sequence Searches: *On the same lines to chemical structures, sequence searches are used for nucleotide and protein sequences*.

Below is an image of a sequence search interface

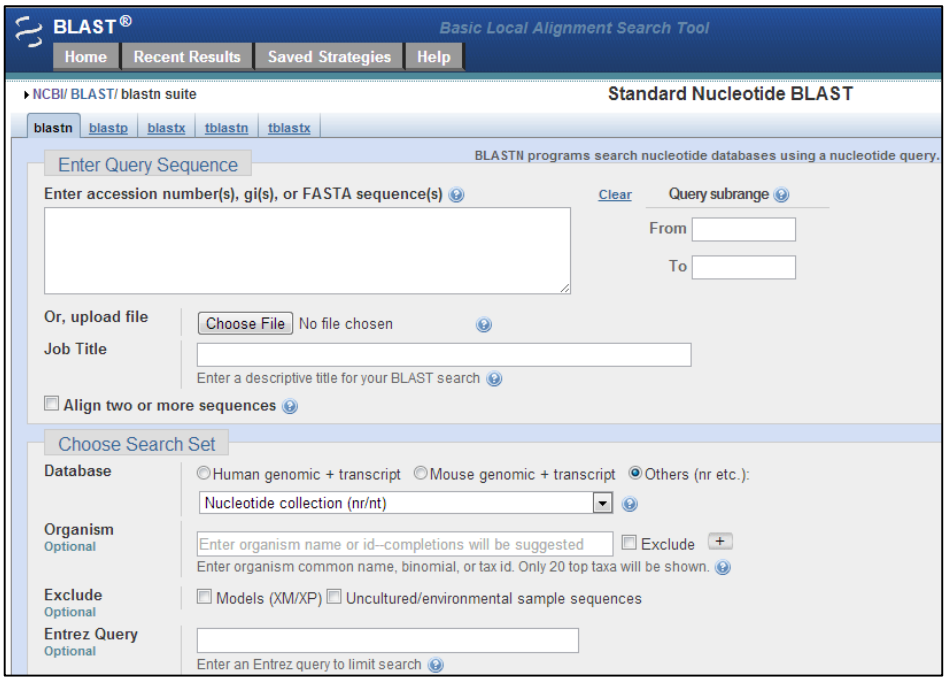
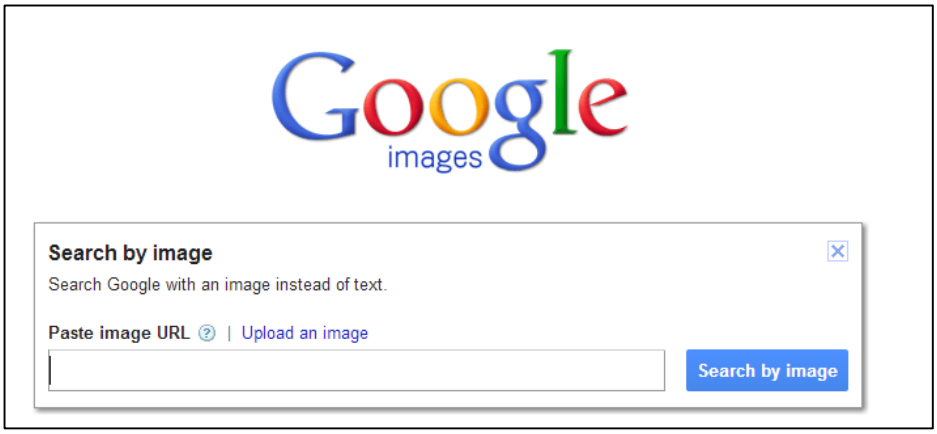


Image Searches: Generally not provided by major databases, certain search engines such as Google allow image to image mapping search algorithm which is helpful in identifying similar images. These searches can be typically useful for mechanical and electromechanical inventions.



The combination of the above types of searches based on the nature of the project would be the most relevant and effective search strategy.

To summarize, in this chapter we covered different aspects of searching. In the next chapter we will study different types of searches with their examples, differences, and similarities between types of search.

EXERCISE 2

Write down an approach for conducting a patent search for a new invention related to a television

For Answers click here or visit end of chapter 3

→ *For Answers to above questions, click here or visit end of chapter 3*

SOLUTIONS TO EXERCISE 1

1. The etymological meaning of patent is 'known'

   (Explanation: Patent is an antonym to latent which means 'hidden'. Hence, patent documents are ordinarily published by default and made open to everybody)

2. The statement is false

   (Explanation: In many patent searches, non-patent technical literature such as journal articles, news publications, media releases, conference transcripts are also used in addition to searching patent literature)

3. Option (e) is the correct answer.

   (Explanation: Although patent searches provide several layers of insights influencing business decisions, it does not give any direct inference on marketing spends of a product/company.)

4. The statement is true

   (Explanation: Refer the example of a pharmaceutical generic manufacturer in the chapter)

5. At the time of drafting of patents, similar inventions identified from patent searches shall help in drawing out the uniqueness of invention in the patent while drafting the specification and claims

(Explanation: Often while drafting a patent, the background section specifies similar inventions obtained from patent searches to compare the inventions and highlight the uniqueness of the invention in question)

CHAPTER 3 TYPES OF SEARCH PROJECTS

In the first chapter, the overall approach of patent searching as a strategic tool was discussed. In the current chapter, we will discuss the various types of activities and projects that involve patent searching and how they are fine tuned by expert searchers to bring out the best results in line with the project objective.

The typical projects for which patent searches are carried out may be categorized as follows:

- **PATENTABILITY**
  (Also known as Prior Art Search or Novelty Search)
- **PATENT INVALIDATION**
  (Also known as Opposition Study or Patent Validity Study)
- **FREEDOM TO OPERATE/ FTO**
  (Also known as Infringement Analysis or Clearance Search)
- **PATENT LANDSCAPE**
  (Also known as State-of-Art Study or Competitive Technical Intelligence Report or White Space Analysis or Technical Gap Analysis)
- **EQUIVALENT SEARCH**
  (Also known as Family Member Search)
- **LEGAL STATUS SEARCH**
  (Also known as Patent Status Search)
- **PATENT TERM EXTENSION SEARCH**
  (Also known as Orange Book Search or SPC search)

We shall now review each of these searches in detail with examples

3.1 PATENTABILITY

(Also known as Prior Art Search or Novelty Search)

3.1.1 OBJECTIVE OF THE STUDY

To ascertain the chance or likelihood of an invention getting a patent especially on the worldwide criteria of novelty and non-obviousness. In simple words, a patentability search is directed to searching any reference of any kind which discloses same or similar invention to the invention in question. Now the confusing part is that similarity is often subjective as obviousness is a non-quantifiable concept. Thus, any search is divided into different relevancy criteria such as Relevant, Related, Distantly Related, and Non-relevant based on the extent of mapping of the novel and inventive features of the invention and the invention disclosed in the reference.

The scope of the study includes searching both patent and non-patent literature to identify references that are relevant and related to as prior art to the current invention.

If the patentability search results in identification of documents disclosing inventions similar to the invention searched, the scope of the invention can then be modified for further searches based on the references identified.

Case Study:

A company ABC wants to invest in R&D projects and has 10 proposed marketable inventions from the scientists. The company conducts a patentability search for all the 10 projects to identify their chances of getting a patent. Five inventions are found to be known entirely through the study, three have similar inventions disclosed and two are completely new and inventive. The company immediately proceeds with the R&D for the two inventions and the scientists are directed to brainstorm on new features for the three inventions that will allow distinction with prior art to make them patentable.

3.1.2 KEY ASPECTS AND BEST PRACTICES

- Date Restriction: None - The searches are run without any date restrictions since the term novelty itself indicates that the invention should not be known any time before applying for a patent

- Jurisdiction Restriction: None - Since the novelty and non-obviousness criteria is absolute and across the globe. In fact it would not be wrong to say that any public disclosure or practice of an invention even in a space station (outside this planet) shall be considered as relevant prior art

- Document Type Restriction: None - Any disclosure in any document or in any reference is considered prior art. It is important and interesting to note that even a non-formal reference such as a comic strip can be used to destroy the patentability of an invention (Reportedly, a Donald Duck story was used by the Dutch Patent Office to negate the patentability of NL 6514306 by Inventor Karl Krøyeri http://www.iusmentis.com/patents/priorart/donaldduck/)

- Defining the relevancy criteria is crucial while considering relevant and related references

- A patentability study is specific to the novel aspects of the invention. A broad invention covering the concept of the invention but not specific aspects of the invention may not be considered related
- The volume of non-English literature for patentability projects should not be neglected or underestimated
- Non patent searches are as important as patent searches in patentability and invalidation searches
- If a single relevant result directly mapping on all the features searched is found, the project can be terminated immediately without the need of additional searches

3.2 PATENT INVALIDATION

(Also known as Opposition Study or Patent Validity Study)

3.2.1 OBJECTIVE OF THE STUDY

To invalidate or revoke an already registered/ granted patent claims or for a pre-grant opposition of a published patent application claims. This is often done by arguing with the patent authorities that the claim(s) of the Patent to be Invalidated (PTBI) at the time of filing was not novel or obvious.

Patent Invalidation is conceptually similar to Patentability Study, as for the project; effectively a patentability study is being done prior to the date restriction of PTBI's filing date.

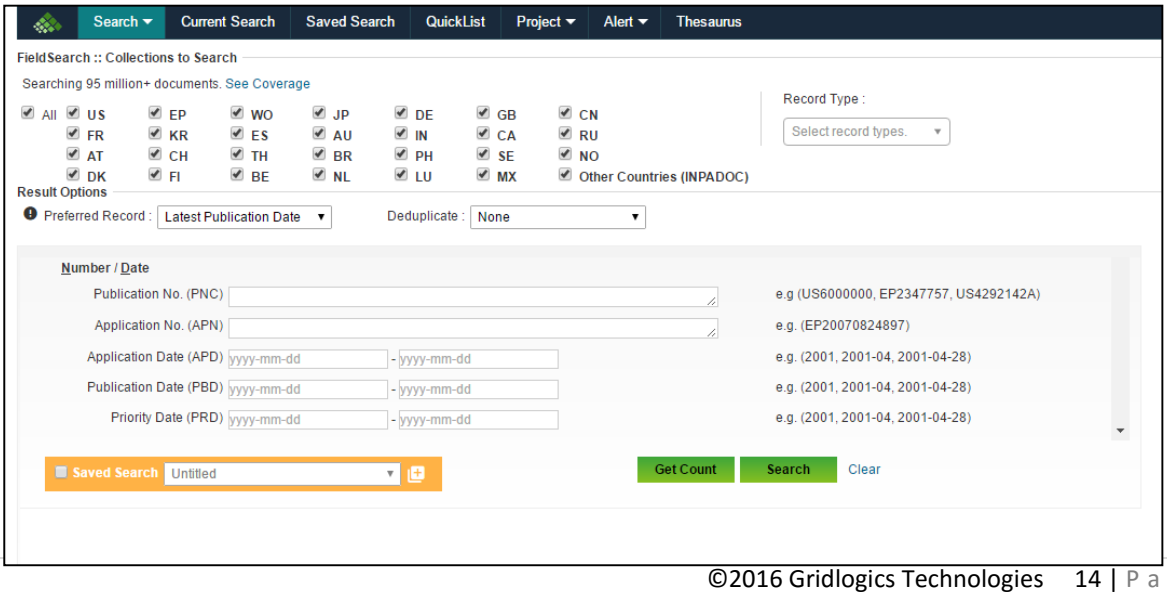
Ordinarily one would assume that invalidations are near impossible projects since granted patents have already been scrutinized by expert patent examiners for novelty and non-obviousness. However, this logic fails the test of time as the advancement of databases and electronic publication of old literature has led to previously unpublished relevant documents being electronically available and searchable now, which can form the basis of invalidation.

Case Study

A company XYZ observes that their competitor company PQR is controlling a multiple SIM card technology invention by virtue of patent rights in India and making huge profits due to the product bearing the technology. The company carries out an invalidation study with the aim to invalidate the said patent and end company PQR's monopoly in the multiple SIM card product market. The study uncovered a Korean language technical paper, which mapped onto the features claimed in the Indian patent written in English. On submission of the document and verified translation of the Korean literature to the court, the patent was successfully revoked, thereby taking away monopolistic rights of company PQR over the patented invention.

3.2.2 KEY ASPECTS AND BEST PRACTICES

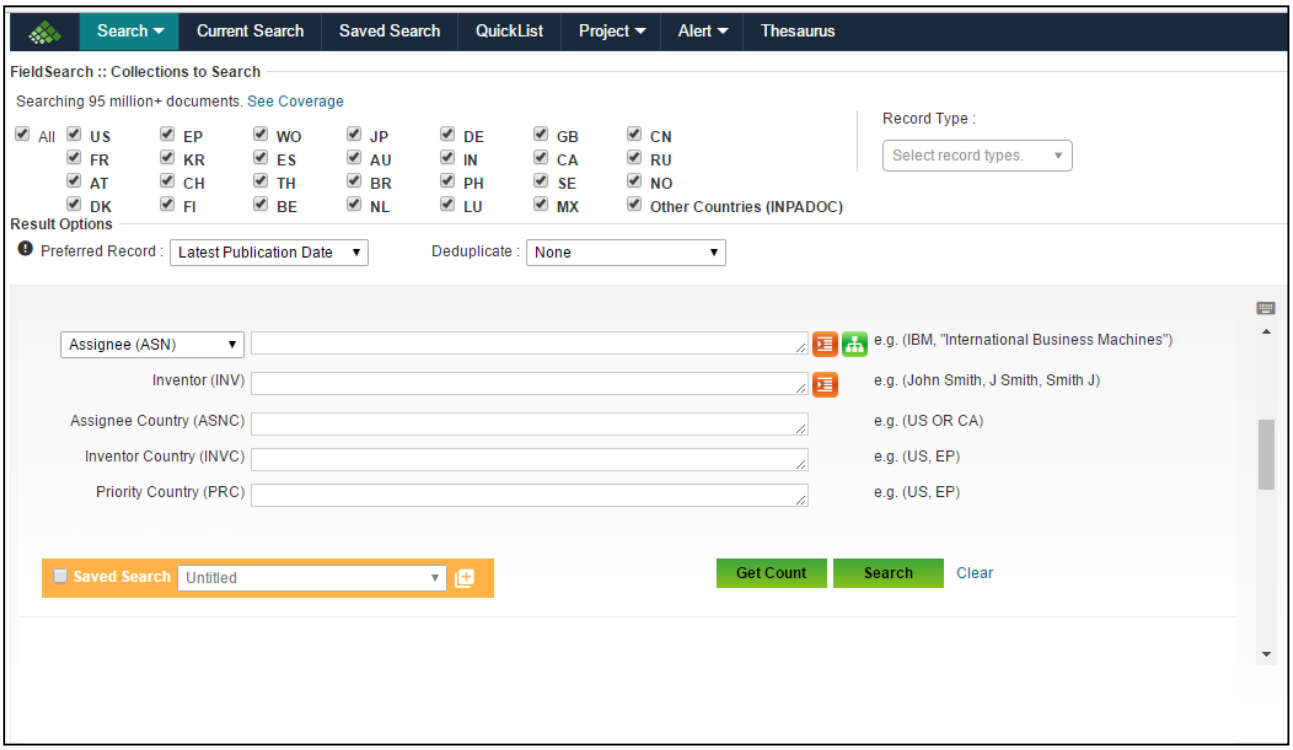
- Date Restriction: Before the filing date of the PTBI – Since the searches are run to locate prior art ordinarily published before the filing date of the patent, a date restriction is set on the search accordingly. Sometimes one or more of the claims of a patent have a priority date later than the filing date of the PTBI. In such cases the date restriction shall be prior to the priority date of the claim.
  (Certain databases like PatSeer allow date restriction for searches.)



- Jurisdiction Restriction: None - Since the novelty and non-obviousness criteria for the PTBI at the time of filing is absolute and across the globe

- Document Type Restriction: None - Again, it is important and interesting to note that even a non-formal reference such as a comic strip can be used to destroy the patentability of an invention. (Reportedly, Science fiction movie scenes have been used for invalidation of patents)

- Additional searches such as assignee based, inventor based, and citation based are carried out in an invalidation search. These searches help in preparing an optimal search strategy to locate a relevant prior art



- Invalidation is specific to the features of the claim to be invalidated. A broad invention covering the concept of the invention but not specific aspects of the invention may not be considered related

- As applicable in a patentability study, the volume of non-English literature for patentability projects should not be neglected or underestimated

- To reiterate the point mentioned for patentability, it must be understood that non patent searches are as important as patent searches in patentability and invalidation searches

- Even if a single relevant result directly mapping on all the features searched is found, the project can be terminated immediately

3.3 FREEDOM TO OPERATE (FTO)

(Also known as Infringement Analysis or Clearance Search)

3.3.1 OBJECTIVE OF THE STUDY

To check whether any product or process utilized or carried out by an entity is not infringing on any live patent's claim. Simply, it is used to ascertain whether there is freedom to operate and invention in a particular jurisdiction from a legal point of view.

If an FTO is found to be negative (i.e. live patent with claims covering the invention to be operated is located), the entity aiming to operate the invention may:

- Not proceed to operate the invention
- Invalidate or oppose the relevant patent
- Apply for a license or buy the relevant patent

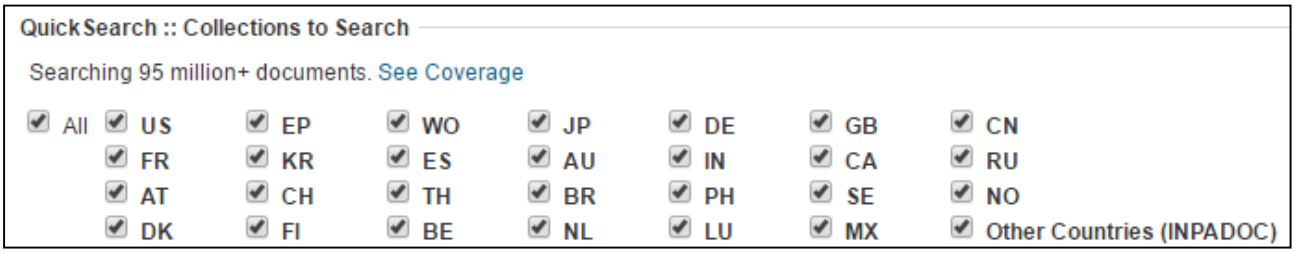
Case Study

A company VTS wants to launch a motorcycle in the market with a new engine, for which they have filed several patents after a patentability search. However, the company did not conduct a freedom to operate study considering that positive patentability study was sufficient for proceeding with the launch. It was later sued by a company BJA as one of its patent had a broad claim found to be infringed by an essential component of the VTS motorcycle engine, and the court instructed VTS to stop their launch and motorcycle manufacturing, due to which VTS suffered heavy losses.

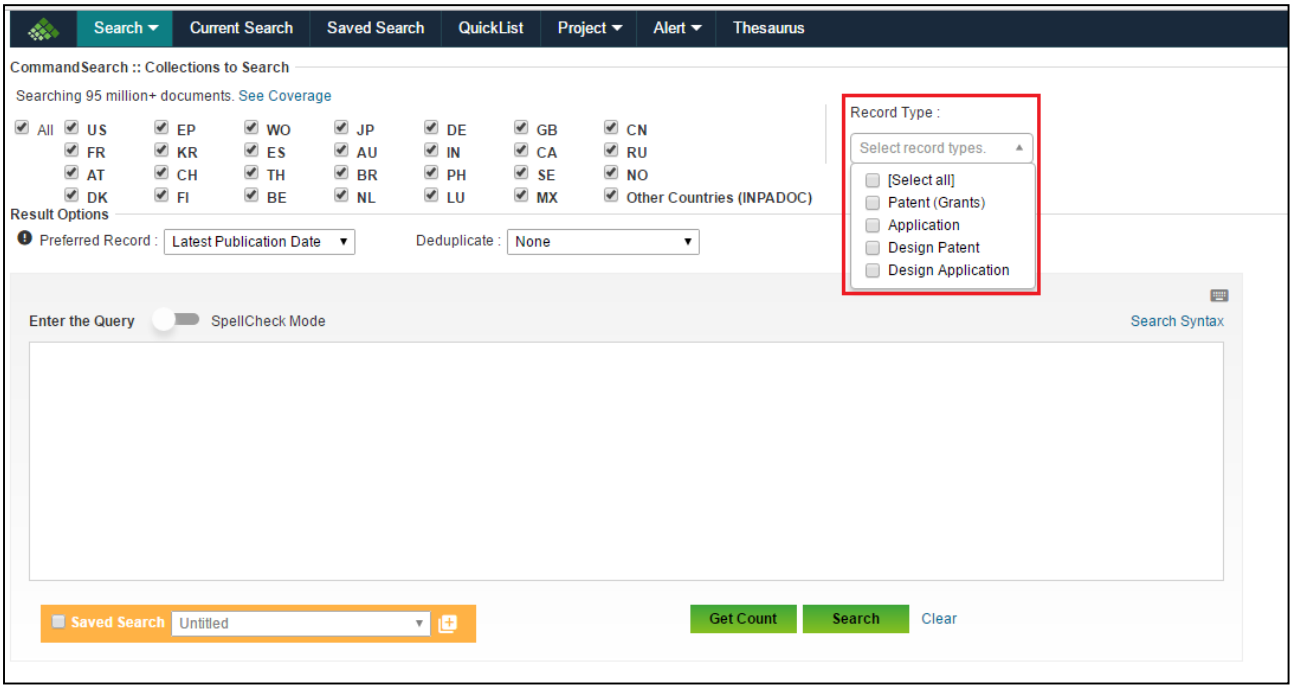
3.2.2 KEY ASPECTS AND BEST PRACTICES

- Date Restriction: Since only live patents may affect FTO, a time period of last 20 years is ordinarily used for searching patents. For pharmaceutical patents an additional 5 years can be added to the time period considering patent term extension

- Jurisdiction Restriction: Specific jurisdiction(s) covering the market(s) where the product or process is to be practiced will only be searched for patent literature
  Database features allow geographical restriction for searches



- Document Type Restriction: Only patents are searched for an FTO, since only patent claims affect FTO. Non patent documents are not searched for an FTO search. In certain projects, to keep a broad approach pending published applications are also searched.



- For an FTO, a broad claim covering the concept of the invention but not specific aspects of the invention shall be considered related. If a claim comprises elements A+B+C and the invention is A+B+C+D+E, the FTO is affected/ negated by the claim

- In FTO all possible relevant results need to be found, as each of those relevant results individually affect. Missing even a single relevant result could be prejudicial to the objective of the project

3.4 PATENT LANDSCAPE

(Also known as State-of-Art Study or Competitive Technical Intelligence Report or White Space Analysis or Technical Gap Analysis)

3.4.1 OBJECTIVE OF THE STUDY

A patent landscape, as the name suggests is a study which aims to give a single platform overview of a particular field providing multiple insights to decision takers. In simple words, a patent landscape uses a large set of patents to extract relevant information useful for understanding a particular field and all of which is viewable in a single file or a dashboard.

The insights derived may be one or more of the following:

- What is the filing/publication trend (time wise) of patents?
- What is the filing trend (technology wise) of patents?
- Who are the top assignees or key players (player here is a term used for any patent filer such as a company, a college or other academic institution, a research unit, a Government funded organization) within the technology and what are their technology wise trends?
- Who are the top inventors working in a particular technical area?
- How is research for the technology spread across different countries? What are the different categories into which the technology can be divided into (taxonomy) and what number and what kind of patents have been filed in those categories? What are the white spaces or technical gaps in a technical area?
- What are the different inventions evolving over the years in a particular field?
- What are the technical details provided in each of the patent extracted for the landscape?
- Which companies are filing how many and what kind of patents?
- What is the geographical distribution of patents filed specific to domain or specific to a player?
- What are the key/unique patents filed in a particular domain or by a particular player?
- What are the R&D areas a company is focusing for future production?
- What is the quality and area of research carried out by a University?

Essentially patent landscapes are of one of the following two types or a combination thereof:

1. Domain Focused

If the initial set of patents are recovered based on a patent search focused on a technical domain:

These landscapes are used to understand a particular domain better by using patent literature and derive the various insights based on the patent cluster extracted. These searches are used essentially by R&D and product development teams.

A state-of-art study is carried out based on a domain focused landscape wherein the recent technologies developed over last few years are uncovered and scrutinized for further research.

A white space analysis is also often carried out based on a domain focused landscape wherein the technical areas with low or no patent filings are identified which act as white spaces in the technology for further research.

2. Player Focused

If the initial set of patents are recovered based on a patent search focused on one or more players (patent filers such as companies, colleges, research units, and Government funded organizations):

These landscapes focus on what types of patent filings are done by particular player(s). It is equivalent to IP profiling of the players to closely monitor their research and business interests by looking at their patent portfolio.

A Competitive Technical Intelligence (CTI) is carried out based on a player focused landscape, where a company is continuously monitoring the patent activities of one or more of their competitors. This helps a business keep their teams informed and well directed towards understanding and targeting their current and future potential market.

The player focused landscape is also carried out during M&A (Mergers and Acquisition) project where a company's patent portfolio is used to calculate its value in terms of intangible assets and its worth to the businesses product and process portfolio.

Case Study:

A mobile company SMG keeps a track on the activities of its competitors by carrying out CTI based landscape. They observed that multiple patents have been filed by one of their main competitors in the area of touch screen technology and SMG also wanted to develop their strength in that area (player focused).

They then conduct a state-of-the-art study in the touch screen technology for the past 5 years, and observed that there is a white space in the area of 'high sensitive finger touch response', since most other technologies focus on the stylus based touch(domain focused). In the landscape they observed that one company TMV has filed a few patents on the finger based touch interface.

SMG then carried out another landscape to study all the patents filed by TMV. It was seen that TMV has worked on the software end as well as the hardware end of the technology and has 3 granted and 4 pending patents surrounding the technology. SMG then acquired the company TMV and used the technology to manufacture high end finger touch sensitive mobile phones which became extremely popular in the market.

3.4.2 KEY ASPECTS AND BEST PRACTICES

- In a landscape, the patents to be analyzed are always categorized in a series of technology based hierarchies and categories under a scheme often referred to as taxonomy. Further, information buckets are used in the landscape study to provide details pertaining to the technology covered in the patent relevant to the landscape, retrieving the relevant data and inputting it against the bucket is called as bucketing

  An exemplary of a basic taxonomy for a landscape project on renewable energy may be as follows:

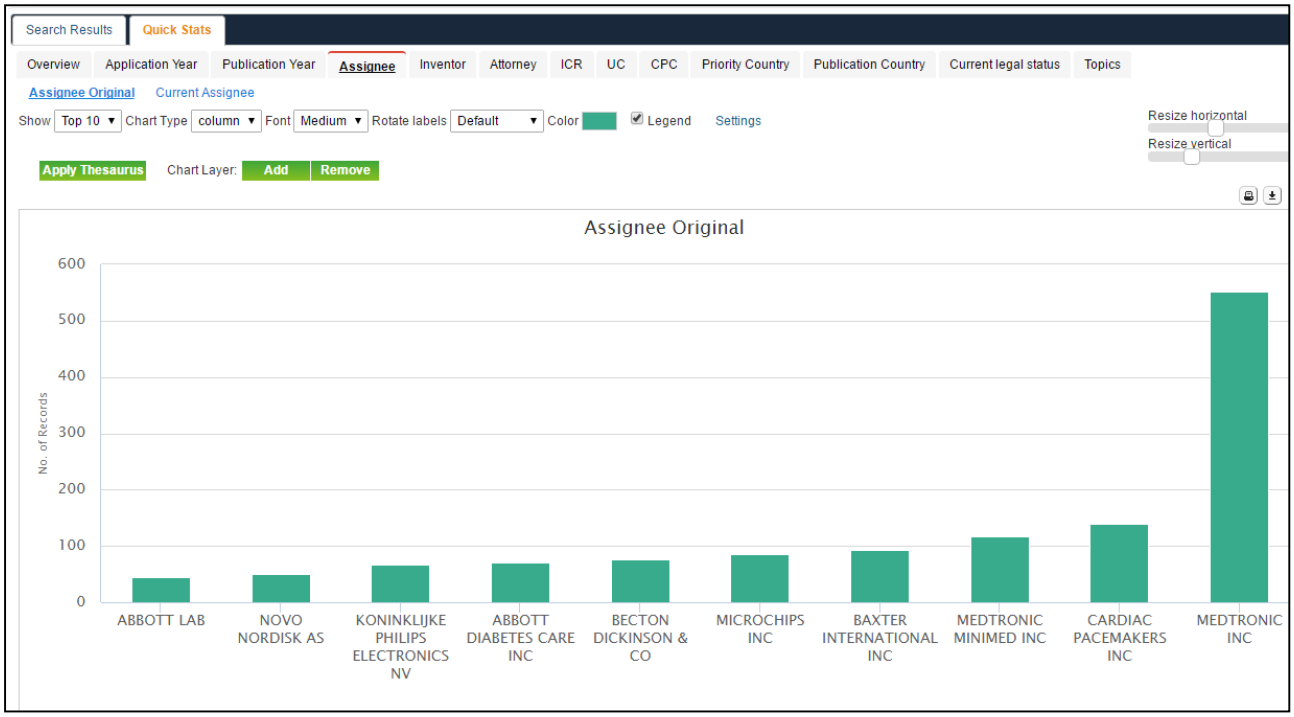
RENEWABLE ENERGY - TAXONOMY		
Level 1	Level 2	Level3
Wind Power		
	Horizontal Axis Wind Turbine	
	Vertical-Axis Wind Turbines	
Solar Energy		
	Photovoltaics Based	
	Heat Engine Based	
Biofuel		
	Solid Biomass	
	Liquid Fuels	
		Bioalcohols
		Oils
	Gaseous Biofuels	
		Biogas
		Landfill Gas
		Synthetic Gas
Geothermal Energy		

  The bucketing information may be as follows:

Construction Details Of Blades	Power Output
blade has a generally flat forward face and rearward facing surfaces which extend at an angle to each other from a straight line extending between a radially inner point	2 mW at a translation distance of 0.100 inch

- A patent landscape may involve analysis of a single member per family if geography based insights are not sought.
- Landscapes are ultimately used as reports and overview sheets where trends and charts form an important part of landscape reports/ studies.

  A few examples of charts are:


Search Results
Quick Stats
Overview
Application Year
Publication Year
Assignee
Inventor
Attorney
ICR
UC
CPC
Priority Country
Publication Country
Current legal status
Topics
Assignee Original
Current Assignee
Show Top 10
Chart Type column
Font Medium
Rotate labels Default
Color
Legend
Settings
Resize horizontal
Resize vertical
Apply Thesaurus
Chart Layer: Add Remove
Assignee Original
No. of Records
600
500
400
300
200
100
0
ABBOTT LAB
NOVO NORDISK AS
KONINKLIJKE PHILIPS ELECTRONICS NV
ABBOTT DIABETES CARE INC
BECTON DICKINSON & CO
MICROCHIPS INC
BAXTER INTERNATIONAL INC
MEDTRONIC MINIMED INC
CARDIAC PACEMAKERS INC
MEDTRONIC INC


Search Results
Quick Stats
Overview
Application Year
Publication Year
Assignee
Inventor
Attorney
ICR
UC
CPC
Priority Country
Publication Country
Current legal status
Topics
IC Full Class
IC Main Class
IC Section + Class
Show Top 10
Chart Type bar
Font Medium
Rotate labels Default
Color
Legend
Settings
Chart Layer: Add Remove
IC Full Class
G06F19/00
A61K9/00
A61K9/22
A61M5/172
A61M5/168
A61M31/00
A61M5/00
A61M37/00
A61M5/142
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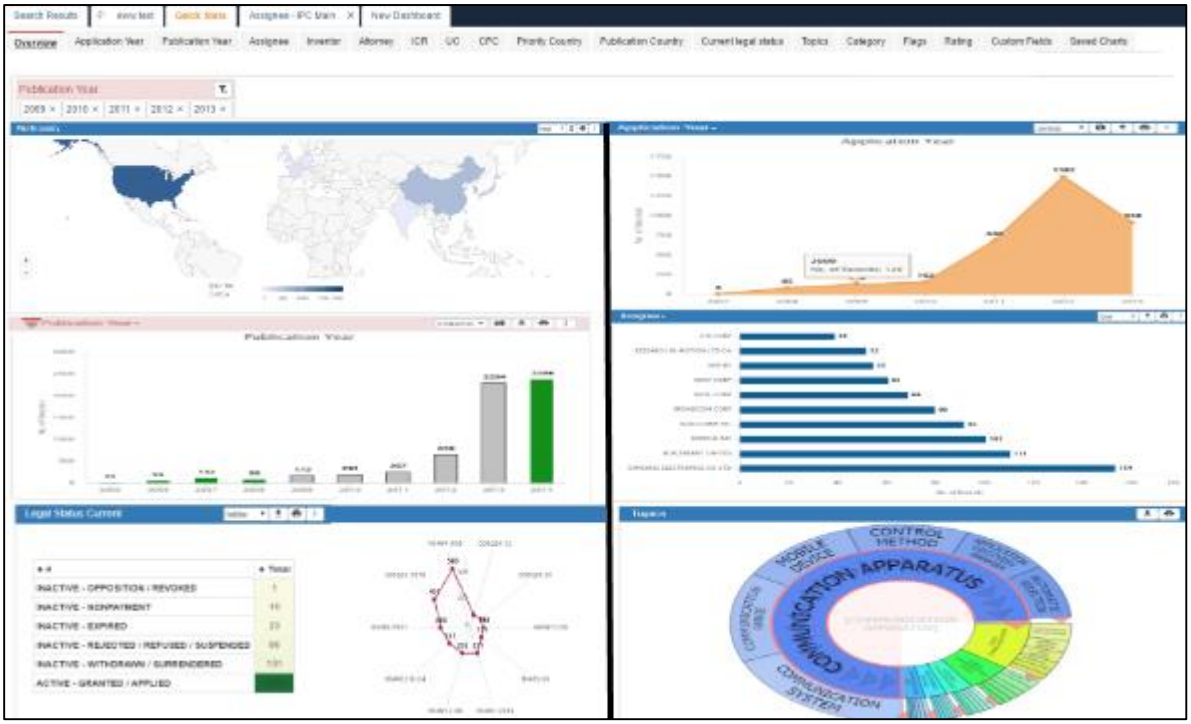
800
1000
1200
1400
1600
1800
2000
2200
No. of Records



- Bibliographic Details (Filing, publication and priority dates; family members; legal status; IPC/CPC/USC, Inventor name, Assignee/Applicant name, etc.) are often included in the landscape for reference and filtering purposes

- Searches used to extract analysis set for landscape are often broad to cover wide range of patents in a technical area and not restrict searches to specific inventions

- For a Competitive Technical Intelligence, an assignee or applicant normalization can be done to get accurate insights

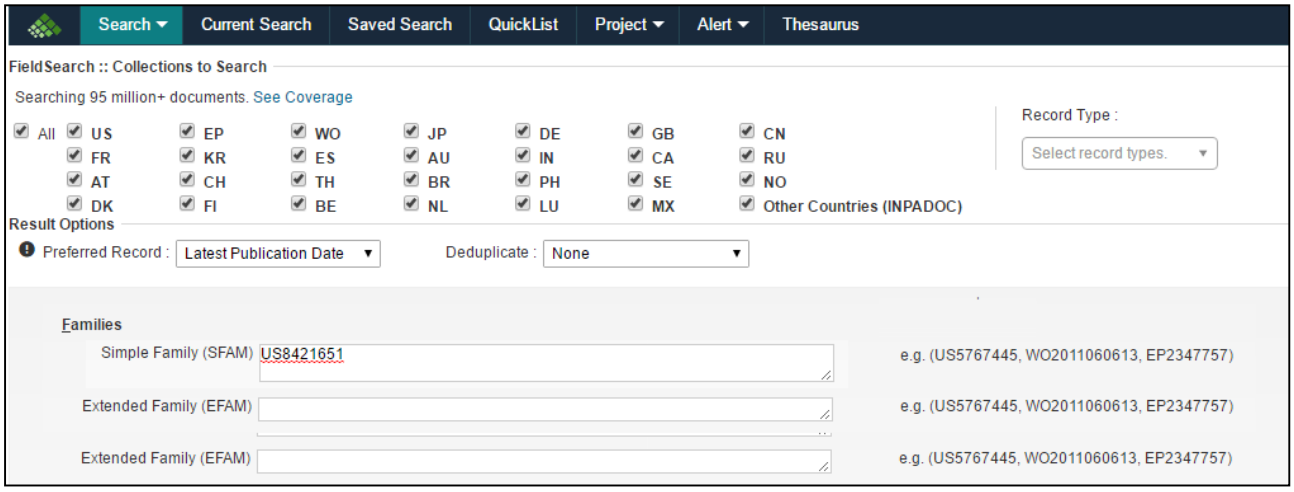
- Since Landscape is a single platform overview comprising several patents and information, multiple projects are often derivable from a single landscape

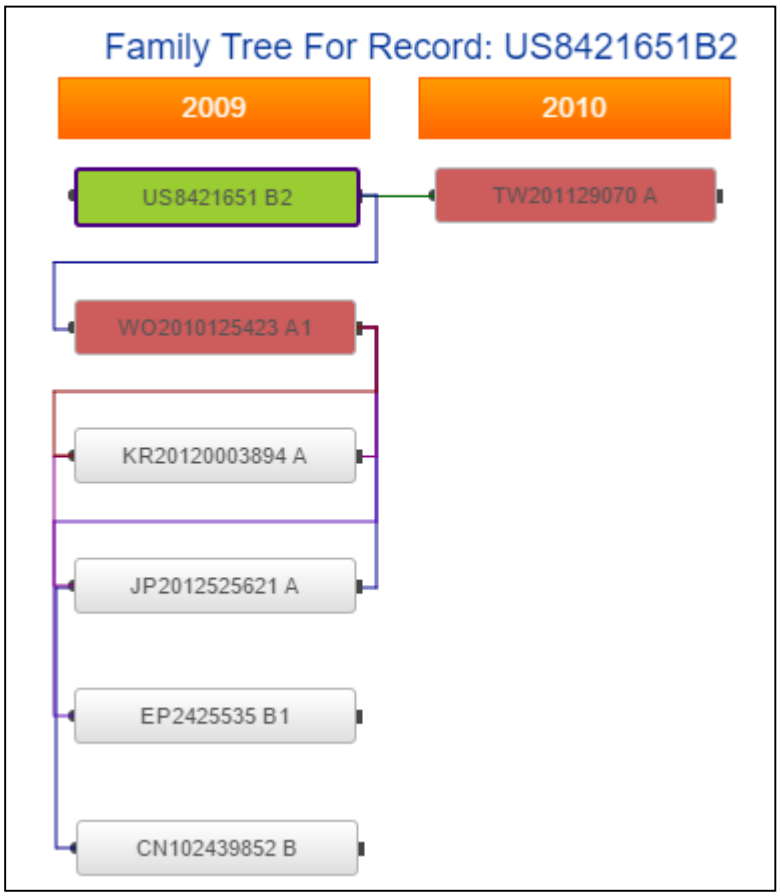
3.5 EQUIVALENT SEARCH

(Also known as Family Member Search)

This search is directed towards identifying whether a family member of a patent/patent application has been filed in particular jurisdictions. This is often used in light of identifying FTO in a particular country knowing that the patent has been filed or granted in another country.

(Note: Two or more patent applications with one or more of their claims sharing the same priority or extended priority are family members. Example, if ABC files a patent application in USA and then extends it to India, then the Indian application is a family member of the US application)

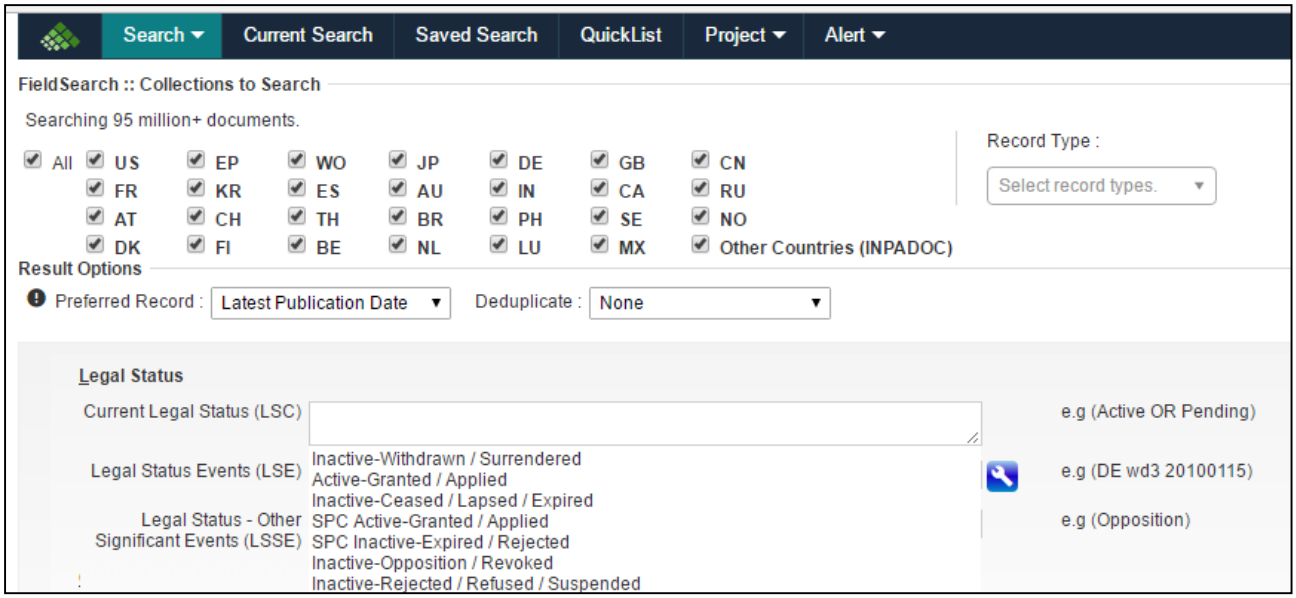




3.6 LEGAL STATUS SEARCH

(Also known as Patent Status Search)

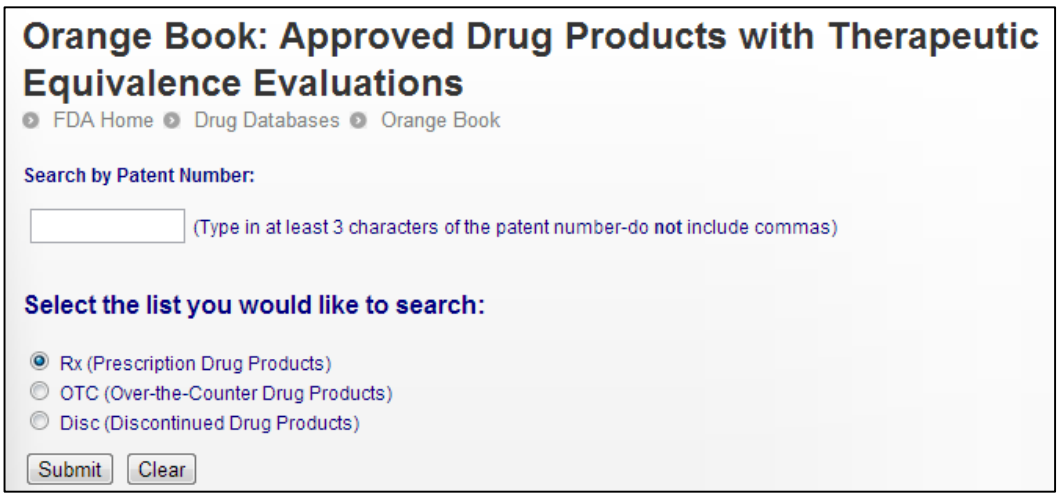
Searches to conclude the latest status of a patent/patent application are known as legal status searches. The legal status provides the information on the rights associate with the patent and especially is used to note whether the patent is in force or not. Constant updating of legal status from time to time is essential.



3.7 PATENT TERM EXTENSION SEARCH

(Also known as Orange Book Search or SPC search)

Typically used for pharmaceutical industries, searches where term extension provided to a granted patent (in certain countries for pharmaceutical based patents) is identified and used to calculate the exact date of expiry of a patent are patent term extension searches. The term extension information for different regions is available through different sources, most widely used by the USFDA Orange Book providing information for US patents.



Some databases allow searching for records where its term has been extended.

EXERCISE 3

Fill in the below table, comparing the different types of patent searches as per the specified parameters

	Patentability	**FTO**	**Invalidation**	**Landscape**
Purpose				
Date Restriction?				
Jurisdiction Restriction?				
Search in non-patent literature?				

→ *For Answers to above questions, click here or visit end of chapter 4*

SOLUTIONS TO EXERCISE 2

- The search should involve a combination of broad and narrow keywords including television, TV, display unit, display monitor, display screen. If we use only television and TV, it shall be too narrow, while if we use display screen and monitor, it shall be broad enough to encompass patents dealing with computers, mobile phones, pagers etc.

- Thereafter, parallel set of search strings should be created using keywords and classifications. Since this invention does not deal with chemical structures and gene sequences, those searches shall not be conducted. Image search may be used if relevant to the subject matter

- The searches are then to be carried out in databases, either free or paid or a combination, allowing access to multiple jurisdictions to ensure extensive coverage

CHAPTER 4 PATENT SEARCH TECHNIQUES INTRODUCTION – PART I

Having understood the significance of patent searching and the different types of patent searches we shall now move ahead to understand the mystics of an excellent patent search strategy and allign ourselves with the various tools for conducting a first-rate and robust patent search.

The main technique involved in an excellent search is a clear demarcation in the mind of a searcher as to what is included in the scope of the invention/search requirement, and what is outside it. Defining the scope of search essentially means to know clearly, what kind of results shall be considered relevant to the objective of the search. If the specific feature set of the invention/search requirement is not clear to the searcher, the search will be vague and directionless. Thus, the first and most important step is to specifically understand the scope of the search.

Although, different search experts develop different styles of their own, the basic techniques and strategy remains the same and is summarized below:

- *Preparing Search Terms from the Project Disclosure*
- *Understanding Databases and Search Resources for creating appropriate search strings*
- *Knowing and understanding the Search Operators used for search strings*
- *Create a parallel set of search strings*
- *Search Optimization using multiple search strings*
- *Using Restrictions: Date, Jurisdiction, Assignee, Inventor*
- *Consolidate your search strategy and combine searches to finalize the search*

In the present chapter, we shall focus on the first three aspects which will help one understand the key ingredients of preparing a search string, which effective and exhaustive search strategies can be made.

4.1 PREPARING SEARCH TERMS

As the battle is not won without a correct combination of soldiers, a search cannot be conducted well enough without the right combination of search terms. A search term is typically a text based word or phrase which a searcher uses to find the relevant set of patents. To prepare a set of search term, the following steps are generally adopted:

STEP 1: CREATE THE INVENTION/ PROJECT STATEMENT AND THE ASPECT TREE

The invention or project requirement can be first put down in words elaborately by the searcher to prepare an invention/project statement. A project statement essentially comprises of the objective, scope, and criteria of the search.

Once the invention statement is in place, the invention statement should be broken down in fragments to create the project aspect tree or the invention aspect tree.

Example 1: For a Patentability Search

Invention: A process for preparing a novel material (prepared by heating chemicals A,B and C together for 3 hours at 200 Degree Celsius) for coating aeroplane window panes to provide thermal resistance to the windows by reflecting the incident heat.

Example 2: For an FTO Study

Invention: Sensing movement of eye balls of a user by a sensor embedded in a Video Game Console for allowing a user to control motion of a vehicle in a videogame.

in the jurisdictions of USA and Europe

Example 3: For a Landscape Study

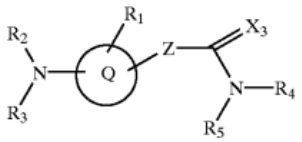
A Competitive Technical Intelligence for identifying companies filing patents in the field of kidney cancer treatment published in the last 5 years.

Example 4: For a Patent Invalidation Search

Invalidation of use of Dastanib for treating Kidney Cancer i.e. *Claim 18 of granted US Patent US6596746* (exemplary CTBI of PTBI – i.e. Claim to be Invalidated of Patent to be Invalidated) whose assignee is Bristol-Myers Squibb Company, and inventors are 'John Wityak and 6 Others' and the earliest claimed priority date of the Patent is April 15, 1999, where

Claim 18: The method of claim 7, wherein said protein tyrosine kinase-associated disorder is a cancer.

Claim 7: A method for the treatment of a protein tyrosine kinase-associated disorder, comprising the step of administering to a subject in need thereof an amount effective therefor of acetic acid and at least one compound of formula III

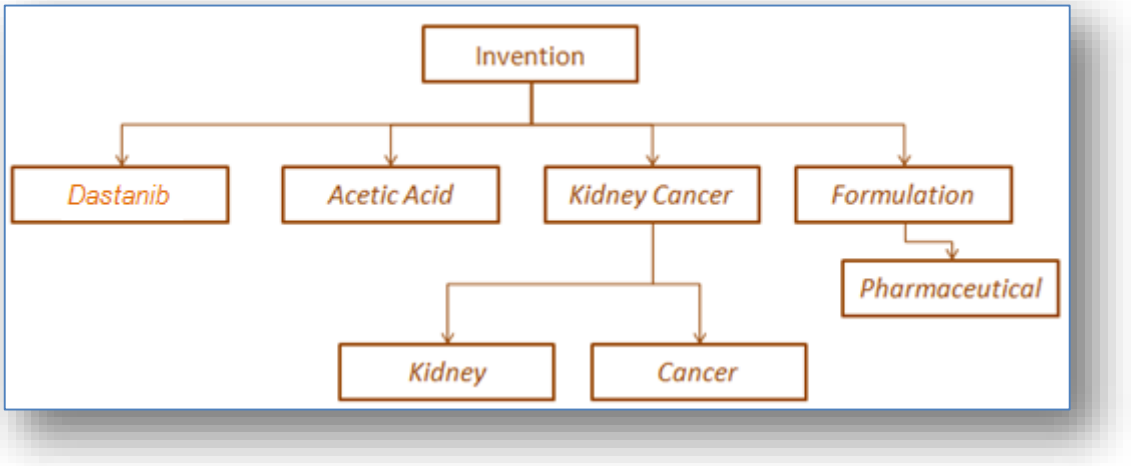


Essentially the invalidation is focused towards one of the structures claimed by the Generic Formula above, which is the chemical Dastanib, administered with Acetic Acid.

Now to create an exemplary Invention Aspect tree for Example 4 using only keywords, we shall break down the invention into different key aspects i.e.

- *Aspect 1: Dastanib*
- *Aspect 2: Acetic Acid*
- *Aspect 3: Kidney Cancer*
  **Aspect three can be further broken down to comprise two individual aspects, i.e. Kidney and Cancer*
- *Aspect 4: Formulation*
  **Aspect four can be further extended to another aspect, i.e. the Formulation being Pharmaceutical. (You will note that this shall be used to narrow down search terms)*

  Invention Aspect Tree

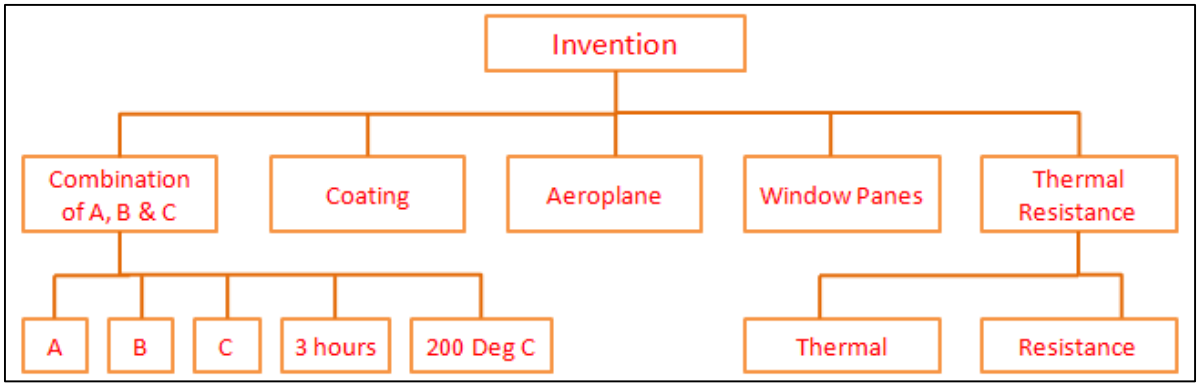


On the same lines, an exemplary Invention Aspect tree for Example 1 may be created with the following aspects:
(Invention: A process for preparing a novel material (prepared by heating chemicals A,B and C together for 3 hours and at 200 Degree Celsius) for coating aeroplane window panes to provide thermal resistance to the windows by reflecting the incident heat.)

- *Aspect 1: Combination and process associated with the combination of A, B and C*
  **Aspect one can be further broken down to the three chemicals and process parameters, i.e. Chemical A, Chemical B, Chemical C, Time of 3 hours and Temperature of 200 Degree Celsius*
- *Aspect 2: Coating*
- *Aspect 3: Aeroplane*
- *Aspect 4: Window Panes*
- *Aspect 5: Thermal Resistance*
  **Aspect five can be further broken down to two aspects i.e. first being a physical property thermal or heat related and the second being the aspect of resistance which is an adjoining aspect to thermal*

as a term. The separation of aspects is essential as the searches may use the term thermal in a manner where resistance may not be adjoining it but still eventually translate into the combined concept. For example, 'better thermal stability' does not use the aspect resistance but still is equivalent to thermal resistance.

Invention Aspect Tree



STEP 2: SYNONYM LIST

Once the aspect tree is created, we have identified that each of the terms of the aspect list are significant and will be used for the searches. Knowing the minds of patent draftsman and legal requirements of patents, we should assume that any of the aspects could be introduced in the patent specification through different synonyms or synonym phrases. Essentially, synonyms are different terms and phrases that can substitute the term functionally and logically which need not necessarily be conventional dictionary synonyms, including aspects broader to the term. Sometimes these synonyms are used as a standalone term in a patent without using a common or popular term *(such as using a 'portable electronic device' instead of mobile or cellular phone throughout a patent, while the patent is related to a mobile)*. Thus, no synonym term or phrase should be ignored. We also find that different synonyms can be used in title and abstract, while a different synonym is used in the description of a patent.

Often synonym phrases and explanatory statements substituting the term are ignored which can be a dangerous miss for a searcher. For example, a heat sensor can be suitably written as 'a component for measuring change in temperature' in a patent, which if not considered in a search, any number of literal synonyms will fail to uncover such a patent.

A synonym list can be created through multiple modes, some of which are listed below as general guidelines:

a. Use a dictionary or thesaurus to identify common English language synonyms.
b. Search for Patents and Technical Papers having the term in title and abstract.
c. Perform an online search with a search phrase 'Synonyms for ...'.
d. Use knowledge repositories such as Wikipedia.
e. Use industry specific websites which indicate a Synonym list or an 'Also known as' list for a specific industry or specific term.
f. Ask a technical expert.
g. Semantic Suggestor or similar tools provided by databases such as PatSeer list out keywords or concepts that are related to your search and improve search precision.

An example of a synonym list is provided below:

Aeroplane

- Aircraft
- Airplane
- Airship
- Airliner
- Jetplane
- Plane
- Airbus
- Aerial Vehicle
- Flying Machine
- Flying Vehicle
- Aircab

- Aviation

Note:

a) Terms such as Helicopter or Chopper may sometimes also be used as synonyms to 'aeroplane' but not in this case since it will not be a functional synonym of aeroplane w.r.t. the invention as the aspect of thermal resistance is subject to speed, elevation, etc. which are vastly different for an aeroplane and a chopper. To elaborate this we may consider another example: If an invention deals with speedometer or distance sensor of a car, the synonym list may include a truck since functionally the speedometer or distance sensor will play the same role in both vehicles. However, an invention dealing with tyre tread or novel tyre material for load bearing in a car, a functional synonym will not include a truck since the parameters influencing the functional aspect i.e. the load on tyre is vastly different in a car and a truck.

b) The term plane although an important and common synonym of aeroplane, is generic and may cover multiple other meanings of the word 'plane' but will have to be included in the list of synonyms which shall be narrowed down with certain other aspect while creating the search string or else it may lead to redundant results.

Dastanib {Compound Generic Name}

- Sprycel {Trade Name}
- BMS-354825 {Alternate Trade Name}
- *N-(2-chloro-6-methylphenyl)-2-[[6-[4-(2-hydroxyethyl)-1-piperazinyl]-2-methyl-4-pyrimidinyl]amino]-5-thiazole carboxamide monohydrate* {IUPAC Name}
- Cc1cccc(c1NC(=O)c2cnc(s2)Nc3cc(nc(n3)C)N4CCN(CC4)CCO)Cl {SMILES}
- 302962-49-8 {CAS No.}

Acetic Acid

- Ethanoic acid
- AcOH
- HAc
- Methanecarboxylic acid
- CH3COOH
- CH3CO2H
- COOH-CH3
- 64-19-7 {CAS No.}
- CC(O)=O {SMILES}

Cancer

- Carcinoma
- Hypernephroma
- Malignant
- Malignancy
- Tumor

- Adenocarcinoma
- Myeloma
- Oncology
- Cell proliferation

Kidney

- Nephro
- Renal

Website

- Web page
- Web platform
- Web portal
- Web browser
- Web forum
- Web Interface
- Online page
- Online platform
- Online portal
- Online forum
- Online interface
- Internet based page
- Internet based platform
- Internet based portal
- Internet based forum
- Internet based interface
- Web based platform
- Web based portal
- Web based forum
- Web based interface
- Network based page
- Network based platform
- Network based Portal
- Network based Forum
- Network based Interface

STEP 3: SPELLING VARIATIONS

While creating search terms, one has to take into consideration the various spelling variations that can be used in patents and publications. These spelling variations must be listed down along with the list of synonyms in the set of search terms to be used for creating search strings. Spelling variations could be due to various factors, such as:

a. Difference in language style enabled spellings, particularly American and British English spelling differences.
b. Common spelling mistakes occurring in usage of certain words.
c. Generally accepted industry norms and variations in spellings.

Certain examples of spelling variations are provided below:

- Tumor or Tumour
- Vapourise or vapourize or vaporize or vaporise
- Color or Colour
- Flavor or Flavour
- Fiber or Fibre
- Meter or Metre
- Catalyse or Catalyze
- Leukemia or Leukaemia
- Anaesthesia or Anasthesia
- Naphthalene, Napthalene, Naphthalen, Napthalen, Naphthaline, Napthaline, Naphthelene, Napthelene
- Processor, Procesor
- Parallel, Parallal, Paralel, Paralal
- Methanecarboxylic acid or Methan carboxylic acid

STEP 4: SPACE VARIATIONS

Another neglected yet important factor is the possibility of alternate representation of terms with or without space or hyphen between them. Similar to the approach with spelling variations, the terms with space variation must also be listed down in the set of search terms to be used for creating search strings. Depending on the database being used, one may require to tweak the search string to ensure that all terms with space variations shall be used for the search.

Certain examples of terms with space variations are provided below:

- Webpage, web-page, web page
- Airplane, Air-plane, Air Plane
- Networkbased, Network based, Network-based
- Interlocking, Inter-locking
- Immune-stimulating, Immunestimulating, Immune stimulating
- Shelflife, shelf-life, shelf life

- Biodiesel, bio diesel, bio-diesel
- Methanecarboxylic acid, Methanecarboxylicacid, Methane-carboxylic acid, Methane carboxylic acid
- DLTKKCTRFS TTPKKSAPYL, DLTKKCTRFSTTPKKSAPYL, DLTKKCTRFS-TTPKKSAPYL {Protein Sequence}

STEP 5: BROADENING OF TERMS

To be able to optimize a search using broad and narrow search strings, broadening of terms to create a super-set level term list is essential. For example, A is a subset of B or A is one of the various varieties of B or A falls under the class of B, then A is the narrow term and B is the broader term.

Examples of narrow and broad terms:

Narrow: Mobile Phone
Broad: Phone, Telecommunication Device, Electronic Device, Computing Device, Wireless Communication Device

Narrow: Leukemia
Broad: Cancer

Narrow: Acetone
Broad: Ketone, Solvent, Volatile
Narrow: Pen-Drive or Flash Drive
Broad: Data Storage Device

Narrow: Fingerprint Recognition
Broad: Biometric Recognition, Pattern Recognition, Identity Recognition

STEP 6: IDENTIFY ESSENTIAL ELEMENTS AND NARROWING ELEMENTS

While preparing search strings, each of the aspects in the invention tree should be categorized as essential and additional which will be used to create parallel search strings with varying concepts.

Example 1:
For the initially mentioned invention: A process for preparing a novel material (prepared by heating chemicals A,B and C together for 3 hours and at 200 Degree Celsius) for coating aeroplane window panes to provide thermal resistance to the windows by reflecting the incident heat.

Here, a good searcher will understand that the key essential elements are only:

a. Chemical A
b. Chemical B
c. Chemical C
d. Mixture of A, B and C
e. Thermal resistance

Non-essential elements;

a. 3 hours
b. 200 Degree Celsius/ Heating
c. Aeroplane
d. window panes

Example 2:

For the initially mentioned Invention: Sensing movement of eye balls of a user by a sensor embedded in a Video Game Console for allowing a user to control motion of a vehicle in a videogame.

Here, the essential aspects are:

a. Sensor
b. Movement of eye balls
c. Electronic Device (not gaming console, since the invention cannot be carried without an electronic device)

Non-essential aspects are:

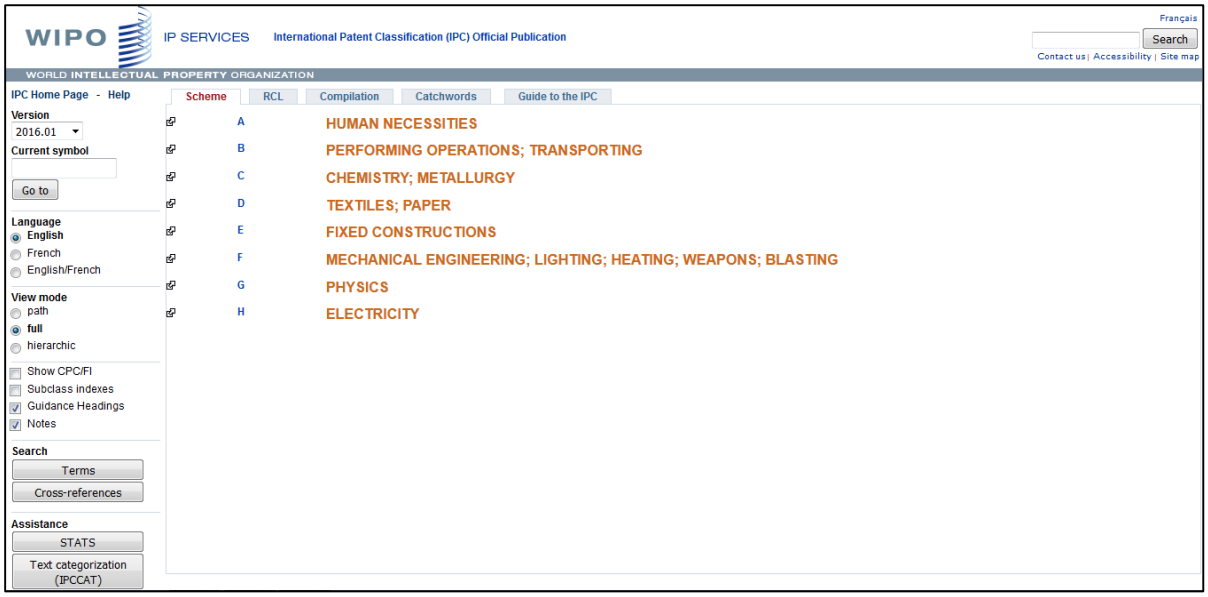
a. Video Game Console
b. Control motion of a vehicle in a videogame

STEP 7: IDENTIFY PATENT CLASSIFICATIONS FOR USING THEM IN PATENT SEARCHES

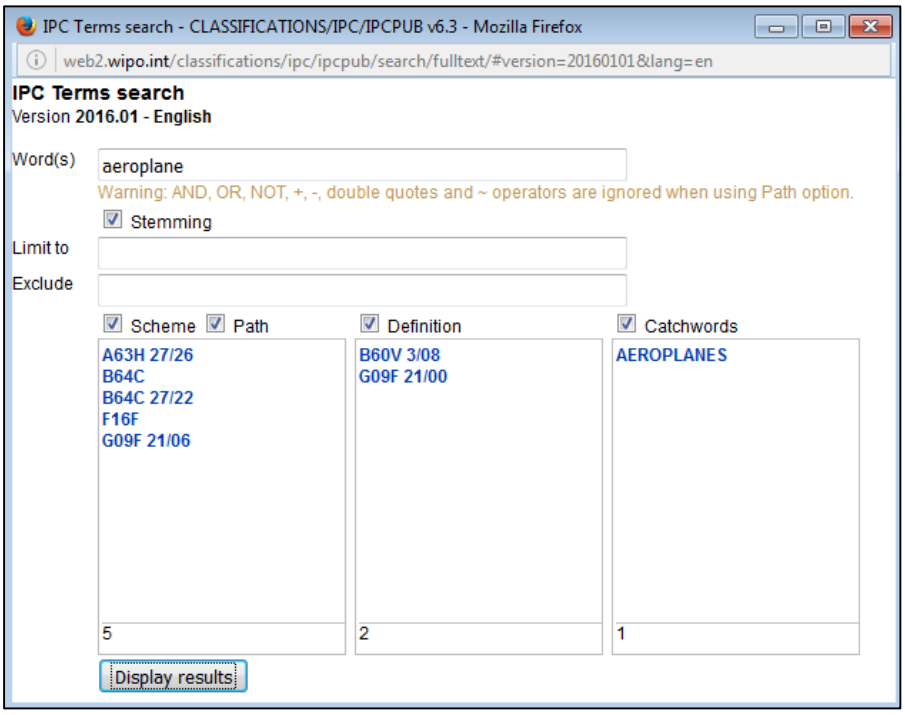
A classification indexed to a patent by a patent office based on the technical domain which is covered in the patent becomes an important tool in the hands of a searcher by using the patent classification in creating a robust multi-step patent search strategy. This is particularly because the classification indexing is done manually by technical experts of the patent office and is generally precise in identifying the technical domain covered in the patent, and thus is likely to match with the searcher's input for a patent of said technical domain by searching via the classification.

As discussed in the first chapter, the most widely used classification systems and accepted by Patent Search Databases are International Patent Classification (IPC), United States Patent Classification (USC), Japanese File Index Classification (FI), and Japanese F-Term. A new classification system, Cooperative Patent Classification (CPC) is a patent classification system jointly developed by the European Patent Office (EPO) and the United States Patent and Trademark Office (USPTO). This is based on previous European classification system (ECLA).Typically, to identify the classification relevant to a technical aspect of a search, the following approaches are useful.

a) Browsing through the classification list for the particular classification or using a search interface provided by the authority for searching the classification as indicated in the image below for IPC.



b) Doing a focused search for a patent using specific technical keywords which match with the relevant domain and noting down the classification of such relevant patents



For example to identify the IPC for *Aeroplanes; a title search with the term aeroplane led to retrieval of several patent results including*

- *US2013181089: Adjustment System Of An Aeroplane With An Adjustable Flap*
- *US8459594: Emergency Evacuation System, In Particular For A Tailless Aeroplane*
- *WO2013067885: Spoiler For Hatch Door On Aeroplane And Hatch Door On Aeroplane Having Same*

When the IPC indexing of each of the patent documents were noted, it was observed that all have been indexed under the relevant IPC Category B64C which is AEROPLANES; HELICOPTERS under Section B i.e. Performing Operations; Transporting.

On the same lines, the classification can be identified for different classification systems.

EXERCISE 4

For the invention of telephone, prepare:

1. An invention statement
2. An invention aspect tree
3. Synonym list
4. Spelling variation list
5. Space variation list

→ *For Answers to above questions, click here or visit end of chapter 5*

SOLUTIONS TO EXERCISE 3

	Patentability	**FTO**	**Invalidation**	**Landscape**
Purpose	To check novelty & inventiveness	To search for other patents being infringed	To knock down or oppose the grant of a patent	To derive insights/trends/ intelligence
Date Restriction?	No	Yes - last 25 years	Yes - before filing date of patent to be invalidated	Mostly Yes - usually recent i.e. 5-10 years to derive relevant insights
Jurisdiction Restriction?	No	Yes - in the market of launch	No	Mostly No - trends sought are global
Search in non-patent literature?	Yes	No - typically restricted to live patents only	Yes	Sometimes Yes - to derive insights from other sources

CHAPTER 5 UNDERSTAND YOUR DATABASE

5.1 SEARCH FIELDS

The search fields provided by a database are the tools that are used to engineer the entire search and while using a database a searcher must be thorough with what the database offers as searchable fields.

Different content fields in a patent such as title, abstract, claims, and description serve different purposes and can thus contain different set of content which need to be scouted during a search to retrieve the relevant results. Typically, title and abstract often give problem and solution based content for the invention. On the other hand, the description will have general explanations, examples, additional applications, properties, and list of components or compounds based on which search strings have to be varied.

For example, in the above example of material being used in aeroplane window panes, a patent may not have the term ‘aeroplane’ in title or abstract, but will be used in claims as a ‘vehicle’ or ‘transportation medium’ and will be listed as ‘aeroplane’ in the description. In the same patent the term ‘heat resistant’ and “A, B and C” may be written in the Abstract.

Examples of Patent Content Based Search fields are listed below

Field Code	Field Name	Syntax Example
A	Abstract	A:((led OR "light emitting diode") AND display)
C	Claims	C:((led OR "light emitting diode") AND display)
D	Description	D:((led OR "light emitting diode") AND display)
T	Title	T:((led OR "light emitting diode") AND display)
TA	Title and Abstract	TA:((led OR "light emitting diode") AND display)
TAC	Title, Abstract and Claims	TAC:((led OR "light emitting diode") AND display)
TACD	Title, Abstract, Claims and Description (Full text)	TACD:((led OR "light emitting diode") AND display)
DEX	Examples Section at end of Description	DEX:((led OR "light emitting diode") AND display)
DPA	Prior/Background Art Section within Description	DPA:((led OR "light emitting diode") AND display)
INC	Independent Claims	INC:((led OR "light emitting diode") AND display)

PatSeer also allows searching for keywords only in independent claims, example section at the end of description and prior/background art section of within description.
At this stage of determining and understanding the relevant Content Based Search Fields, it is also extremely important to understand the coverage that a database provides, else important patents can be missed due to inappropriate field selection.
For example, if the coverage of a database is as follows:

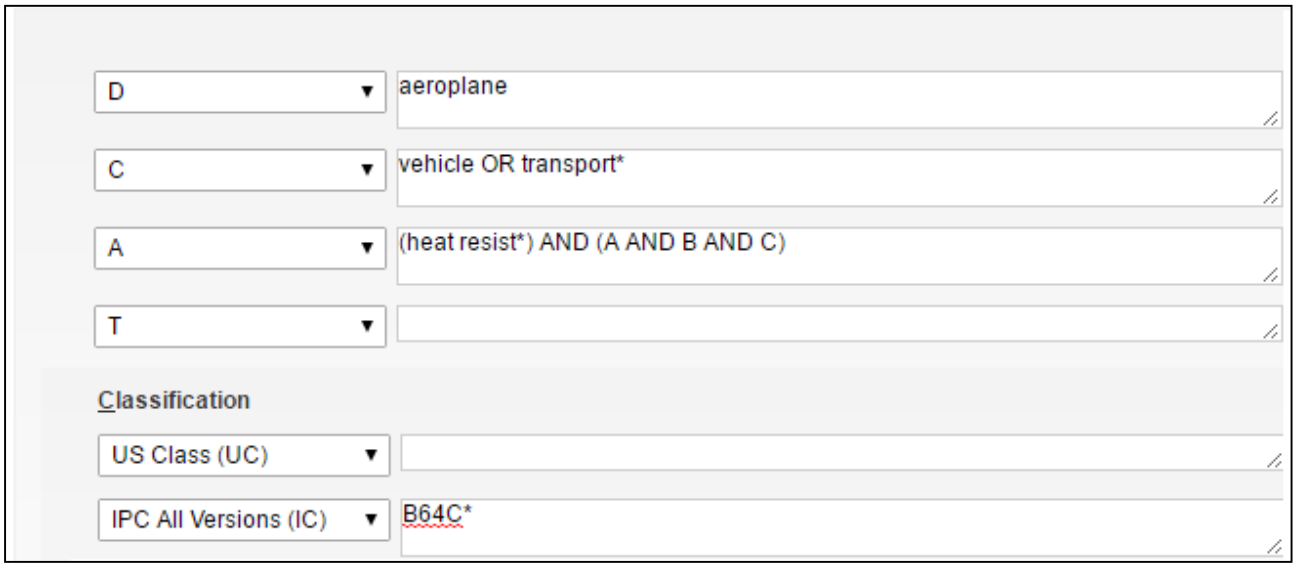
Spain (ES) patents Bib Data from 1981, Full text from 2004
and the searcher carries out an FTO with search strings being run in Full Text or Claims for Spanish Patents, it would be a wrong approach as relevant results before 2004 shall not be returned since full text coverage before 2004 is not available with the database.

Now, patent content based field searches are sometimes coupled with Patent Classification Searches as a parallel search strategy. Patent Classification is typically indicative of the specific technical domain the patent is associated with. Wherever the specific technical domain can be identified, the Patent Classification could act as a suitable replacement of certain keywords.

Examples of Patent Classification Based Search fields are listed below

Field Code	Field Name	Syntax Example
IC	International Classification (All versions)	IC:G06F13*; IC:G06F13/00
ICO	International Classification (Version 1 to 7)	ICO:G06F13*; ICO:G06F13/00
ICR	International Classification Revised (Version 8 - 9)	ICR:G06F13*; ICR:G06F13/00
UC	US Classification	UC:"713/201"; UC:713*
UCMN	US Main Class	UCMN:713*
CPC	Cooperative Patent Classification	CPC:G06F13/00
CPCG	CPC Main Group	CPCG:B23B29*
CPSC	CPC Sub Class (First 4 letters)	CPSC:C07C
FI	Japanese FI	FI:C08L*; FI:C08L25/04
FTERM	Japanese F term	FTERM:4J001*; FTERM:3C058/AA09
JFF	Japanese F-I Facets	JFF:LDR

Example of a basic search for aeroplane window pane invention i.e. example 1 using above field combinations can be as follows



*- Use of certain characters/ expression such as 'AND', 'OR', * is explained later in the chapter.*
- IPC Classification B64C is designated for: Aeroplanes; Helicopters)

Search term in abstract includes (Chemical A) and (Chemical B) and (Chemical C)

Further, while doing Patent Invalidation, Freedom-to-Operate, and Landscape Studies, date based fields become important for restricting the search strings to the relevant date set.
Examples of Date Based Search fields are listed below

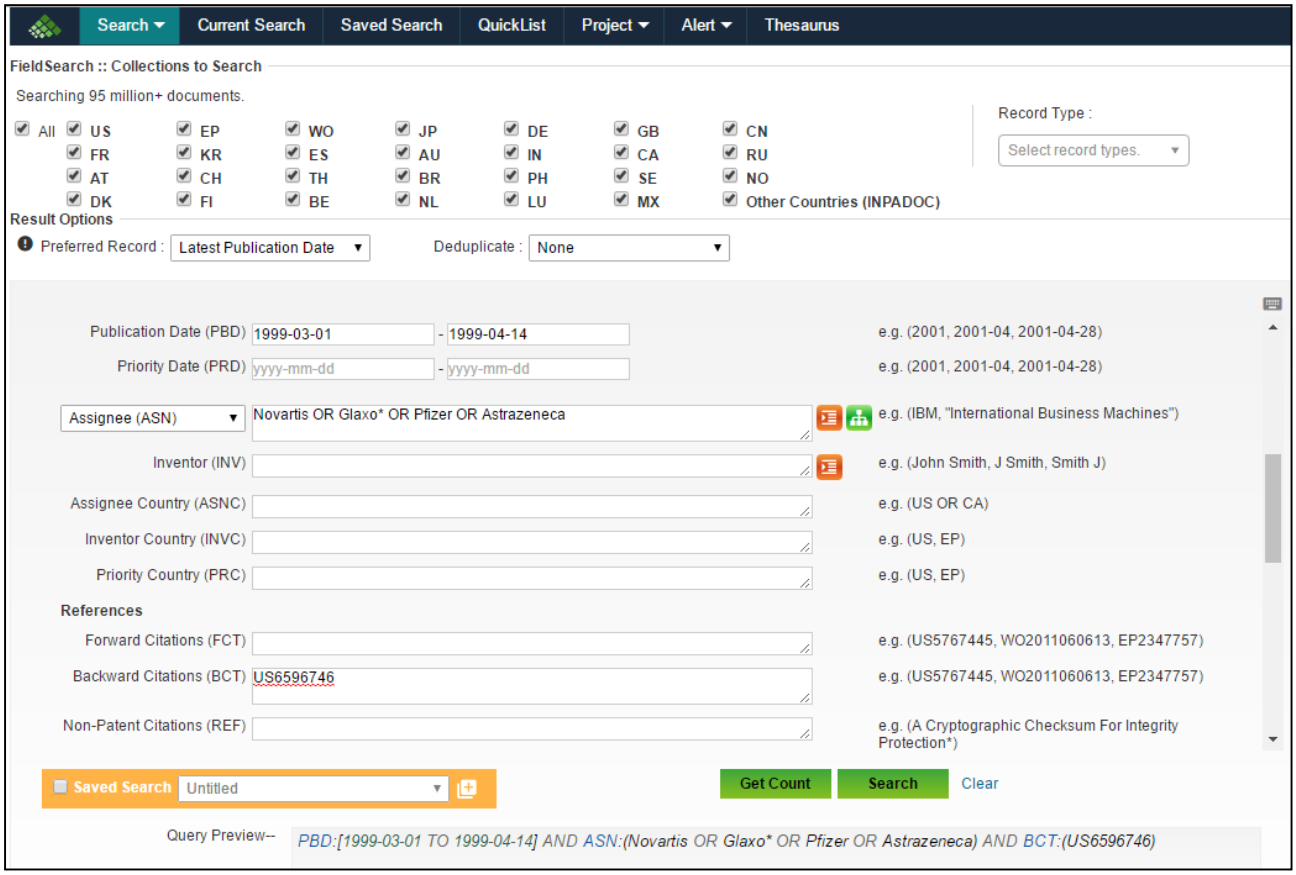
Field Code	Field Name	Syntax Example
APD	Application Date	APD:2007-06-21; APD:2009-12; APD:[2001-01-01 TO 2009-12-31]
APY	Application Year	APY:2001; APY:[2001 TO 2004]
EED	Estimated Expiry Date	EED:2012-01-23; EED:2012-12; EED:[2012-01-01 TO 2015-12-31]
EEY	Estimated Expiry Year	EEY:2015; EEY:[2013 TO 2014]
EPBD	Earliest Publication Date	EPBD:2001-01-23; EPBD:2001-01; EPBD:[2010-01-01 TO 2010-12-31]
EPBY	Earliest Publication Year	EPBY:2001; EPBY:[2001 TO 2002]
EPRD	Earliest Priority Date	EPRD:2004-11-21; EPRD:2004-11; EPRD:[2001-01-01 TO 2005-12-31]
EPRY	Earliest Priority Year	EPRY:2004; EPRY:[1992 TO 2000]
PBD	Publication Date	PBD:2011-11-20; PBD:2011-11; PBD:[2003-01-01 TO 2007-12-31]
PBY	Publication Year	PBY:2011; PBY:[2010 TO 2011]
PRD	Priority Date	PRD:2001-03-23; PRD:2001-03; PRD:[2001-01-01 TO 2003-12-31]

While carrying out Invalidation Search, particularly searching citations of the patent to be invalidated and its related patents is considered as a standard best practice, as a series of citations may connect a searcher to relevant results. In certain cases, the citation search can be coupled with search restriction of a relevant set of assignees or inventors to get a focused analysis set.

Field Code	Field Name	Syntax Example
BCT	Backward Citations	BCT:US6000000
FCT	Forward Citations	FCT:US6000000
REF	References (Non Patent backward citations)	REF:"Physics Today"
ASN	Assignee	ASN:"General Motors"
ASNN	Assignee Normalized	ASNN:("IBM CORP" OR "MCAFEE INC")
CASN	Current Assignee	CASN:IBM
RASN	All Assignees in US	RASN:("International Business Machines OR

	Reassignment History	IBM)
CAAN	CASN + ASN	CAAN: IBM
RAAN	RASN + ASN	RAAN: IBM
INV	Inventor	INV: "CLARK MICHAEL"

Example of a basic search for the Invalidation of Claim 18 of US6596746 using Date, Citation, and Assignee field combinations can be as follows

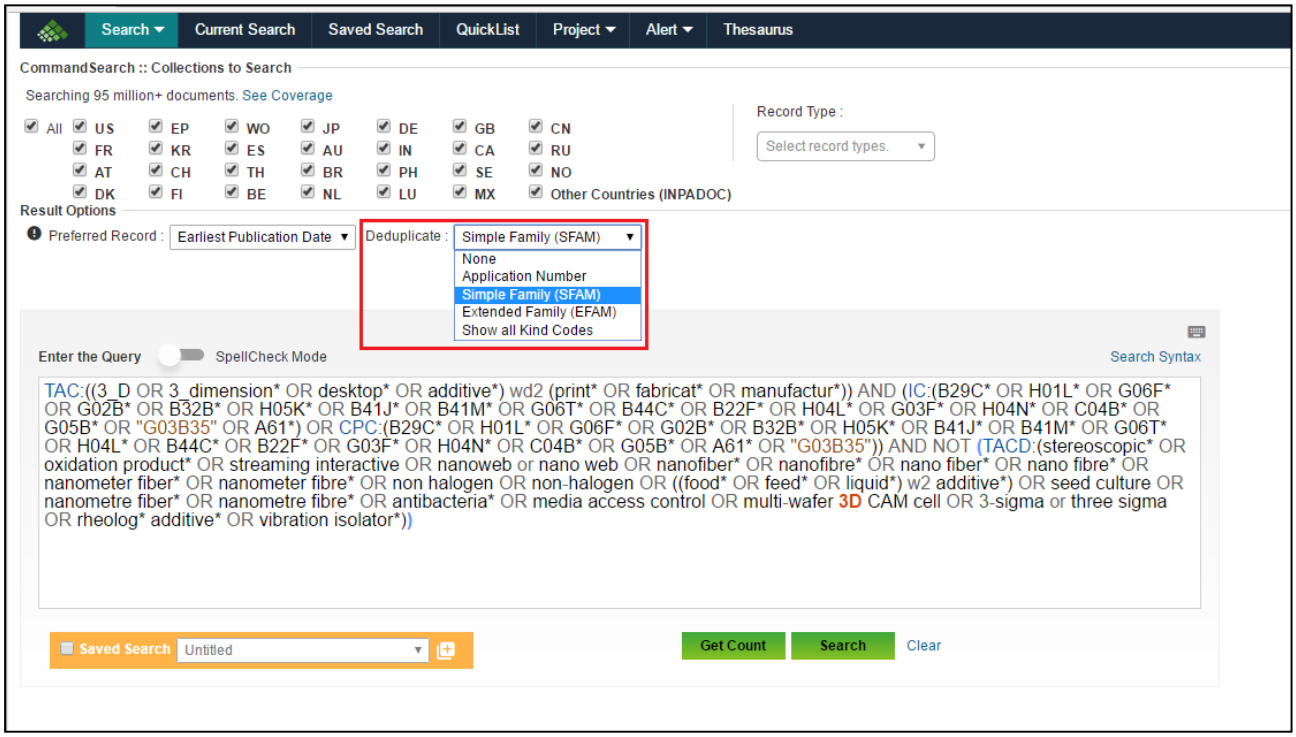


5.2 FAMILY MEMBER LISTING AND DISPLAY

Certain databases provide search and display of one member per family and others do not. It is important to know whether the searches are being carried out to give results of a single family member set or in all patent documents, in order to assess the quantum of patents that have to be analyzed.

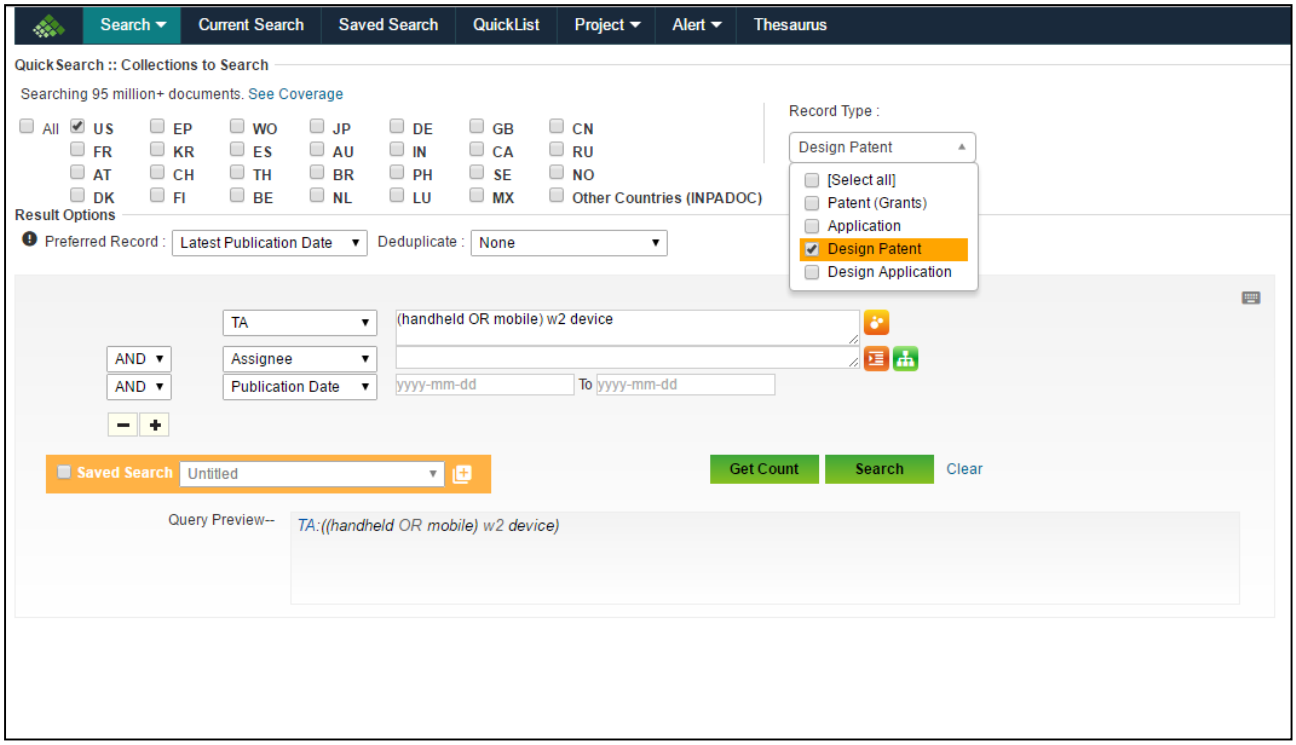
For example, for a certain patentability project, a search string results into 1240 patent documents, but they are essentially only 225 patent families, then the searcher is looking at analysis of only 225 inventions to compare it with the projects invention. If this factor is not considered then it will give a wrong impression to the searcher on how much time and effort will be involved in analysing the result.

In certain databases such as PatSeer, records are not grouped by families by default. So you can search individual records and choose to restrict them to one member per family.



5.3 RECORD TYPE

PatSeer allows searching or filtering results by record types. Based on kind code, each record across all countries has been tagged as Patent, Application, Design Patent, Design Application, Utility Model, and Plant Patent.



5.4 STEMMING

Stemming is a tool or form of searching in which a term is taken and the basic root or the core of the term is extended to its language and grammatical variations. This is typically useful to cover plurals, different verb forms, tenses, etc. For example, if stemming is applied on the term 'formatted', it will cover the terms 'format', 'formatting', 'formattor', 'formatter', 'formation', and of course the terms itself, i.e. 'formatted' as the basic root or core extracted for the word was 'format'. Sometimes Stemming may lead to unwanted and non-relevant variations due to the extended variations.

It is important to understand what kind of stemming a database provides and whether a default search has the stemming mode active or inactive. Based on this the search terms are to be crafted and analysis set is consolidated. Typically, expert searchers work without stemming to avoid the junk results and create their search strings in a manner to comprise the relevant variations which the stemming mode would have otherwise covered.

The stemming character PatSeer uses is "#" and one can simply add it at the end of the word that needs to be stemmed. This can be done when searching for patent content in ten different languages where language specific stemming rules are applied in each case. It is particularly called "transparent stemming" because when # is added to the end of the term, the interface instantly shows what will be searched and the searcher can then decide if stemming should be applied to the term. So for example, scheduling# will show schedul* and the searcher can then be clear on what search terms will the stemming lead to.

5.5 MULTILINGUAL FEATURES

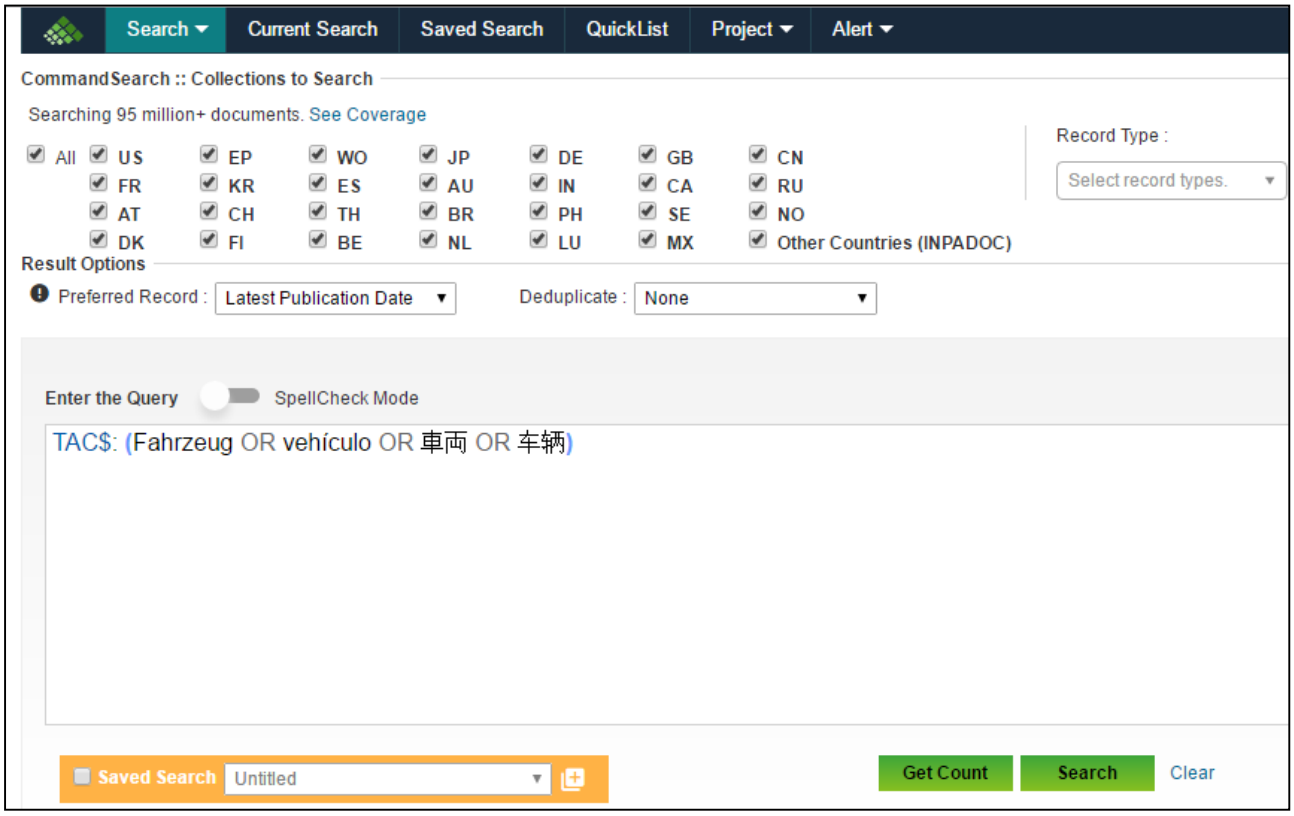
Patent literature is spread over in multiple jurisdictions, written in different languages. Particularly, non-English jurisdictions such as China, Japan, Korea, and European Nations are of prime importance when it comes to patent searches and patent analytics. The challenge lies in carrying out effective searches for patents in these multilinguistic brackets, and that is where the multilingual features of a database can save the day. In recent years, commercial databases have incorporated various features to facilitate multilingual patent search and analytics. For example, PatSeer allows a searcher to use the following features to make the most out of their search strategy and extend their search to reach beyond the language based barriers.

Multi-lingual Stemming	Multi-lingual Stemmer that support stemming across English, German, French, Spanish, Russian, Portuguese, Korean, Japanese, Chinese and Swedish language content
Cross-language searching	Field search allows searching across patent content in 10 languages in a single query statement
Search Term Translator	Integrated search term translator allows instant translation of any search term while entering your search query dynamically

Examples of searchable fields across different languages

Field Code	Field Name
TDE, ADE, CDE, DDE, TADE, TACDE, TACDDE	Search in German
TFR, AFR, CFR, DFR, TAFR, TACFR, TACDFR	Search in French
TKR, AKR, CKR, DKR, TAKR, TACKR, TACDKR	Search in Korean
TJA, AJA, CJA, DJA, TAJA, TACJA, TACDJA	Search in Japanese
TES, AES, CES, DES, TAES, TACES, TACDES	Search in Spanish
TZH, AZH, CZH, DZH, TAZH, TACZH, TACDZH	Search in Chinese
TRU, ARU, CRU, DRU, TARU, TACRU, TACDRU	Search in Russian
TSV, ASV, CSV, DSV, TASV, TACSV, TACDSV	Search in Swedish
TPT, APT, CPT, DPT, TAPT, TACPT, TACDPT	Search in Portuguese
TOH, AOH, COH, DOH, TAOH, TACOH, TACDOH	Search in Other Languages
TTH, ATH, CTH, DTH, TATH, TACTH, TACDTH	Search in Thai
T$, A$, C$, D$, TA$, TAC$, TACD$	Search content in all the above language at the same time

In certain databases such as PatSeer, multilingual terms for any keyword can be searched by adding a $ in front of searchable fields. For instance, searching for TAC$: (vehicle OR Fahrzeug OR vehículo OR 車両 OR 车辆) will search for results relating to Vehicle across German, Spanish, Japanese and Chinese (simplified) records.



5.6 CHEMICAL LOOKUP

Chemistry based keyword searches are often a challenging task by even the best of the searchers, where the brackets and hyphens in the chemical names intersect with the search engine's logic and algorithm. Although structure based searches can be carried out while searching chemical based inventions, they are not always exhaustive and for inventions where generic or common chemicals are used merely as one of the aspects of the invention, a structure search may turn out to be futile. In such cases keyword searches have to be carried out and one must find out whether the patent database provides any feature to facilitate chemical searches.

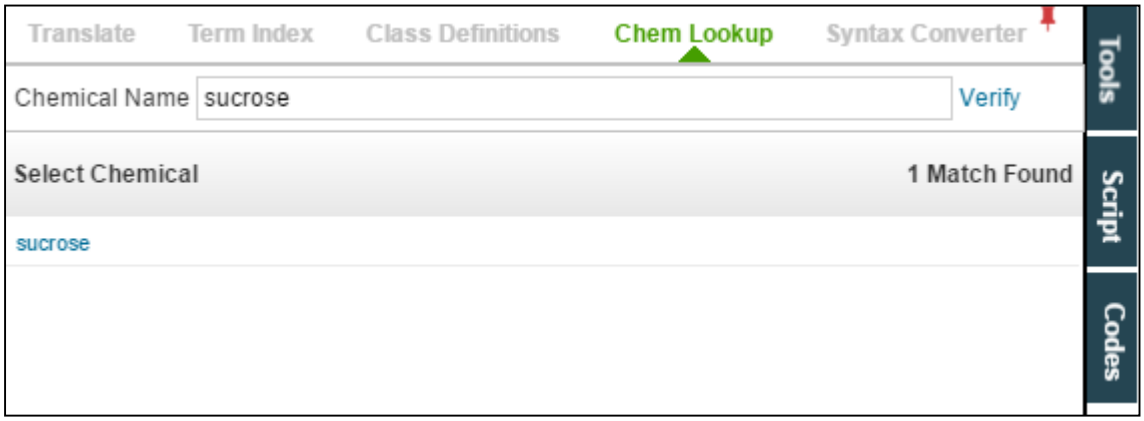
For example, PatSeer provides a feature enabling keyword searches for chemical names, which can be used to create a proper search string by the searcher.

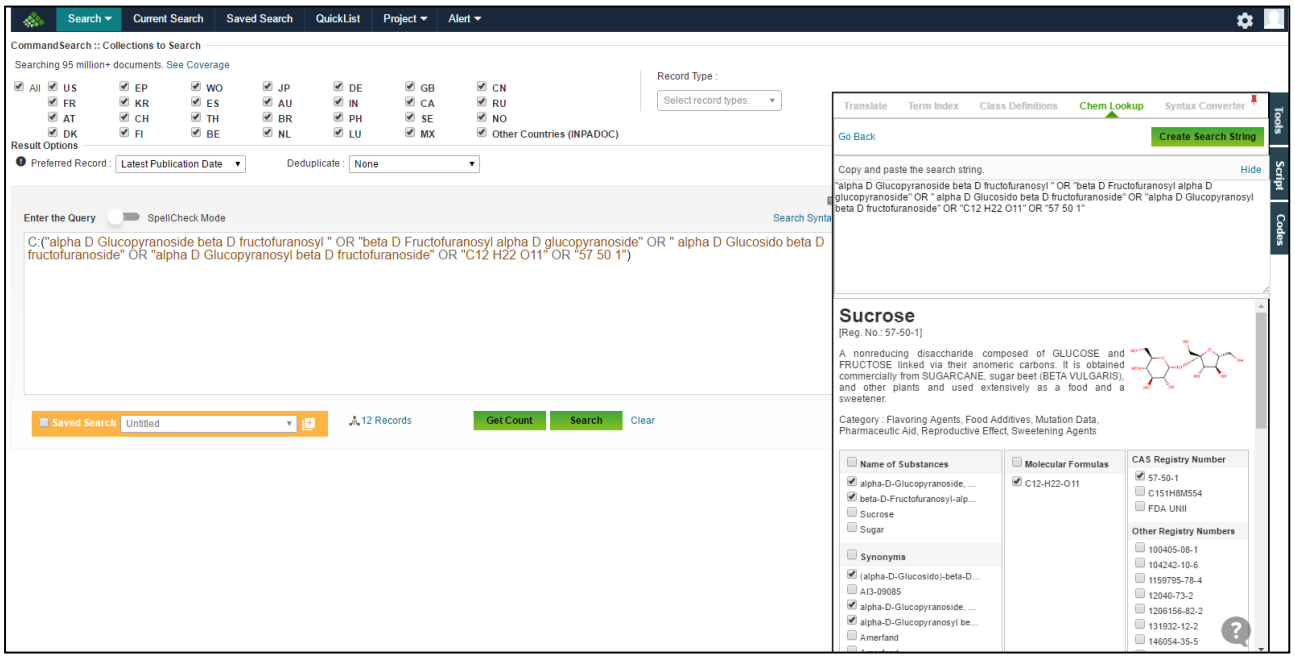
PATSEER

Chemical name to search	Search syntax for exact match	Search syntax to match variations
(2,3-TRANS)-TETRAHYDRO-2-PHENYL-5- HYDROXY-3-HYDROXYMETHYLFURAN	TAC: "2 3 TRANS TETRAHYDRO 2 PHENYL 5 HYDROXY 3 HYDROXYMETHYLFURAN"	TAC: "2 3 TRANS TETRAHYDRO* 2 PHENYL 5 HYDROXY 3 HYDROXYMETHYL*"

In PatSeer characters such as hyphen (-) , parentheses ({ [ ) }], apostrophe/quotes (‘ ”), slash (/ or \) and comma (,) are indexed as space and consecutive spaces are reduced to a single space. This is mighty useful in searching complex chemical names with multiple brackets, commas, hyphens, etc.

PatSeer also allows you to lookup a compound, drug, or registry number and view name equivalents which can further help make your search queries more comprehensive and precise.





You can even easily lookup CAS Registry number or CAS Number and find the respective chemical substance which matches the CAS Number.

EXERCISE 5

Please answer the following:

1. What is stemming? Is stemming suggestible while doing advance searches?

2. Is it possible to search applications filed in last ten years which are granted and are have referenced US6596746 using relevant database features listed in the chapter? If yes, how?

For Answers click here or visit end of chapter 6

→ *For Answers to above questions, click here or visit end of chapter 6*

SOLUTIONS TO EXERCISE 4

1. An invention statement

   A device comprising a transmitter and receiver capable of transmitting sound signals to another corresponding device and receiving transmitted sound signals from another device

   (*Explanation: The invention statement can have many variations depending on searcher's approach. The essential part is it should be broad enough to cover variations and narrow enough to designate the invention. This invention statement can have narrower sub-versions to include digital/analogue, wireless/wired etc.*)

2. An invention aspect tree

   The following exemplary invention aspect tree can be created based on the above invention statement:

   a) Device
   b) Transmitter
   c) Receiver
   d) Sound
   e) Signals
      i. Digital
      ii. Analogue
   f) Transmitting
      i. Wireless
      ii. Wired
   g) Receiving
      i. Wireless
      ii. Wired

   (*Explanation: It is pertinent to note that transmitter and transmitting are listed as different aspects of the invention. This is because the system component and the process associated with it are both technically and in patent language different and distinct. The synonyms and broadened search strings in both cases can differ widely and keeping them distinct will ensure that no relevant reference is missed.*)

3. Synonym List

   Device

   - Apparatus
   - System
   - Instrument
   - Machine

   Transmitter

- transmitting/ transmission device (*and all synonyms of device*)
- telemetry device
- telecommand device
- telecommunication device
- telegraphic device

Receiver (*suitable synonyms of transmitter that are applicable here need not be repeated*)

- radio
- AVR (*acronym for Audio Video Receiver*)

Sound

- audio
- voice
- speech
- noise
- vocal
- oral

Signals

- waves
- communication
- message

Digital (*sometimes an expression is so specific, it may not have a suitable synonym for a search*)

Analogue (*again, no synonym on same lines as that of digital*)

Transmitting

- sending
- communicating
- sharing
- signalling

Wireless

- remote
- shortwave

Wired

- lined
- cabled

Receiving

- getting
- securing

- accepting
- obtaining

4. Spelling & Space variation list

- Apparatus/ Aparatus
- transmitting/ transmiting
- transmission/ transmision/ transmisson/ transmison
- telemetry/ telemetery/ tele metry/ tele metery/ tele-metry/ tele-metery
- telecommand/ telecomand/ tele command/ tele comand/ tele-command/ tele-comand
- telecommunication/ telecomunication/ tele communication/ tele comunication / tele-communication/ tele-comunication
- telegraphic/ tele graphic/ tele-graphic
- Analogue/ Analog
- communication/ comunication (*sometimes deliberate spelling mistakes are made in patents such as this*)
- signalling/ signaling
- shortwave/ short wave/short-wave
- getting/ geting

CHAPTER 6 SEARCH OPERATORS

Following are the typical search operators used to carry out searches with multiple terms and combination of concepts.

6.1 BRACKETS

In one of the basic rules of mathematics, the BODMAS (Brackets, Over, Division, Multiplication, Addition, Subtraction), the Bracket/Parenthesis supersedes and rules as the primary operator while search strings are created and run in a database to search patents. Brackets are used to either separate a group of search terms from another group or to combine and minimize operators, which can be concluded from the below examples:

Example 1:
Wrong format without brackets:
AEROPLANE OR AIRPLANE OR AIRCRAFT AND WINDOW NOT ENGINE

Correct format using proper brackets:
((AEROPLANE OR AIRPLANE OR AIRCRAFT) AND (WINDOW)) NOT ENGINE

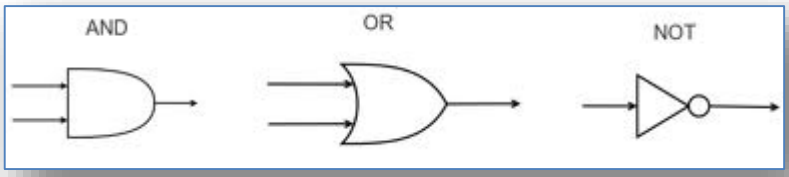
Example 2:
Wrong format without brackets:
gas OR liquid AND tube OR pipe

Correct format using proper brackets:
(gas OR liquid) AND (tube OR pipe)

Thus, a search string (gas OR liquid) AND (tube OR pipe) will first search for a result which contains either the terms gas or liquid and then check whether the same result contains either the term **'tube'** or **'pipe'**, and then return the result which satisfies the condition. Here, it may be noted that the brackets perform the role of separation as well as combination. The concept of 'gas OR liquid' is separated from the concept of 'tube OR pipe' and each of the terms are also combined with each other owing to the arrangement of the brackets. Typically, maximum careless mistakes occur in placements of brackets by searchers and this must be treated with extra care when search strings are being created.

6.2 BOOLEAN OPERATORS

The standard Boolean Operators used in patent searches i.e. AND, OR, and NOT derive their roots from Logic Gates where each of the operators perform a particular action on the two or more input terms and provide an output based on the Boolean Operator's Logic



AND - All the terms are searched in combination to return a document which has the presence of All the search terms coupled with AND

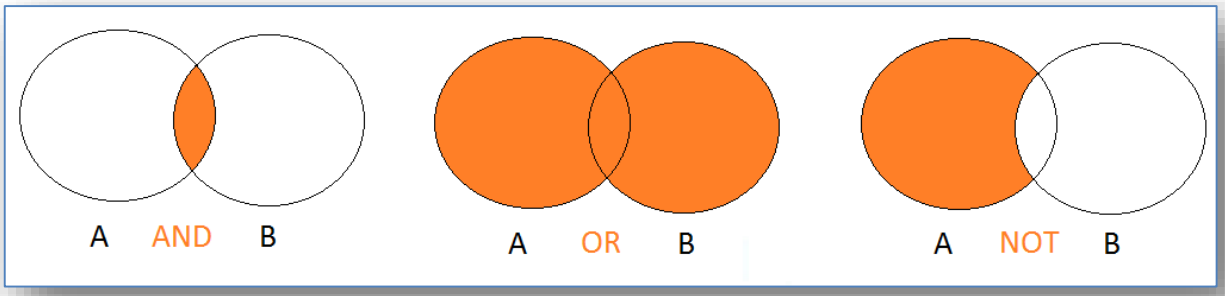
OR - Any document containing the presence of at least one of the terms coupled with OR shall be returned

NOT - The term that is coupled with a NOT if present in any of the documents then such documents shall be eliminated from the search result. This is typically useful to eliminate duplicate results or to remove generic terms to avoid junk results.

For Example:
T: ((Heat OR light) AND (Sun OR Moon)) as a search string will lead to returning the following results*

Patent Document No.	***Title of the Patent Document***	***Stemming Status for the search***
JP 2000018732	*Compound **heating** Boiler Of **sun light***	*Stemming is ON and thus heating is also covered*
US 8296994	*Film Sheet For Area Focusing Of **sun light** And Greenhouse Provided With The Same*	*Stemming is OFF*
RU 2446516	*Method For Obtaining Reserve Electric Energy From Solar **heat** On **moon** Surface*	*Stemming is OFF*

Now if we change the search string to include a NOT operator to provide the below Search String:
T: (((Heat OR light) AND (Sun OR Moon)) NOT electric)*
then the above result 3 i.e., RU 2446516 will not be returned in the results of this search string and all patent documents which have the term electric in their title will be eliminated from the set of results returned.
The Boolean Operators for the purpose of better understanding can be represented by the following Venn Diagrams



6.3 DEFAULT OPERATOR

Default Operator is the operator which will be applicable if no operators are provided between search terms. For example, PatSeer uses a default operator to an exact match instead of the AND or OR operator.

So a query like *Solar Cooking* which has no operator in between, will search exactly *"Solar Cooking"* and not *Solar AND Cooking*, which means:

US 20130022727 with title *'Solar Cooking Apparatus'* will return in the search

BUT NOT

EP 0099423 with title *'Heating And/or Cooking Apparatus With A Solar Collector'*

since the exact term *"Solar Cooking"* is not present in the title in exact order and arrangement.

Most databases use double inverted commas to specify exact terms for search i.e. as mentioned above "Solar Cooking" will return results with the exact term Solar Cooking in the exact order and arrangement.

6.4 PROXIMITY AND TRUNCATION OPERATORS

Proximity operators are one of the key search optimization tools which is extensively used by expert searchers. To search two terms by specifying the distance between them (word based proximity), a proximity operator comes in handy. Thus, if one wants to search certain terms together in a range of five to ten words or within the same line or same paragraph a proximity operator is employed defining such range or distance.

On the other hand, truncation/wildcard operators allow fixing of certain portions of the search term and allowing variable characters in the truncated portion. This operator has a similar effect as that of stemming but is more definite and can be controlled by the searcher. Certain databases allow truncation on both sides of the term, while some provide only on the suffix side of the term. Some databases also allow a single truncation which lets only one character to be variable *(For example: Analy?e allows both Analyse and Analyze to be searched where "?" acts as the single truncation operator.)*

In case of proximity operators, PatSeer allows bidirectional proximity search by using operator **w** and **wd** for left-right ordered proximity. Proximity operators' **ws#** and **wp#** allow to perform an unordered proximity search within the same sentence and same paragraph, where # is the range of occurrence.

For example,

1. TAC: (mobile ws network) searches for mobile and network within the same sentence. The search will span across the length of the sentence.
2. TAC: (mobile ws3 network) searches within 3 words and within the same sentence. The span across 3 words is unordered.
3. TAC: (fiber wp optic*) searches for fiber and optic* within the same paragraph. The search will span across the length of the paragraph.
4. TAC: (fiber wp3 optic*) will search within 3 words and within the same paragraph. The span across 3 words is unordered.

Operator **w** is same as w0 meaning within 0 words), **w5** (within zero to five words), **w2-4** (within two to four words), **w4-4** (within exactly 4 words). Similarly **wd, wd5, wd2-4, wd4-4** can be used for left-to-right ordered proximity.

For example

While searching in Title, Abstract, and Claims
TAC: ((optic w2 (fiber or fibre)) wd5 (transmission amplifier))*

Optic uses * as an unlimited forward truncation to cover words like optic, optics, optical, optically, optico, optician, opticalcommunication (where terms such as opticalcommunication is not a regular used word but is typically a spelling error or deliberately written word to avoid searches)*

This query will search for optic within 2 words of fiber or fibre and occur within 5 words of the phrase transmission amplifier due to the proximity operator w and wd.*

TAC: (airbag and vehicle) AND ((frontal* or (Side w5 impact) or external*)) WD5 airbag*)*

This query will search for the side within 5 words of impact (bidirectional search) and within 5 words of airbag (left to right)

Sometimes truncation leads to unwanted term extensions which leads to junk patent results and thus needs to be carefully used.

For example if one uses air to search for terms airplane, aircraft, airship, airliner, aircab the searcher may not realize that the search will also return results with terms such as air, airfoil, airbag, airflow, airconditioning, airtight etc. which are not related in any manner to airplane and its variants and shall thus result into a large pool of non-relevant results.*

6.5 HIT CUTOFF OPERATOR

PatSeer allows searching for only those records in which a word or a phrase appears more than X number of times in the field you have specified. The hit cutoff operator PatSeer uses is | which is to be added at the end of a word or a phrase that you want to specify a cutoff for.
For example,
TAC: (mobile AND network|3) searches for mobile and network, where network appears 3 or more times within TAC
TAC:"thin battery"|3 searches for records that have the phrase thin battery appearing 3 or more time in the title

6.6 TERM BOOSTING

PatSeer allows boosting a term or a phrase to influence the relevance order of results.
GPS^4 OR triangulation: matches either words but GPS documents come earlier in results.
"skate board"^10: the phrase is boosted by order of 10
By default, the boost factor is 1. Although the boost factor must be positive, it can be less than 1 (e.g. 0.2).

6.7 MINIMUM MUST MATCH QUERY

PatSeer also supports minimum must match query which enforce a minimum number of words to match within an OR'ed list. For instance, TA: ANY2(computer* OR PDA OR PC OR laptop). This will match any 2 words from the list of words in OR query.
Similarly,

- TAC: ANY2(nano fabric OR nano fabrics OR nanofibre* OR nano fiber* OR nano fibre* OR nanometer fiber) matches any 2 words out of 6 words in any record to be relevant for inspection.

6.8 LIMITED TRUNCATION

You can use limited truncation and for this you need to specify a number after *. Limited trunctation limits the wildcard to extend from 0 to N number of characters where N is the number you specify. For example: mix*2 will match mixer and mixed but not mixing. Similarly colo*1r will match color and colour.

In the next chapter i.e. second part of Patent Search Techniques, we shall engage in creation of search strings and queries with real time examples of database searches conducted on PatSeer.

EXERCISE 6

Please answer the following:

1. Create a search string with the search fields from previous chapter and proper combination of search operators from the present chapter to search all patents:
   - having the keywords (computer, computing, compute), within three words of (screen, screens), in title or abstract;
   - as well as those which fall under IC classifications G06F & H04N;
   - such that both Apple and Sony are not the applicants/assignees of any of those patents.

For Answers click here or visit end of chapter 13

→ *For Answers to above questions, click here or visit end of chapter 7*

SOLUTIONS TO EXERCISE 5

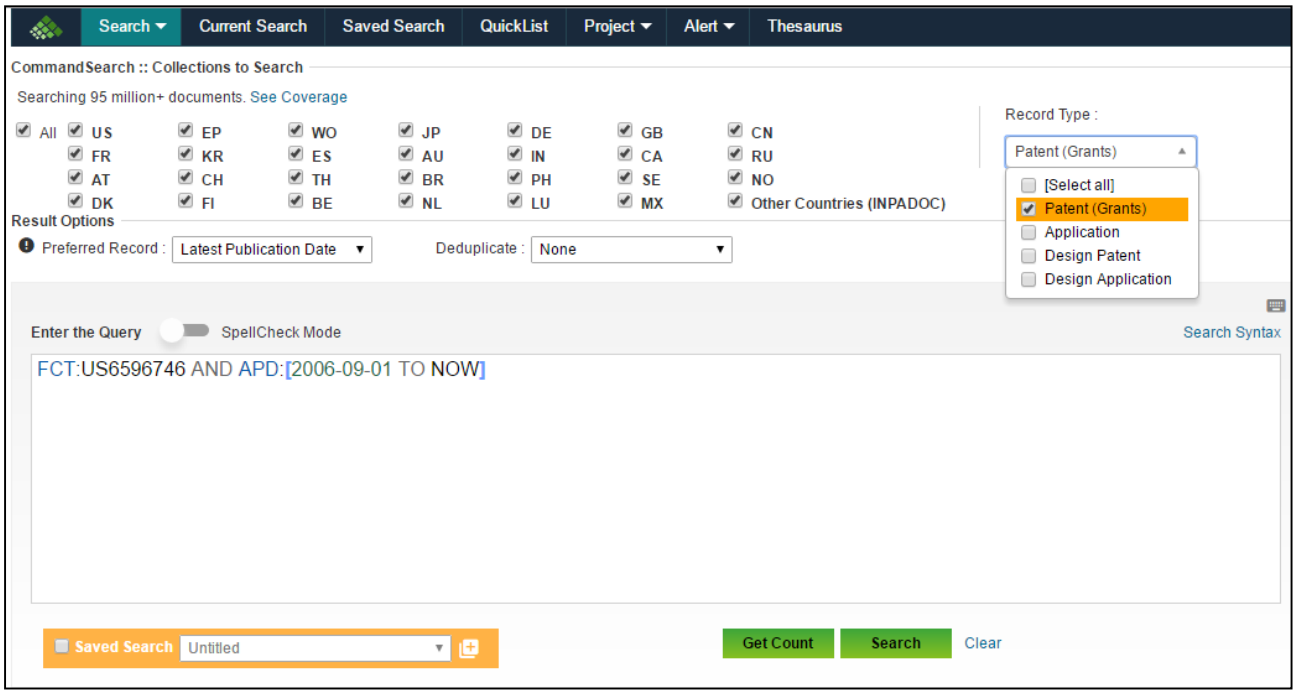
1 Stemming is a tool or form of searching in which a term is taken and the basic root or the core of the term is extended to its language and grammatical variations. This is typically useful to cover plurals, different verb forms, tenses, etc. Stemming is useful in basic and preliminary searches, but in advanced or expert searches stemming should be avoided as it can lead to unanticipated variants and lead to junk results diluting the search string impact.

2 Yes, it is possible, using the following combination of features:

a) Using forward citation command: FCT, we can generate a string FCT: US6596746 for generating a list of patents and published applications that have referenced US6596746

b) Then using the filing date/application date feature command APD, the limitation of last 10 years can be enabled e.g. APD:[2006-09-01 TO NOW] (*here it is very important to see the syntax of date. Often positions of month and date get changed due to overlooking the syntax leading to inaccurate results*)

c) Further, the result can be further restricted to only granted patents



CHAPTER 7 PATENT SEARCH TECHNIQUES INTRODUCTION – PART II

In the previous chapters we got acquainted with the key aspects, i.e. objective, project type, and the ingredients of a patent search. The present chapter will discuss the concurrent use of these aspects in creating search strings and consequently into a search strategy.

Chapter 3 elaborated the following steps which are the most significant pre-requisite to preparing a search strategy for a given database:

- *Preparing Search Terms from the Project Disclosure*
- *Understanding Databases and Search Resources for creating appropriate search strings*
- *Knowing and understanding the Search Operators used for search strings*

Once the above steps are thorough, a searcher shall have the necessary tools to engineer a robust search strategy which will be touched upon in the current chapter.

The remaining basic techniques and strategy aspects mentioned in the introduction section of Chapter 3, as provided below shall be covered in the current chapter.

- *Create a parallel set of search strings with at least:*
    - *One Search String in only Title, Abstract to cover patent documents with only Bibliographic Data indexed in the database*
    - *One Search String in only Description or Claims to avoid missing out relevant patents with short, narrow or vague Title and Abstract*
    - *One Search String using Patent Classification*
- *Search Optimization using multiple search strings*
- *Using Restrictions: Date, Jurisdiction, Assignee, Inventor*
- *Consolidate your search strategy and combine searches to finalize the search*

The chapter will also simultaneously highlight different approaches that are required to be taken for different technical domains while carrying out patent searches.

For better understanding, we will use four different examples to create search strategies with comments at relevant sections of the examples.

Example 1:
Patentability - in the domain of Electronics, Telecommunication and Business Method

Example 2:
FTO - in the domain of Biotechnology

Example 3:

Invalidation - in the domain of Mechanical Devices used in Biomedical applications

Example 4:

Landscape in the domain of Chemistry

SOLUTIONS TO EXERCISE 6

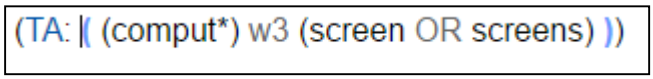
The correct search string is as follows:

TA: (comput* w3 (screen OR screens)) AND IC: (G06F OR H04N) NOT ASN: (Apple OR Sony)

Explanation:
Although, comput is used for the various suffixes to comput to obtain the desired set of keywords, * was not used for screen because many other variation such as screening, screened, screenshot, screenguard, screensave, screencast etc. which would lead to junk results. Also ? was not used as it signifies exactly one character and not 0 or 1 character, thereby missing out 'screen' in the searches. With only two terms it is best to use a simple OR command, and search for both directly.*

The operator used between keywords and classification was OR because we want to include all patents having the keywords as well as the classification, and not the combination of both. On the same lines the operator between the two classification codes and the assignees was OR and not AND.

One of the common mistakes that occur during advanced searches, are inaccurate placements of brackets. For this PatSeer provides a unique feature whereby if the user moves the cursor keys to the left and right of a bracket it'll be color coded to match the corresponding closing or opening bracket for that instant. This can also be done in excel by pasting the string after an = sign as a formula where corresponding brackets are highlighted in dark when cursor keys are move left and right around it



CHAPTER 8 CREATING A SEARCH STRATEGY EXAMPLE 1 - PATENTABILITY SEARCH

Let us take an example of an invention in the domain of Electronics, Telecommunication, and Business Method, for which a patentability assessment has to be carried out, which means identifying any document where the novel and inventive aspects of the invention are covered. It is important to understand that for patentability, the document recovered must be specific and narrow in terms of matching of the invention aspects and matching information in the document identified as relevant.

In the first example, we will also give step by step comments and indicators related to the creation of search strings.

8.1 UNDERSTANDING THE INVENTION

A device for

a. *reading or swiping a payment card (such as debit card or credit card) via magnetic stripe or chip using the 'card present methodology';*
b. *attaching or connecting to a mobile telephone which has internet connectivity using a TRS (tip, ring, sleeve) connector or a Universal Serial Bus (USB);*
c. *verifying or authenticating the payment card information through internet connectivity enabled in mobile telephone;*
d. *allowing the user to enter debit card or credit card information without it being stored in the system; and*
e. *allowing a transaction to be executed if the authentication and verification is done at the host server's end.*

8.2 CREATING THE INVENTION STATEMENT AND GENERATING KEYWORDS

If the invention were to be put down in a single statement in the form of an invention statement, it could be:
A device for allowing swiping of a credit card and connect it to a mobile phone for processing a transaction using internet connection on the mobile phone.
It can be noted that aspects such as *type of connector; verifying, or authenticating the payment card information;* have not been included in the invention as they do not seem to be the essential aspects of the

invention. Once the searcher identifies a document with information matching the invention statement, then the additional aspects of the invention can be looked up in the identified document.
Accordingly, the key aspects and additional aspects of the invention shall be used to formulate the search strategy.

8.3 IDENTIFYING PATENT CLASSIFICATIONS

To create a robust search strategy, the best practice is to have at least one search string using a relevant patent classification. As mentioned in Chapter 3, patent classifications could act as a suitable replacement to use instead of certain keywords while specifying the technical domain relating to the invention.

To identify the relevant Patent Classifications, the approaches mentioned in Chapter 3 are taken, and the following IPC and US Classifications were identified

Relevant IPC Codes Identified		
S. No.	**IPC**	**Classification Details**
1	G06Q 30/00	Commerce, e.g. shopping or e-commerce
2	G06K 7/00	Methods or arrangements for sensing record carriers

Relevant US Classification Codes Identified		
S. No.	**USCLA**	**Classification Details**
1	235/380	Registers -Credit or identification card systems
2	235/439	Registers -Particular sensor structure

8.4 DEVELOPING THE SEARCH STRATEGY

The below search strategy is an indicative and exemplary approach to the study which involves a series of search strings. It can be observed that certain iterative searches are carried out to broaden and narrow the search strings using operators and variation of search fields. Classification based searches are incorporated to provide robustness to the searches.
The Search Strings highlighted in **Bold** font are the ones which are finally used for obtaining an analysis set.

SS No.	**Search Strings (where T-Title, A-Abstract, C-Claims, D-Description, UC-US Class, IC-Int. Class)**
1	TACD:((mobile OR cellular OR cell OR portable) AND (phone OR communication) AND (payment OR purchase OR purchasing OR shopping OR shop OR buy OR buying OR mobile wallet OR epayment) AND

	(online OR internet OR GPRS OR wi fi OR wifi AND card)
2	TACD: ((mobile OR cellular OR cell OR portable) AND (phone OR communication) AND (payment* OR purchas* OR shop* OR buy* OR mobile wallet OR epayment) AND (online OR internet OR GPRS OR "General packet radio service" OR wi fi OR wifi) AND (card OR cards) AND (credit OR debit OR visa OR mastercard OR master card OR maestro))
3	TACD:((mobile OR cellular OR cell OR portable) AND (phone OR communication) AND (payment* OR purchas* OR shop* OR buy* OR mobile wallet OR epayment) AND (online OR internet OR GPRS OR "General packet radio service" OR wi fi OR wifi) AND (card OR cards) AND (credit OR debit OR visa OR mastercard OR master card OR maestro) AND (device OR gadget OR instrument OR component OR system))
4	**TA: (mobile OR cellular OR cell OR portable) AND (phone OR communication) AND (payment* OR purchas* OR shop* OR buy* or mobile wallet OR epayment)** **AND** **C: (card or cards) AND (online OR internet OR GPRS OR "General packet radio service" OR wi fi OR wifi)** **AND** **TACD: (credit OR debit OR visa OR mastercard OR master card OR maestro) AND (device OR gadget OR instrument OR component OR system)**
5	**TA: ((mobile OR cellular OR cell OR portable) AND (phone OR communication) AND (payment* OR purchas* OR shop OR shops OR shopping OR shoping OR buy OR buying OR mobile wallet OR epayment) AND (online OR internet OR GPRS OR wi fi OR wifi) AND (card or cards) AND (credit OR debit OR visa OR mastercard OR master card OR maestro))**
6	**TACD: (mobile OR cellular OR cell OR portable) AND (phone OR communication) AND (payment* OR purchas* OR shopping or shop or buy or buying OR mobile wallet) AND (online or internet OR GPRS OR wi fi OR wifi) AND (card OR cards) AND ((TRS OR "tip ring sleeve" OR "Universal Serial Bus" OR USB) w5 connector) AND (swipe OR swiping)**
7	**TA: ("3.5 mm" OR "3.5-mm" OR "3.5mm" OR TRS OR "tip ring sleeve" OR "Universal Serial Bus" OR USB) AND (credit card OR debit card OR payment card OR visa OR mastercard OR master card OR maestro) AND (phone OR mobile OR portable or wireless OR cellular)**
8	**UC:("235/380" AND "235/439")**
9	**IC:(G06K7* AND G06Q30*)** **AND** **TACD: ((mobile OR cellular OR cell) AND (device OR gadget OR instrument OR component OR system) AND (online OR internet OR GPRS OR wi fi OR wifi) AND (card OR cards) AND (credit OR debit OR visa OR mastercard OR "master card" OR maestro))**

CHAPTER 9 CREATING A SEARCH STRATEGY EXAMPLE 2 - FTO SEARCH

In the second example, let us understand the search strategy preparation for a Freedom to Operate (FTO) study in the field of Biotechnology, where the focus area of the search need not be a specific invention but a broad based invention area which may extend to several inventions.

9.1 UNDERSTANDING THE INVENTION AREA

The invention area involves an artificial tissue obtainable by the following method of preparation:

a) To add a composition containing fibrinogen to isolated cells;

b) To add a fibrinolytic agent to the product resulting from the previous step;

c) To add at least one coagulation factor, a source of calcium, thrombin, or any combination thereof to the resulting product of the second step;

d) To add a polysaccharide composition to the resulting product of the third step;

e) To grow isolated cells in or on the resulting product

9.2 RESTRICTIONS

Freedom to Operate, typically involves a date restriction to restrict the set of results to last 25 years since only live and enforceable patent documents are to be considered as potentially relevant to the scope of an FTO. Thus, considering patent terms timelines and factoring in patent term extensions, only patent documents with filing date/priority date extending back to 25 years are searched for an FTO.

Also, FTO is geography specific and thus specific jurisdiction restriction is applied on the search strings. For the purpose of this study the jurisdiction of our search would be GB i.e. Great Britain, for which patents of GB and EP shall be considered relevant for the study.

9.3 IDENTIFYING PATENT CLASSIFICATIONS

To identify the relevant Patent Classifications, the same approach as mentioned in Chapter 3 is taken, and the following IPC were identified

Relevant IPC Codes Identified		
S. No.	**IPC**	**Classification Details**
1	C07K 14/745	... Blood coagulation or fibrinolysis factors
2	C07K 14/75	Fibrinogen
3	C12M 3/00	Tissue, human, animal or plant cell, or virus culture apparatus

Since EP and GB patent documents shall not be classified by the USPTO the search will not involve US classifications.

9.4 DEVELOPING THE SEARCH STRATEGY

For this example, an alternative approach to searching is considered where each of the concepts are initially run in different search fields to create individual concept based search strings. These search strings are then combined iteratively with each other and Patent Classifications to narrow down the result set.
Relevant Date and Jurisdiction restrictions are extended to the searches.
The Search Strings highlighted in **Bold** font are the ones which are finally used for obtaining an analysis set

SS No.	**Search Strings (where T, A, C, D, UC, IC as provided in Example 1; PRD-Priority Date, PBC - Country)**
1	TA:((artificial* OR synthetic* OR invitro OR "in vitro" OR biomaterial* OR "bio material") w2 (tissue or tissues OR organ)) OR ((tissue OR organ) w5 (synthe* OR engineer* OR cultur* or scaffold*)) AND PRD:[1988-01-01 TO 2013-12-31] AND PBC:(EP OR GB)
2	TACD: ((artificial* OR synthetic* OR invitro OR "in vitro" OR biomaterial* OR "bio material") w2 (tissue OR organ)) OR ((tissue OR organ) w5 (synthe* OR engineer* OR cultur* or scaffold*)) AND PRD:[1988-01-01 TO 2013-12-31] AND PBC:(EP OR GB)
3	TA: (fibrinogen* OR (factor w2 (I or 1)) OR (plasma w2 glycoprotein*)) AND PRD:[1988-01-01 TO 2013-12-31]

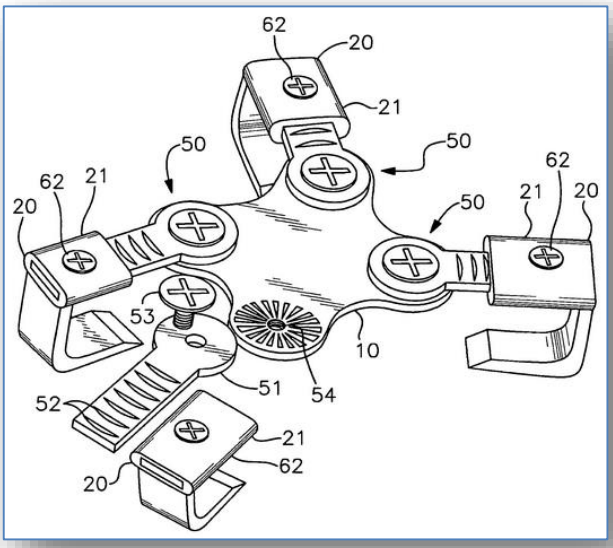
	AND PBC:(EP OR GB)
4	TACD: (fibrinogen* OR (factor w2 (I or 1)) OR (plasma w2 glycoprotein*)) AND PRD:[1988-01-01 TO 2013-12-31] AND PBC:(EP OR GB)
6	**(SS1 AND SS4) OR (SS2 AND SS3) OR (SS1 AND SS3)**
7	TACD: (fibrinoly*^4 OR "t PA" OR tPA OR rtPA OR PLAT OR (serine w2 protease*) OR ("tissue plasminogen" w4 activation) OR urokinase OR ("uro kinase") OR abbokinase) AND PRD:[1988-01-01 TO 2013-12-31] AND PBC:(EP OR GB)
8	TACD: (((coagulat* OR clot* OR haemostatic OR hemostatic) w4 (factor* OR protein* OR glycoprotein* OR peptide* OR initiator)) OR (Factor wd2 (I OR II OR III OR IV OR V OR VI OR VII OR VIII OR IX OR X OR XI OR XII OR XIII)) OR prothrombin OR proaccelerin OR proconvertin OR (pro wd (thrombin OR accelerin OR convertin)) OR ((Antihemophilic OR (anti hemophilic)) w4 (factor* OR globulin)) OR (christmas w4 factor) OR ("Stuart Prower factor") OR (plasma w2 thromboplastin) OR (Hageman w4 factor) OR (fibrin w2 stabili*) OR Hemofil OR cothromboplastin OR thrombokinase OR thromboplastin OR Thrombin) AND PRD:[1988-01-01 TO 2013-12-31] AND PBC:(EP OR GB)
9	TACD: (polysaccharide OR polysacharide O R monosaccharide OR monosacharide O R saccharide OR sacharide) AND PRD:[1988-01-01TO 2013-12-31] AND PBC:(EP OR GB)
10	SS9 AND SS8 AND SS7 AND SS4 AND SS2
11	**SS10 AND TAC: (tissue or tissues or organ or organs)**
12	**IC: (C07K14/745 AND C07K14/75 AND C12M3/00)**
13	**(IC: C12M3/00) AND (SS4 AND SS7 AND SS8 AND SS9) OR** **(IC: C07K14/75) AND (SS2 AND SS7 AND SS8 AND SS9) OR** **(IC: C07K14/745) AND (SS2 AND SS4 AND SS9)**

CHAPTER 10 CREATING A SEARCH STRATEGY EXAMPLE 3- INVALIDATION SEARCH

In the third example, the approach to an invalidation study will be observed, where the specific aspects of a claim or claims of a certain patent are to be mapped with any public disclosure previous to the priority date of the claims of the patent.

10.1 UNDERSTANDING THE INVENTION

Invalidation of Claim 4 of US 7803176 B2 (Titled: Sternal closure clamp device)



Claim 4. The device of claim 1, further comprising engagement member ***pivoting*** *means wherein the angle of each of said engagement members is independently adjustable relative to said central body.*

Claim 1. A ***sternal*** *closure* ***clamp*** *device comprising:*
a central body;
four independently actuated engagement members, each comprising a telescoping arm member having a longitudinal axis and a projection member, two of said engagement members mounted on a first side of said central body and the other two of said engagement members mounted on a second side of said central body, wherein said arm members of said first side engagement members are positioned such that said first side arm member longitudinal axes are non-parallel to each other and wherein said arm members of said second side engagement member are positioned such that said second side arm member longitudinal axes are non-parallel to each other;wherein each of said engagement members are independently retractable toward said central body and independently extendable away from said central body; and
engagement member locking means for securing said engagement members in a fixed retracted position relative to said central body, said engagement member locking means being releasable such that said engagement members are extendable from said retracted position.

10.2 RESTRICTIONS

An Invalidation search involves a date restriction to restrict the set of results to documents published or with priority before the priority date of the patent to be invalidated (PTBI) or claim to be invalidated (CTBI), which for this example is **28 May 2009.**

10.3 IDENTIFYING PATENT CLASSIFICATIONS

To identify the relevant Patent Classifications, the same approach as mentioned in Chapter 3 is taken, and the following IPC and USCLA are identified

Relevant IPC Codes Identified		
S. No.	**IPC**	**Classification Details**
1	A61B 17/00	Surgical instruments, devices or methods
2	A61B 19/00	Instruments, implements or accessories for surgery or diagnosis not covered by any of the groups A61B 1/00-A61B 18/00…

Relevant US Classification Codes Identified		
S. No.	**USCLA**	**Classification Details**
1	606/151	Surgery - Surgical mesh, connector, clip, clamp or band
2	606/213	Surgery - Sutureless closure
3	606/905	Surgery - Rib or sternum plate

10.4 DEVELOPING THE SEARCH STRATEGY

The approach to the search adopted in this example is similar to Example 2, where parallel concepts are chalked out and combined with each other using field based variation and narrowing. However, here in each of the strings where the concepts are combined at the first step itself to make them optimally broad and narrow, and then duplicates are removed by using an 'OR' operator. Further, a general approach taken in an Invalidation Search includes assignee based searches and citation based searches which are indicated in the search strings below. Citation searches can be carried out for PTBI or citations highlighted by the applicant or the examiner for the patent. PatSeer corporate tree and PatSeer assignee/inventor matching can be used to make the assignee search robust and accurate.

Also relevant date restriction has been used in the searches.

The search strings highlighted in **Bold** font are the ones which are finally used for obtaining an analysis set.

SS No.	Search Strings (where T, A, C, D, UC, IC, PRD as provided in Example 1 and 2, ASN - Assignee)
1	**TA: ((closure OR closing OR seal OR sealing OR stitch OR stitches OR join OR joining OR fastener OR fastening OR fastner OR fastning OR sew OR sewing) AND (device OR apparatus OR article OR object OR machine OR equipment OR tool OR appliance OR instrument))** **AND** **TACD: ((sternum OR sternal) AND (coupling OR join OR joining OR buckle OR buckling OR conjoin OR connect OR connecting OR link OR linking OR unit OR bond OR bonding OR union OR junction) AND (Claw OR clamp OR hook OR grappler OR pincer OR clutch OR grip OR gripping OR gripper OR clench OR clasp OR talon) AND (Pivot OR fulcrum OR axel OR gliding joint OR spindle OR swivel))** **AND** **PRD:[2007-01-01 TO 2009-05-28]**
2	**TA: ((claw OR clamp OR holder OR hook OR grappler OR capture OR pincer OR clutch OR grip OR gripping OR gripper OR clench OR clasp OR talon) AND (device OR apparatus OR article OR object OR machine OR equipment OR tool OR appliance OR instrument)))** **AND** **TACD:((sternum OR sternal) AND (closure OR seal OR sealing OR stitch OR stitches OR join OR joining OR fastener OR fastening OR sew OR sewing) AND ((pivot OR fulcrum OR axel OR gliding joint OR spindle OR swivel))** **AND** **PRD:[2007-01-01 TO 2009-05-28]**
3	**TA: ("sternum" OR "sternal" OR sterna OR (breast w4 bone*)))** **AND** **TACD: ((device OR apparatus OR article OR object OR machine OR equipment OR tool OR appliance OR instrument) AND (Shaft OR rod OR bar OR Pole OR axis OR shank) AND (arm OR limb OR branch OR extension) AND (Claw OR clamp OR holder OR hook OR grappler OR capture OR pincer OR clutch OR grip* OR clench OR clasp OR talon) AND (Coupling OR join OR buckle OR conjoin OR connect OR link OR unit OR bond OR connect OR union OR junction) AND (Pivot OR fulcrum OR focal OR gliding joint OR spindle OR swivel))** **AND** **PRD:[2007-01-01 TO 2009-05-28]**
4	TACD: (sternum OR sternal OR sterna OR (breast w4 bone*)) AND (device OR apparatus OR article OR

	object OR machine OR equipment OR tool OR appliance OR instrument) AND (shaft OR rod OR bar OR Pole OR axis OR shank) AND (arm OR limb OR branch OR extension) AND (Claw OR clamp OR holder OR hook OR grappler OR capture OR pincer OR clutch OR grip* OR clench OR clasp OR talon) AND (Coupling OR join OR buckle OR conjoin OR connect OR link OR unit OR bond OR connect OR union OR junction) AND (Pivot OR fulcrum OR focal OR "gliding joint" OR spindle OR swivel) AND PRD:[2007-01-01 TO 2009-05-28]
5	**TACD: (sternum OR sternal OR sterna OR sternums) AND (device OR apparatus OR article OR object OR machine OR equipment OR tool OR appliance OR instrument) AND (Shaft OR rod OR bar OR pole OR axis OR shank) AND (arm OR limb OR branch OR extension) AND (Claw OR clamp OR holder OR hook OR grappler OR capture OR pincer OR clutch OR grip* OR clench OR clasp OR talon) AND (Coupling OR join OR buckle OR conjoin OR connect OR link OR unit OR bond OR connect OR union OR junction) AND (pivot OR fulcrum OR focal OR gliding joint OR spindle OR swivel)** **AND** **PRD:[2007-01-01 TO 2009-05-28]**
6	**TA:(sternum OR sternal OR sterna OR (breast w4 bone*)) AND (device OR apparatus OR article OR object OR machine OR equipment OR tool OR appliance OR instrument) AND (claw OR clamp OR holder OR hook OR grappler OR capture OR pincer OR clutch OR grip* OR clench OR clasp OR talon OR (pivot OR fulcrum OR focal OR gliding joint OR spindle OR swivel) -----check query** **AND** **PRD:[2007-01-01 TO 2009-05-28]**
7	**TACD:((sternum or sternal) w20 pivot)** **AND** **PRD:[2007-01-01 TO 2009-05-28]**
8	**TAC:(sternum OR sternal OR sterna OR (breast w4 bone*))** **AND** **TA:(sternum OR sternal OR sterna OR (breast w4 bone*))** **AND** **(IC: (A61B17* OR A61B19*) OR UC: ("606/151" OR "606/213" OR "606/905"))** **AND PRD:[2007-01-01 TO 2009-05-28]**
9	**Citation Analysis of US7803176B2**
10	ASN:(Synthes Holding OR SIC Breveti OR Aesculap OR Spiration OR KLS Martin OR (Johnson W2 Johnson) OR Medtronic OR Covidien)
11	**ASN:(Synthes Holding OR SIC Breveti OR Aesculap OR Spiration OR KLS Martin OR (Johnson W2 Johnson) OR Medtronic OR Covidien)** **AND** **TAC: (sternum OR sternal OR sterna OR sternums)**

CHAPTER 11 CREATING A SEARCH STRATEGY EXAMPLE 4 - LANDSCAPE SEARCH

In the fourth example, we shall create an exemplary search strategy for a landscape study in the domain of chemistry which will involve broad based searches to uncover patent documents published in the last five years highlighted trends, evolution, and white spaces in a particular technical field with the IP activities of the major players in that field.

11.1 UNDERSTANDING THE INVENTION

The field of landscape study is *'Nitro to amine reduction methods with recycle of all the liquid streams at source'.*

11.2 IDENTIFYING PATENT CLASSIFICATIONS

To identify the relevant Patent Classifications, the same approach as mentioned in Chapter 3 is taken, and the following IPC and USCLA are identified

Relevant IPC Codes Identified		
S. No.	**IPC**	**Classification Details**
1	C07B 31/00	General methods of organic chemistry - Reduction in general

No US Classification was obtained for a broad concept covering the scope of the study.

11.3 DEVELOPING THE SEARCH STRATEGY

For a landscape project the search terms are kept broad and the analysis set is high in volume. This is done to encompass all possible patent documents related to a cluster of technical areas in a technical field to have a holistic view of each of these clusters in relation to the field or broader technical domain. Often a detailed taxonomy or a categorization list is prepared, which forms as the benchmark for analyzing and categorizing the patent documents obtained in the search with relevance to the scope of the study.

SS No.	**Search Strings (where T, A, C, D, UC, IC, PRD as provided in Example 1 and 2, ASN – Assignee, PBD - Publication Date)**
1	**TA:((reduction OR reduce OR reducing) AND (nitro OR NO2 OR nitrogen dioxide))** **AND** **PBD:[2008-08-01 TO 2013-08-31]**
2	TA:((prepar* OR manufactur* OR produc* OR synthes*) AND amin*) AND PBD:[2008-08-01 TO 2013-08-31]

3	**TA: ((prepar* OR manufactur* OR produc* OR synthes*) AND amin*)** **AND** **TACD:((reduction OR reduce OR reducing) w20 (nitro OR NO2 OR "nitrogen dioxide")) ------ reduce will search for reduces** **AND** **PBD:[2008-08-01 TO 2013-08-31]**
4	TACD:(((reduction OR reduce OR reducing) AND (nitro OR NO2 OR "nitrogen dioxide")) AND (amin*OR NH2 OR NH)) AND PBD:[2008-08-01 TO 2013-08-31]
5	**TACD:(((reduction OR reduce OR reducing) w10 (nitro OR NO2 OR nitrogen dioxide)) w25 (amin* OR NH2 OR NH))** **AND** **PBD:[2008-08-01 TO 2013-08-31]**
6	**TACD:((nitro OR NO2 OR nitrogen dioxide) OR (amin* OR NH2))** **AND** **PBD:[2008-08-01 TO 2013-08-31] AND IC: (C07B31*)**

CHAPTER 12 SEARCH STRATEGY BASED ANALYSIS APPROACH

From the above examples, it can be observed that once the search strategy and parallel search strings are consolidated, the searcher may take different approaches to analyze the search result. Some searchers combine all the relevant search strings with an 'OR' operator to get a final consolidated set of patent documents to be analyzed, while some analyze the search string results one at a time and use a 'NOT' operator to remove duplicates from the previously analyzed search set.

For example, if String1, String2, and String3 are finalized for search and analysis, one approach is to create Search String4 which is (String1 OR String2 OR String3) so that all patent documents of the 3 strings are combined and duplicates removed to give a single unique set of patent documents to be analyzed. In the other approach a searcher will first analyse String1, followed by analysis of (String2 NOT String1) to avoid analysis of repeating documents from String 1 and likewise. While analyzing the results from the third string, the search will analyze ((String3 NOT String2) NOT String1) which can also be represented as (String3 NOT (String1 OR String2)).

Say for instance, a landscape search is to be conducted in the field of wireless charging.

The table below shows sequence of steps to come up with a relevant set of records. Firstly, different combinations of keywords were used. The search results are then combined with relevant IPC and CPC Classes to restrict the result set to relevant records.

TAC: ((inductive* OR wireless*) wd2 (charg* OR transfer*) OR WPT OR inductive_charg* OR wireless_charg*)

AND

(IC: (H02J* OR B60L* OR H01F* OR H01M* OR H04B* OR G08C* OR G06F* OR H04W*)

OR

CPC: (H02J* OR B60L* OR H01F* OR H01M* OR H04B* OR G08C* OR G06F* OR H04W*)
)

Search String 1

Search String 2

CHAPTER 13 FACTORS AFFECTING PATENT SEARCHES IN DIFFERENT TECHNICAL VERTICALS

Although the thumb rules of patent searching remain the same, certain technical domain specific improvisations are required to be done by an expert searcher from time to time. Over the years each technical domain has evolved with its own contraction of language and jargons which have led to alternate forms of expressing technical concepts or terms. To ensure a robust search strategy these forms need to be strictly incorporated in the search strings. Some of these alternate forms and variations are indicated below:

a) Classification schemes e.g. scientific names in biology, Acetic Acid classified as an acid as well as a solvent;
b) Technical jargons e.g. Cookies, troubleshoot, plugin in the field of computers;
c) Acronyms e.g. RCC in Civil Engineering, GPRS in telecommunication;
d) Structures and sequences used in the life sciences domain;
e) Industry Specific Nomenclature such as IUPAC name, Solvent Green 28
f) Indexing such as CAS Numbers
g) Alternate Notations such as Simplified Molecular-Input Line-Entry System or SMILES in Chemistry, Binary Schemes in Computers
h) Trade Names e.g. SQL for database, Drug Names such as Lipitor for Atorvastatin

As a result, a searcher will require understanding and adapting to the intricacies of each technical domain and the variables involved in creating a robust search string. Primarily, it would be expected that a person conducting a search in a particular technical domain is a technical expert and would be aware of the various possible ways in which certain terms or concepts would be expressed by a patent draftsman, an inventor, or an author. However, it is generally recommended to do thorough reading on the technical aspects comprised in the search to get acquainted with all related terms, jargons, synonyms, illustrations, and classification that may be required while searching or analyzing patent literature.

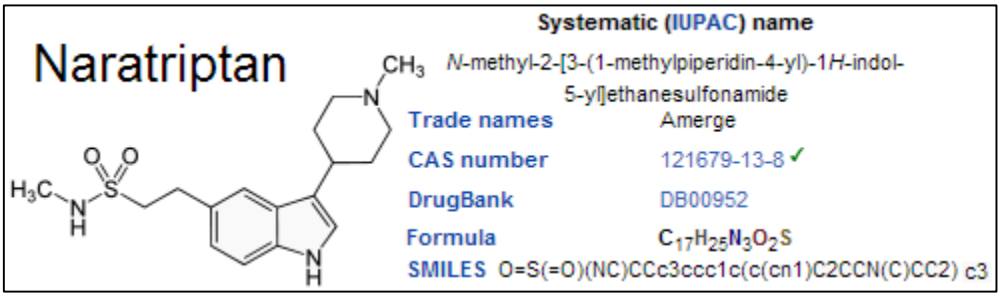
In the following paragraphs we shall discuss certain factors to be considered while engaging in patent searches for different domains.

Domains primarily involving mechanical components such as Mechanical, Biomedical, Civil Engineering, and Instrumentation, there are umpteen number of ways in which the construction and arrangement of the components can be put in words and explanations of the invention primarily depending on the drawings. For example, a fishing rod can be described in a patent simply as a ‘fishing rod’ or an 'elongated body coupled to a string' or 'a device with a pulley and lever arrangement' each of which covers the same concept but with completely different and generic set of terms that will lead to a high number of results. Here it will be a good approach to narrow the search terms with functional or application aspect of the invention such as fish* in the current example, and sternal or sternum in the above example 3. The same example of sternal closure device also has the narrowing effect of aspects relating to the working of the invention such as pivot mechanism.

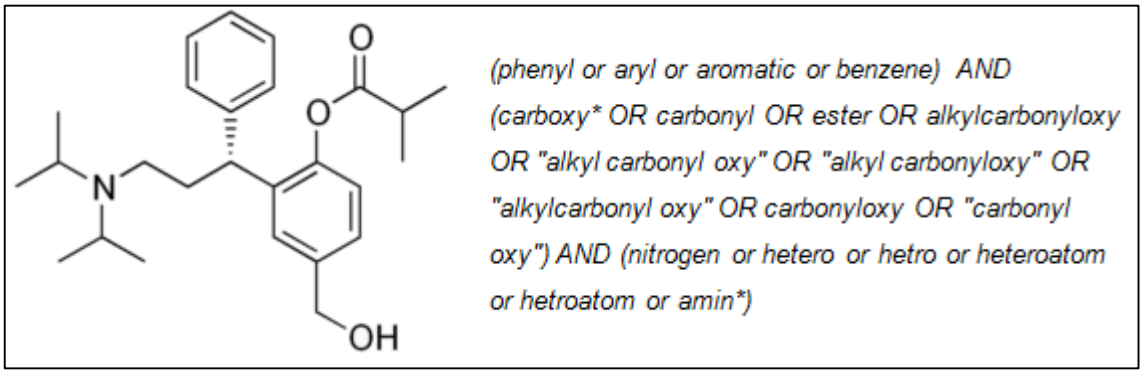
On the same lines in the field of computers and Information Technology, the inventions are based on virtual elements for e.g. Modules, Interfaces, Databases in ITIT Databases, and Computers which can easily be

substituted by generic terms like processed, codes, program, data structures, memory, storage, processing, input-output, etc. As observed in Example 1, internet can be alternated with terms such as online, GPRS, Wi-Fi, and network based user interaction system. Here again, restriction with respect to the final output or activity associated with the invention can be used to restrict the search strings and retrieve a relatively relevant set of patent documents for analysis. If we consider the first example, online payment or commerce can be used as a concept to restrict software or network enabled embedded system for the invention.

In the chemical or pharmaceutical domain, the naming variation of a chemical compound has to be meticulously incorporated in the search string. Different nomenclatures and indexing such as IUPAC, Generic Name, Trade Name, Chemical Formula, CAS No., SMILES, and Drugbank ID are available and must be used in the searches. The same chemical compound will also be represented by a Chemical Structure for which a separate structure search might be required to be executed on specialized databases such as STN or Pubchem.

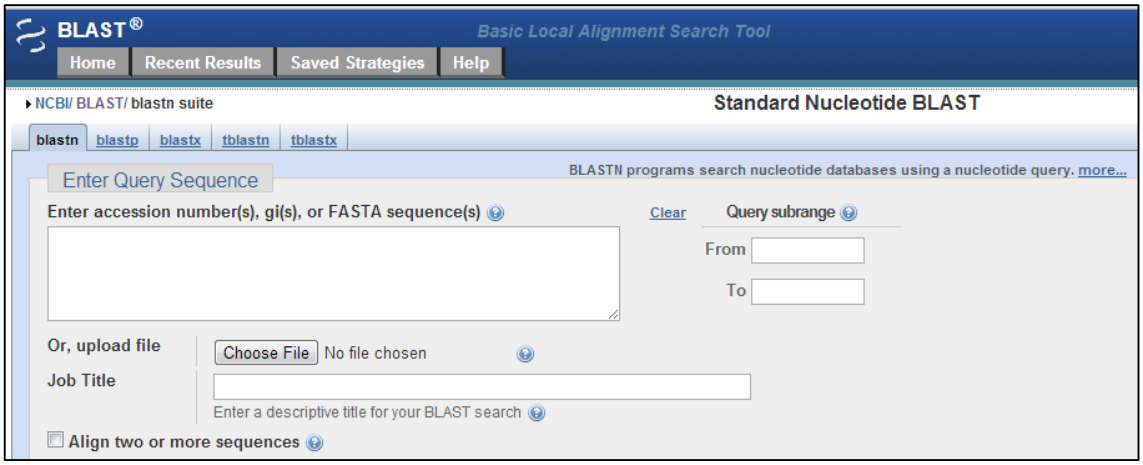


Sometimes, drugs are also broadly illustrated as agonists or antagonist specific to receptors without mentioning any keyword, directly referring the drug. E.g. **Naratriptan** can be referred to as 5-HT1 receptor subtype agonist throughout a patent document, which will only be obtained if a searcher covers the search term in the search string. At times, a search may be directed towards a complex molecule with several fragments where a searcher may break down the fragments and search them as separate search concepts to retrieve a relevant set of analysis results. An example of the same is shown below as an indicative reference to use individual fragments/elements in combination to search for a relatively large molecule



Another important factor while conducting a chemical search would be to cover the generic groups or markush enabled groups that may be used in a relevant patent. For example, for searching Ethanol, the search term should incorporate terms such as alcohol', 'Ethylalcohol ', 'CH_3CH_2OH', 'C_2H_5OH', 'OH', 'hydroxy', and 'hydroxyl'

Biological science including Biotechnology also has considerations similar to that of Chemistry, where alternate names, classification, and indexing play an important role in search term variations. This is indicated in Example 2, where fibrinogen is alternated with 'factor I' and 'plasma glycoprotein'. In certain biotech search projects, a separate Sequence Search may be carried out using specialized databases such as STN, NCBI, etc. Sequence search portals allow nucleic acid and protein sequence searches and also perform searches based on translated sequences. The search interface of NCBI allows a Basic Local Alignment Search Tool, or BLAST that can be observed in the below image.



EXERCISE 7

Please find the variants for the following keywords that shall be required in searches specific to those domains:

Mechanical

Velcro

Herbal/Biology

Arachis hypogaea

Information technology

Torrent

Chemistry

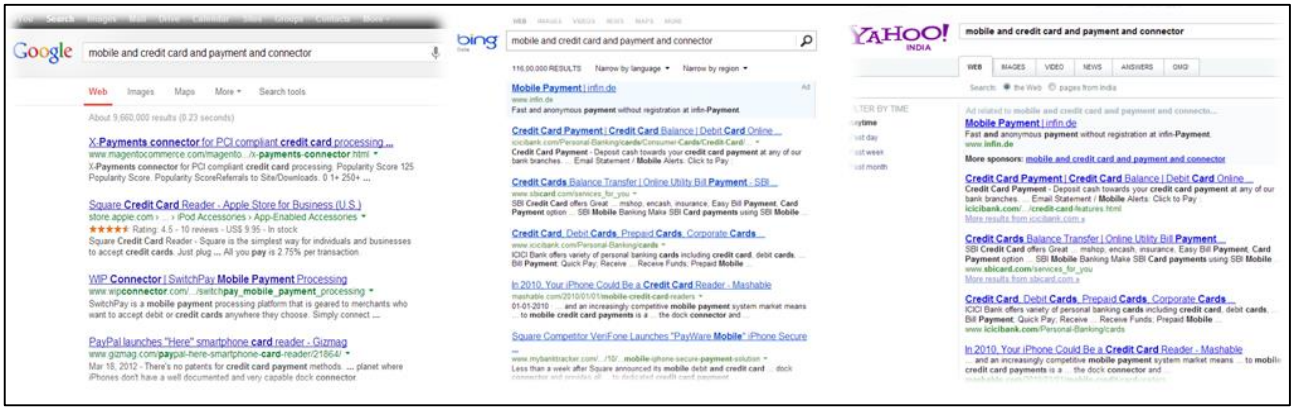
Nitroglycerine

→ *For Answers to above questions, click here or visit end of chapter 14*

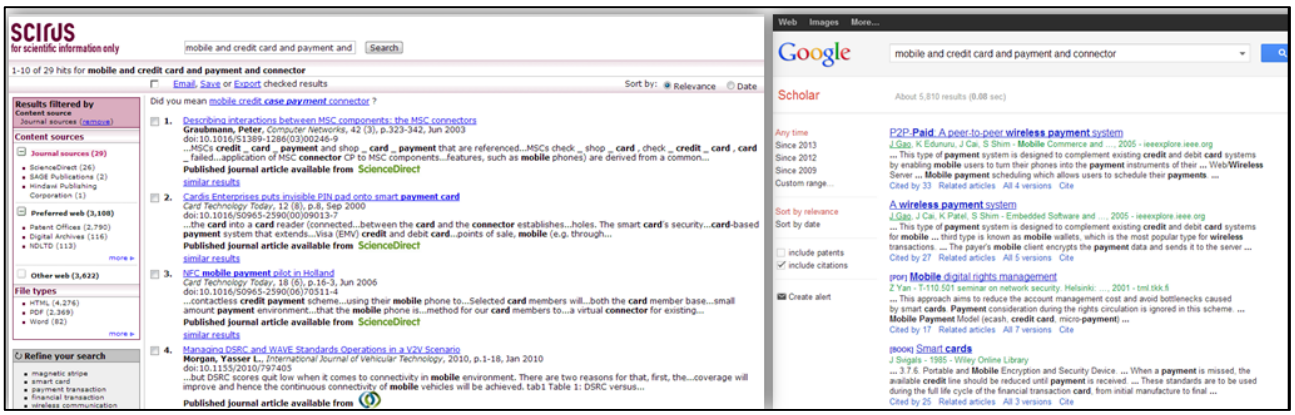
CHAPTER 14 NON PATENT SEARCHES

The above examples primarily focus on patent searches. However, for a comprehensive search in Patentability and Invalidation projects, non patent searches must also be run complimenting the patent searches to cover a larger field of scientific data. Particularly, when it comes to exploring technical literature sourced from Universities and scientific societies, non-patent literature becomes extremely important. However, improper database indexing, limited availability of full-text document, lack of classifications, and coding often make it difficult for a searcher to analyze and scout non-patent literature with the same speed, coverage, and accuracy as it is possible for patent searches.

Ordinarily open search engines such as Google, Bing, and Yahoo can be used to carry out primary non patent literature search.



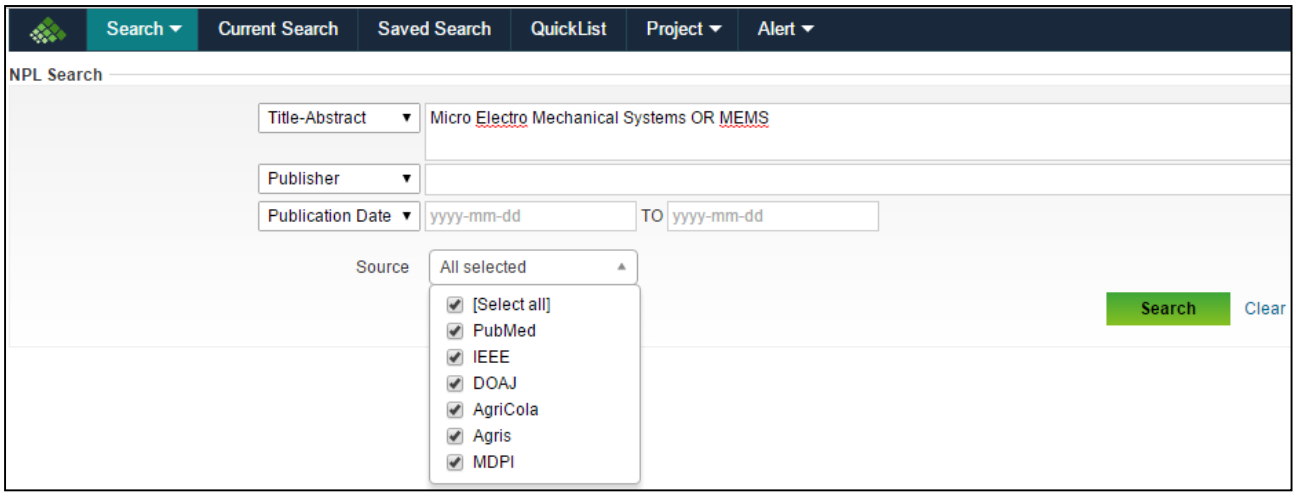
Certain scholarly and scientific literature sources such as Google Scholar and Scirus provide advanced search features and far more relevant data source which help a searcher conduct a deeper and robust search.



Individual Journals, Online Libraries, or Physical Literature Sources may also be accessed for conducting non-patent literature survey.

Some commercial databases provide access to prominent science and engineering databases via a single integrated search interface. The NPL search interface of PatSeer is illustrated below. The interface

integrates many different journal sources (some of them require you to have a subscription to them). The advantage of the integrated interface is that you can run a single query across all of the sources simultaneously.



In the next chapter, we shall be understanding alignment of patent searches with strategy and decision making of different stakeholders at a holistic macro-level

EXERCISE 8

Please conduct a basic online survey and

a) Identify at least 2 non patent full text sources facilitating relevant prior art searches, and
b) At least one full text technical paper within those sources

In the following technical areas:

a) Treatment of renal cancer
b) Biometric Encryption
c) Windmill Blades

For Answers click here or visit end of chapter 18

→ *For Answers to above questions, click here or visit end of chapter 18*

SOLUTIONS TO EXERCISE 7

Mechanical - Velcro

- hook and loop
- hook-loop
- hook and pile
- fastener (and other variations of fastening)
- connector (and other variations)
- coupler (and other variations)
- linker (and other variations)

Biology/Herbal - Arachis hypogaea

- peanut
- groundnut
- monkeynut
- nut/nuts
- goober
- Legume
- Fabaceae
- Leguminosae

Information Technology - torrent

- bitTorrent
- P-to-P
- P2P
- peer to peer
- peer-to-peer
- peertopeer
- communication protocol
- file sharing
- file transfer
- file distribution
- file upload and download

Chemistry- Nitroglycerine

trinitroglycerin

nitroglycerine

TNG

glyceryl trinitrate

GTN

1,2,3-trinitroxypropane

1,2,3-Propanetriol trinatrate

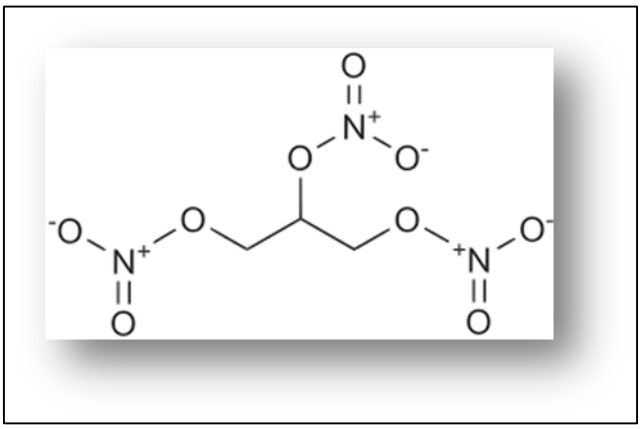
Common name: **Dynamite**

Category: explosive (and other variations of explosion)

CAS No: 9010-02-0

SMILES: C(C(CO[N+](=O)[O-])O[N+](=O)[O-])O[N+](=O)[O-]

Structure:



CHAPTER 15 MAPPING PATENT SEARCH TO STRATEGY AND DECISION MAKING

In the previous chapters, the different types and approaches to patent searches have been discussed from a searcher's point of view. In this final chapter, we shall take a holistic macro-level understanding of the alignment of patent searches with strategy and decision making of different stakeholders.

For an effective understanding, we will take a bi-dimensional approach to observe how and where patent searches act as a strategic contributor. The first dimension would be the various stakeholders who use patent searches for strategic inspects and a contributive factor in decision making, while the second dimension is different types of patent searches.

Dimension 1 can be further split into the following categories:

a) *Businesses with in-house research capabilities, and driven by innovation. These are typically large companies with funds directed towards Research and Development. Such entities may also be called as Innovators*
b) *Businesses without in-house research capabilities. These are typically small and medium scale enterprises where there is no or minimal spending on Research and Development. Such entities may also be called as Non-Innovators or Generics*
c) *Research Institutes including academic institutions, Government funded R&D Centres, Innovation Labs, etc*
d) *Investors such as Venture Capitalists, Angel Investors, Banks, Financial, and Private equity firms*

Dimension 2 can be further split into the following categories:

a) *Patentability*
b) *Patent Invalidation*
c) *Freedom to Operate/ FTO*
d) *Patent Landscape*
e) *Equivalent Search*
f) *Legal Status Search*
g) *Patent Term Extension Search*

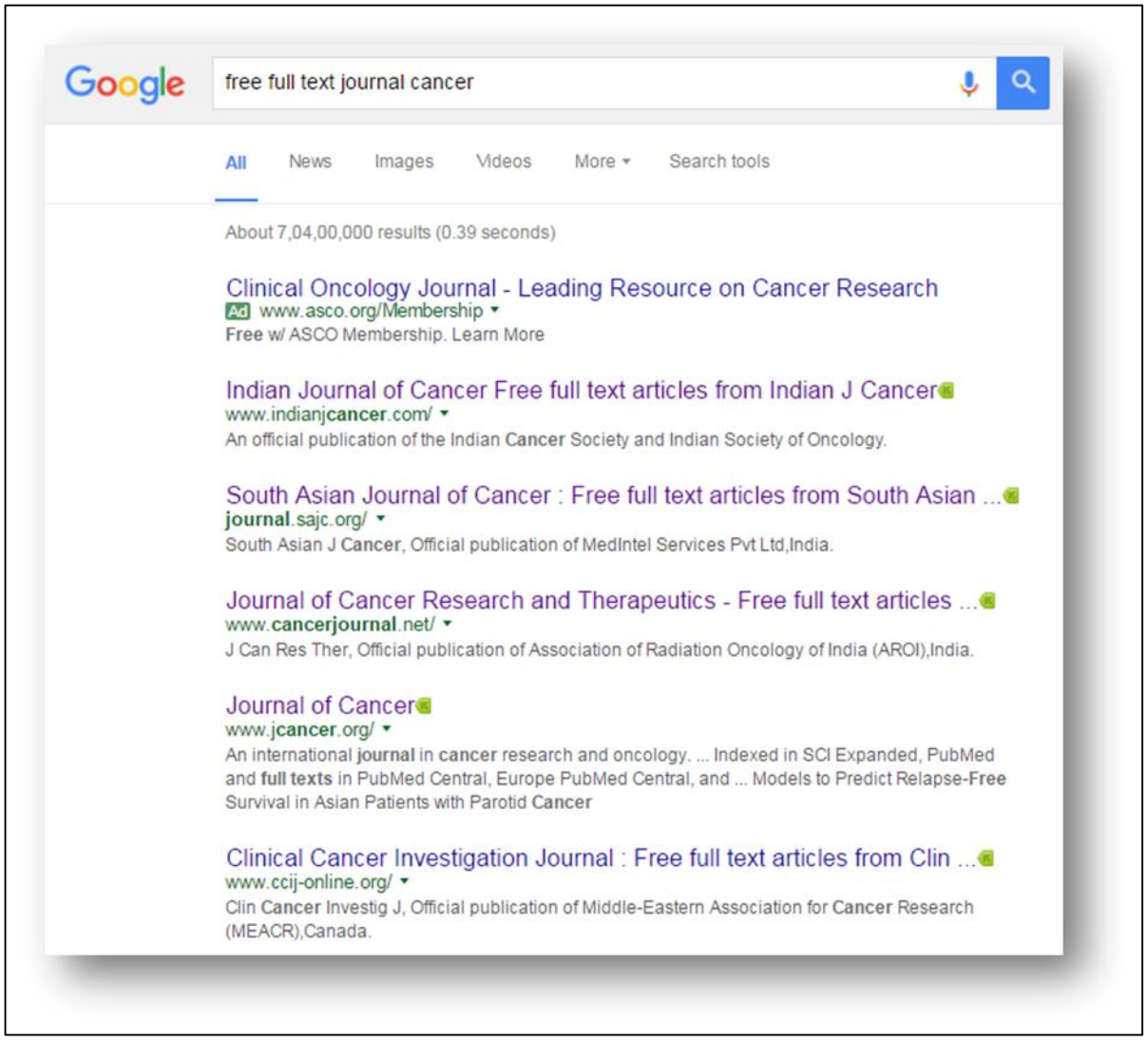
	Businesses with in-house research capabilities	Businesses without in-house research capabilities	Research Institutes including Academecia	Investors
Patentability	H	N	H	H
Patent invalidation	M	H	N	N
Freedom to operate/ FTO	H	M	N	H
Patent landscape	H	M	H	L
Equivalent search	L	H	N	N
Legal status search	H	H	N	H
Patent term extension search	H	H	N	H

H – High Impact Strategic contributor
M – Medium Impact Strategic contributor
L – Low Impact Strategic contributor
N – Not used as a typical Strategic contributor

The above table provides an indicative matrix of the relationship between the two dimensions, in terms of whether a category of the first dimension is used by a category of the second dimension and the impact associated with it.

SOLUTIONS TO EXERCISE 8

A basic internet search with keywords 'free full text journal cancer' or 'free open database cancer' would give you several links to open databases/free full text journals for cancer, and on the same lines for any other technical area including b) and c)



a) Treatment of renal cancer

Open Source Journal

- Indian Journal of Cancer - http://www.indianjcancer.com/
- South Asian Journal of Cancer - http://journal.sajc.org/

A basic search interface available on all such sources would yield in the sought *technical literature reference, such as:*

- ✓ Title: Targeted therapy for metastatic renal cell carcinoma… *(Noura Majid, Nabil Ismaili, Mounia Amzerin, Hassan Errihani)*
  Link:http://www.ccij-online.org/article.asp?issn=2278-0513;year=2013;volume=2;issue=3;spage=195;epage=201;aulast=Majid

b) Biometric encryption

Open Source Journal

- Researchgate, collection of journals including journals on software and cryptography - www.researchgate.net
- International Journal of Computer Science and Network Security - http://ijcsns.org/

Technical literature reference

✓ Title: A Behavioral Biometric Approach Based on Standardized Resolution in Mouse Dynamics *(S.Benson Edwin Raj, A. Thomson santhosh)*
Link: http://paper.ijcsns.org/07_book/200904/20090450.pdf

c) Windmill Blades in construction industry

Open Source Journal

International Journal of Renewable Energy Research - http://www.ijrer.org/
International Journal of Environmental Research and Public Health via MDPI - http://www.mdpi.com/journal/ijerph

Technical literature reference

✓ Title: Design, Development, Manufacturing and Testing of Aerofoil Blades for Small Wind Mill *(Mahesh Wagh, Nilkanth N. Shinde)*

Link: http://www.ijrer.org/ijrer/index.php/ijrer/article/view/353/pdf

CHAPTER 16 DIMENSION 1 - MAPPING OF STRATEGY BASED ON STAKEHOLDER TYPE

The mapping of patent search to strategy and decision making shall now be discussed based on the type of stakeholder

16.1 BUSINESSES WITH IN-HOUSE RESEARCH CAPABILITIES

These entities substantially use patent searching at different stages of their company and product lifecycle and use it as an important decision making tool.

At the pre-innovation stage, Patent Landscapes are used to identify the existing innovations to avoid repetition of research along with white spaces or innovation gaps which provide a direction in which research can be carried out. These Patent Landscapes are also used by the entity to look for opportunities of acquiring or in-licensing patents or even for mergers and acquisitions.
On narrowing down the particular research activity to be carried out in anticipation of a new and unique invention being developed at the end of such research, a patentability search is conducted to ascertain the strength of the invention in terms of novelty and inventiveness. One or more such inventions when found patentable may be developed, else skipped or suitably modified to meet the patentability criteria.

At the same time an FTO is also carried out to check whether any patent with broad claims will cause hindrance to the inventions practice in a certain jurisdiction even if patentable. If the FTO reveals granted or to be granted patent documents in the jurisdiction, the entity may:

a) Approach the patent holder to acquire or in-license the patent
b) Carry out an invalidation study to see if the patent may be invalidated
c) Wait for the patent expiry
d) If not granted, the entity will docket it for regular Legal Status Search Updation

The entity may also use patent invalidation to gain competitive advantage over its competitor by trying to invalidate or knock-off patents favouring the competitors.

16.2 BUSINESSES WITHOUT IN-HOUSE RESEARCH CAPABILITIES

The non-innovators use patent search sporadically and as a support element to their business cycle and decision making.

Since they have no inventions being developed in-house, they don't require carrying out patentability searches.

However, for practicing of products or processes in any jurisdiction, unless it is well known and established that the product/process is subject to clear and free market.

A landscape search for R&D direction shall not map with the strategic requirements of non-innovators, but they may carry out focused landscapes for keeping a watch on upcoming technologies with which they can make generic versions with their setup. They may also use landscapes to identify patents relevant to their business and enable inorganic innovation growth within the organization by acquiring such patents without carrying out the R&D in-house.

16.3 RESEARCH INSTITUTES

Most Research Institutes heavily depend on literature survey and history of technologies along with an in-depth know how of evolving state of art in technical areas. This is done through either ongoing broad landscapes or a series of focused subject oriented landscapes. The insights from the landscape studies guide the direction of their research. Once inventions are identified, again at the pre-invention development stage and post invention development stage, patentability searches are carried out. Since most research organizations do not market or manufacture the products related to their research, FTO is not an area of focus for them.

16.4 INVESTORS

Investors lay special emphasis on establishing the value of a business or products they intend to fund by assessing the intellectual property worth and/or risk, both in tangible and intangible form.

If an investor is evaluating an investment opportunity in a novel and inventive technical concept, the investor usually makes sure that the IP is protected by conducting a robust patentability search and filing of a patent at the earliest along with a robust FTO to ensure marketability of the technical concept.

On the other hand, for an already public technical concept, an FTO study is an absolute essential test for an investor before funding any entity.

Certain investors carry out landscape studies to identify emerging investment opportunities specific to their area of interest.

CHAPTER 17 DIMENSION 2 - MAPPING OF STRATEGY BASED ON PROJECT TYPE

The Mapping of Patent Search to Strategy and Decision Making shall now be discussed based on the type of search project:

17.1 PATENTABILITY

Patent Searchers carry out a 'Patentability' searches to ascertain whether a proposed invention, i.e., a product or a process is 'novel' as well as 'non-obvious' at both pre-invention development stage and post-invention development stage. If there is any substantial time gaps between pre-invention development stage and post-invention development stage then it is recommended to re-conduct the Patentability search. This is because of the 18 months publication time lag, where during the second search it is possible to uncover patent documents filed before the date of the first search but published after that date.

If the Patentability search proves the proposed invention to be both novel as well as non-obvious then it may be decided to file patent application for grant of the patent on the proposed invention.

If the Patentability search proves the invention to be **not** novel or **obvious** and/or **anticipated**, changes or differences with the proposed invention and the citations obtained during the search may be identified and/or manner of drafting a patent specification may be altered to highlight the novelty and inventiveness of the proposed invention.
If the Patentability search proves the proposed invention to be both **not** novel as well as **obvious** and/or **anticipated** due to presence of a patent document mapping the technology of the proposed invention it may also be contemplated that a 'Freedom to Operate/ FTO' search shall also give a negative verdict, i. e., this uncovered patent document shall act as "roadblock" to launching and continuance of the product or the process of the proposed invention in a particular jurisdiction. This shall save both cost and time of an investor.

Patentability search results and analysis may also be included in the background portion of a patent specification to describe prior art and already available technology in the same field as that of the proposed invention.

17.2 PATENT INVALIDATION

Patent searchers carry out an 'Invalidation' search to ascertain validity of a cited potential patent reference(s) that might act as "roadblocks" to launching and continuance of a product or a process in a particular jurisdiction. If it is noted that a patent is not allowing freedom of operation, for an essential product or a process, carrying out invalidation search can be a good option. In an Invalidation search and study, if a relevant citation is located to discredit the grant of a patent, a granted patent may be revoked and will clear the product or the process for freedom to operate.

If a competitor's patented product or process is performing well in the market, carrying out an Invalidation search and study to locate references or citations to discredit the patent is a good option to impinge on the competitor's monopoly.

Invalidation searches can also be used as a defensive tactic. Information obtained on a competitor's patented product or process through invalidation searches and studies may be used to deter these competitors from invalidating one's own patents.

17.3 FREEDOM TO OPERATE/ FTO

Patent searchers carry out a 'Freedom to Operate/ FTO' search to ascertain the "right to use" of a product or a process in a particular jurisdiction. A Freedom to Operate/ FTO search mainly concentrates on identifying potential patent references that might act as "roadblocks" to launching and the continuance of a product or a process. A Freedom to Operate/ FTO search may also uncover pending patent applications so that if eventually issued as patents, might be infringed by a given product/process. If the verdict of the search is positive, i. e. if the Freedom to Operate/ FTO search uncovers no potential patent references that might act as "roadblocks" to launching and the continuance of a product or a process in a particular jurisdiction, then launching and continuance of a product or a process and using that in the same jurisdiction may be carried out.
However, if the verdict of the search is negative, i. e. if the Freedom to Operate/ FTO search uncovers potential patent reference(s) that might act as "roadblocks" to launching and continuance of a product or a process in a particular jurisdiction, then the following two approaches can be taken-

- In-licensing of the patent(s) w.r.t. the desired product or process can be done;
- Invalidation searches can be carried out w.r.t. the desired product or process.

If the verdict of the search is negative, i. e. if the Freedom to Operate/ FTO search uncovers potential patent reference(s) that might act as "roadblocks" to launching and continuance of a product or a process in a particular jurisdiction, then the legal status as well as the life-time of the potential patent reference(s) can be checked to see when the patent expires after which free and open use of the desired product or process shall be permissible in the particular jurisdiction.

17.4 PATENT LANDSCAPE

Patent Searchers carry out 'Patent Landscape' study to obtain a single view matrix of all relevant technical information related to a technical field. A predefined taxonomy is created in a manner that shall provide relevant categorization and information/data bucket.

- Patent Landscape studies are useful to observe filing trends for patents of different categories
- Patent Landscape studies are useful to observe filing trends for patents of different players
- Patent Landscape studies are useful to identify patents for in-licensing or buying

- Patent Landscape studies are useful to identify top players and/or companies and/or universities in a particular field of technology

- Patent Landscape studies are useful to identify top inventors in a particular field of technology

- Patent Landscape studies are useful to identify the geographical region where maximum patent filings occur

- Patent Landscape studies are useful to follow competitors' research and development activity by studying their patent portfolio

- Patent Landscape studies are useful to identify white spaces or technology gaps to guide further research in that area of the technology

17.5 EQUIVALENT SEARCH

Patent searchers carry out 'Equivalent' search after a relevant patent citation, with respect to a specific technology, has been identified and now it is required to be checked whether a family member of the same patent citation has been filed and is live in any other jurisdiction.

Equivalent searches may be conducted by or for 'businesses **without** in-house research capabilities' for a patent document/citation of a product or a process which is lucrative to be practised in another jurisdiction. If the equivalent search is positive, i. e., no equivalent patent application or no family member of a patent application is filed and/or is live in that jurisdiction, then there is no hindrance from that patent family for practicing the product or the process in that jurisdiction.

17.6 LEGAL STATUS SEARCH

Patent searchers carry out 'Legal Status' search to identify one or more patents based on their current legal status. Identification of a patent's legal status, helps to understand if the patent is in force, in order for grant, lapsed, or capable of being restored or irreversibly abandoned/out of force.

Generally, the legal status searches are conducted in combination with another searching aspect such as:

a) an assignee to identify patents with specific legal status; example, all patents of an assignee that have lapsed in last one year

b) one or more patents for repeated updation of current legal status; example, a patent which was relevant to freedom-to-operate study but had lapsed during the freedom-to-operate search and hence was not considered relevant for the freedom-to-operate study; however, on later updation the patent was restored thereby becoming relevant to the freedom-to-operate study conducted earlier, after the legal status searches were done for such updation.

Typically, this is done with the same intention as that for checking freedom-to-operate with respect to a product or a process claimed in a patent/ patent application. Based on the outcome of this search, strategic approach similar to a freedom-to-operate can be taken.

17.7 PATENT TERM EXTENSION SEARCH

Patent searchers carry out 'Patent Term Extension' search to check if the enforceable term of a patent has been extended, and if so, until when is the patent life valid during which freedom of operation of the product or the process protected by the patent remains negative.

To exemplify the importance of patent term extension search, the pharmaceutical industry in USA may be taken into consideration. Patent Term Extension (PTE) is relevant to generic businesses or 'businesses **without** in-house research capabilities' while applying for the marketing exclusivity given to first generic applicant, after expiration of the patent term, where the expiration date shall be subject to the PTE.

CHAPTER 18 EXEMPLARY CASE STUDY

Innovator Company A (located in USA)	**Generic Company B (located in India)**
University C (located in USA)	**Investor D (located in India)**

- Innovator Company A carries out a Patent Landscape search and analysis and identifies a white space or technology gap in the area of use of a pharmaceutical formulation for transdermal patch treatment for PQR disease

- Scientists of Innovator Company A, propose a pharmaceutical formulation, comprising an active pharmaceutical ingredient (API) – 'T_X' with two other ingredients 'T_Y' and 'T_Z', for the development and use of the proposed transdermal patch for the treatment PQR disease

- A patentability search is conducted with respect to this proposed transdermal patch pharmaceutical formulation and a positive verdict is obtained

- Innovator Company A also conducts a freedom-to-operate search and study in USA, and finds that the use of 'T_X' for treatment of PQR disease is already patented in USA and was assigned to University C

- Thus even though the invention of the proposed transdermal patch pharmaceutical formulation was patentable, University C's granted patent shall be acting as hindrance to working of the proposed transdermal patch pharmaceutical formulation containing the pharmaceutical ingredient (API) – 'T_X' for treatment of PQR disease

- Innovator Company A approaches University C, who is already aware of Innovator Company A's work in the field of treatment of PQR disease, based on their landscape searches and state-of-the-art studies; and proposes to join in research and development collaboration and also offers in-licensing of the patent protecting API – 'T_X'

- University C then carried out series of research projects along with Innovator Company A in the field of treatment for PQR disease using API – 'T_X' based pharmaceutical formulations for different modes administration

- Patentability and freedom-to-operate searches were carried out every time

- Innovator Company A gets the patent for transdermal patch pharmaceutical formulation for the treatment of PQR disease, granted and also gets an extension on this patent term for regulatory approval delay

- Innovator Company A now wants to expand to Europe with their collaborative innovations and research carry out freedom-to-operate searches and study in Europe

- Now, Generic Company B sees a demand for the transdermal patch pharmaceutical formulation in India, for the treatment of PQR disease

- Generic Company B being aware of Innovator Company A's now patented invention for the transdermal patch pharmaceutical formulation for the treatment of PQR disease conducts an equivalent search in India to locate any family member of the same patent that may have been filed in India

- The equivalent search returns negative results as no corresponding family members were filed in India by Innovator Company A. Hence, the transdermal patch pharmaceutical formulation for the treatment of PQR disease was free to be used in India

- Generic Company B now approaches Investor D to fund the proposed project in India

- Investor D notes that only an equivalent search was carried out in India and a freedom-to-operate search and study had not been carried out to locate any broad claims covering different aspects of the transdermal patch pharmaceutical formulation for the treatment of PQR disease

- Investor D carries out a freedom-to-operate search and study and obtains a positive verdict and Investor D funds Generic Company B project in India for manufacturing and marketing transdermal patch pharmaceutical formulation for the treatment of PQR disease successfully for over 10 years. Investor D holds maximum market share during this time

- Generic Company B now is keen on entering the markets of USA as a competitor to Innovator Company A

- Generic Company B conducts legal status searches and patent term extension searches and notes that Innovator Company A's patent for transdermal patch pharmaceutical formulation for the treatment of PQR disease is still in force for 3 more years including the patent term extension provided

- Generic Company B conducts an invalidation search and study but fails to find a relevant prior art but later applies for the marketing exclusivity as generic manufacturer and successfully receives approval for it

To summarize, in this chapter we covered different aspects of Mapping Patent Search to Strategy and Decision Making searching.

In the next chapter, we shall learn more about PatSeer and how it can help you conduct complex searches, analyze records and prepare reports.

EXERCISE 9

An USA based perfume company, with a strong R&D team and many patents to their credit in the area of perfumes, wants to enter into the domain of pens. They aim to capture the market's attention by launching a cutting edge innovative pen but are not sure of which one. They come to you for guidance and an anticipated plan. Please prepare a patent strategy for the scenario.

For Answers click here or visit end of chapter 'Free Databases Available For Patent Searching'

→ *For Answers to above questions, click here or visit end of chapter 19*

CHAPTER 19 PATENT GLOSSARY

PATENT RECORD TYPES

Patent documents are classified according to different types of subject matter. Record type can be classified as:

- **Application** - A patent application is a request for a patent made for the invention described and claimed by that application. Also referred to as published application once is the published by the patent office via a gazette or on its website.

- **Patent (Grants)** - Patent is a legal right granted by a sovereign state to an applicant. It can be either a solution to an existing problem or completely new invention. It must also have an inventive step with capability of industrial applications. The actual term for a patent is 20 years. In order to keep the patent active, it is mandatory to pay maintenance fees.

- **Plant Application/ Plant Patent** – It is filed and issued to protect a new and distinct, invented or discovered asexually reproduced plant including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state.

- **Design Application/ Design Patent** – It is filed and issued to protect a new, original, ornamental or aesthetic design embodied in or applied to an article of manufacture. The term period for an industrial design is 14 years. Design patents are not subject to the payment of maintenance fees.

- **Supplementary Protection Certificate/ SPC Application (SPC)** - A Supplementary Protection Certificate (SPC) is a sui generis IP right that extends the duration of certain rights associated with a patent. It comes into force only after the corresponding general patent expires. It normally has a maximum lifetime of 5 years.

- **Statutory Invention Registration (SIR)** - In the United States, a Statutory Invention Registration (SIR) is a registered invention published by the United States Patent and Trademark Office (USPTO) at the request of the applicant or assignee. An SIR does not afford the inventor the legal protection of a patent, and merely serves as a defensive publication, preventing others from obtaining a patent on the invention. In fact, the inventor must waive all rights to a patent on the invention when a Statutory Invention Registration is published.

- **Utility Model Application /Granted Utility Model**- It is filed and issued for invention relating to a new and useful process, machine, manufacture, or composition of matter, or a new and useful improvement thereof, it generally permits its owner to exclude others from making, using, or selling the invention for a period of up to twenty years from the date of patent application filing, subject to the payment of maintenance fees.

- **Reissue Patent**- It is issued to notify any correction made to an already issued utility, design or plant patent. It does not affect the period of protection offered by the original patent.

- **Granted Innovation Patent** - The innovation patent requires an innovative step rather than an inventive step, to protect an incremental advance on existing technology that may not qualify for standard patent protection rather than a groundbreaking invention. An innovation patent lasts up to 8 years and is designed to protect inventions that do not meet the inventive threshold required for standard patents. It is a relatively quick and inexpensive way to obtain protection for your new device, substance, method or process.

- **Granted Petty Patent** – also known as petty patents or innovation patents. It is type of utility model wherein the term of the patent varies across countries but is usually less than 10 years.

PATENT FAMILIES

A single invention protected in various countries constitutes a patent family. The patent documents sharing the same priority dates directly or indirectly are considered as family members. For e.g., if ABC files a patent application in USA and then extends it to India, then the Indian application is a family member of the US application. There are mainly two types of patent families:

A Simple family comprises those records that have exactly the same priority or same combination of priorities. Simple Family members can be interpreted as records that in all probability protect exactly the same invention.

An Extended family includes records that contain all records that are directly or indirectly linked to at least one common priority. Extended Family members can be interpreted as records that protect the same and also related inventions by the same applicant.

For detailed explanation on each type of family please visit **Patent Families** page at EPO website.

PATENT CITATIONS

A citation is a reference to a prior art that is considered relevant to the current patent application. In patent terminology you may hear about backward or forward citations. A citation by itself usually means a backward citation.

Backward citations of a record refer to the document(s) that was/were published earlier than the current record and are listed in the record as cited prior art references by the applicant or the examiner.

Forward citations of a patent refer to all those document(s) that cite it.

For e.g.,

If Patent A which is published in 2005, is cited by Patent B published in 2010

then:

Patent A is a backward citation of Patent B; and

Patent B is a forward citation of Patent A

FIELDS OF A PATENT

Abstract: A brief summary of the invention

Application Date: Application/filing date of a patent application is the date on which it was first filed

Application Number: The number assigned to a patent when it is filed

Application Year: Application/filing year of a patent application in which it was filed

Assignee: Name of the individual or company applying for a patent

Assignee Country: Assignee country is the country of residence of assignee at the time of application

Attorney, Agent or Firm: Individual or a company authorized to represent clients in obtaining patents and acting in all matters and procedures relating to patent law and practice, such as filing an opposition

Assignment: Process of sale of patent document or transfer of its ownership

Backward Citations: Document(s) that was/were published earlier than the current record

Citations: Comprise a list of references which act as relevant prior art

Claims: Claims define the scope of the patent document

Cooperative Patent Classification (CPC): CPC is based on European Classification (ECLA) and is jointly developed by the European Patent Office (EPO) and the United States Patent and Trademark Office (USPTO). It merges schema of both the classification systems

Current Assignee: Current assignee is the latest assignee present in Reassignment data of a patent document

Description/ Specification: The text portion which describes the invention in detail. It comprises of background and overview of the invention, embodiments of the invention, figures, flow charts, and chemical formulae

Designated States: they are contracting countries in which the patents can be applied. They are generally present for PCT applications and European patent documents

Earliest Priority Date: Application/filing date of the earliest filed application within in the family of the record

Earliest Priority Year: Application/filing year of the earliest filed application within in the family of the record

Earliest Publication Date: Publication date of the earliest published record within the family of the record

Earliest Publication Year: Publication year of the earliest published record within the family of the record

Examiner: Person who examines the patent application

Expiry Date: Date on which the patent's term expires

Expiry Year: Year in which patent's term expires

Extended Family: Patent documents linked (directly or indirectly) via a priority document belonging to one patent family

F-TERM: In Japanese patent law, F-term is a system for classifying Japanese patent documents according to the technical features of the inventions described in them

Family ID: Unique number allotted to all family members of a patent or application

Field Of Search: US Classification codes that an examiner refers to while searching to identify prior art

File Index (FI): Extension to International Patent Classification created by Japanese patent office

Forward Citations: Documents that cite a specific patent document

Grant Date: The date when the patent office issues a patent to the applicant

Independent Claims: Claims that stand on their own and do not refer to any other claim

Infringement: Unauthorised use of a patented invention

International Patent Classification (IPC): IPC is a hierarchical patent classification system used across different countries to classify patents. It has been developed by WIPO

International Classification (Version 1 to 7): Refers to old international patent classification version (1-7)

International Classification Revised (Version 8 to 9): Revised (8-9) version of international patent classification

Inventor: A person, or persons who have invented a technology

Inventor Country: Country of residence of the inventor at the time of application

Kind Codes: An alpha numeric text used to identify published patent documents according to type and status

Legal Status: Data relating to events in the lifetime of a patent. It gives indication of whether a patent is active (granted, applied) or inactive (withdrawn, abandoned, expired).

Locarno Classification: Locarno Classification system is used to classify industrial designs

Patent Family: Same invention disclosed by common inventor(s) and applied in more than one country

Patent Number: Unique number assigned to patent application when it is granted

Priority Country: Country in which patent application is first filed

Priority Date: Filing date of the first application filed with a patent office

Priority Number: Usually the first application number to be assigned in a patent family

Publication Country: Country in which patent application/ patent is published

Publication Date: The date on which the patent application/ patent is published by the respective patent office

Publication Year: The year in which the patent application/ patent is published by the respective patent office

References: Non patent literature refers to those documents and publications that are not patents or published patent applications, but are cited as references.

Simple Family: Patent documents which have exactly the same priority date or combination of priority dates

Title: Title of the patent document

US Class: Classification system developed by USPTO used to classify all US patent documents

US Reassignment Assignee: All the assignee names that are part of the assignment transactions

SOLUTIONS TO EXERCISE 9

Provided below is an exemplary strategic approach in the scenario provided:

1. The first step towards identifying new technologies is patent landscapes focused towards identifying and understanding the state-of-art existing in a particular domain. Although, a patent landscape for pens can be carried out to identify white spaces in the technology, unless narrowed down further, the landscape study for 'pens' as a broad domain would be extremely vast and time consuming. Thus, you advise the clients to identify a narrower technical area within the domain of pens to proceed further with the landscape. Since the company has substantive research capabilities and IP in perfumes and fragrances, the technical area can be suggested as 'Pens with perfumed inks'.

2. If the client finds the proposal aligning with their business strategy, the landscape study can be carried out in the mentioned technical area, with focus on the following data points/ trends:
    - white spaces in the technical area that can be used to direct R&D
    - key/ interesting technologies by individual inventors that can be in-licensed or purchased
    - small companies with a decent patent portfolio which can be acquired or collaborated with
    - academic institutions/ research institutes who are active in the domain and can be collaborated with for product development
    - inventors working in the relevant area, who can be hired by the company for product development

    The landscape study should also be coupled with non-patent research with a business focus - news, exhibition displays, press-releases - to understand what products and innovations are popular and trending in the industry.

3. Once the client is able to identify a few specific inventions based on gathered insights and research, both **patentability search and freedom to operate study** need to be carried out. Often clients believe that either one of them would give a window into the other and ask the searches to conduct only one of the searches, but that is not true and can lead to a huge exposure to IP failure risk, and as a searcher you must strongly advise the client to do both, failing which they can substantially prejudice their own interest. As has been discussed in the previous chapters, the patentability search will only focus on the specifics of the invention and does not consider broad claims which can lead to negative FTO. At the same time, FTO factors in only patent information in specific jurisdiction for last 25 years, thereby missing out on a lot of data that may be relevant for quashing patentability of an invention.

4. In an FTO, it is very important for the searcher to not only focus on the uniqueness of the invention but also on each individual component/aspect of the invention to ensure complete FTO of the product. A relevant example in the instant scenario can be:

    the client informed that the invention is a pen with multi-fragrance ink, such that, after every few hours the fragrance shall change into a new one.

Normally, an inexperienced searcher would initiate the FTO search focusing on the keyword & classification for concepts 'pen', ''ink', 'fragrance', 'change' & corresponding synonyms. However, an experienced searcher shall go deeper into the aspect of:

a) what is causing the periodic change of the fragrance
b) the compounds/ compositions imparting the fragrance
c) what kind of mechanism would the pen be using
d) what kind of nib/tip would the pen have

and conduct FTO studies for those aspects independently. If for example there is a live patent in US for the technology involved in changing fragrances, even though such a patent may not related to pens but to pharmaceuticals having broad claims dealing with the mechanism itself, the client can face legal action after the product launch for patent infringement. Thus, every component is to be checked for FTO.

5. If the FTO is positive the company can launch the product, while if it is not, the following strategies can be adopted:
    - ascertain if patent infringement can be avoided by modifying the product
    - in-license or acquire the patent rights of the patent leading to loss of FTO
    - oppose or invalidate the patent leading to loss of FTO
    - dismiss the idea to launch the product and move towards a different product/invention

6. If the patentability is positive, a patent claiming the unique features of fragrant ink with periodic change must be filed before the product is launched and made public

7. Sometimes, the company may come up with patentable ideas which are not directly commercializable by them. In such a case, a patent application can still be filed to strengthen IP portfolio and asset value. Such patents can be licensed, sold or cross-licensed later on strategic footing.

IP generation and commercialization occurs in a continuous cycle and thus the company should be advised to continue with the patent landscapes periodically and follow it up with relevant activities as listed above.

PART II – HOW TO USE PATSEER FOR PATENT SEARCH AND ANALYSIS

CHAPTER 1 BACKGROUND & OVERVIEW

PatSeer is a fully-featured web-based global patent research platform with integrated analytics, project workflow and collaboration capabilities. PatSeer patent database comprises 104+ authorities (including 42 full-text countries), along with Searchable full-text Translations of 11 non-English authorities, support for both Simple & INPADOC Families, PDFs, Drawings, Citations, Legal Status, Assignee Corporate Tree, Semantic Search, Topics Clustering and many other data-points for superior research.

PatSeer pioneered the concept of sharing an interactive patent dashboard called Patent Dashlets® amongst patent databases. Such dashboards, for instance, allow corporate patent professionals to collaborate effectively with their external counsels or even with internal management stakeholders. It creates a centralized work environment for a team to manage to search patent databases, work on patent data projects, carry out analysis and deliver insights. Coupled with powerful workflow management features, the platform can be customized to operate according to internal processes and requirements.

PatSeer also includes a unique “hybrid” search engine that supports searching for patents publication-wise or patent family-wise. This helps give flexibility to the user, especially during analysis as not all patent analysis questions can be easily answered if the database supports only one type of search.

It also consists of Industry’s first ‘Search Recall™ feature’ which allows users with easy access to past work and helps them reuse it for their projects.

PatSeer Editions

- PatSeer Premier
- Patseer Standard
- PatSeer Lite

Patseer also has powerful web based analytics product called PatSeer Pro and Enterprise wide collaboration and sharing platform called PatSeer Projects.

We will see PatSeer Premier, Standard and Lite editions capabilities in below table.

		Editions		
Feature	Description	Premier	Standard	Lite
Coverage	Includes full text of US, EP, WO, DE, GB, FR, JP, CN, KR, ES, CA, CH, AT, AU, IN, BR, TH, RU, PH, SE, NO, DK, FI, BE, NL, LU, MX, AP, CO, DD, EA, IL, MA, MC, OA, TW, TJ, KG, AM, UZ, MD and GE. Also Includes searchable JP, CN, FR, DE, DK, FI, RU, NL, LU and MX English Translations and bibliographic data from 104+ countries as part of INPADOC data. (Approximately 61 million full text records in a database of 102 million+ records). Click here to see Detailed Coverage Table.	✔	✔	✔
Corporate Tree	Integrated Corporate Tree for Top 3000 Assignees within search page so that you can lookup subsidiaries and include them in your company searches	✔	✔	✖

Normalized Assignees	Assignee names have been cleaned up manually using in-house tools for more precise search and analytics	✔	✔	✔
Current Assignee	Search Latest Ownership details for US records along with Probable Assignee calculation for unassigned records. See related blog post.	✔	✔	✔
Reassignment Assignee	Search across all assignees present in the US Reassignment history of the record	✔	✔	✔
Maintenance Data	Maintenance status for US patents has been integrated into results	✔	✔	✔
Independent Claims	Independent Claims are searchable separately from Full Claims	✔	✔	✔
Description Examples	Examples that occur at the end of the patent description can be searched separately	✔	✔	✔
Description of Prior/Background Art	The section within patent description that describes the prior/background art has been made available as a separate search field	✔	✔	✔
Priority Information	Priority Numbers and data available for every record and integrated into search results	✔	✔	✔
Patent Family	Both Simple and Extended Family information integrated into results. You can choose collapse results by either Simple or Extended Family	✔	✔	✔
Searchable Legal Status	INPADOC Legal Status linked with each record and searchable along with other fields. Current Legal Status is calculated for each records and available as a separate search field	✔	✔	✔
Front Page Images	Front page drawings for US, EP, WO, DE, JP, CH, GB, FR records displayed along with results.	✔	✔	✔
Image Mosaic	Links to mosaic of all patent images	✔	✔	✔
PDFs	Links to view PDF for each record. PDF coverage available for all major authorities US,EP,WO,GB,FR,DE,JP,CN and more	✔	✔	✔
Citations	Backward/Forward Citations per record/per family available for US and most European authorities with an indication of Examiner and Inventor Citations.	✔	✔	✔
Classification Descriptions	CPC, US and International (IPC) Class Descriptions integrated into the search results for instant lookup	✔	✔	✔
Assignee and Inventor Country	Country information provided for Assignees and Inventors where available	✔	✔	✔
Estimated Expiry Date	Estimated Expiry Date calculated for each patent and available for search and filtering. The Expiry date factors Term Extensions and Disclaimers for US records.	✔	✔	✔

Earliest Priority and Publication date	Earliest Priority and Publication date from the Extended family has been pre calculated and linked to each record	✔	✔	✔
PatSeer Search Features				
Search Forms	Multiple search forms to suit different types of users. Quick Search, Simple Search, Field Search, Command Line and Number Upload	✔	✔	✔(Except Command Line & Natural Language Search)
Non Patent Literature Search (NPL)	Get access to prominent science and engineering databases via a single integrated search interface.	✔	✔	✖
Search Scripting	Combine searches like a pro! Combine search queries using AND/OR/NOT with identifiers assigned to each search query. So you can prepare your final search strategy in steps rather than having to formulate the large search in a single go	✔	✔	✖
Semantic Search Suggester	See keywords or concepts that are related to your search and improve search precision	✔	✔	✔
Search Fields	Search by All text fields, US, IPC(8-9), IPC(1-7), CPC and Locarno classifications, Assignee/Inventor Country, Attorney Agent, Examiner, Earliest Priority Date, Legal Status and more.	✔	✔	✔
Lookup Matching Assignee / Inventor	Lookup all variations of the Assignee or Inventor name you are searching for and include them in your search	✔	✔	✔
Search Syntax	Includes advanced Search capabilities needed by professional searchers such as complex Boolean, wildcards, proximity, fuzzy, and range queries. All operator words – and/or/not are also searchable	✔	✔	✔
SLART Support	Left, right and middle truncation supported to aid searching in chemical and biotech verticals	✔	✔	✔
Proximity Searching	Fully Featured proximity support without any compromise. Includes support for both ordered and un-ordered proximity, support for nested boolean within proximity queries (like A or B within 5 words of C or D), support for number range in proximity (like A within 3 to 10 words of B) and support for adding any number of words in a single proximity statement (like A or B or C or D or E within 10 words of each other)	✔	✔	✔

Same Sentence / Paragraph Searching	Search within same sentence and search within the same paragraph using the ws and wp operators. So say (mobile ws5 imag*) searches for mobile within 5 words of imag* and within the same sentence.(Search within same paragraph will not work for authorities that have OCR'ed full text data)	✔	✔	✔
Multi-lingual Stemming	Integrated Multi-lingual Stemmer that supports stemming across English, German, French, Spanish, Russian and Swedish language content. Our unique approach to stemming ensures transparency and full control over what stem will be searched. See Related Blog Post.	✔	✔	✔
Cross-language searching	Useful composite fields allow you to search across patent content in 9+ languages in a single query statement	✔	✔	✔
Natural Language Search	Search free-text and rank patents that have similar content. Simply copy-paste the text that you want to look up in Title-Abstract-Claims or in Full text and PatSeer identifies the records closest to the text you have given	✔	✔	✖
Similarity Search	Search records that are similar to a given record using multiple methods such as Co-Citations and Co-classifications.	✔	✔	✔
Search Term Translator	Integrated search term translator allows you to quickly translate any search term while entering your search query without leaving the page	✔	✔	✔
Browse Term Index	Allows you to lookup all variations of the input word. This lookup also supports left truncation. So if you input *cycle it will show you all variations such as bicycle, recycle etc.	✔	✔	✔
Class Definitions Search	Search through IPC, US and CPC Class definitions with the same powerful search syntax. You can search across all the class definitions simultaneously and also restrict your search to a portion of the class (Section / Main Class / SubClass) if needed.	✔	✔	✔
Chemical Synonym Lookup	This option in Search Tools allows you to lookup a compound, drug or registry number and view name equivalents which can further help make your search queries more comprehensive and precise. Information Source: National Library of Medicine	✔	✔	✖
Manage Searches	See all the searches done for past 1000 searches. Combine complex search strings or Save search strategies.	✔	✔	✔
Search and Record Monitor Alerts	Receive Email Alerts of any new records being published in your area of interest (based on your search criterion). Monitor records and receive an alert if any changes happen to its family, forward citations, legal status and in case of US records, its reassignment and maintenance status.	✔	✖	✖

Search Recall™	Search Recall™ allows you with easy access to past work and helps you reuse it for current tasks, thereby reducing duplication of time and effort. It remembers all your annotations and actions for search results so that you don't have review or repeat the same action for any record in your result set.	✔	✔	✖
Query Analyzer	View the exact count contributed by each element in search query	✔	✔	✖
Syntax Converter	Convert search queries from other databases to PatSeer using the Syntax converter	✔	✔	✔
Viewing Results				
Result-Set Hit Analysis Map	Power-scan records in your result-set using a Hit Analysis map that quickly shows you the keyword hit counts across Title/Abstract/Claims and Description of search result	✔	✔	✔
Thesaurus	Get precise insights by creating and applying thesaurus to your charts and graphs.	✔	✖	✖
Integrated Filters	Powerful integration of filters on the left help you narrow down into specific portions of your result-set with ease. Combine filters across multiple fields with ease.	✔	✔	✔
Keyword-in-Context View	Why bother reading the whole document when you can browse through all the matching portions of text using the Keyword-in-context (KWIC) view? Save multiple minutes per document with this view!	✔	✔	✔
Multiple Result Views	Multiple Result views for quick browsing and reviewing of results	✔	✔	✔
Sort Results	Sort results by search relevancy, latest Publication or application date, most cited and least time-to-grant.	✔	✔	✔
Custom View	Choose exactly which fields to see in a smart Excel type view	✔	✔	✔
Detailed View	Supports results browsing so that user can run through each result right within the detailed view itself. Detailed View tab can be moved to separate monitor so that user can browse through results one by one conveniently	✔	✔	✔
Integrated Claims Translator	All Non-English Claims can be translated live to English using the inbuilt Translator. The translated claims appear side-by-side to the original claims for easy comparison and review.	✔	✔	✔
Drawings View	Browse through Patent Drawings with ease and with speed using our newly added Drawings viewer	✔	✔	✔

Side-by-side View	See multiple aspects of the record at the same time without scrolling	✔	✔	✔
One Record per Window	Each record can be opened in a new Window/Tab	✔	✔	✔
Term Highlighting	Multi-color highlighting with advanced capabilities such as partial word portion highlighting and setting multiple words (synonyms) to the same color	✔	✔	✔
Key Concepts Cloud	Key Concepts extracted from the full text of the record can be seen in a Concept Cloud box when viewing the Detailed view of a record. They help give a quick idea of important concepts covered in the text.	✔	✔	✔
Save View Settings	Save all view preferences with single click	✔	✔	✔
Analyzing Results				
Family Tree	Visualise the relationships between all the publications that result from the original application. Family Tree is also configurable by the user and modified trees can be saved too.	✔	✔	✔
Forward / Backward Co-citations	Instantly search for records that are similar to a particular records using co-citation analysis. View forward or backward co-cites of a records ranked by number of shared citations.	✔	✔	✔
Results Filtering	Powerful filters help you narrow down results with ease. User can combine filters across fields to answer complex questions like “Which are the key IPC Classes for inventions coming from Japanese division of a multinational conglomerate company between 2000-2005.	✔	✔	✔
Quick Stats	Great looking configurable charting that works over million records with sub second response times	✔	✔	✔
Chart Layers	Generate multi and cross dimensional charts/tables using our unique first-in-industry chart layering technology	✔	✖	✖
Chart Drill-through	You can drill-down all charts by simply clicking on a chart item and immediately view the records behind the data.	✔	✔	✖
Charting Custom Data Points	All Custom fields, flags and ratings can be plotted in the charts along with standard patent fields to help you make your charts more business relevant.	✔	✖	✖
Citation Tree	View forward and backward citations of records displayed year wise in a tree with a single click.	✔	✔	✔
Topics	Topics Chart to visualize hierarchical topics data, depicted by concentric circles	✔	✔	✖
Exporting Results				

Word / Excel	Export records in ready to use Word or Excel reports. Charts for key stats can also be including in Word and Excel reports.	✔	✔	✔
CSV / XML	CSV/XML export for importing data in other analysis tools	✔	✔	✔
Patent iNSIGHT Pro Export	Replicate your results sets into Patent iNSIGHT Pro with easy and minimum time. All additional meta data such as custom fields, rating, categorizations etc. is also exported and recreated in Patent iNSIGHT Pro.	✔	✔	✔
Projects				
Rating/Flag	Assign a rating to a record or simply flag it to highlight its importance. Both aspects can be used to signify different characteristics of a record.	✔	✔	✔
Comments	Multi-user conversation style commenting possible over each record with option for private and open comments to facilitate collaboration between different users who have access to a project.	✔	✔	✔
Custom Fields	Create any number of custom fields for records in a project. Advanced custom fields such as limited list, date and checkbox style custom fields to capture information necessary to support the most complex patent workflows.	✔	✔	✖
Categorization	You can also define your own clusters and sub clusters (up to 5 levels) and recreate your organizational taxonomies within each project	✔	✔	✔ (but can't create any)
Patent Dashlets®	Create multiple dashboards that include just the fields you want to display for all or a portion of records in the report. These highly configurable and interactive Dashlets work seamlessly with Permission Groups so that you can only share a dashlet with a client or coworker instead of the complete project.	✔	✖	✖
Analyze	Use additional fields that you create as filters or in charts against other patent biblio fields or with each other.	✔	✔	✔
Saved Charts	Save charts with a comment describing it. Saved charts can be selectively shared with other users.	✔	✔	✖(Can be saved but can't be shared)
Attachments	Save any number of attachments (Word/Excel/PDF/Images/PPT). Attachments can be saved at project level and also at per-record level.	✔	✔	✖
Compare & Search Across Projects	Makes it very easy to find answers to questions like which records are common across a set of projects or what extra records	✔	✔	✖

	are present in this project etc.			
Project Collaboration & Sharing				
Project Sharing	Share the platform and empower the recipient with flexibility to filter and play with the data as per his/her own needs and requirements. You can share with anyone with an email id and service providers can also share with anonymous users.	✔	✖	✖
Permission Groups	The most extensive and flexible permission settings that allow you to decide exactly the level of access and control you wish to provide to the person you share a project with.	✔	✖	✖
Sharing Patent Dashlets®	Share Dashlets selectively, so that users can only see a portion of the records in the project with just the fields that you include in the dashlet.	✔	✖	✖
Creating a Saved Chart Dashboard	Saved charts can be configured like a dashboard for senior management users who are interested only in the big picture.	✔	✖	✖

CHAPTER 2 PATSEER CONTENT AND CAPABILITIES

PatSeer is a patent database built on web 2.0 architecture. It includes advanced project management and collaboration capabilities with a clean and intuitive interface, it makes it very easy to conduct powerful analysis and deliver the analyzed data.

To begin with, let's take a look at the content that goes into PatSeer:

2.1 COVERAGE

- 61 million+ full text records of 42 countries and 102million+ biblio records covering 104+ countries as part of INPADOC data
- Searchable Full Text English Translations of JP, KR, CN, FR, DE, DK, FI, RU, NL and LU
- PDFs, Front Page Images, Embedded Images, Mosaics, Simple/Extended Families, Backward /Forward Citations and more
- Updated multiple times each week with manual data quality checks

2.2 SEARCH SYNTAX

- Search full-text in Original Language (incl. Non Latin Text) and English. Legal Status Search enhancements include date range, Event, Event Country (Incl. Designated Country Code events for EP,WO)
- Fully featured Search Syntax with 191+ search fields
- No compromise on search techniques –Proximity, Complex Boolean with Proximity, Command Line Searching, Search Scripting, Wildcards, Left and Middle Truncation, Hit Count Cutoff, Natural Language Search. Limited truncation is supported for right and middle truncations only.

2.3 SEARCH AIDS

- Annotate records and families using PatSeer Search Recall™
- Normalized Assignee Names and Corporate Tree for Top 3000 companies
- Looking up Matching Assignee /Inventor names

- Semantic Search Suggester
- Search History and Saved Searches
- Chemical Synonym Lookup
- IPC/US/CPC Classification Definition Search
- Term Index Lookup and Multi Language Translator

2.4 REVIEW AND ANALYSIS

- Collapse results by Simple/Extended family or by Application Number
- Multiple Result Views, Custom View, Detailed Record View, KWIC view, Hit Analysis
- Citations by Self or by Family, Co-citation analysis
- Analyze search results via multi-dimensional charts (Column/line/pie/area/bubble/radar/heatmap/geographical map)
- Topics Chart to visualize hierarchical topics data, depicted by concentric circles
- Live translator to translate all non-English claims to English.
- Key Concepts give a quick idea of key concepts covered in the record.

2.5 EXPORTS

- Multiple Export formats including Word/Excel/CSV/XML/Patent iNSIGHT Pro format
- Charts can be also included in Word and Excel exports

2.6 ALERTS

- Create weekly and monthly search alerts
- Setup Record Monitors to track changes to any record

2.7 PROJECTS

- Save and analyze up to 70K records in a project
- Import your meta data from CSV /Excel files
- Leverage flags, ratings, custom fields, hierarchical categories to add context to your analysis
- Share and Collaborate project data effectively using Patent Dashlets™

CHAPTER 3 PATSEER: A TRUE HYBRID DATABASE

Most databases force a user to view a record from preset country priority order, with the users left to either investigate each family member or export the data to extract meaningful statistics.

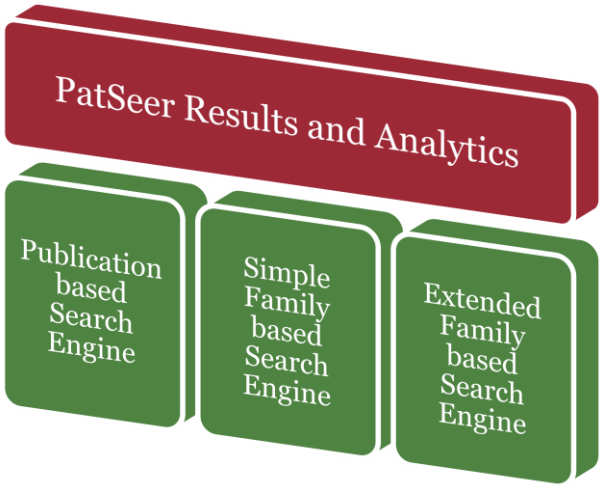
All currently available databases can be categorized into the following two types: (Simple/Extended) Family based databases or Publication based databases. Family based databases enforce results to be unique families each of which can be of one type mostly – Simple Family, Extended (INPADOC) Family or a variation of INPADOC wherein custom rules are applied to break large families into smaller sets. The result you see is usually a US, EP or WO record if present. It isn't possible to view the results by a particular country of choice.

Publication-based databases allow users to search in individual records after which the user can choose to collapse/group the results by Family. Even here, if you group results by family you just cannot ensure that the country you selected will be the one displayed.

Further, some analysis is best done with publication counts, while other analysis requires family-wise counts. Finally, always using any one type of family definition, such as INPADOC can be misleading in many cases without delving deeper into the nature of the portfolios held. So you can find yourself not being able to view and analyze the result set exactly the way you want. Consequently most patent researchers are forced to export data before beginning any type of analysis no matter how simple the task may be.

PatSeer, as the first true hybrid database helps resolve some of these fundamental challenges.

PatSeer integrates a dual-family definitions engine and a publication-based engine at search level itself to combine the benefits of both databases and offer you full flexibility in how you search, display and view your result-set. In this way it's a true hybrid between a publication-based and a family-based database.



So while records in PatSeer show up as individual publications when you collapse them by INPADOC (Extended) or Simple Family, your results viewing and subsequent analysis (lists/charts) can be completely controlled by giving a country preference. Your preferred country's record will be selected even its equivalent has matched your search query. This way if you are only interested in viewing and analyzing the records for a particular country, you can be sure that the results you see comprehensively cover all matching inventions filed in that country. Further all charts and statistics that you generate can be presented by No. of publications, No. of Simple Families or No. of INPADOC families.

The hybrid engine benefits can be summarized as:

- No need to export result every time to gather precise insights
- Capability to decide which record shows up in your results view when searching by family
- Flexibility to choose the type of underlying engine most suited for your task

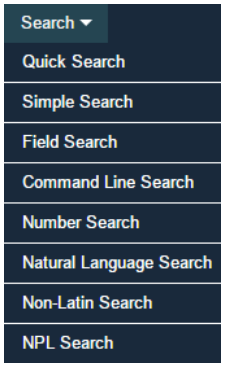
CHAPTER 4 PATSEER SEARCH

This chapter introduces the types of search forms in PatSeer which can be used to help assess patentability, validity, infringement, clearance, and state of the art.

4.1 SEARCH FORMS

There are different types of search forms to suit different searchers. These platforms are made available for simple and advanced searching techniques.

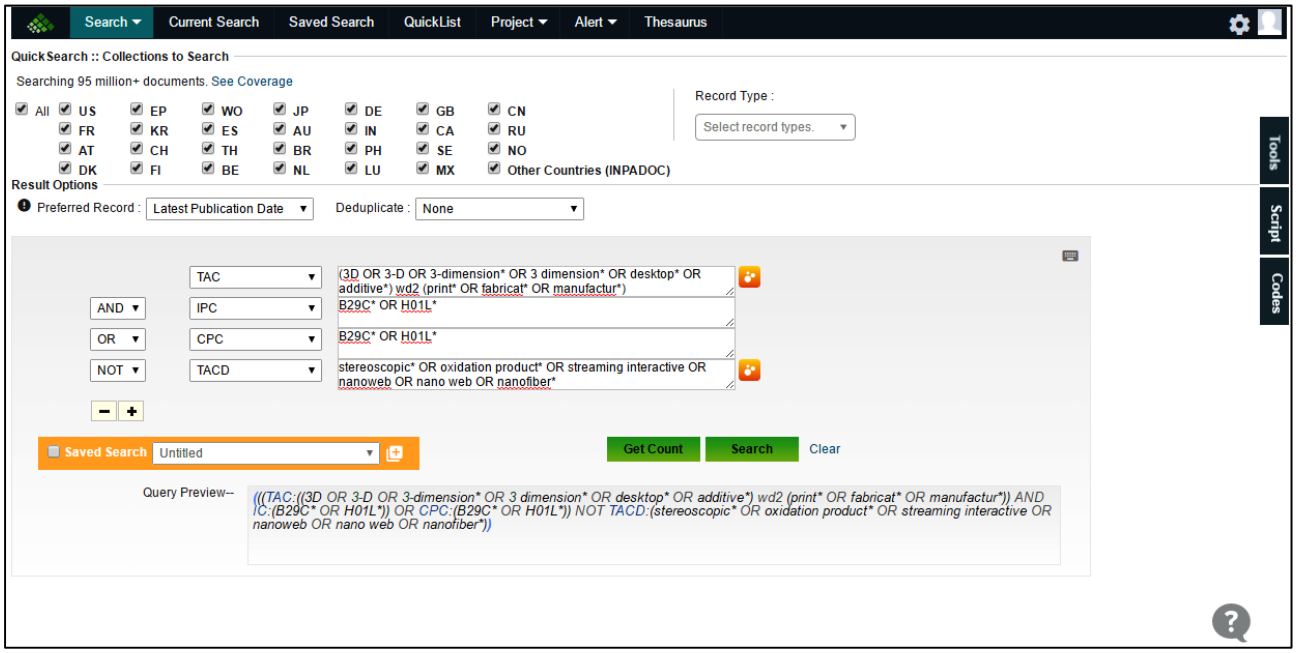
- Quick Search
- Simple Search
- Field Search
- Command Line Search
- Number Search
- Natural Language Search
- Non-Latin Search
- NPL Search



The following snapshots illustrate various searching platform options within PatSeer

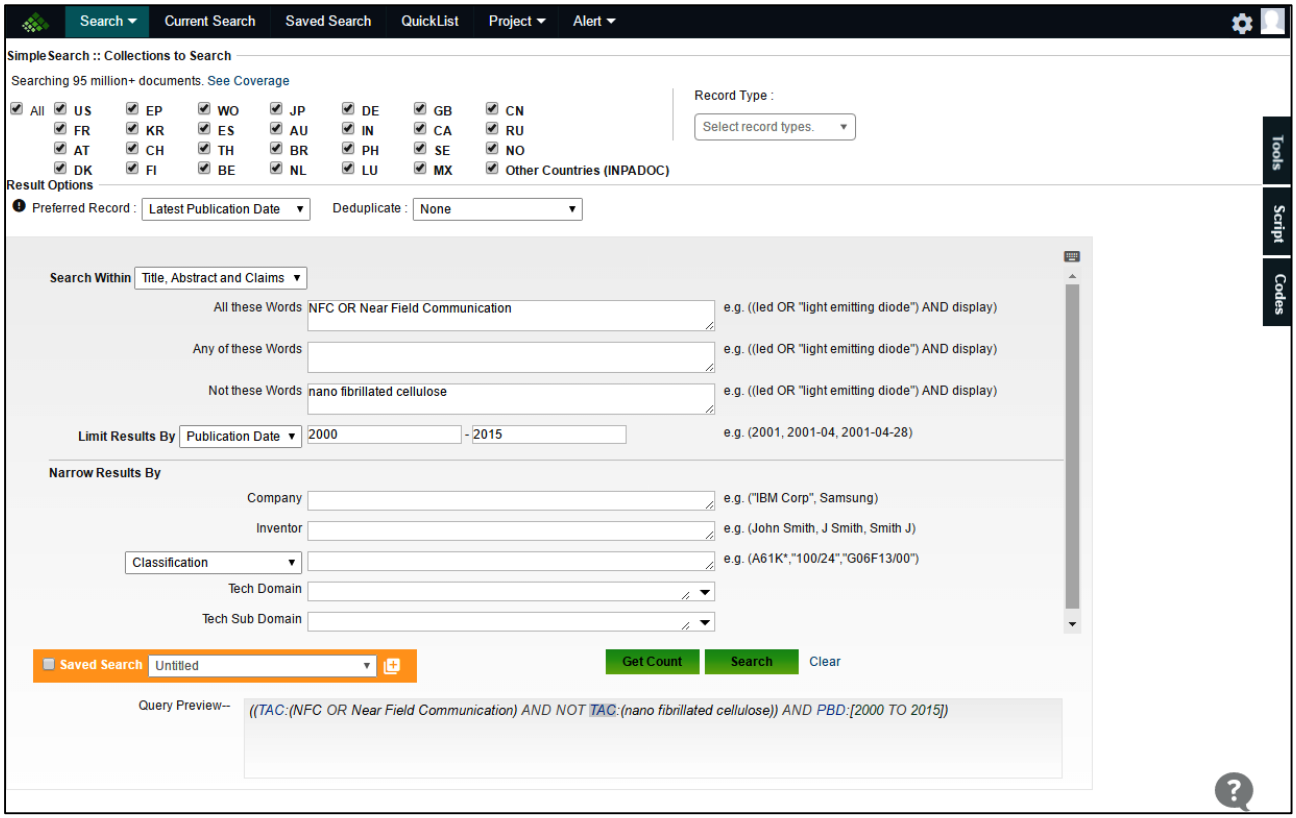
4.1.1 QUICK SEARCH

Quick Search makes it easier to build queries using many fields. The form can be used to create structured queries in addition to running simple searches.



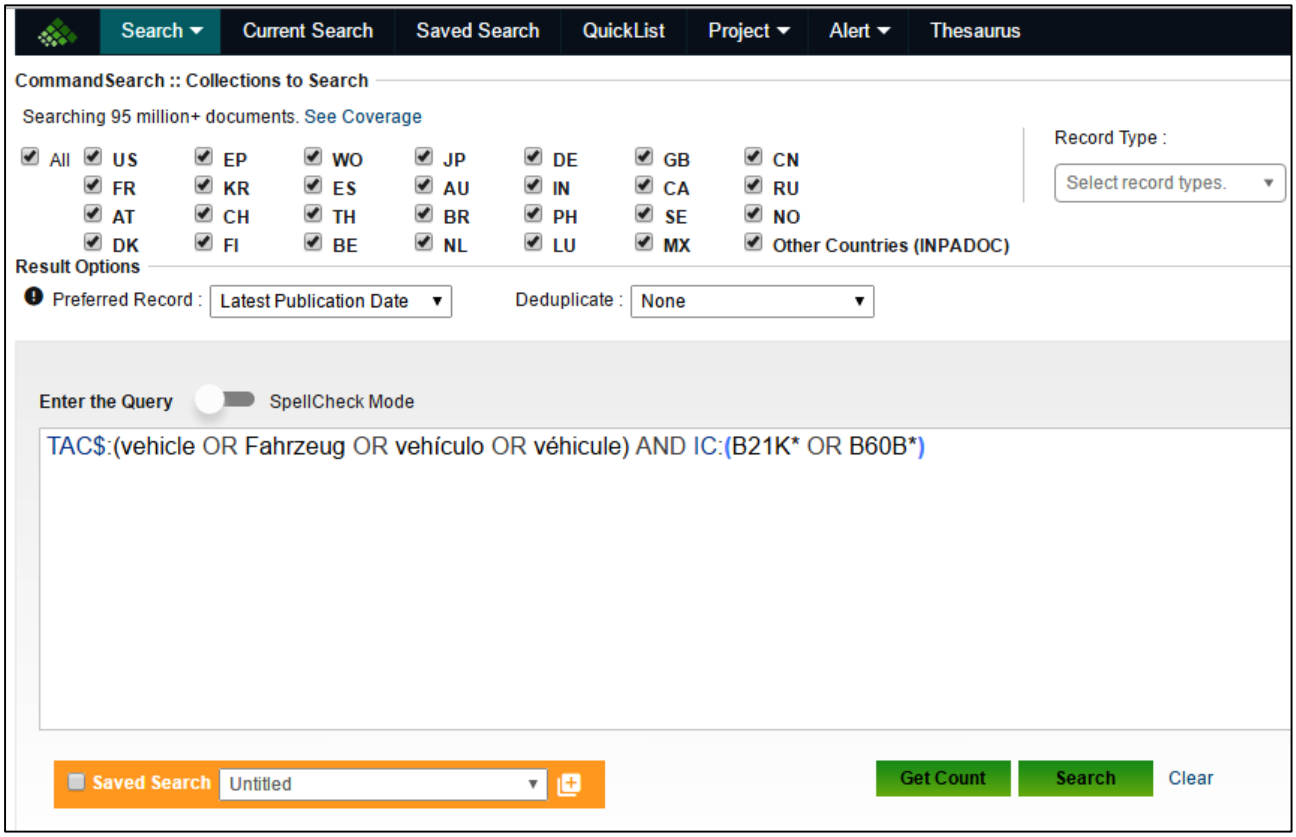
4.1.2 SIMPLE SEARCH

Simple Search is useful for those searchers who do not want to form complex boolean queries themselves. The different text fields in this form allow them to include words that they want to mandatorily have or words that they want to exclude.



4.1.3 COMMAND LINE SEARCH

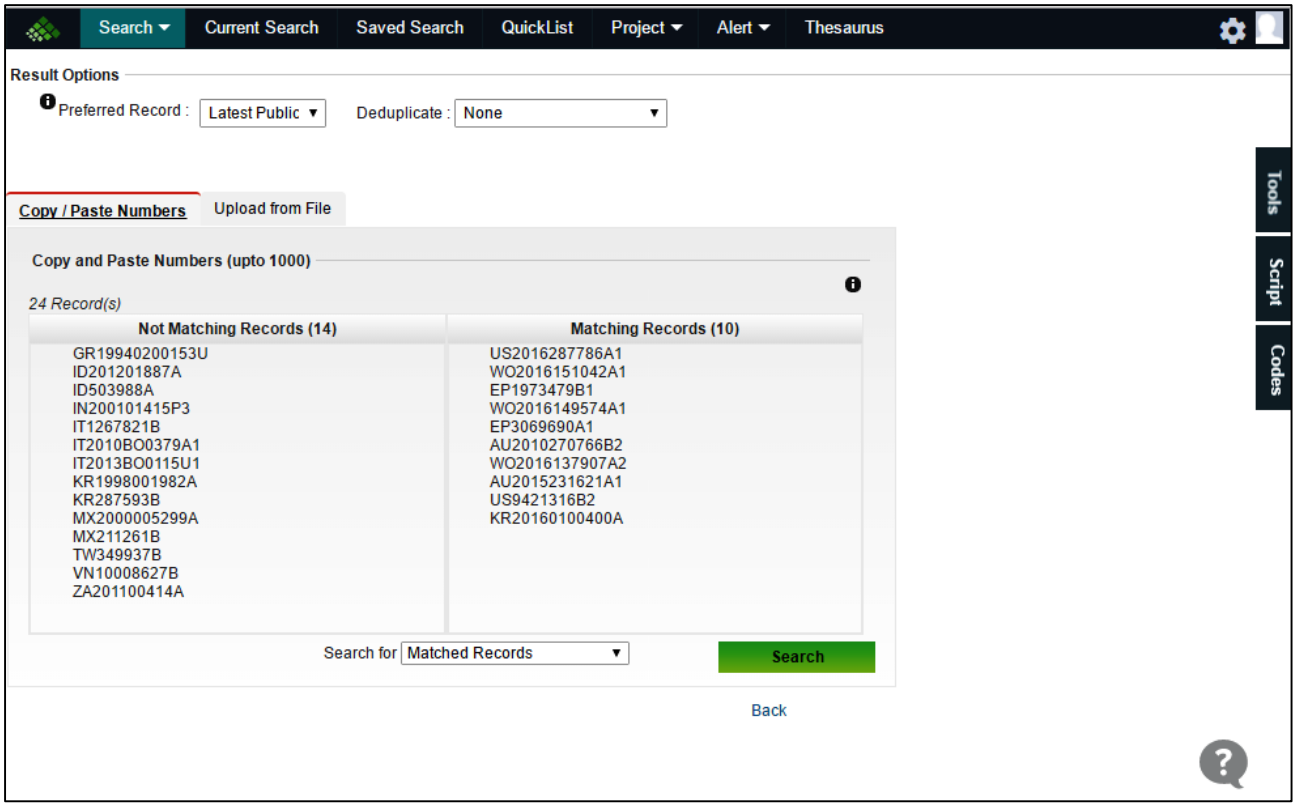
The Command Line Search is used by most patent searchers. It provides flexibility to enter long queries. Different search fields can be used in combination with one another to get precise results. The field codes available in Field Search Option can be used by users to locate precise results easily in minimal time. One of the advantages here is that multi-language searches can be combined.



4.1.4 NUMBER SEARCH

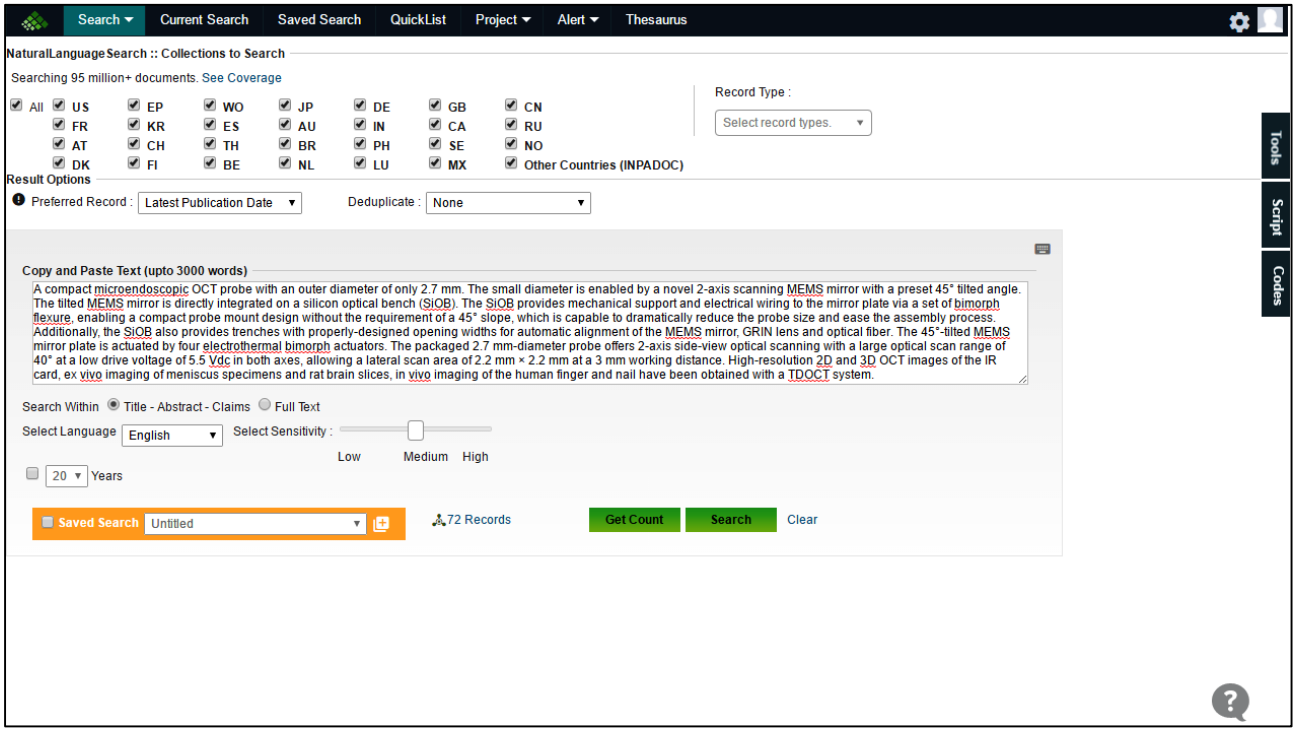
In Number Search form users can copy paste a bunch of numbers with or without kind code. It allows uploading a bunch of numbers from files which would appear in the search results.

You can even import Numbers in PatSeer from any other database with ease. The wizard takes care of complex number conversion so that most numbers get matched. Users can also search for family members and citations of the record numbers that they want in their result set.



4.1.5 NATURAL LANGUAGE SEARCH

This is useful for R&D professionals and also perhaps marketing professionals wherein you can simply copy paste text up to 3000 words and immediately find records that are having portions related to the text that you have entered.



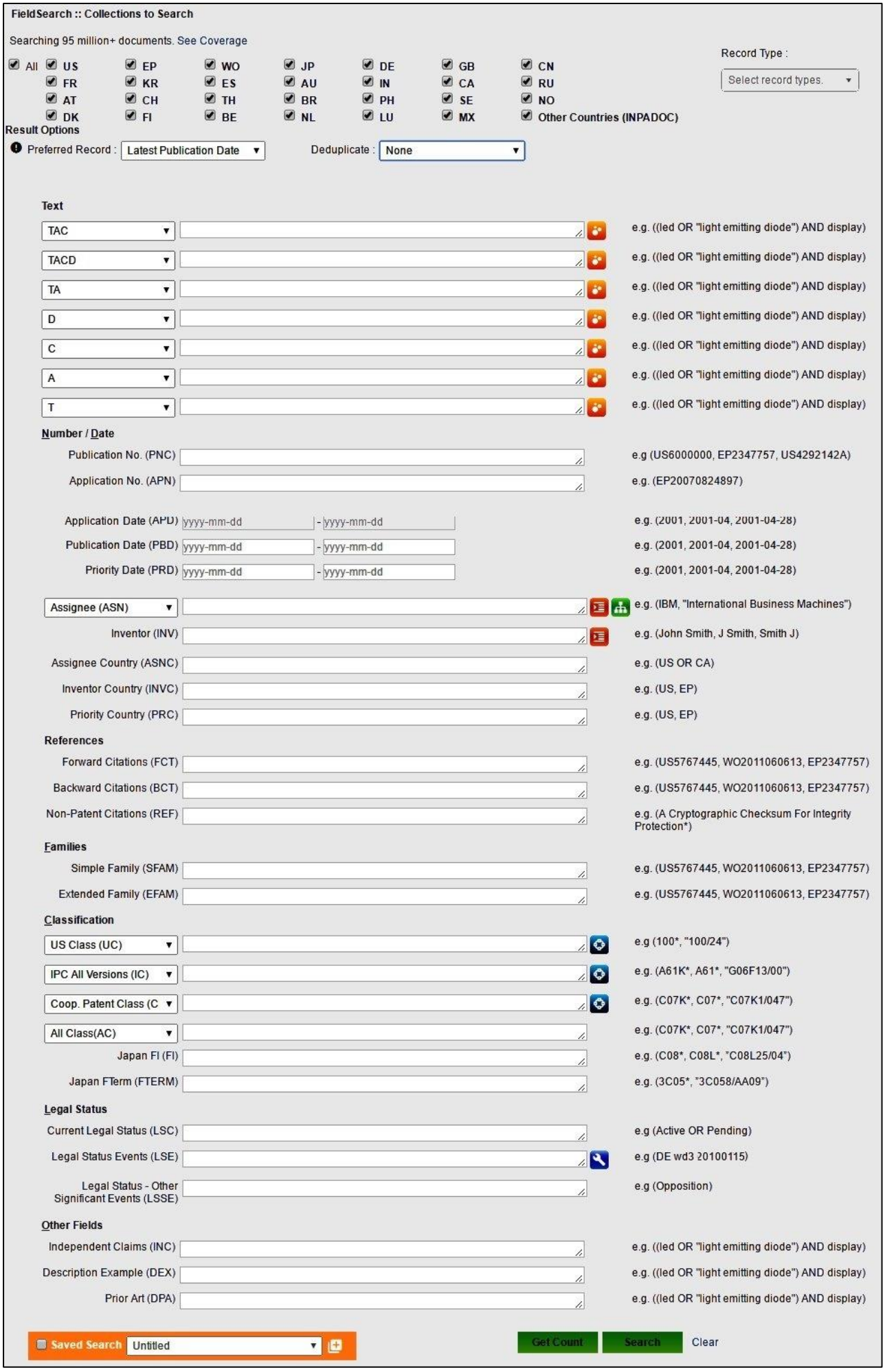
4.1.6 FIELD SEARCH

Field Search allows users to search across a wide range of patent fields and most patent professionals are familiar with this style of search. They can search across text fields, numbers, dates, companies, inventors, citations, families and classifications.

Following are extensive search fields made available to the user for locating keywords in exact field

Text ➢ Title ➢ Abstract ➢ Description ➢ Claims **Number/ Date** ➢ Publication Number ➢ Application Number ➢ Application Date ➢ Publication Date ➢ Priority Date **Applicant** ➢ Assignee ➢ Current Assignee ➢ US Reassignment Assignee ➢ Inventor ➢ Assignee Country ➢ Inventor Country ➢ Priority Country **References** ➢ Forward Citations ➢ Backward Citations ➢ Non-Patent Citations	**Families** ➢ Simple Family ➢ Extended Family **Classification** ➢ US Classification ➢ IPC (All versions) ➢ ICR (Versions 8-9) ➢ IPO (Versions 1 to 7) ➢ Cooperative Patent Classification ➢ Japan FI ➢ Japan FTerm **Legal Status** ➢ Current Legal Status ➢ Legal Status Events ➢ Legal Status- Other Significant Events **Other Fields** ➢ Independent Claims ➢ Description Example ➢ Prior Art

In addition to searching across fields, there are three main tools that help users refine search queries. These are shown as icons next to their applicable fields.

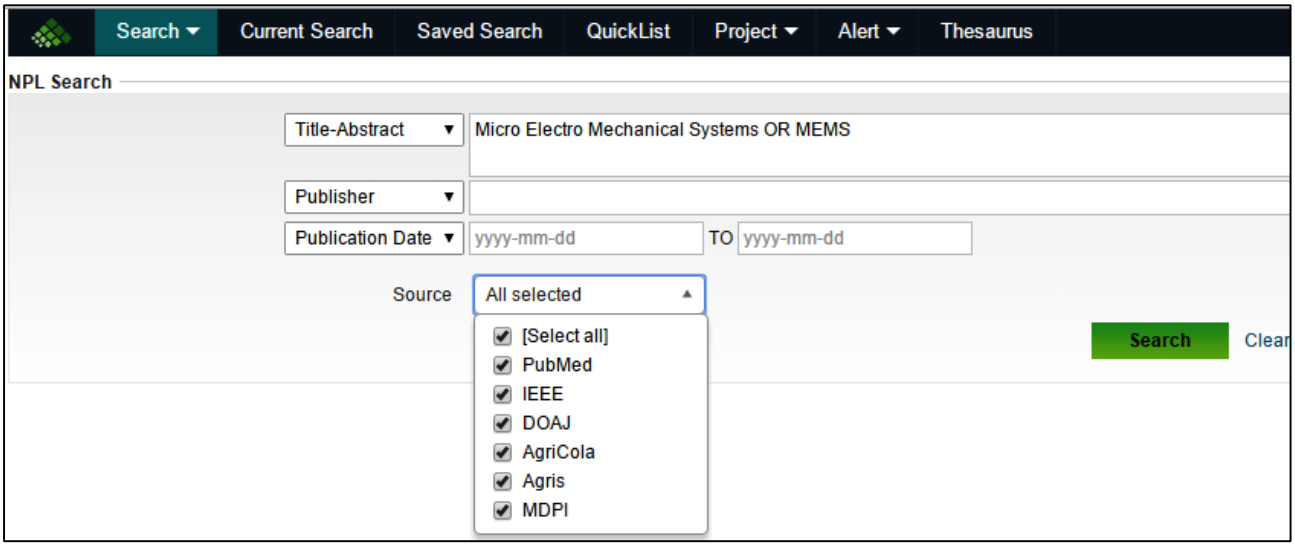

FieldSearch :: Collections to Search
Searching 95 million+ documents. See Coverage
Record Type :
Select record types.
All US EP WO JP DE GB CN
FR KR ES AU IN CA RU
AT CH TH BR PH SE NO
DK FI BE NL LU MX Other Countries (INPADOC)
Result Options
Preferred Record : Latest Publication Date
Deduplicate : None
Text
TAC
TACD
TA
D
C
A
T
e.g. ((led OR "light emitting diode") AND display)
Number / Date
Publication No. (PNC)
e.g (US6000000, EP2347757, US4292142A)
Application No. (APN)
e.g. (EP20070824897)
Application Date (APD)
Publication Date (PBD)
Priority Date (PRD)
yyyy-mm-dd
e.g. (2001, 2001-04, 2001-04-28)
Assignee (ASN)
e.g. (IBM, "International Business Machines")
Inventor (INV)
e.g. (John Smith, J Smith, Smith J)
Assignee Country (ASNC)
e.g. (US OR CA)
Inventor Country (INVC)
e.g. (US, EP)
Priority Country (PRC)
e.g. (US, EP)
References
Forward Citations (FCT)
e.g. (US5767445, WO2011060613, EP2347757)
Backward Citations (BCT)
Non-Patent Citations (REF)
e.g. (A Cryptographic Checksum For Integrity Protection*)
Families
Simple Family (SFAM)
Extended Family (EFAM)
Classification
US Class (UC)
e.g (100*, "100/24")
IPC All Versions (IC)
e.g. (A61K*, A61*, "G06F13/00")
Coop. Patent Class (C
e.g. (C07K*, C07*, "C07K1/047")
All Class(AC)
Japan FI (FI)
e.g. (C08*, C08L*, "C08L25/04")
Japan FTerm (FTERM)
e.g. (3C05*, "3C058/AA09")
Legal Status
Current Legal Status (LSC)
e.g (Active OR Pending)
Legal Status Events (LSE)
e.g (DE wd3 20100115)
Legal Status - Other Significant Events (LSSE)
e.g (Opposition)
Other Fields
Independent Claims (INC)
Description Example (DEX)
Prior Art (DPA)
Saved Search
Untitled
Get Count
Search
Clear

4.1.7 NON PATENT LITERATURE SEARCH

Non-Patent Literature (NPL) searching has a key role in patent and prior art research. NPL may be in the form of journals, user manuals, conference papers, technical reports, theses.

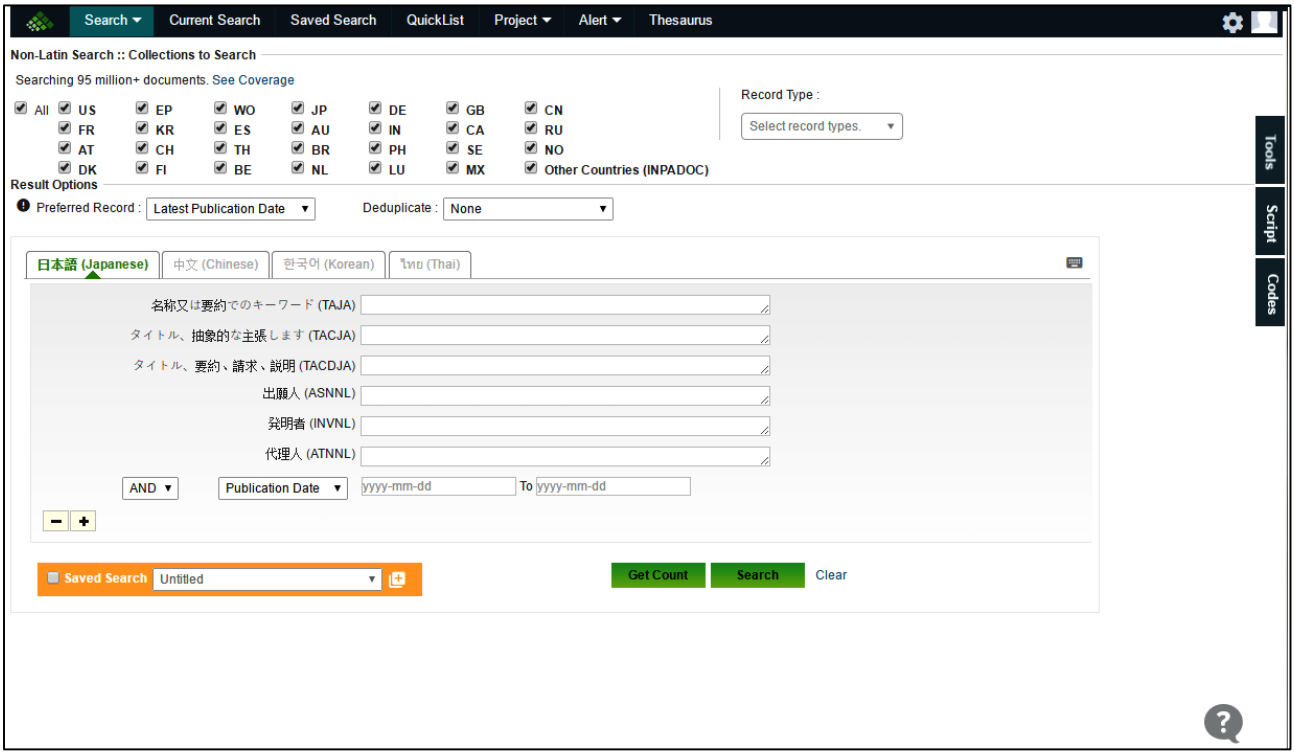
Patent databases provide users access to prominent science and engineering databases like PubMed, IEEE, Agris, AGRICOLA, DOAJ, ScienceDirect, Springer, MDPI via a single integrated search.

Users can perform keyword/ field based search across different sources and can view the result set.



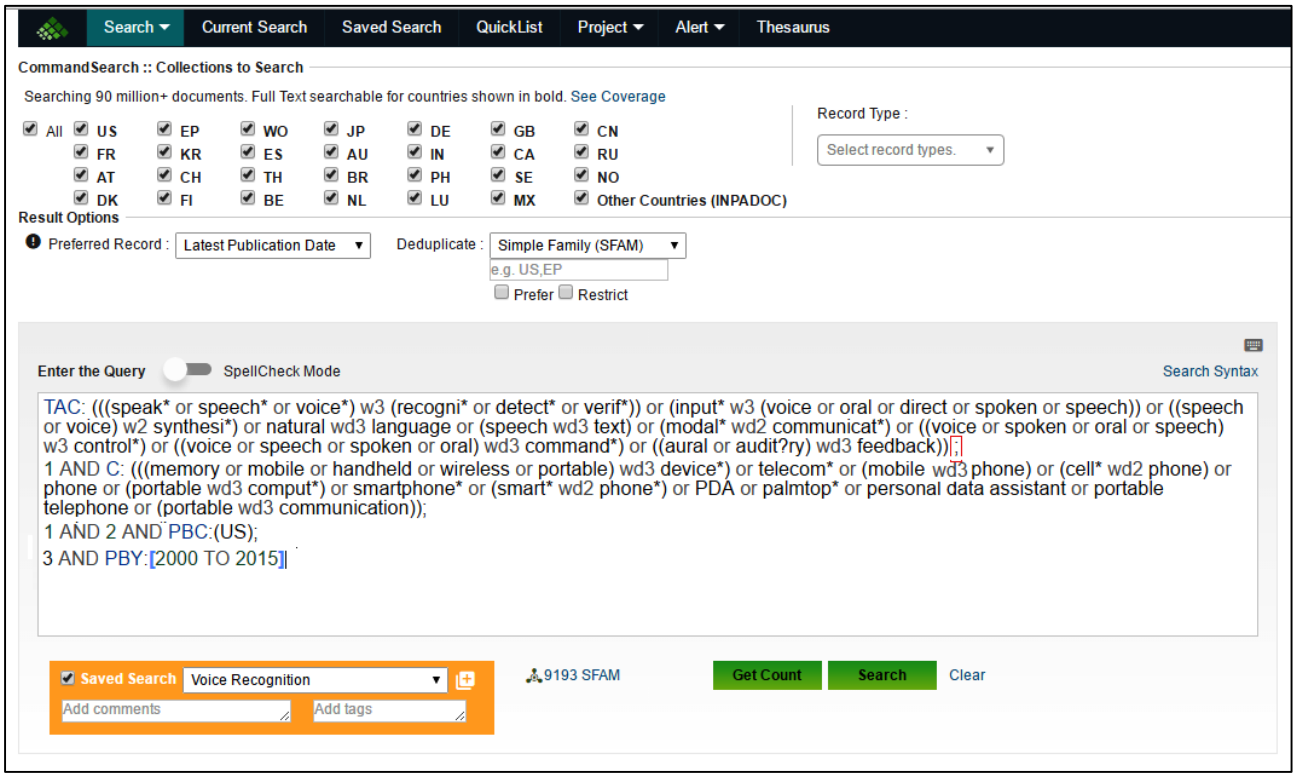
4.1.8 NON LATIN SEARCH

It is easy to search within non-Latin text without having to learn different language specific field codes. The non-Latin search form allows you to search in Japanese, Chinese, Korean or Thai language.



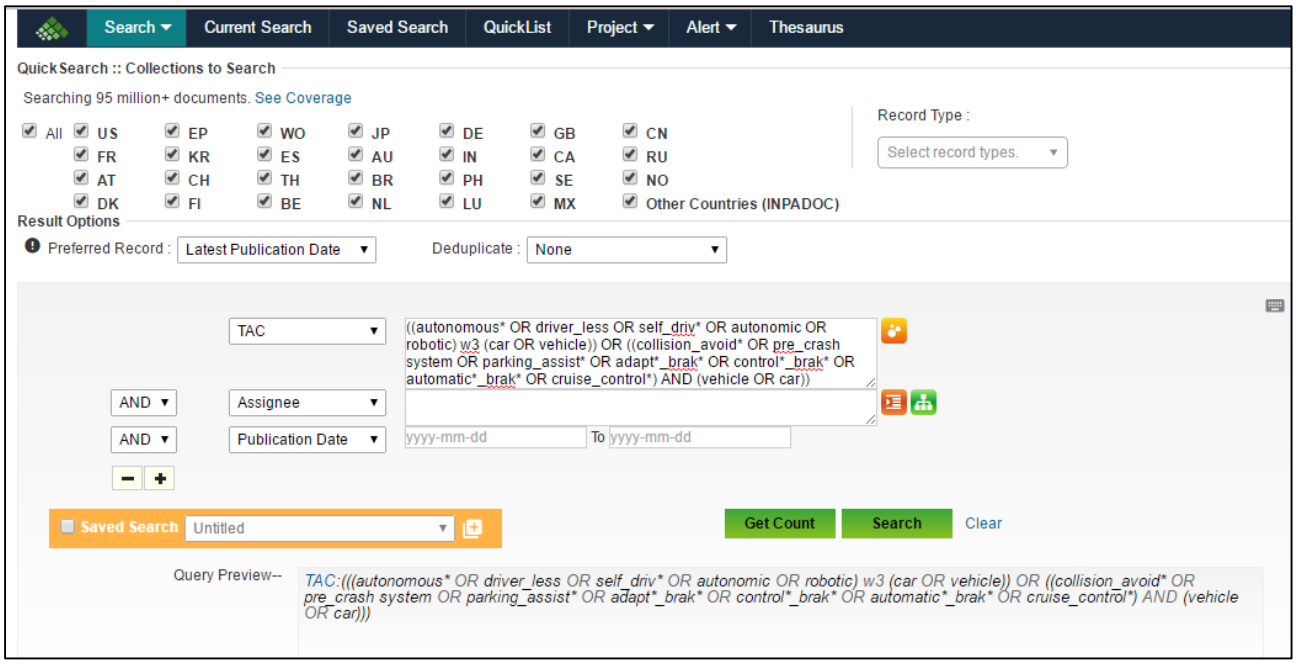
4.2 STACK MULTIPLE SEARCH QUERIES

You can consolidate multiple queries into one making it easier to interpret and execute large search strategy.



4.3 RESIZABLE ELEMENTS IN QUICK/SIMPLE/FIELD SEARCH

The height for text boxes in quick/simple/field search resizes based on the length of your query. This makes it easy to see your complete query.



4.4 MULTI-LINGUAL STEMMING

PatSeer supports stemming in 10 languages: English, German, French, Spanish, Russian, Portuguese, Korean, Japanese, Chinese and Swedish language content. Users may use translator to obtain corresponding foreign language keywords and use the 'root-word' of the same keywords with the help of the integrated 'Multi-lingual Stemmer' that supports stemming across mentioned languages. PatSeer also supports transparent real-time stemming.

The following snapshot represents how integrated stemmer functions for German term Beförderung which means transport.

Placing # after Beförderung converts it to its stem Beforder*

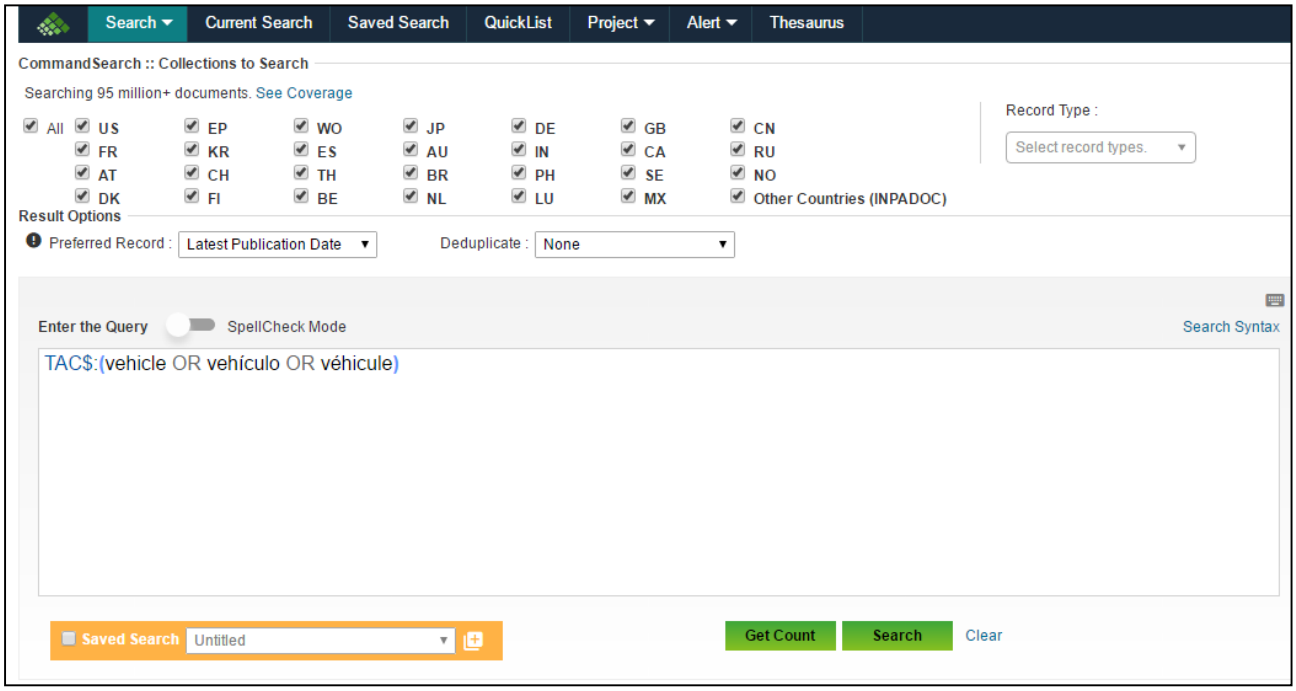
Searching in text field TACDE within field search will search in German content spread across German/Austrian/Switzerland data.

4.5 CROSS LANGUAGE SEARCHING

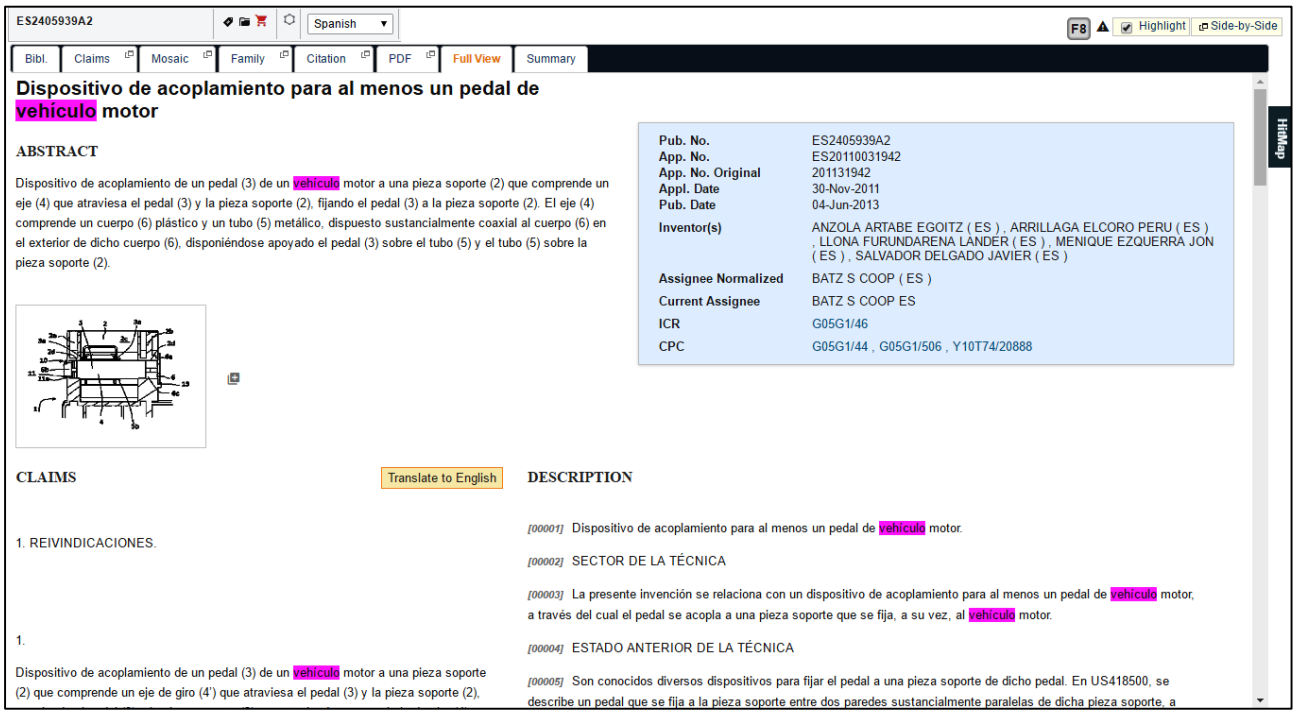
In addition to searching in TAC (representing searching in title or abstract or claims) which looks up only English content, PatSeer also supports non Latin language search to improve quality of results. For instance, searching in TACDE (representing searching in title or abstract or claims of German language) searches only German content and TACJA (representing searching in title or abstract or claims of Japanese language) searches only Japanese content.

Users who want to search across all TAC (representing searching in title or abstract or claims) content irrespective of the language earlier had to repeat the search term across the fields and combine it using an OR operator. However, a composite field character **$** allows the user to easily search across content in all languages in a single query statement.

The following snapshot represents the query syntax for searching Spanish, French and English equivalent terms for vehicle in title, abstract and claims.



The following images represent the results having equivalent terms in either Title, Abstract or Claims portion of records




FR2986381A1
French
F8
Highlight
Side-by-Side
Bibl.
Claims
Mosaic
Family
Citation
PDF
Full View
Summary
HitMap
PROCEDE DE GESTION DE L'ENERGIE ELECTRIQUE D'UNE ARCHITECTURE ELECTRIQUE D'UN VEHICULE AUTOMOBILE ET VEHICULE AUTOMOBILE METTANT EN OEUVRE UN TEL PROCEDE
ABSTRACT
L'invention concerne un procédé de gestion de l'énergie électrique d'une architecture électrique (2) d'un véhicule (1) comprenant un stockeur d'énergie électrique (3), un réseau de bord (6) comprenant un organe électrique activé, un générateur (5), un convertisseur DC/DC (4) comprenant une entrée (E) reliée au stockeur (3) ainsi qu'une sortie (S) reliée au réseau de bord (6) et au générateur (5), des moyens de contrôle (7) permettant de piloter le convertisseur DC/DC (4) ainsi que le générateur (5), procédé caractérisé en ce que l'on vérifie si le générateur (5) est défaillant et lorsque le générateur (5) est jugé défaillant, on pilote le convertisseur DC/DC (4) de sorte à fournir un courant en provenance du stockeur (3) vers le réseau de bord (6) et une tension minimale de fonctionnement de l'organe électrique activé du réseau de bord (6). L'invention porte aussi sur un véhicule automobile mettant en oeuvre un tel procédé.
Pub. No. FR2986381A1
App. No. FR20120050750
App. No. Original 1250750
Appl. Date 26-Jan-2012
Pub. Date 02-Aug-2013
Inventor(s) BELKHIRI ABDESLAM (FR) , BOUCLY BERNARD (FR) , COMTE RAPHAEL (FR)
Assignee Normalized PEUGEOT CITROEN AUTOMOBILES SA (FR)
Current Assignee PEUGEOT CITROEN AUTOMOBILES SA FR
ICR H02J1/00
CPC H02J7/0065 , B60R16/02 , B60R16/03
CLAIMS
Translate to English
1. Procédé de gestion de l'énergie électrique d'une architecture électrique (2) d'un véhicule automobile (1) comprenant un stockeur d'énergie électrique (3), un réseau de bord (6) comprenant un organe électrique activé, un générateur (5), un convertisseur DC/DC (4) comprenant une entrée (E) reliée au stockeur d'énergie électrique (3) ainsi qu'une sortie (S) reliée au réseau de bord (6) et au générateur (5), des moyens de contrôle (7) permettant de piloter le convertisseur DC/DC (4) ainsi que le générateur (5)
DESCRIPTION
Procédé de gestion de l'énergie électrique d'une architecture électrique d'un véhicule automobile et véhicule automobile mettant en oeuvre un tel procédé.
Domaine technique de l'invention
La présente invention se rapporte à un procédé de gestion de l'énergie électrique d'une architecture électrique d'un véhicule automobile.

4.6 FAMILY SEARCHING CAPABILITIES

In PatSeer records are not grouped by families by default. So you can search individual records and choose to collapse them by one member per family or de-duplicate results by Application Number (i.e., by Patents and Applications). The latter de-duplication is particularly useful for US records in case you would like to keep only the granted patent and not its corresponding application in the result. When de-duplicating results by family, you can de-duplicate by both Simple Family (SFAM) and Extended Family (EFAM).

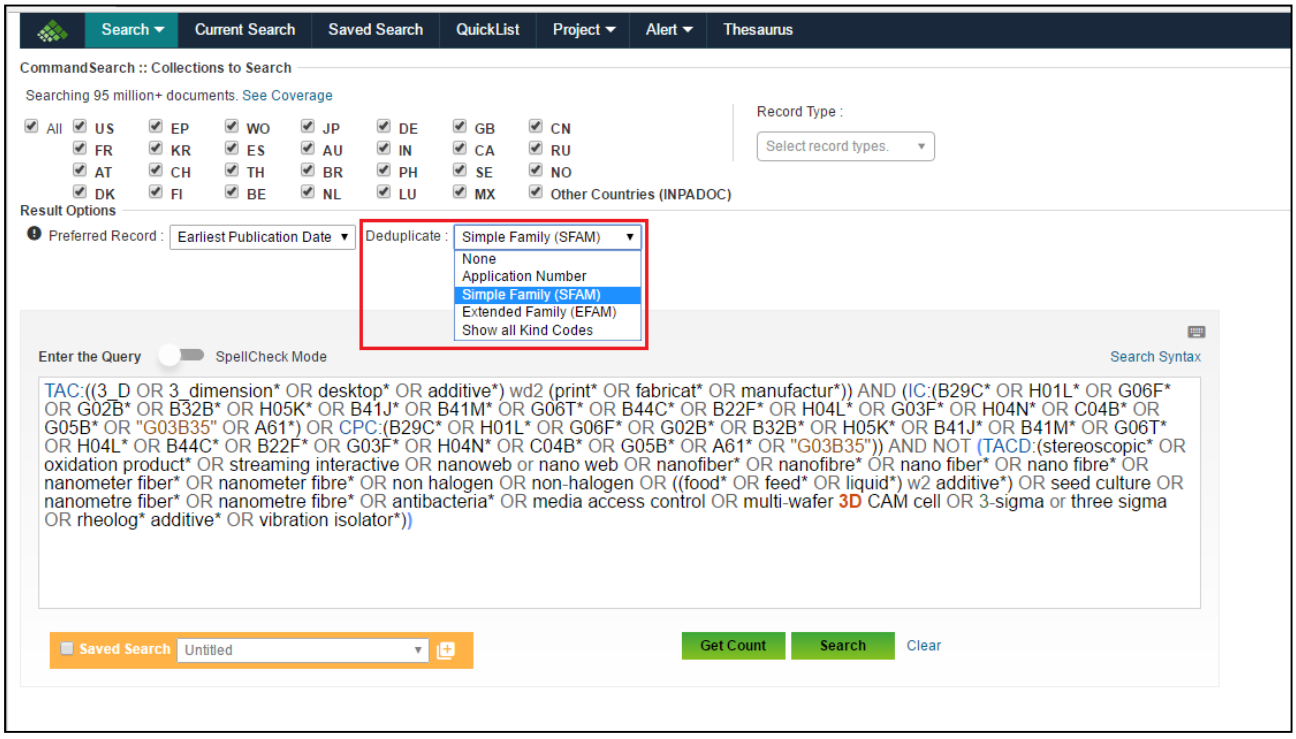
Simple family refers to all patent documents with exactly the same priority date or combination of priority dates. For e.g.
C- Country code

Document Number	Priority Number
C000011	P00001
C000012	P00001
C000013	P00001

Extended patent family refers to all patent documents linked (directly or indirectly) via a priority document belonging to one patent family.

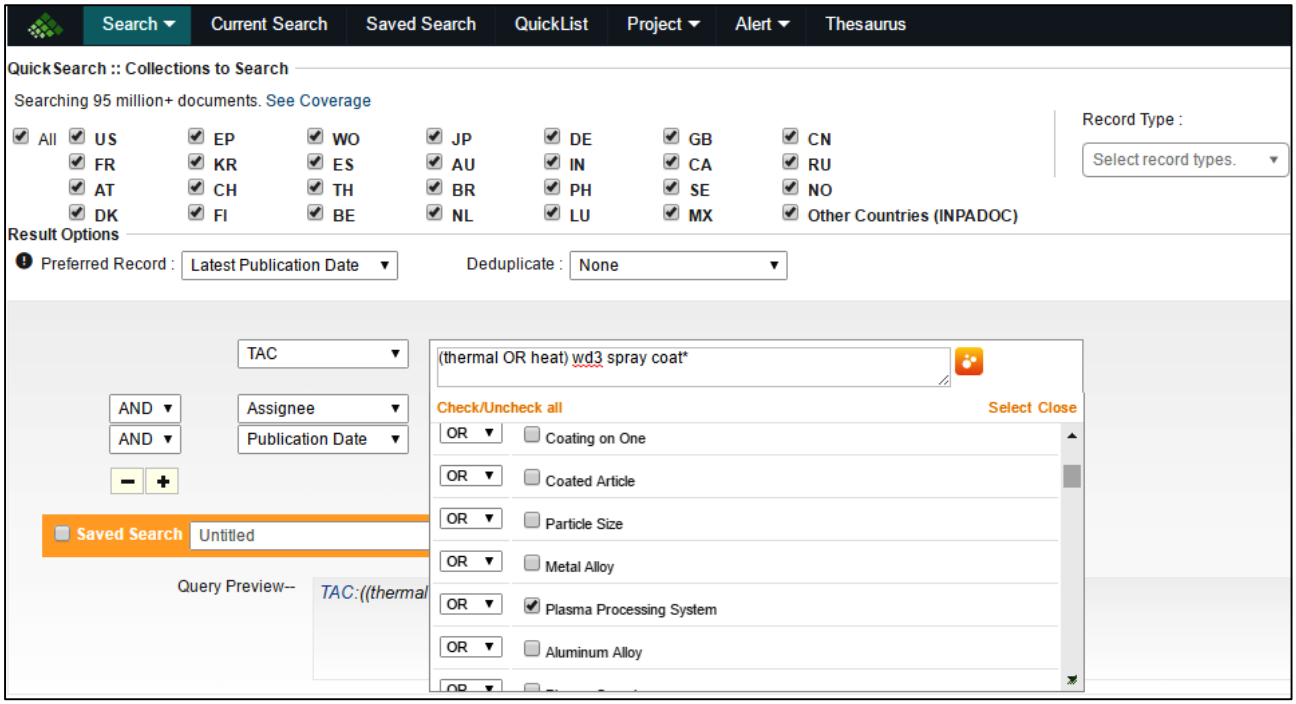
The preferred record option allows you to decide which record should be chosen while deduplicating results. For example when de-duplicating results by Application Number, if you select Latest Publication Date as the preferred record, you will get the patent in place of the application in your result.

Normally when you give a country code preference you get one-member per family in the result. For those families where the preferred country isn't present, the result will show another record from the family based on relevance. Using the "Restrict to" capability, you can now restrict your search to families that contain only the country codes you have given. This is specifically useful when doing FTO, Infringement, and any other type of searches which are country specific.



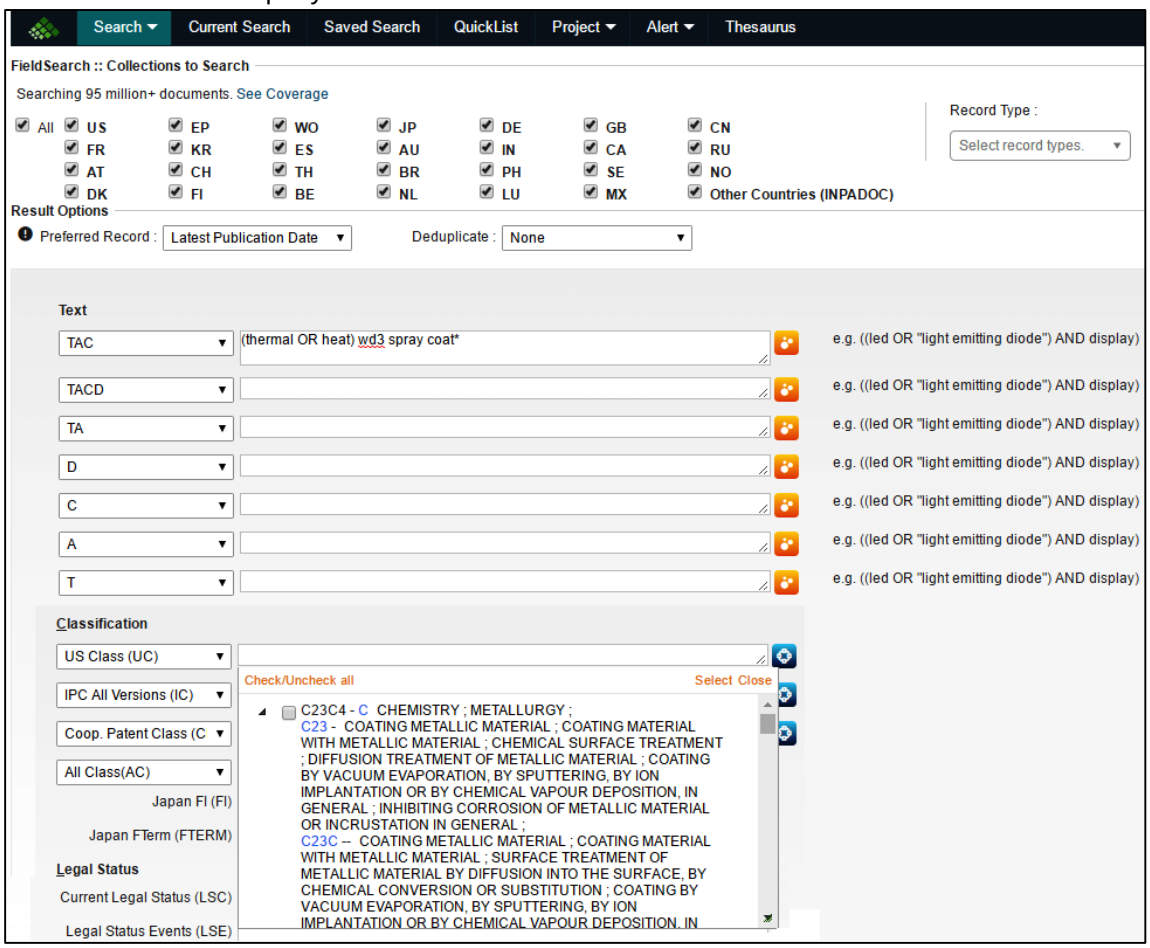
4.7 SEMANTIC SEARCH SUGGESTER

Semantic Suggester provides suggestions and choice of different keywords with respect to the concept relevant to a search which results in high precision of searching. For e.g., if any user wants to search for ”thermal spray coating” and would like to include all the related words in the query, Semantic Suggester shows the list of terms that are related to the query entered. The user can browse through the list of terms and decide which term could be useful in the search. The user can choose to enter the term as it is or make a note of the related word and then add it to the search.

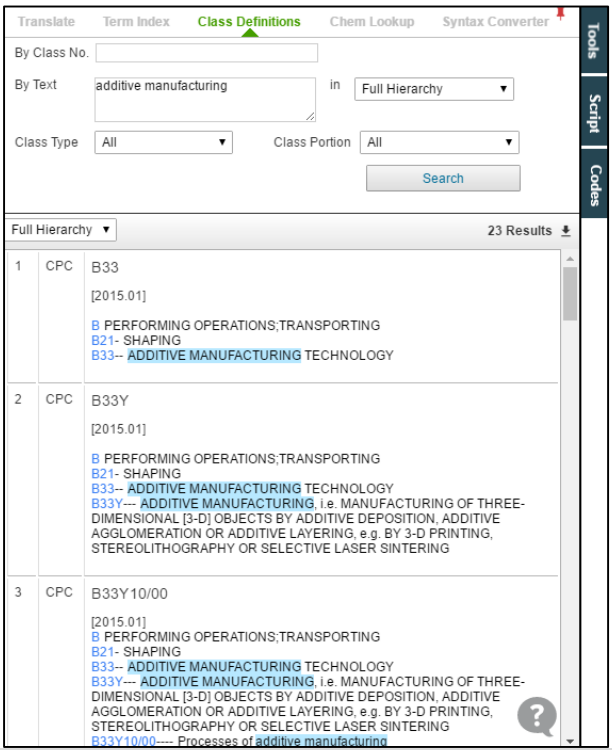


4.8 SEE RELATED CLASSIFICATIONS

Related Classifications allow users to quickly lookup all the related classifications and their descriptions to your search query. It is useful to decide on whether to restrict or expand your search by including classifications in the query.

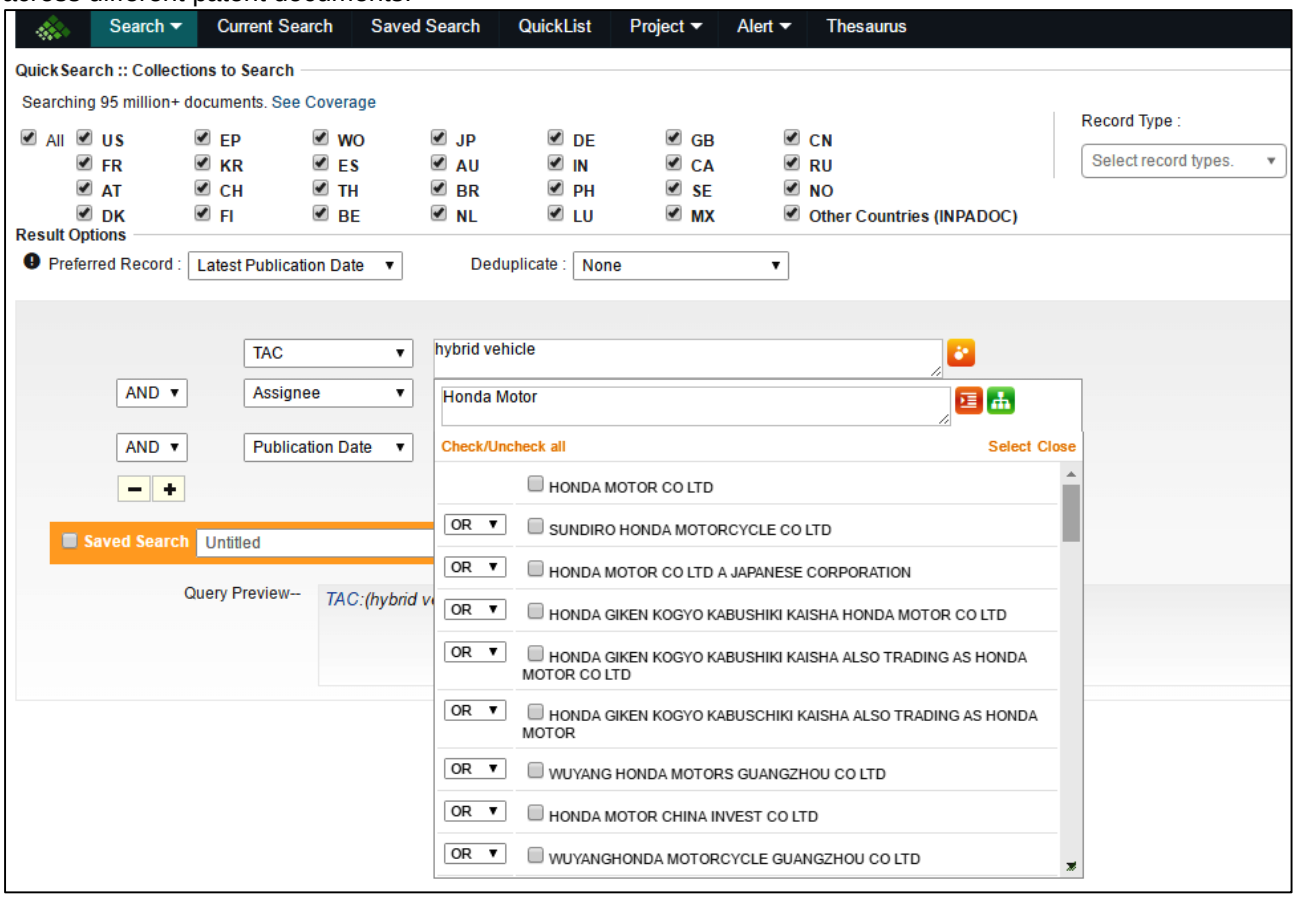


You can search across all the class definitions simultaneously and also restrict your search to a portion of the class (Section / Main Class / Sub Class)



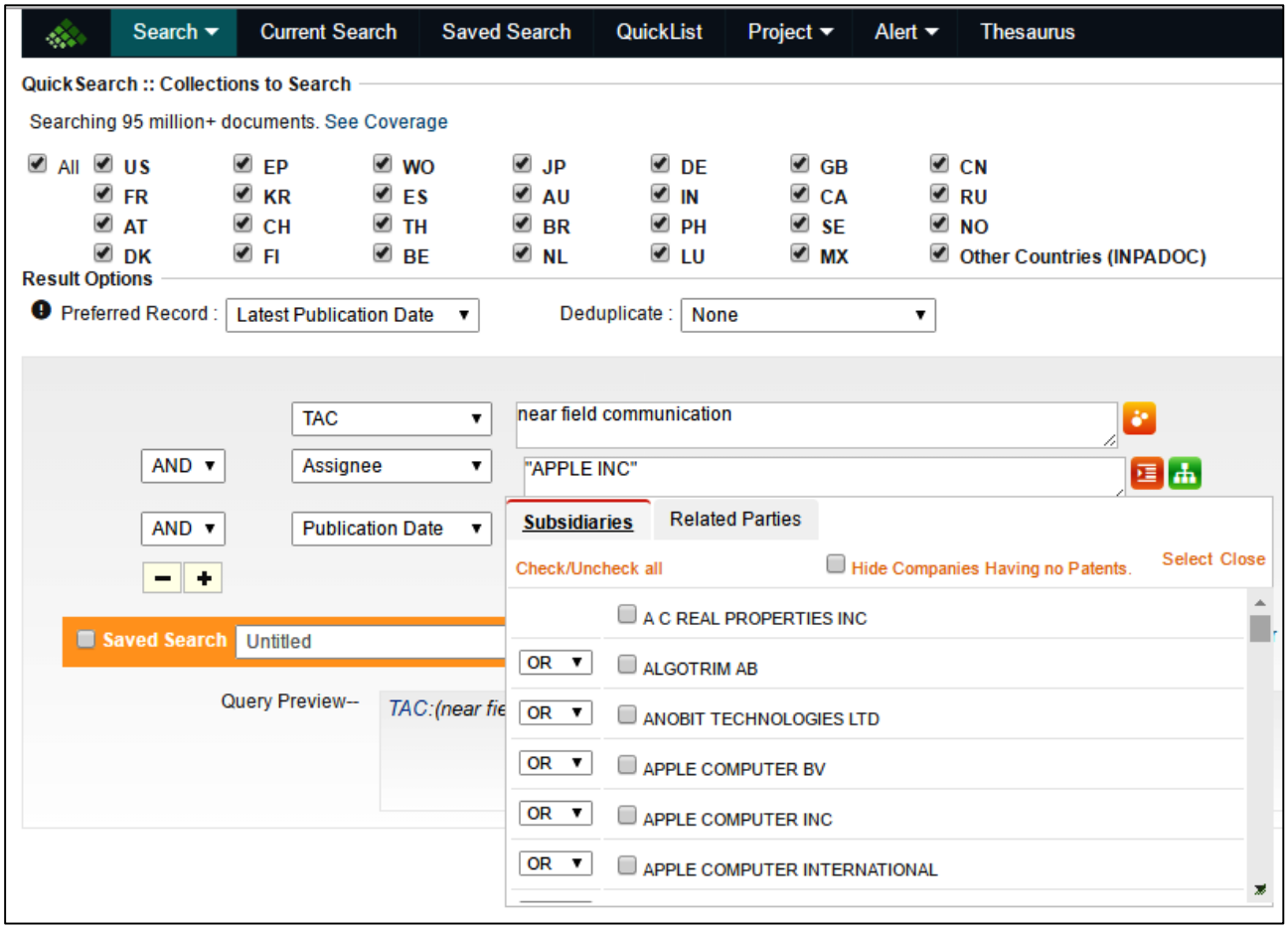
4.9 LOOKUP MATCHING ASSIGNEE / INVENTOR

Users can look up all available variations of a relevant 'Assignee or Inventor Name' and include them in the search. This feature is extremely useful to locate the variations in the names of Inventors and Assignees across different patent documents.



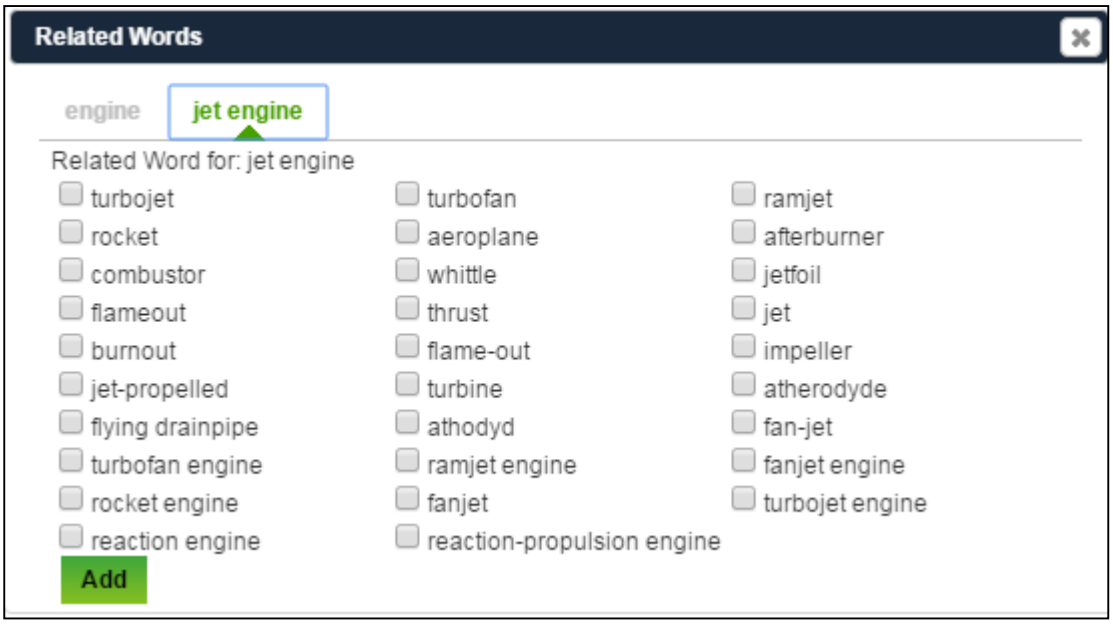
4.10 CORPORATE TREE

PatSeer features an integrated Corporate Tree of top 3000 Assignees within search platform. This allows users to choose subsidiary companies and include them in Assignee searches.



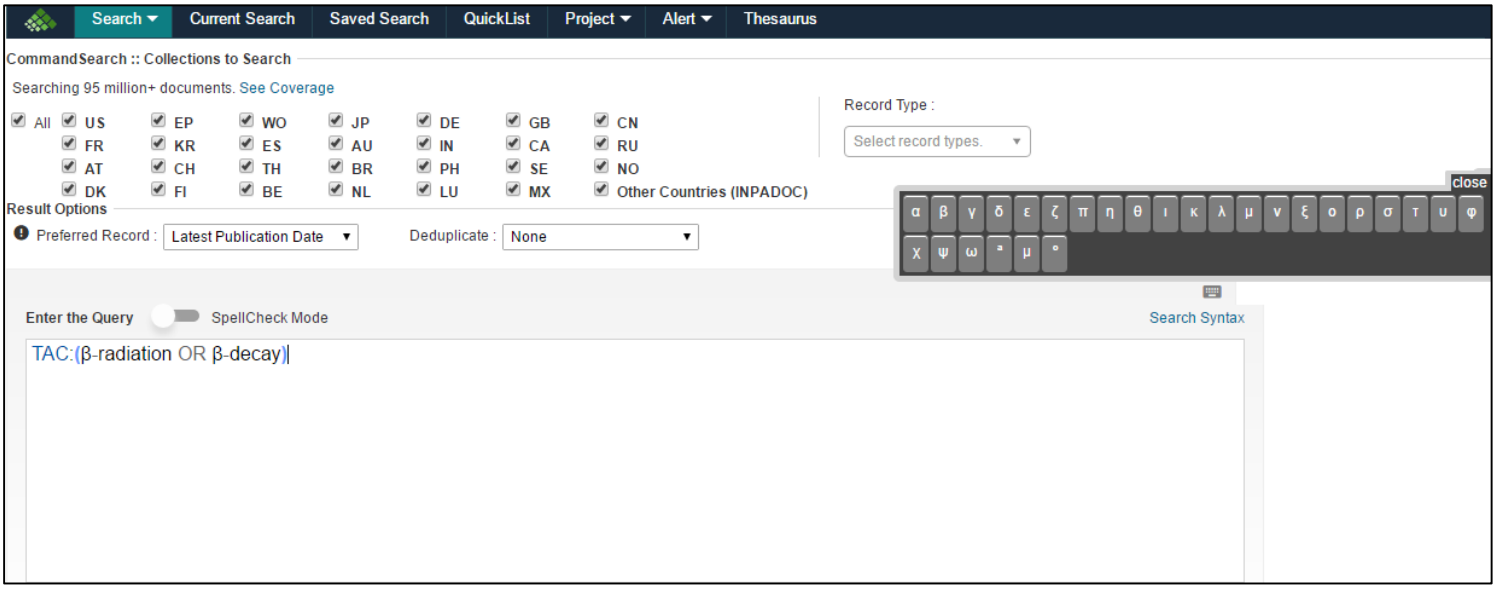
4.11 SYNONYM / RELATED TERMS LOOKUP

You can lookup synonyms and related terms not only for single terms, but also for phrases. This feature is different from the Semantic Suggester which shows related technology terms to your search query.



4.12 SPECIAL CHARACTERS KEYBOARD

A virtual keypad allows you to include various symbols like alpha (α), beta (β) or even range of temperature (º) in search queries across search interfaces. This is useful while conducting chemical related searches.



4.13 SEARCHABLE LEGAL STATUS

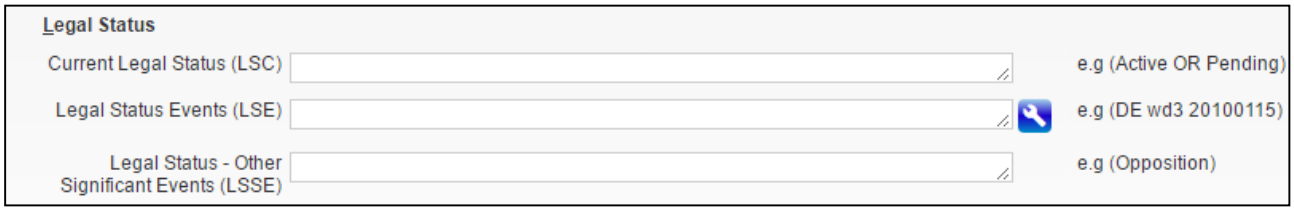
Analysing patent legal status data is an important component of patent information as it determines

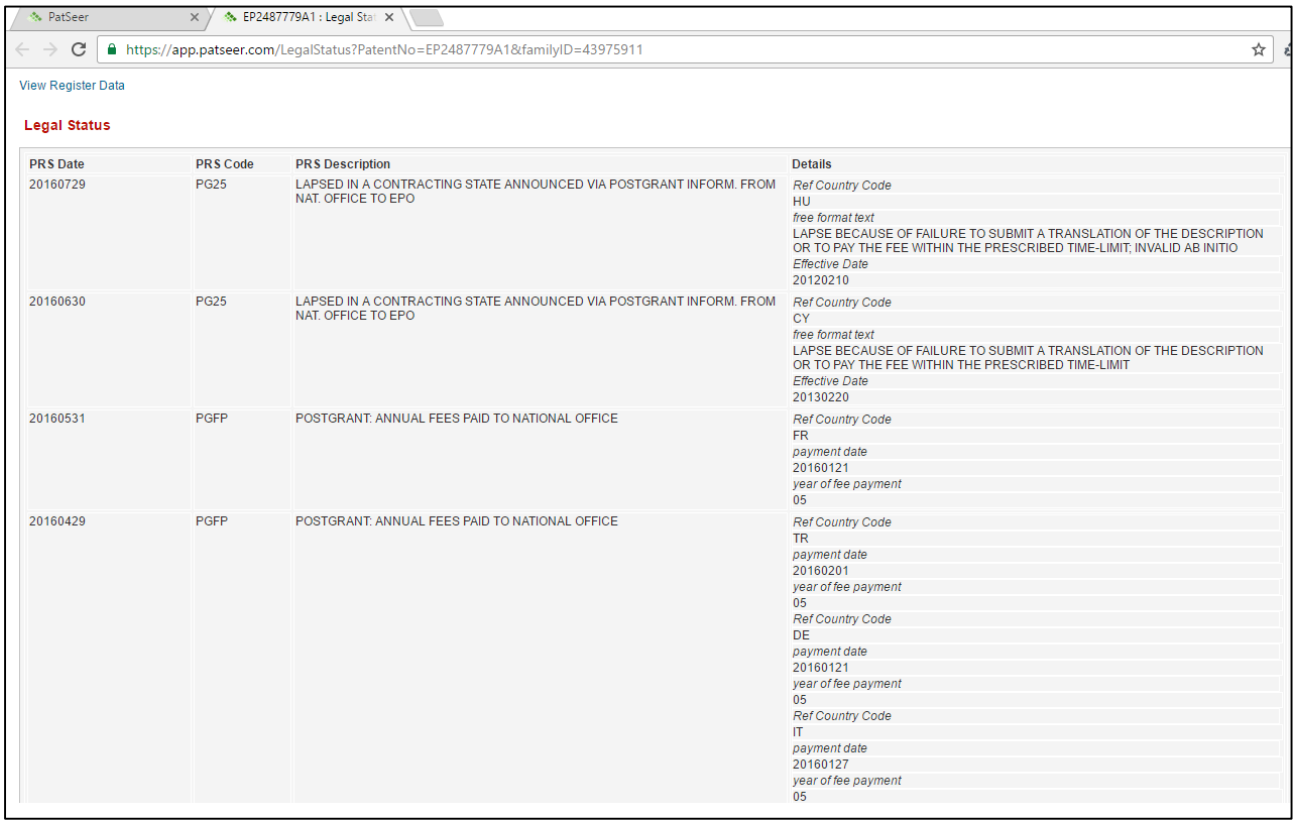
- whether examination of a patent application is still pending;
- whether the application has been withdrawn or was rejected;
- whether a patent has been granted and is still valid; or
- whether a granted patent has expired, lapsed, or been revoked.

Examples of Legal status Based Search fields are listed below:

Field Code	Field Name	Syntax Example
LSC	Current Legal Status	LSC:(Active OR Pending)
LSE	Legal Status Events	LSE: (DE wd3 ([20040101 TO 20101231]))
LSSE	Legal Status - Other Significant Events	LSSE: opposition
ATN	Attorney, Agent or Firm	ATN:"Richardson"
EXMR	Examiner	EXMR:"John"

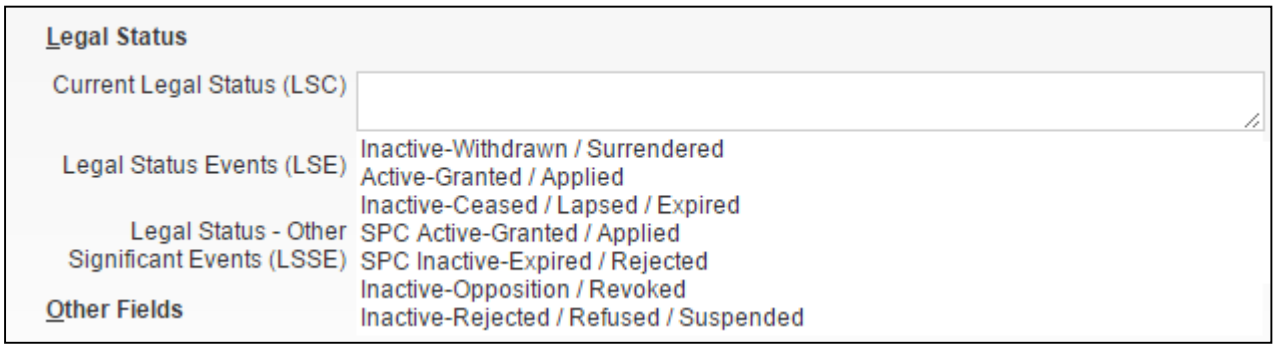
In PatSeer, legal status information for all patent documents is formatted the way INPADOC legal status is present. The purpose of doing this is that it allows conducting proper date range searching and combining those with PRS code or a country code for more precise results. This formatted content is present in Legal Status Event.



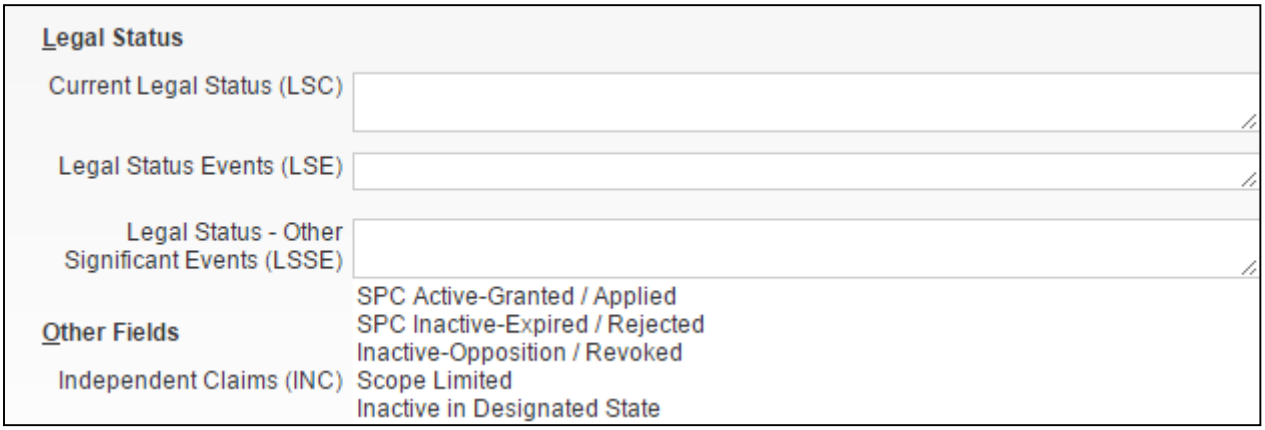


The following snapshot shows the register document and legal status of a record

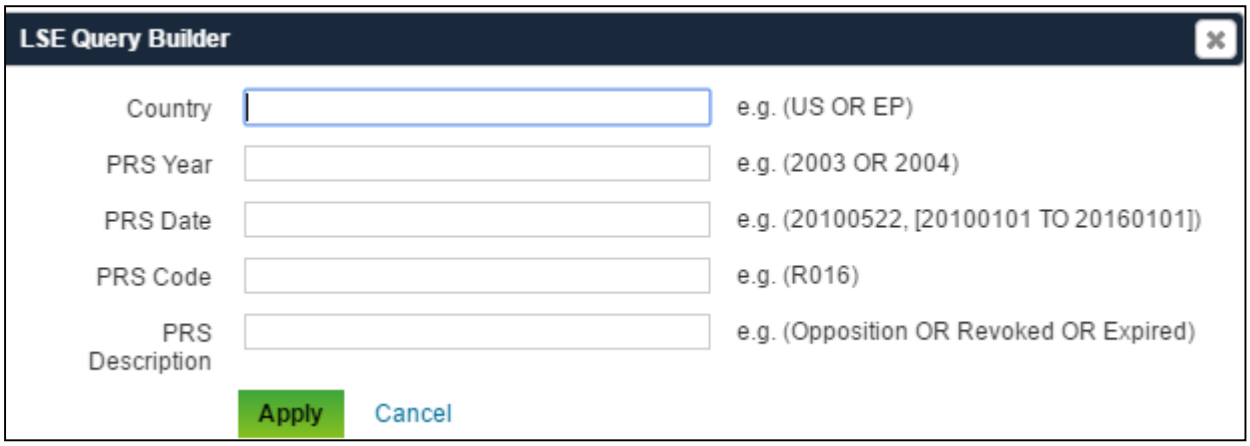
In addition to LSE fields, there are two calculated fields in PatSeer; Current Legal Status (LSC) and Legal Status- Other Significant Events (LSSE). LSC provides the latest legal status of the record and the drop down list gives the valid values for this particular field. This list includes inactive statuses, active statuses or active/ inactive SPCs or the record has become inactive.



Similarly in case of LSSE, this particular field captures events that happen during the lifetime of a record such as opposition, scope of claims of the record have been limited, or the record is no longer active in one of its designated states or an assignment or a collateral event has happened. These fields can be included in your search.

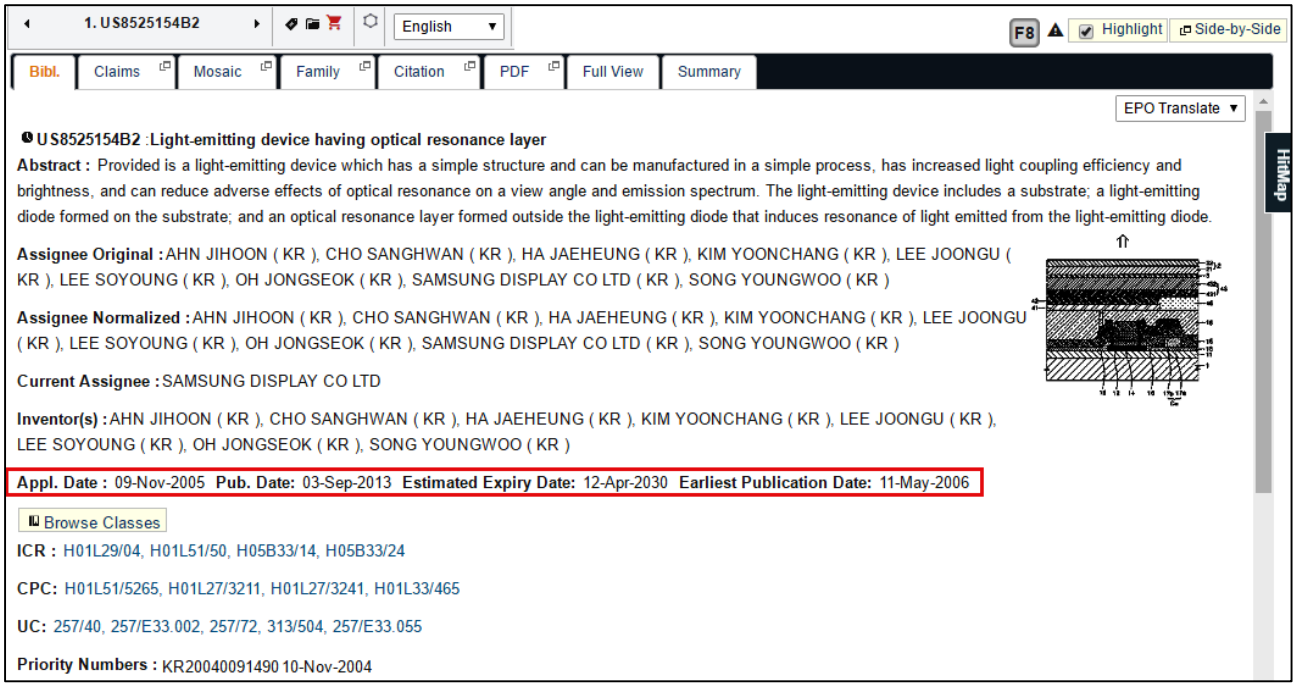


Legal status query builder helps you in forming legal status event query wherein you can enter one or more countries, PRS year, PRS date/date range, PRS code, and word from PRS description.



4.14 US RECORD TYPE AND TERM EXTENSION

Users can search for various US Record type (Continuation/CIP/ Divisional, etc.) The list of valid values for search is given in the table below. Also if a US grant has a Term Extension or a Disclaimer then that too is indicated in the field. This field is unique in the industry and is very useful when you are searching for US Application Types and Term Information.

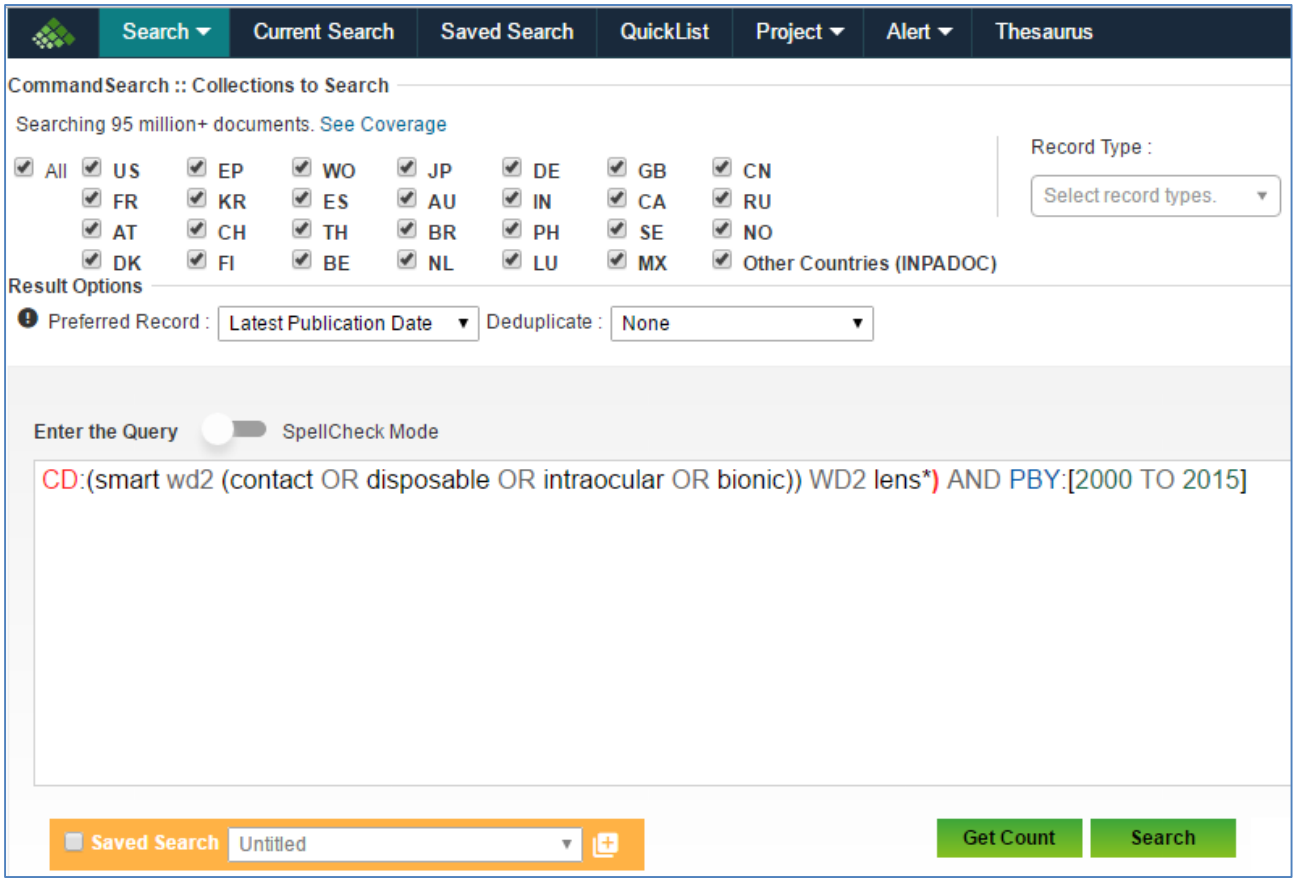


List of possible values for TTYP field code:

TTYP Field Value	Description
A371	A-371-of-international
ADD	Addition
DIV	Division
DIVTO	Division-into
CON	Continuation
CIP	Continuation-in-part
CONRE	Continuing-reissue
REI	Reissue
DIVRE	US-divisional-reissue
REX	Reexamination
RRM	US-Reexamination-reissue-merger
SUB	Substitution
PROV	US-provisional-application
UMB	Utility-model-basis
COR	Correction
RELP	Related-publication
PREA	Previously-filed-application
NPOP	Non-provisional-of-provisional

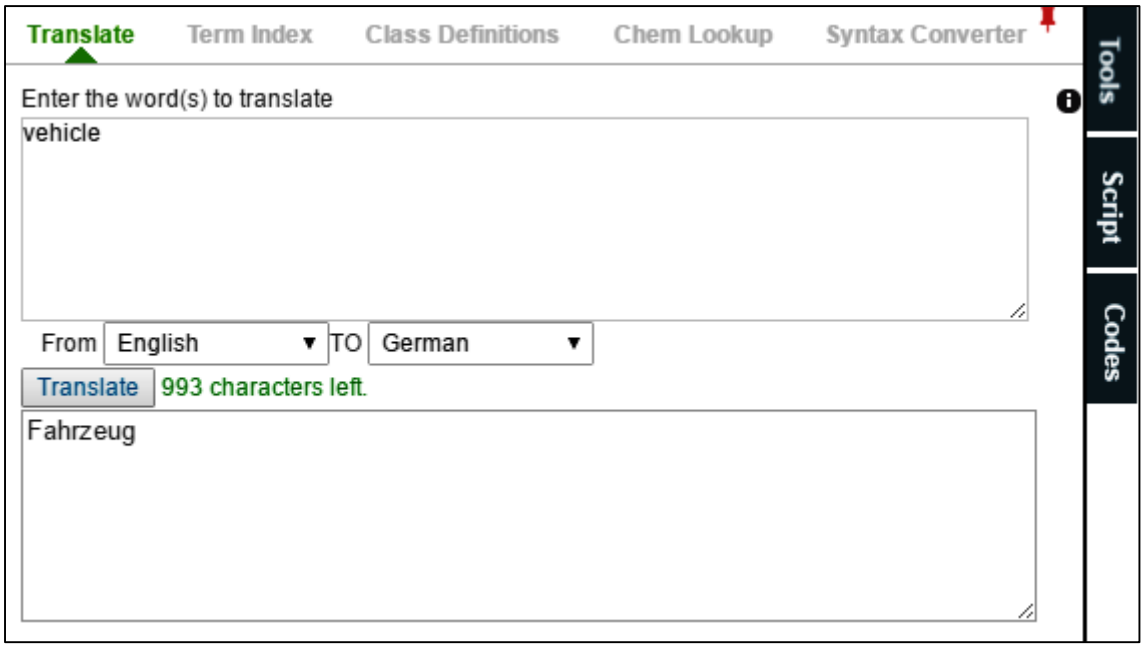
4.15 SEARCH QUERY HIGHTLIGHTER

The query highlighter colors field codes and Boolean operators automatically as you type. It also indicates common syntax mistake in Red. For instance, if you type in “CD” (an incorrect field code) to search or even if the parenthesis doesn’t match, then the syntax gets highlighted in red. For correct syntax, the field code appears in blue.



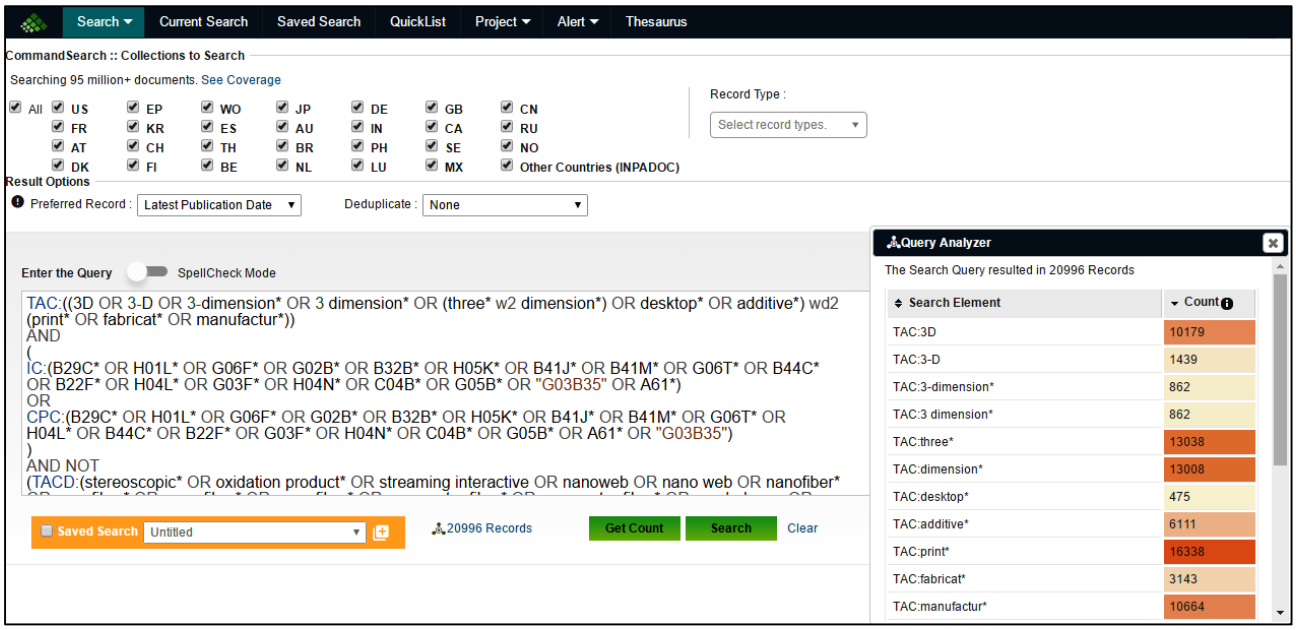
4.16 SEARCH TERM TRANSLATOR

Search term or keywords can be easily translated while searching without leaving the search page; this is possible by using the integrated search term translator widget.



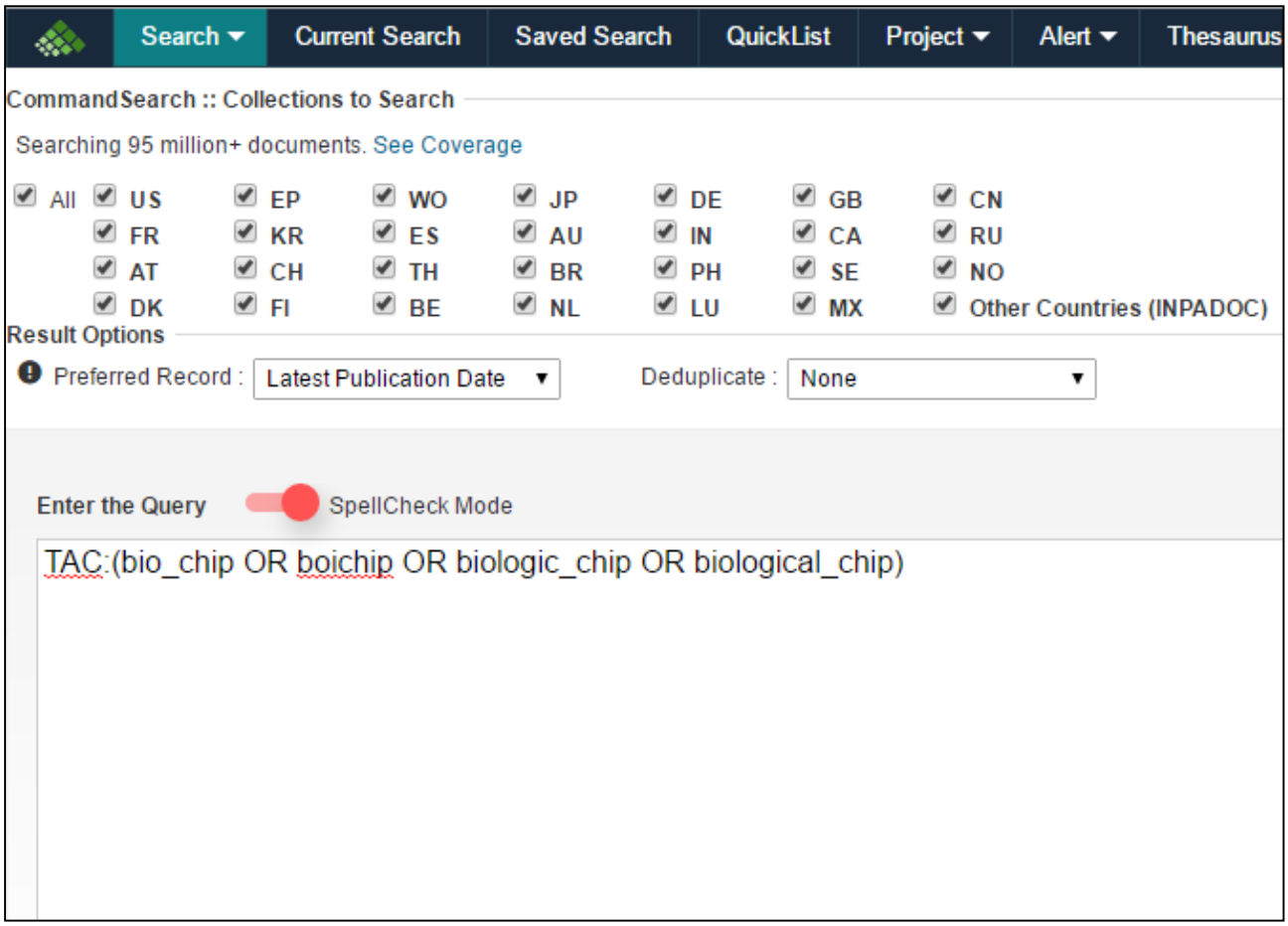
4.17 SEARCH QUERY ANALYZER

Patent searchers can view exactly the counts contributed by each word in the search query through the search query analyzer.



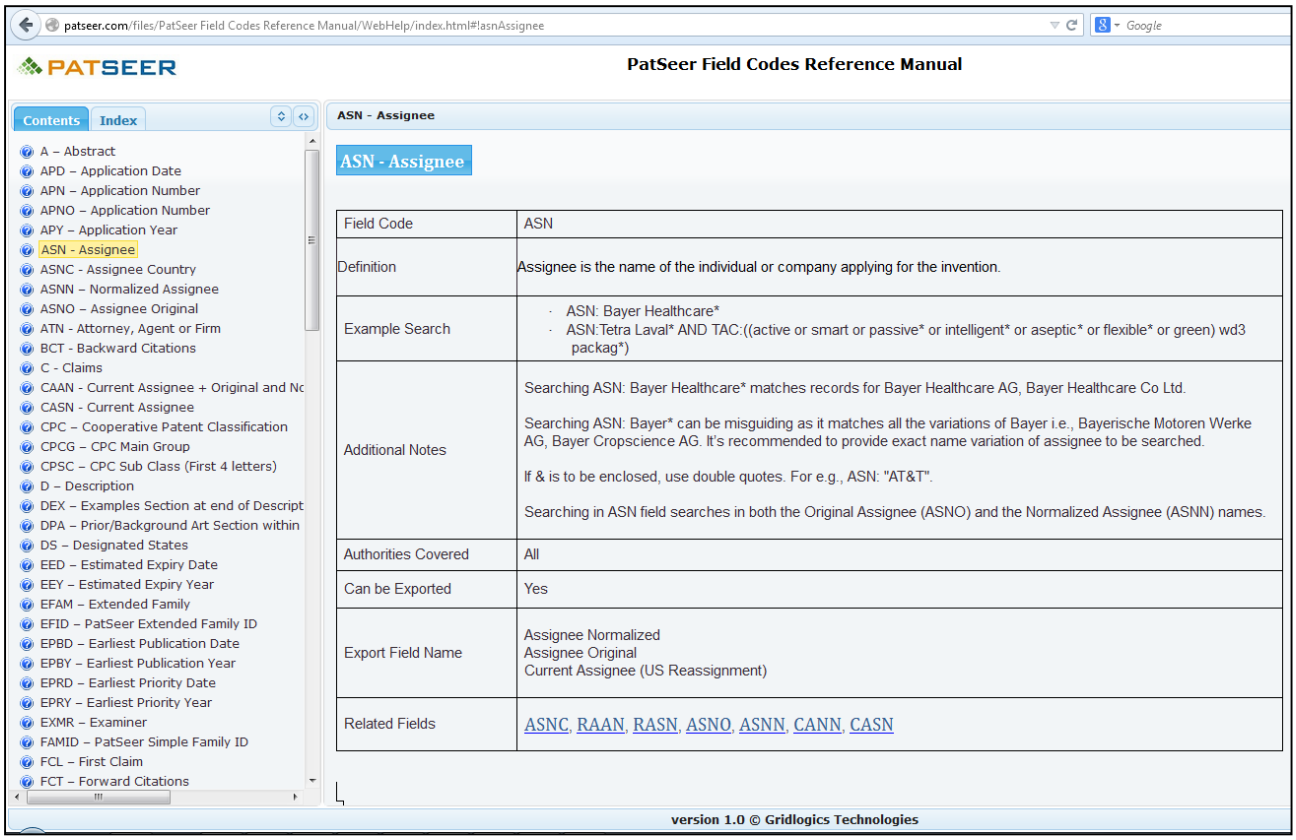
4.18 SPELL CHECK

The spell checker or spell-check option highlights the misspelt words in your search query.



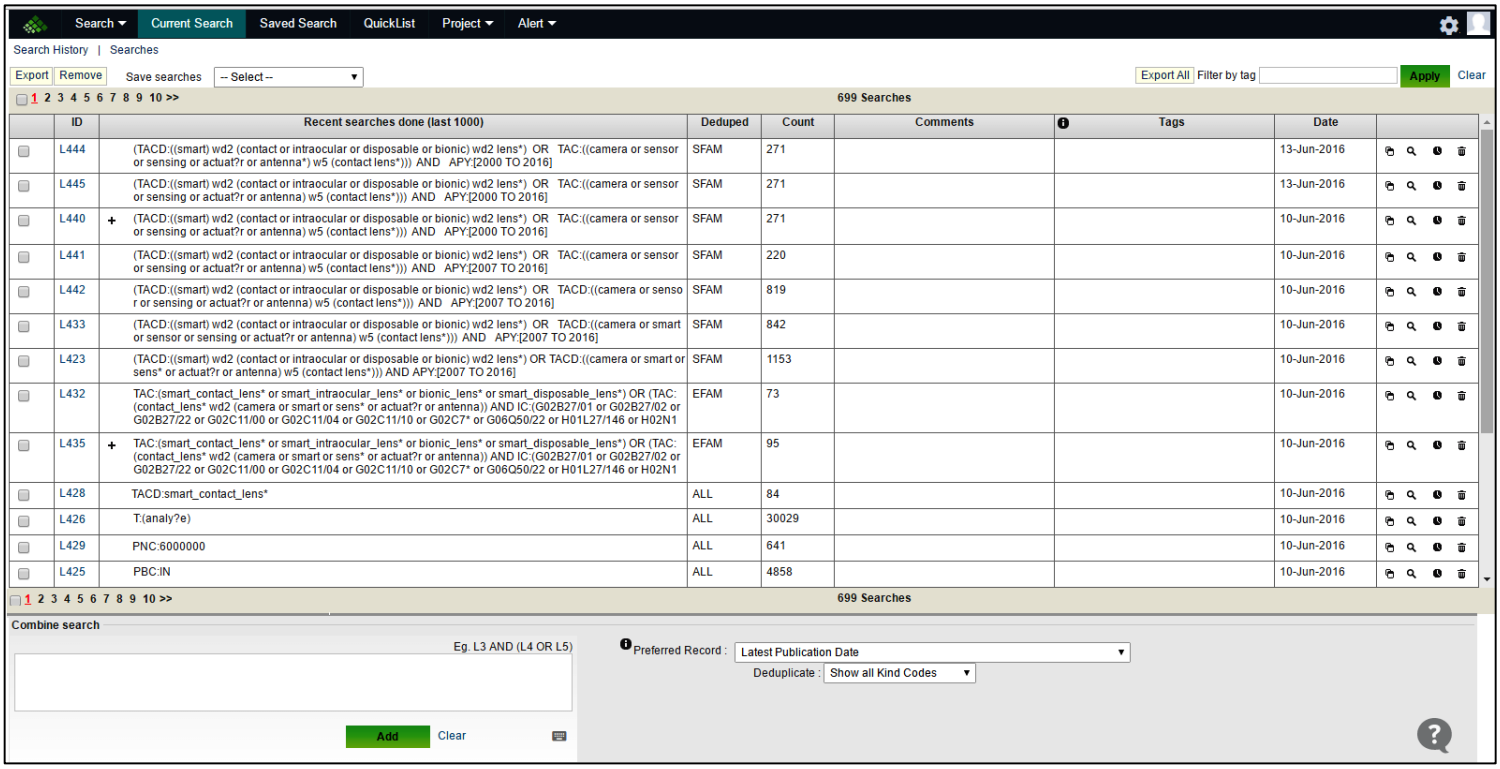
4.19 DETAILED FIELD CODE REFERENCE PORTAL

Field Code Reference portal gives details for each field code along with examples of usage. The document acts as a guide to use appropriate field codes, their syntax, and related fields. The link to the reference portal is present in the top-right of the Codes tab.



4.20 MANAGE SEARCHES

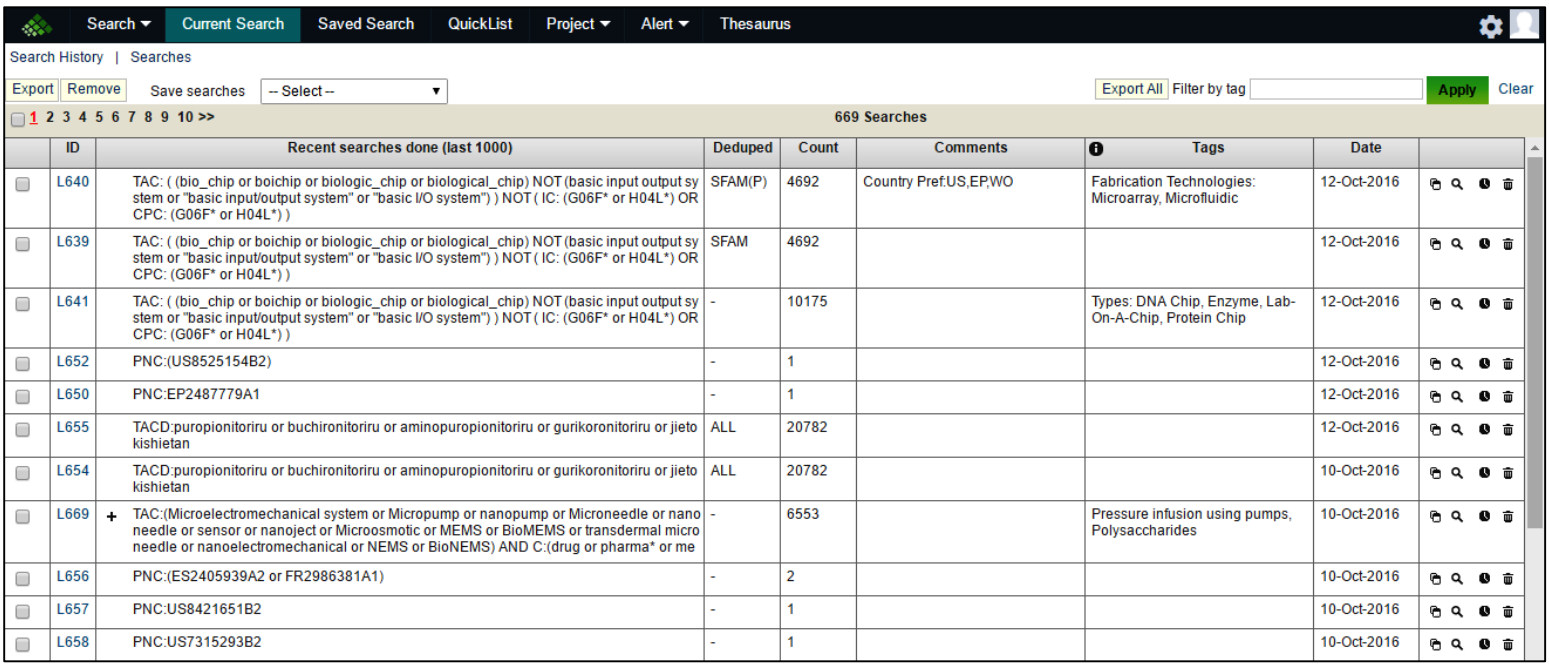
Manage searches stores the last 1000 search strings. The search queries can be combined with different search queries using AND/OR/NOT operators. This allows the user to conduct searches in more complex ways than what are possible using different search forms



4.21 COMMENTING AND TAGGING SEARCH QUERIES

Each search query in Current Searches and Saved Searches can be commented on and also tagged with one or more categories. A filter by tag option on the top right allows you to quickly filter and view just the queries containing the tag searched.

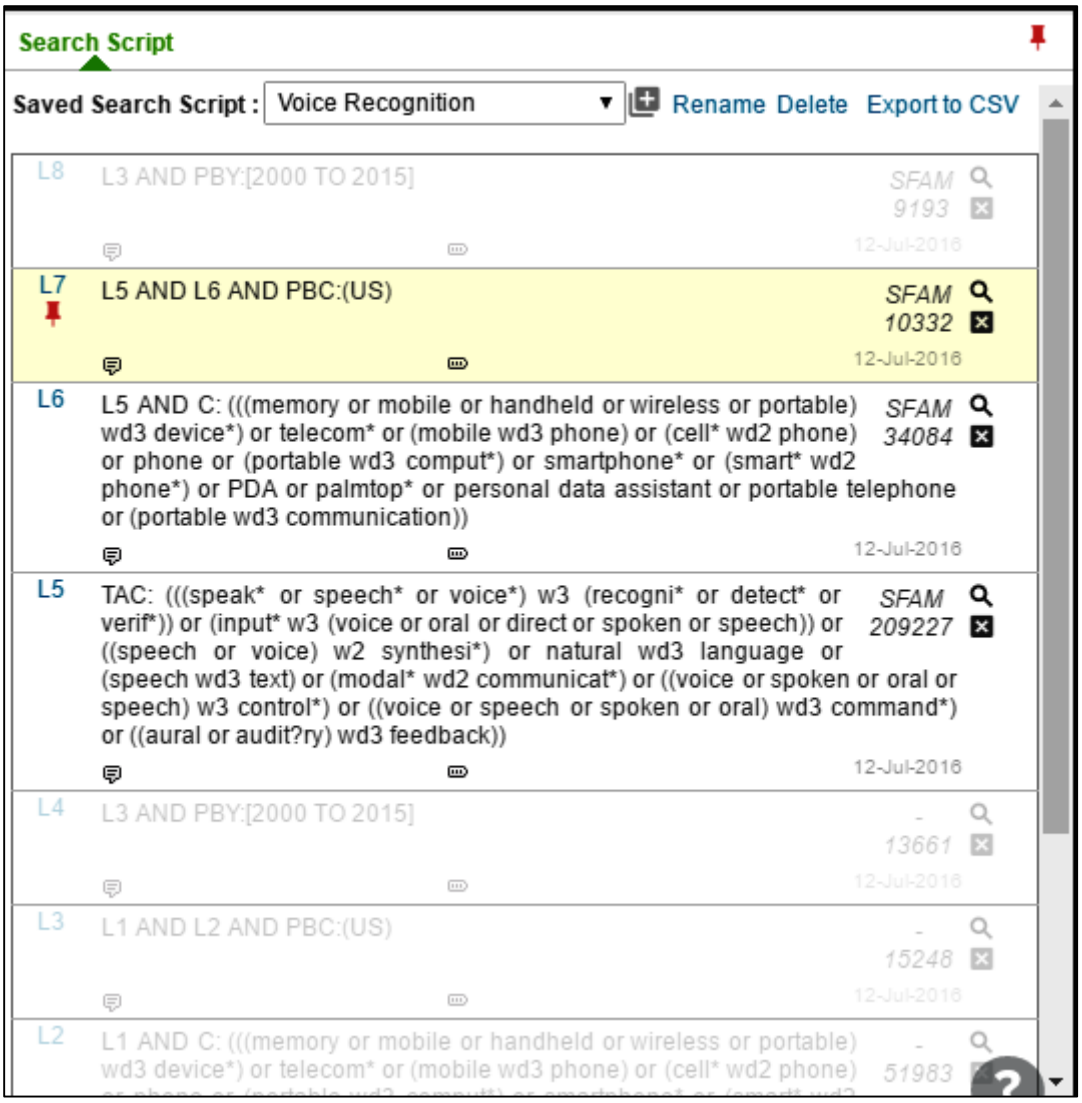
Export options allow you to also export the comments and tags with each search query.



	ID	Recent searches done (last 1000)	Deduped	Count	Comments	Tags	Date
	L640	TAC: ((bio_chip or boichip or biologic_chip or biological_chip) NOT (basic input output system or "basic input/output system" or "basic I/O system")) NOT (IC: (G06F* or H04L*) OR CPC: (G06F* or H04L*))	SFAM(P)	4692	Country Pref:US,EP,WO	Fabrication Technologies: Microarray, Microfluidic	12-Oct-2016
	L639	TAC: ((bio_chip or boichip or biologic_chip or biological_chip) NOT (basic input output system or "basic input/output system" or "basic I/O system")) NOT (IC: (G06F* or H04L*) OR CPC: (G06F* or H04L*))	SFAM	4692			12-Oct-2016
	L641	TAC: ((bio_chip or boichip or biologic_chip or biological_chip) NOT (basic input output system or "basic input/output system" or "basic I/O system")) NOT (IC: (G06F* or H04L*) OR CPC: (G06F* or H04L*))	-	10175		Types: DNA Chip, Enzyme, Lab-On-A-Chip, Protein Chip	12-Oct-2016
	L652	PNC:(US8525154B2)	-	1			12-Oct-2016
	L650	PNC:EP2487779A1	-	1			12-Oct-2016
	L655	TACD:puropionitoriru or buchironitoriru or aminopuropionitoriru or gurikoronitoriru or jieto kishietan	ALL	20782			12-Oct-2016
	L654	TACD:puropionitoriru or buchironitoriru or aminopuropionitoriru or gurikoronitoriru or jieto kishietan	ALL	20782			10-Oct-2016
	L669	+ TAC:(Microelectromechanical system or Micropump or nanopump or Microneedle or nano needle or sensor or nanoject or Microosmotic or MEMS or BioMEMS or transdermal micro needle or nanoelectromechanical or NEMS or BioNEMS) AND C:(drug or pharma* or me	-	6553		Pressure infusion using pumps, Polysaccharides	10-Oct-2016
	L656	PNC:(ES2405939A2 or FR2986381A1)	-	2			10-Oct-2016
	L657	PNC:US8421651B2	-	1			10-Oct-2016
	L658	PNC:US7315293B2	-	1			10-Oct-2016

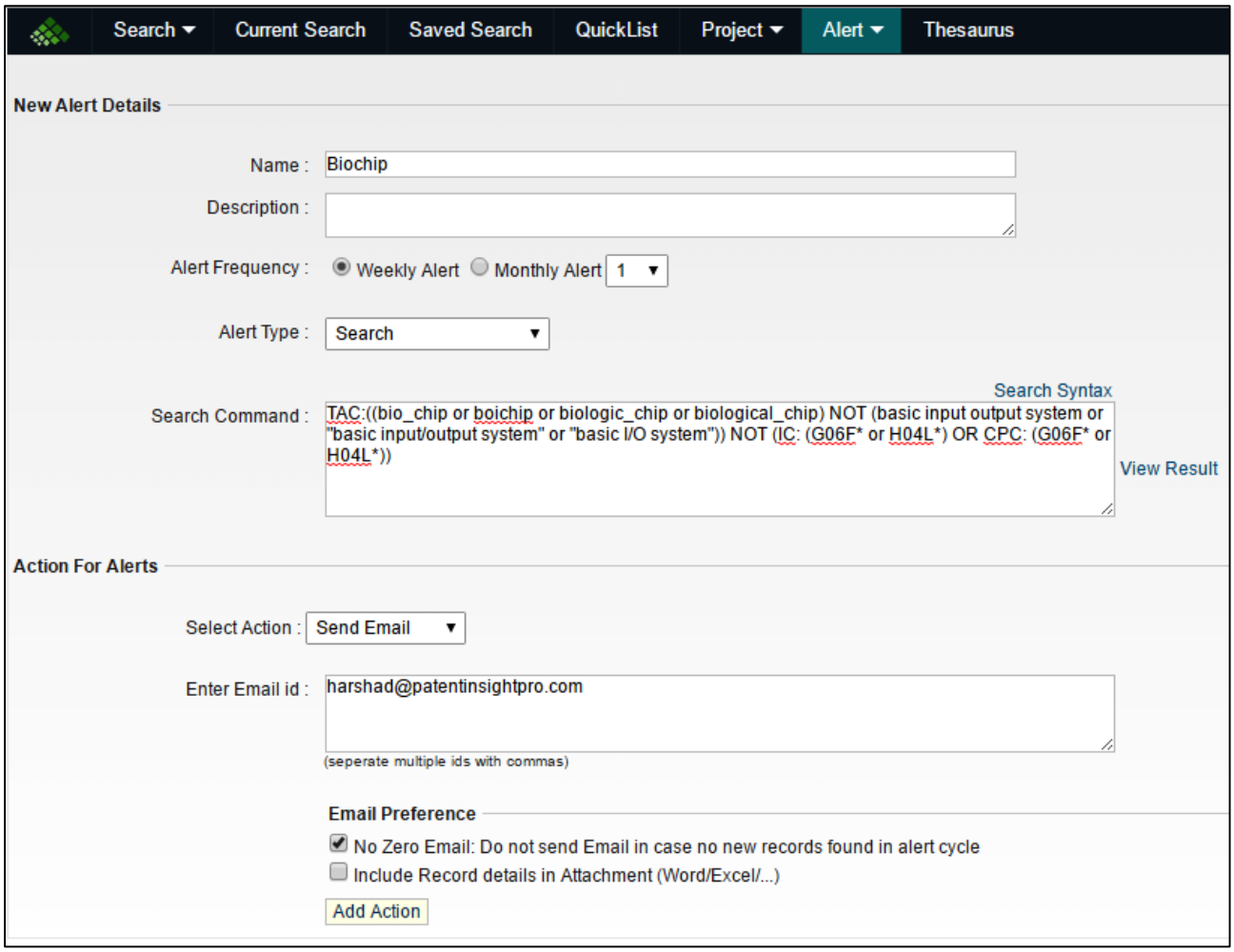
4.22 SEARCH SCRIPTING

Scripting allows you to prepare your final search strategy in steps rather than having to formulate the large search in one click. You can create individual search statements and then combine them with boolean operators. The search query gets saved instantly in Saved Search Script as soon as you search for same. The queries can also be exported to CSV file.



4.23 ALERTS

The Alerts feature allows users to receive email alerts of any new patent documents being published in the area of interest based on defined search criteria. Within Alerts you have an additional option to receive record details of each result in the form of Word/Excel/CSV and XML files. You can decide which patent fields you want to include just like any export file. This gives the flexibility to quickly browse through details of records without having to log in to the application.



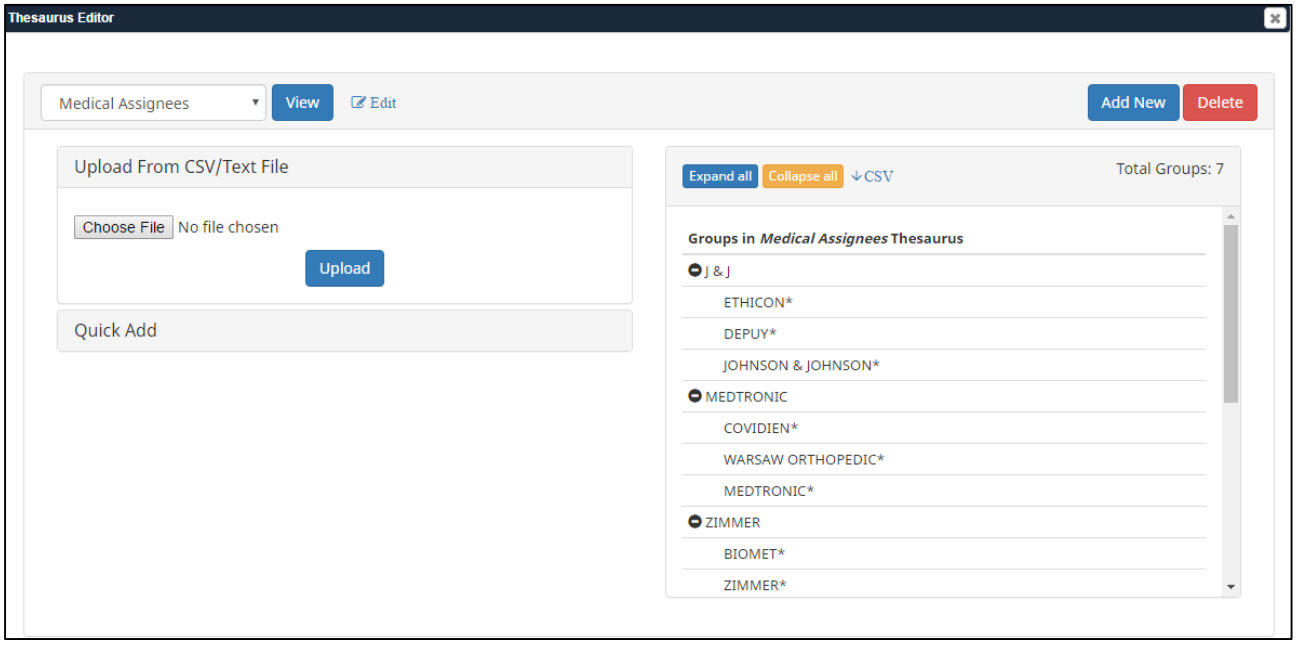
CHAPTER 5 VIEWING RESULTS

5.1 CREATE AND APPLY THESAURUS

A thesaurus file helps you define synonymous words and phrases which can be treated as equivalents.

You can create and maintain multiple set of thesauri for Assignee/ Inventor/ Attorney and Keywords.

Once a thesaurus is created, you can use it for data clean-up activities or to apply in your analysis for precise insights. These thesauruses can be exported to CSV making it easy to manage and extend those over a period of time.



5.2 SEARCH RECALL

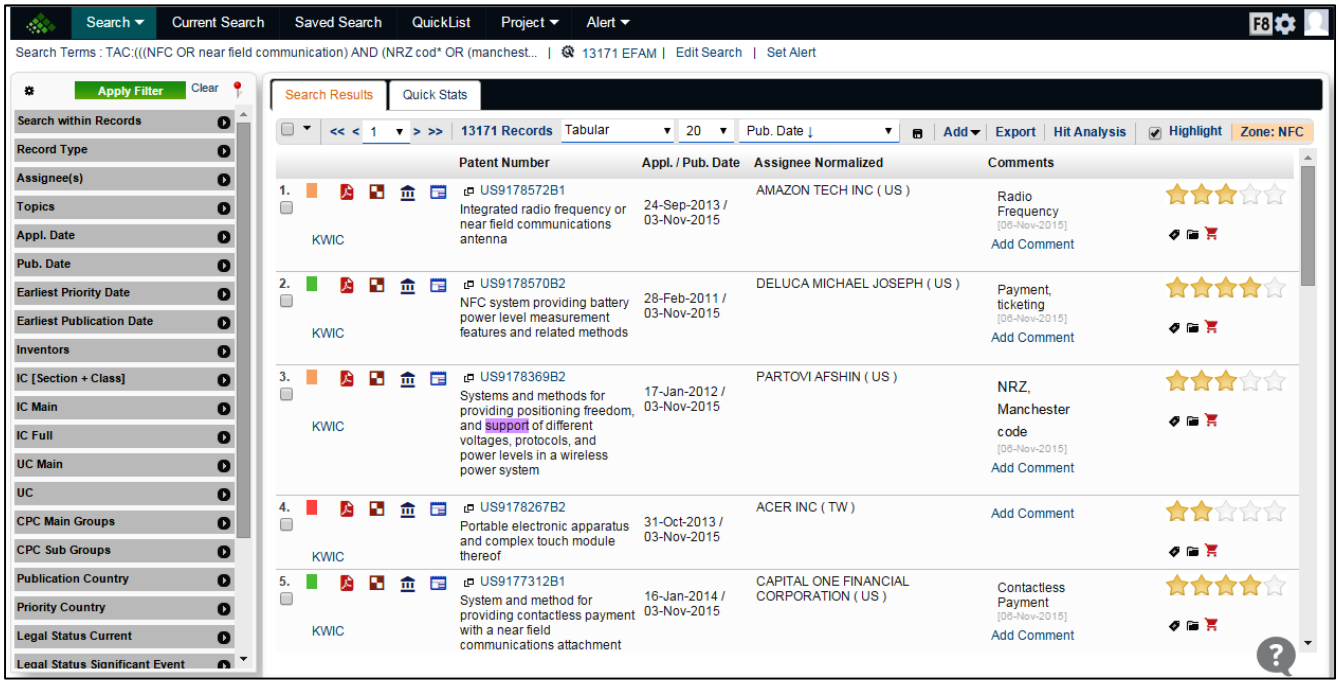
When searching for patents, there are always noise patents that show up in your search query. Even after multiple iterations of your keyword search, there will be a few records that are found to be irrelevant after reading through their text. The usual next step for you is to figure out a way to exclude such records by adding a “NOT” segment to your query. And when you run out of safe “text patterns” to NOT out from your search query, the only remaining option is to create a long list of such numbers that are NOT’ed from the original query. Even then there may be family equivalents that still show up!

So if you have a shorter turnaround time for your search project, then perhaps your time is better spent making sure you are not missing out a relevant record instead of focusing on the NOTs. Also if you go fast on your NOT strategy, you may get unknowingly exclude a critical relevant record from your results.

PatSeer Search Recall™ addresses this challenge by giving you options to flag, rate, or comment on your search results and those actions show up alongside the record if it appears in future searches. So you can mark a record as relevant or irrelevant with a single-click and thereby not have to go through it again for the same search project.

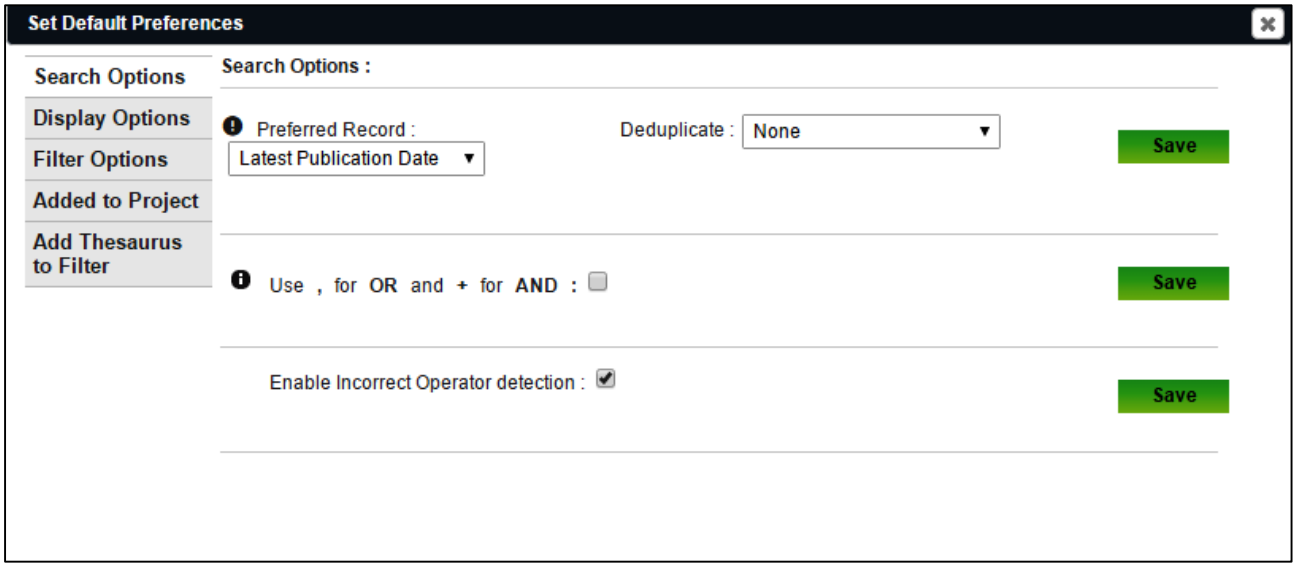
Further, if you are working on different technology projects you may or may not want to see the annotations from one project in another. So Search Recall provides you recall (or memory) zones that capture and store your actions and you can turn off or switch between these zones as per need. Further, marking a whole patent family is also possible and you can opt for annotating the whole family (Simple or INPADOC families) instead of a single record.

The recall is done in zones and you have to define one or more zone to begin with. So entries you make in one zone are not recalled if another zone is enabled.



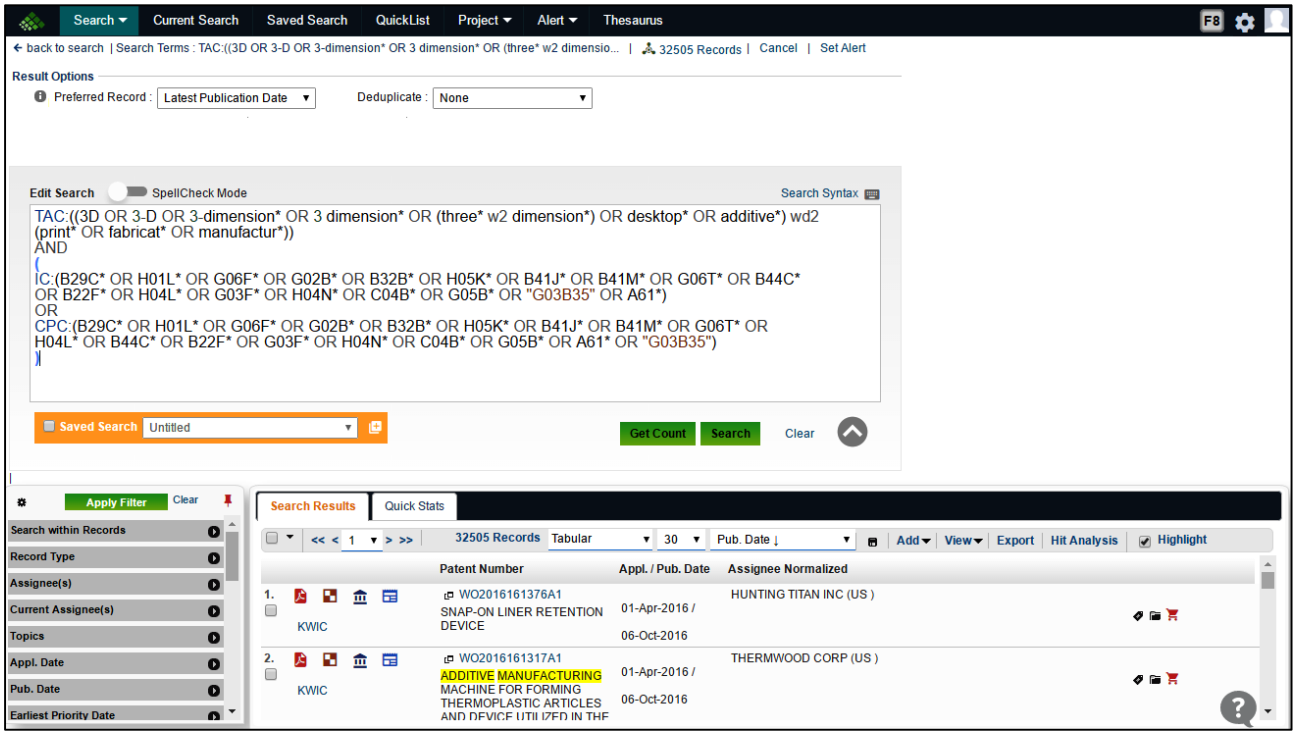
5.3 USER PREFERENCES

You can set your default search, display and other related preferences from the User preferences panel. This helps you avoid setting them each time.



5.4 EDIT SEARCH

Saved Search Script option within Edit Search form allows users to save their final query for reference. A 'Collapse' icon allows collapsing the search box.



5.5 MULTIPLE RESULT VIEWING/SORTING

PatSeer currently allows up to 200 results to be viewed in a single page for quick browsing of results. In tabular and detail view of the results, PatSeer displays normalized assignee names. This label provides uniformed/clean assignee names to the records for a more precise search and analysis.

Following are the different options to view results in PatSeer

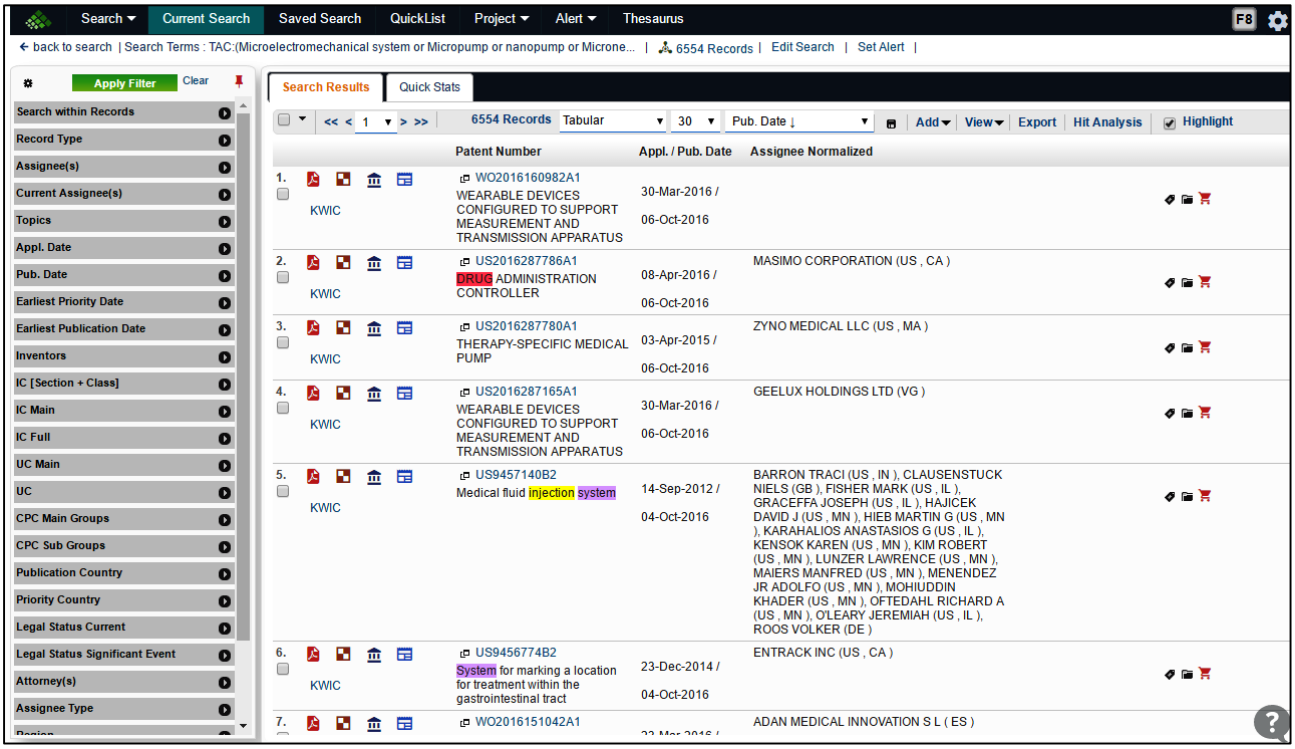
Tabular Standard Standard and Independent Claims Standard and Family	Drawings Drawings and Abstract Numbers Only Custom View

PatSeer also allows users to sort results while searching on the following criteria:

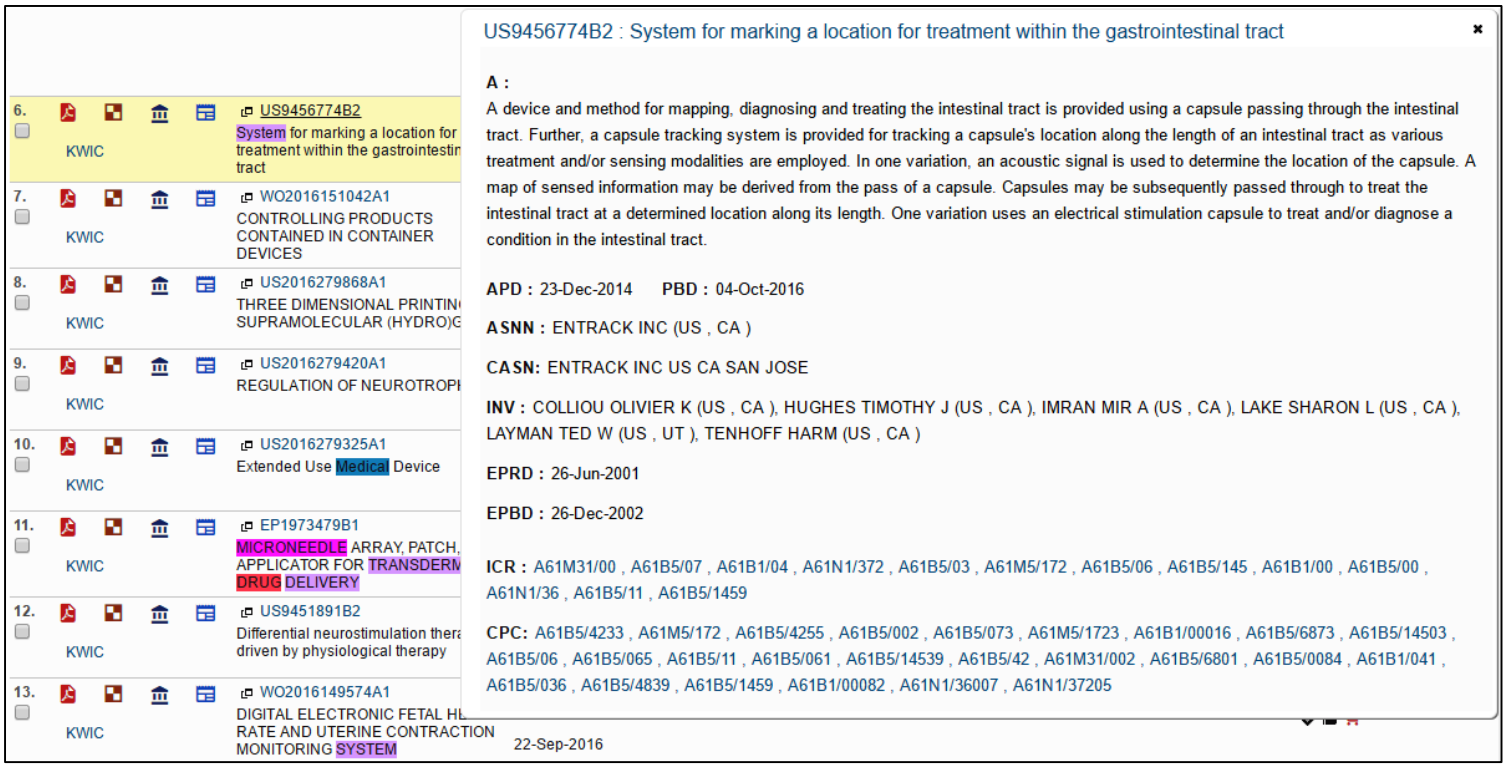
Publication Date Application Date Relevancy Most cited patent document	Earliest Publication Date Earliest Priority Date Document Number Simple / Extended Family Litigation

5.5.1 TABULAR VIEW

This view includes number, application/ publication date, assignees, links to PDF, image mosaics, legal status and register data, family viewer and link to KWIC.

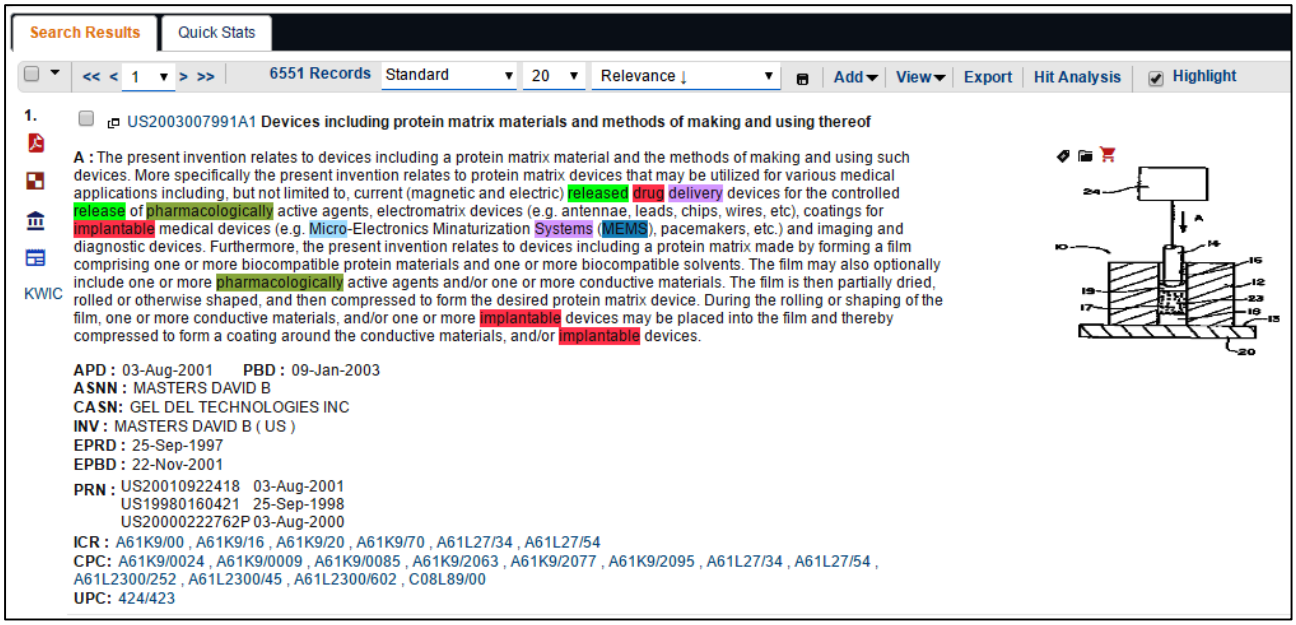


Bibliography information for patent can also be viewed by placing the cursor over the record number. This helps to quickly scan through a large result set without really changing windows.



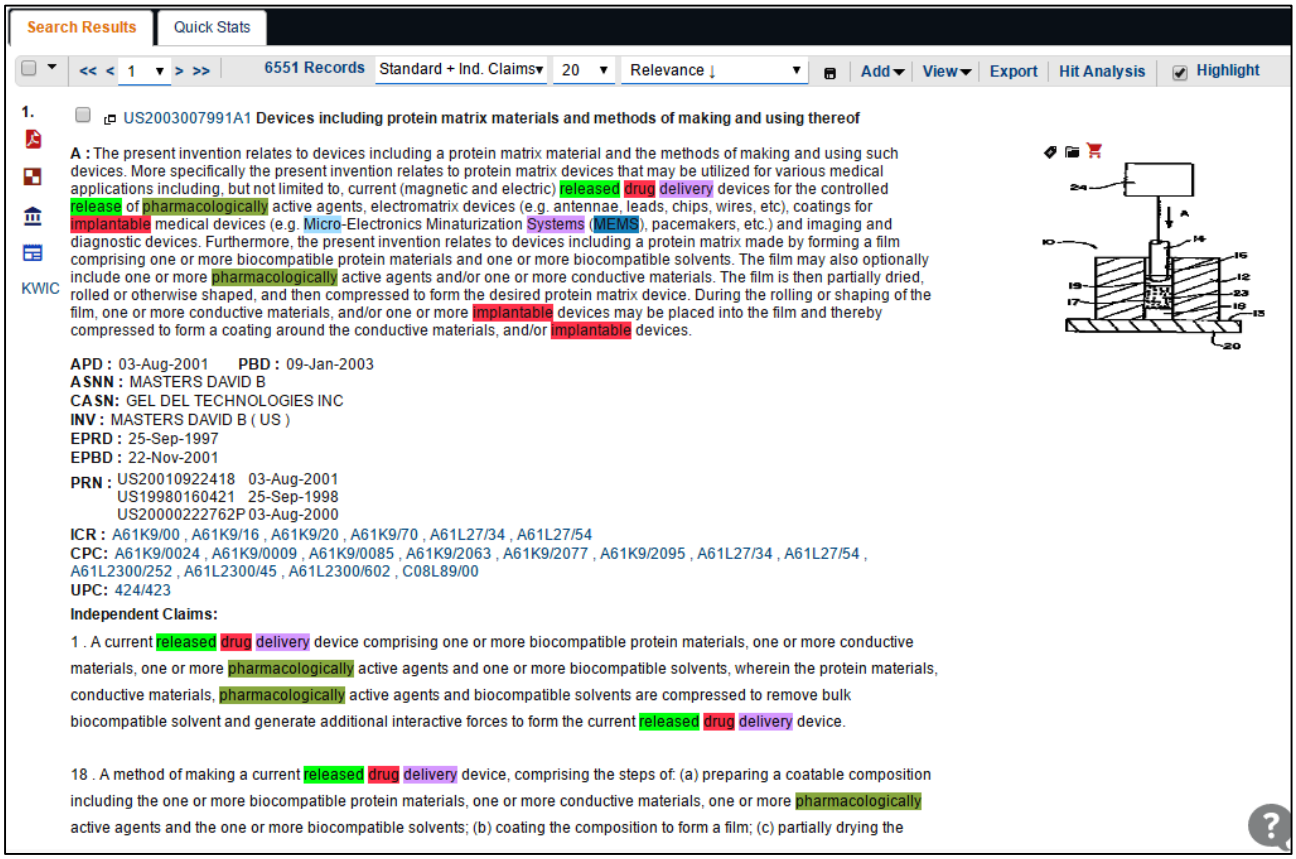
5.5.2 STANDARD VIEW

This view shows the full bibliographic fields of the record and image for the record on the right side. The bigger picture for that image can be viewed by clicking on the image.



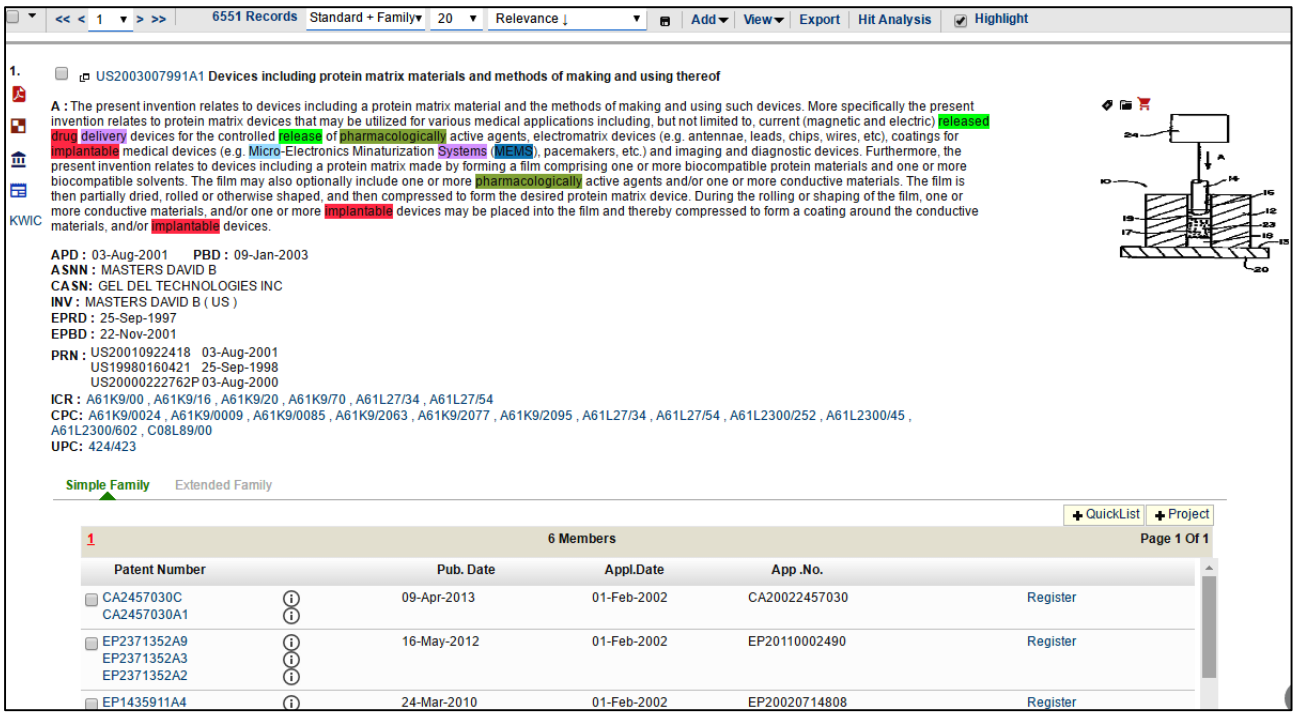
5.5.3 STANDARD AND INDEPENDENT CLAIMS VIEW

This is similar to standard view except that it allows viewing biblio data along with independent claims of the record.



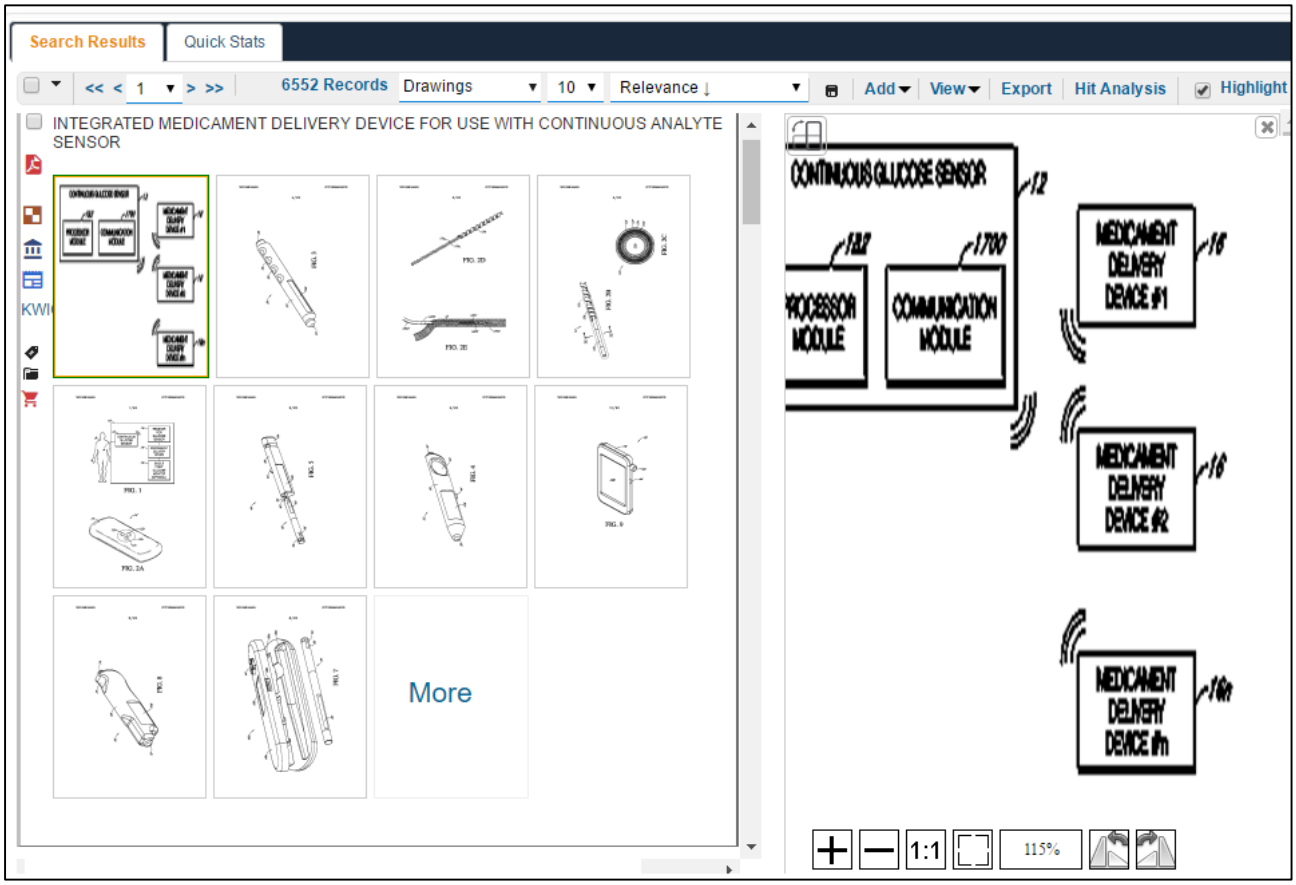
5.5.4 STANDARD AND FAMILY VIEW

This view allows viewing bibliographic data along with family information of the record where it is available. Information for both, simple and extended family members of the record can be viewed and added to a project. Family information is added in a table at the end of the standard view. Users can click on any of the family member to see further details.



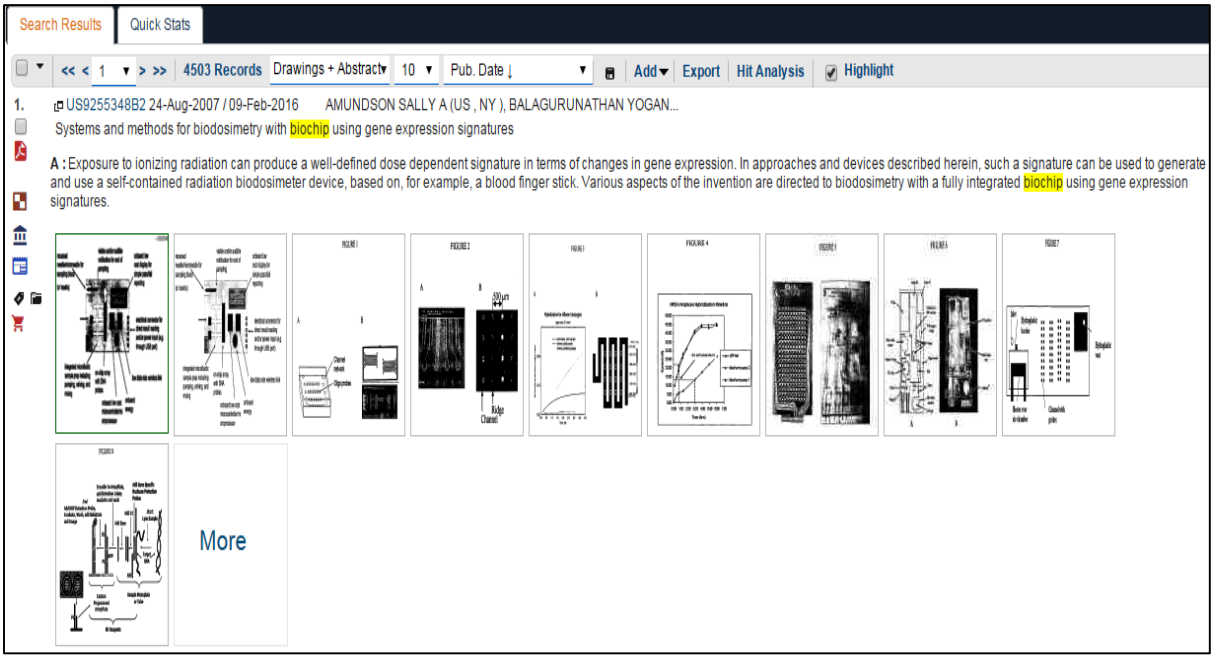
5.5.5 DRAWINGS VIEW

The Drawings view allows users to browse through all the drawings available for patent documents viewable in the result list. You can also view 10/ 20/ 50 results in a single view. Further, you can also see a collection of images in vertical carousel pattern, which helps you to see multiple images in a single space.



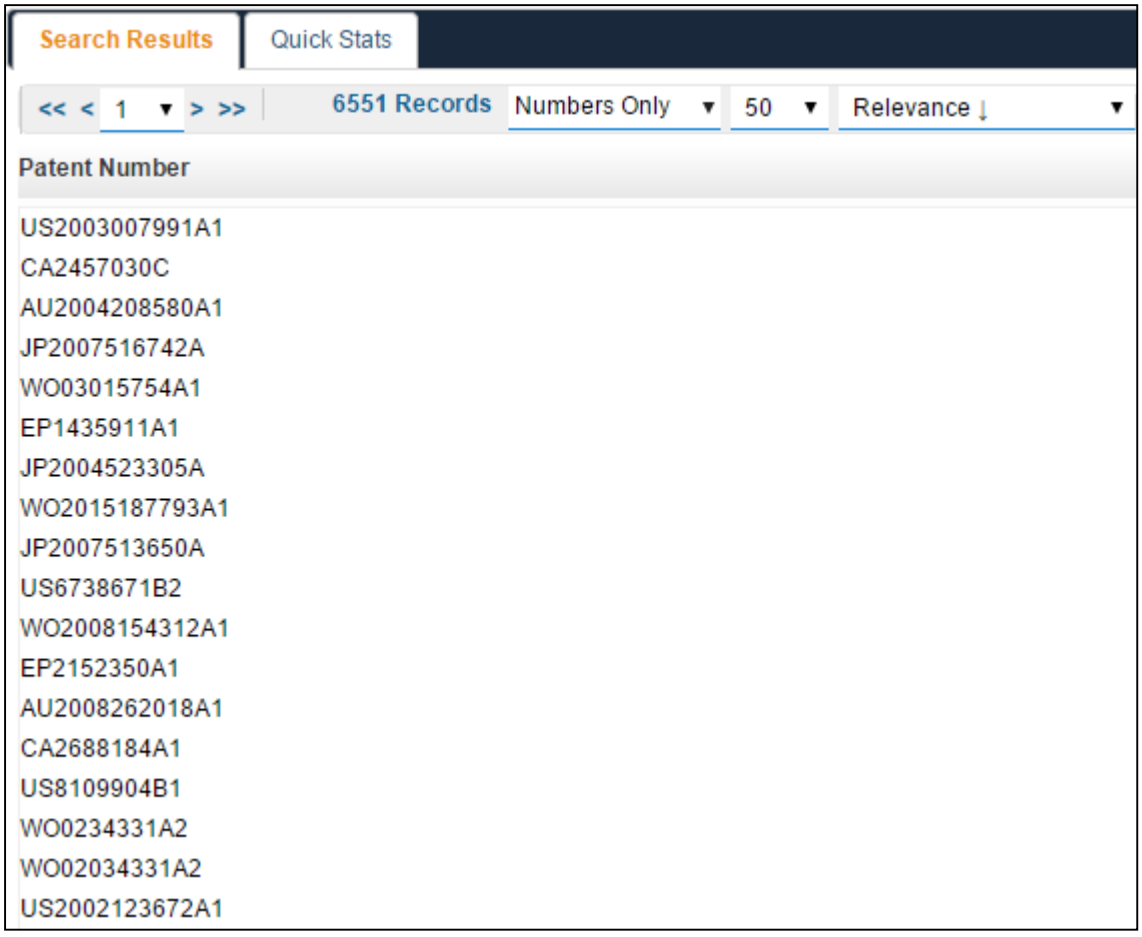
5.5.6 DRAWINGS AND ABSTRACT VIEW

You can view the abstracts of the records along with their drawings in a single view



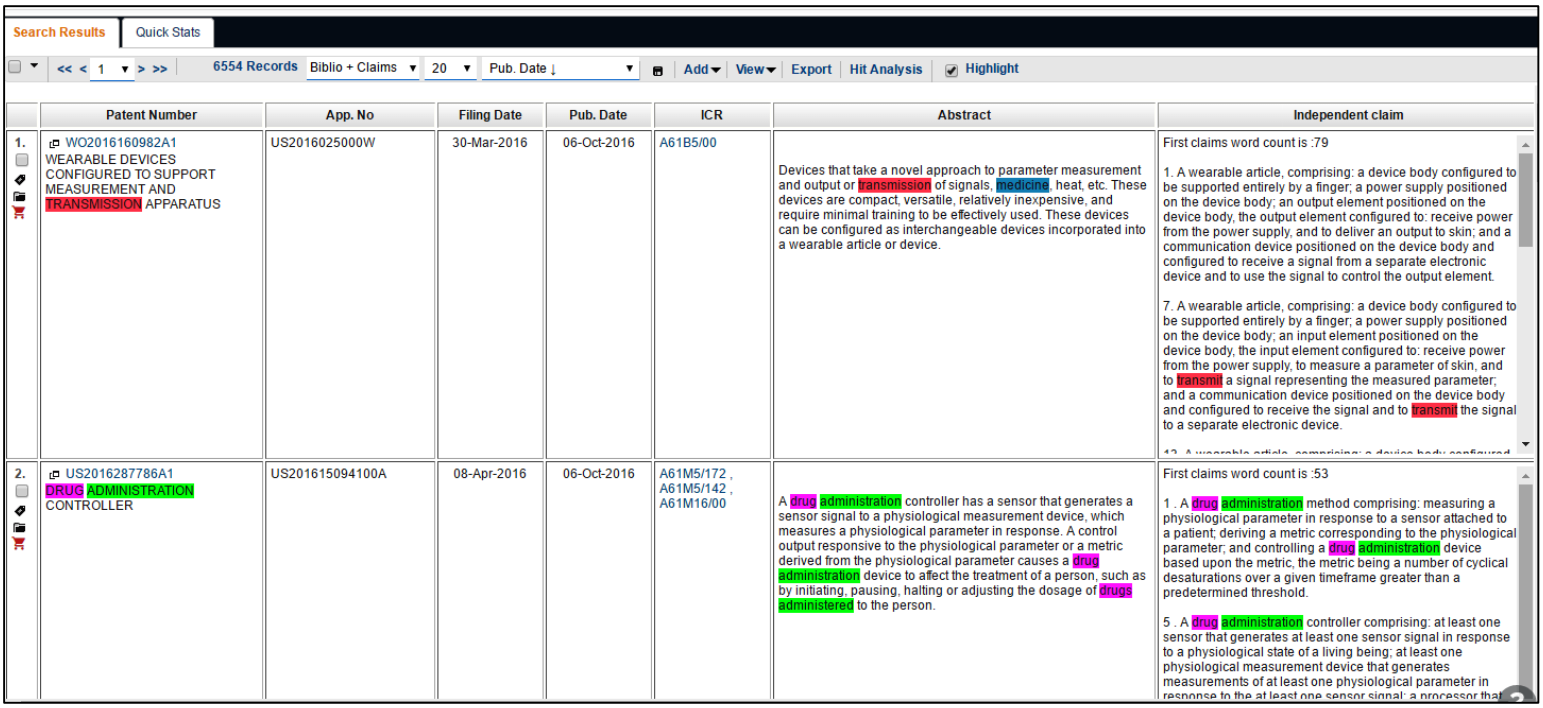
5.5.7 NUMBER VIEW

The Number View shows just the set of numbers that have appeared in your results. A maximum of 200 numbers can be displayed at one time. The numbers can be copied and pasted for further use.



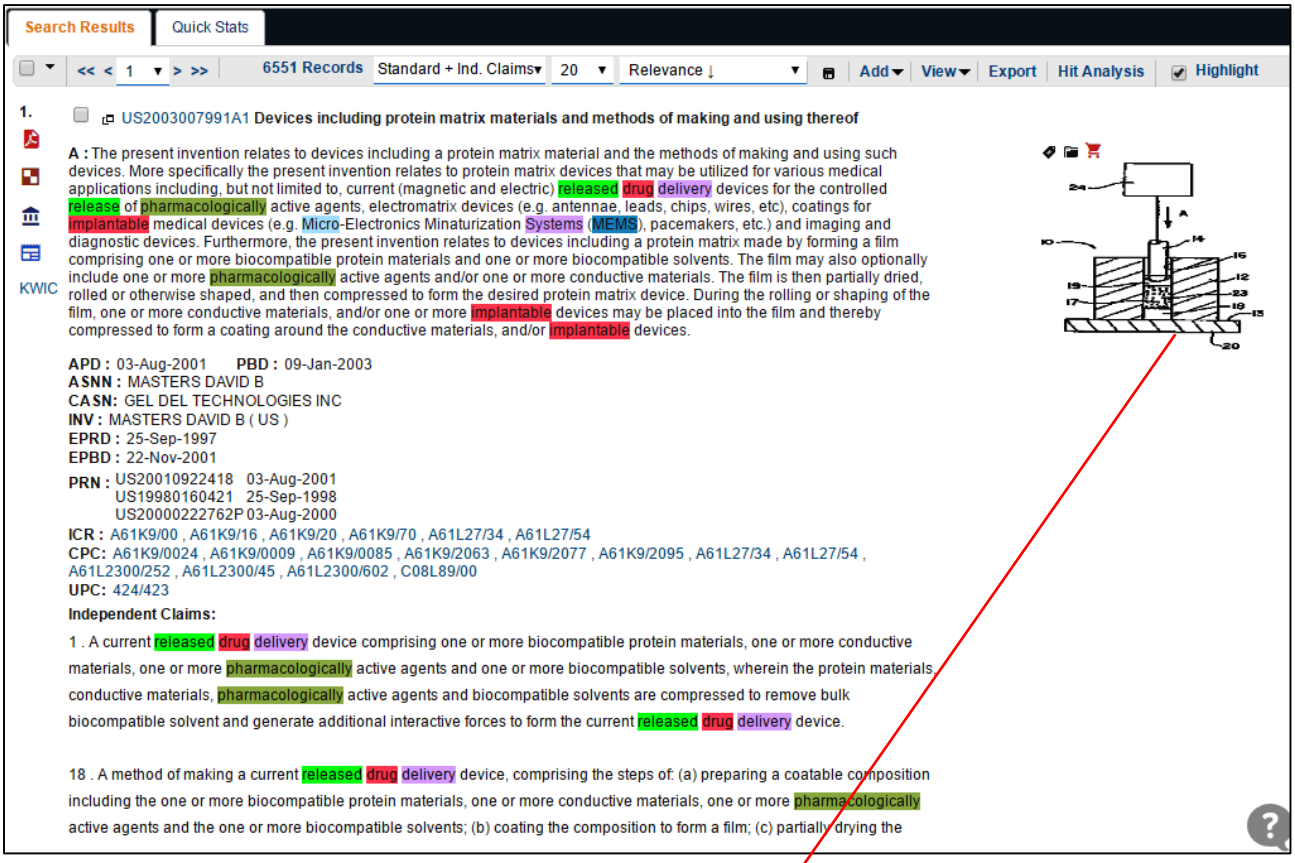
5.5.8 CUSTOM VIEW

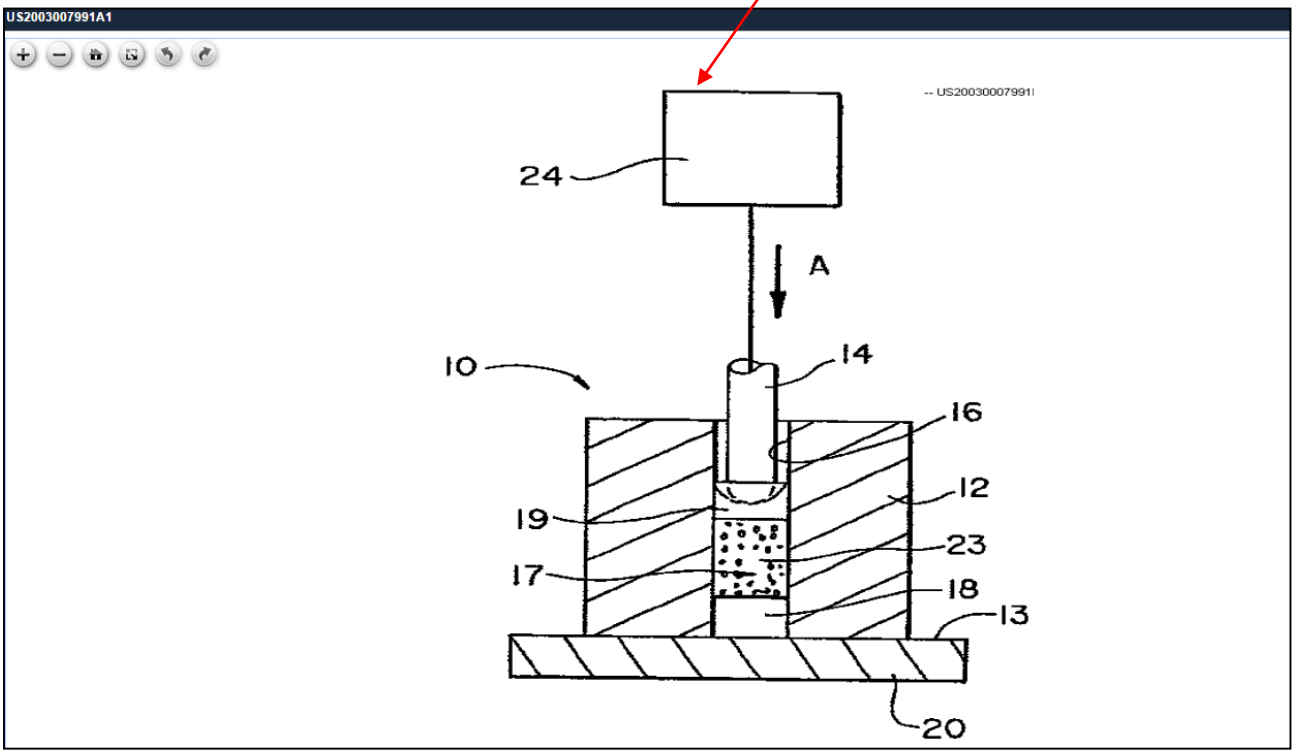
Custom View allows users to decide what set of fields he wants to view. You can create multiple custom views as per your project requirements. You can choose the option as Column (appears like an Excel) or List type of custom view (arranged in a row of cards type of format).



5.6 ZOOM SUPPORT FOR FRONT PAGE DRAWINGS

It is now easy to view front page drawings on a larger scale. The image can easily be rotated or even zoomed in or zoomed out.

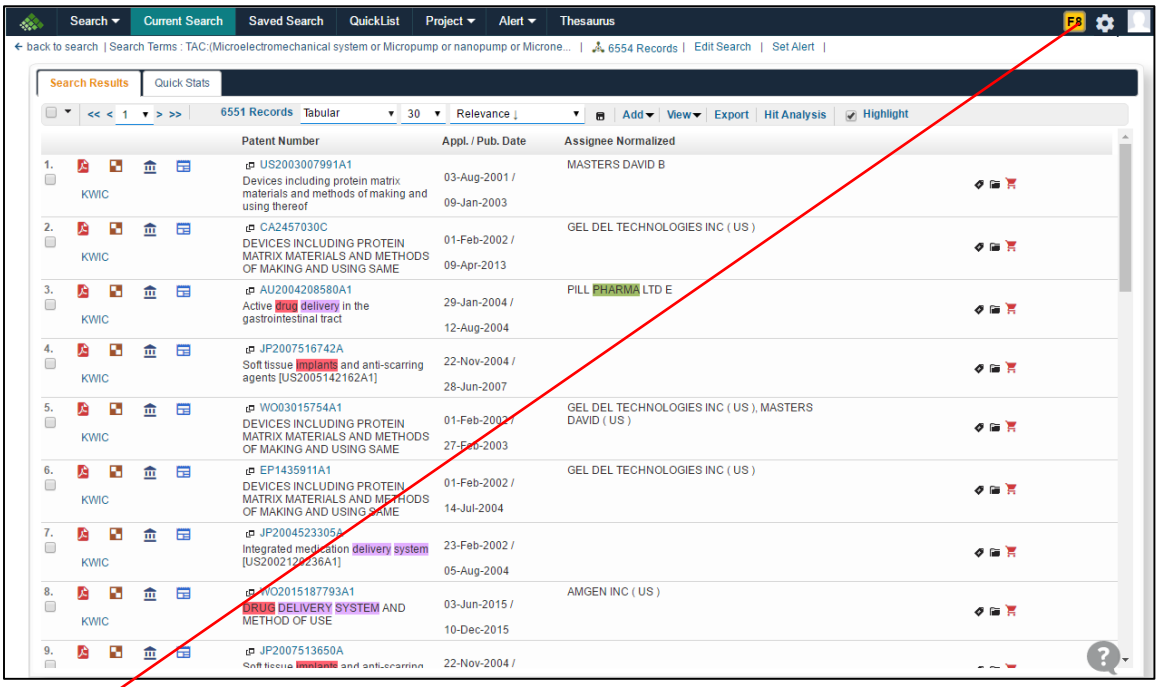


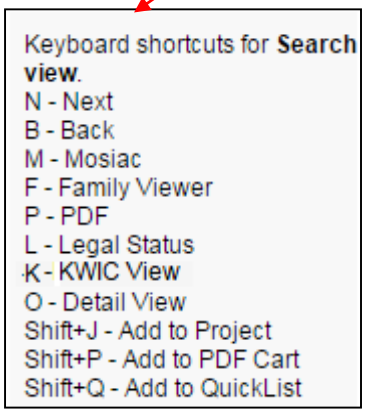


5.7 SHORTCUT KEYS FOR NAVIGATION

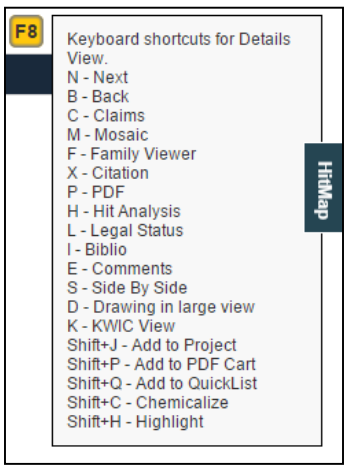
Keyboard shortcuts within the result navigation and single record view pages help save time when navigating through result sets and invoking common actions. The shortcut keys are enabled by default and can be disabled or re-enabled using the F8 key. An icon on the top right indicates if the Shortcuts are enabled or disabled. Clicking on the icon gives you the list of keys and their actions.

Shortcut keys can be used to scroll through a large result set, open different/ key details of records without using a mouse.



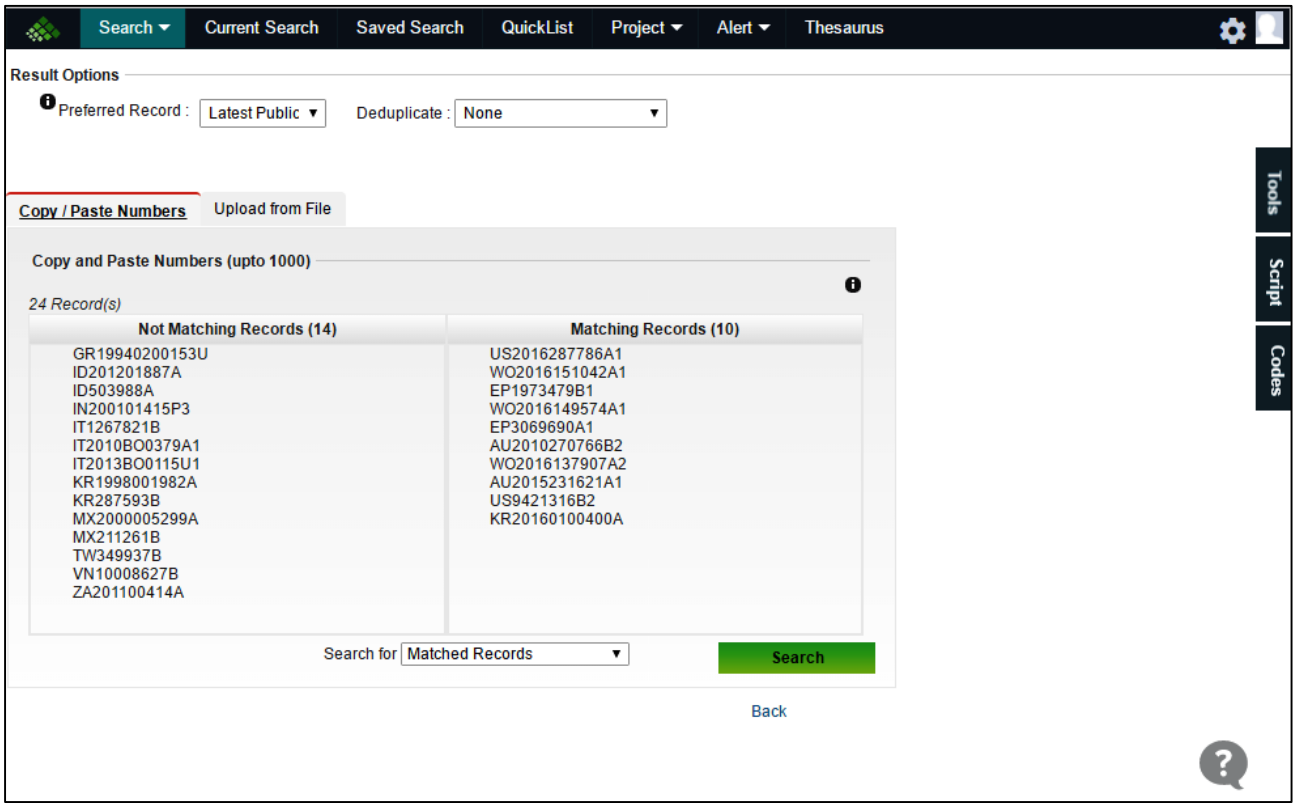


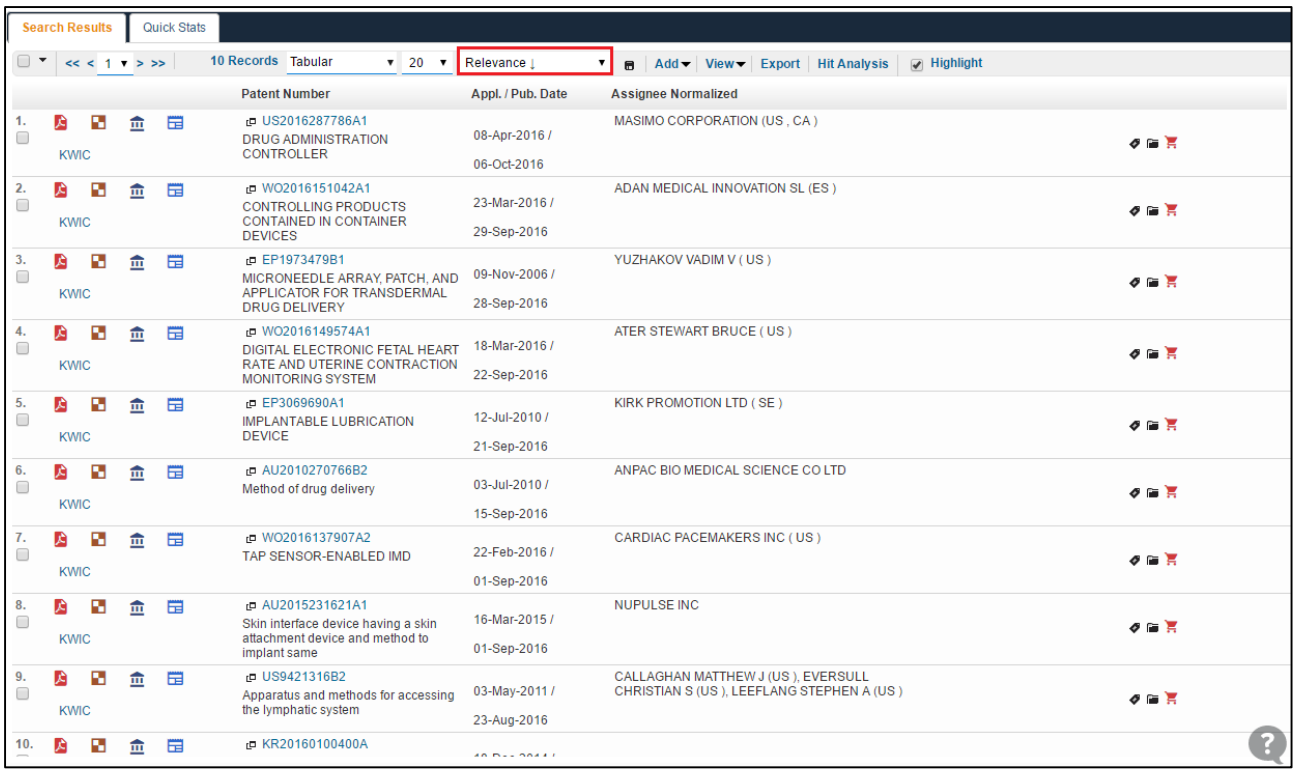
In detailed view, shortcut keys would look like in the image below



5.8 NUMBER SEARCH ORDER RETENTION

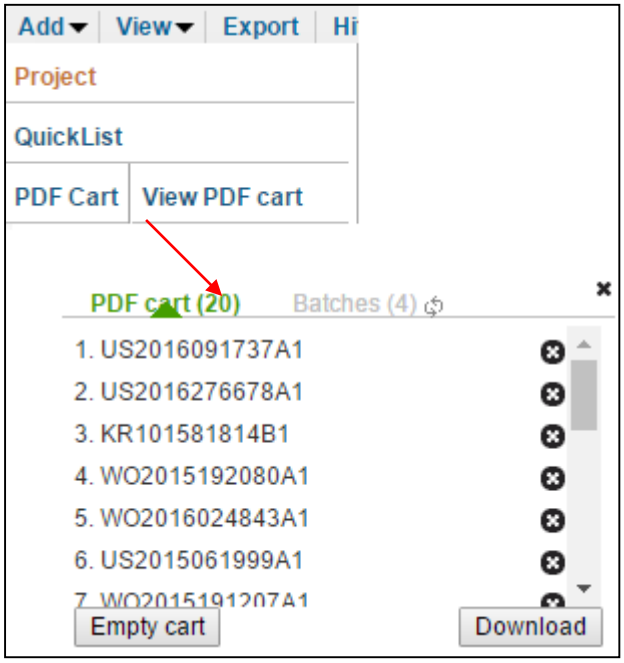
If you want to view records in same order as you have entered, you can sort results by relevance. This makes it easy to review your result set.





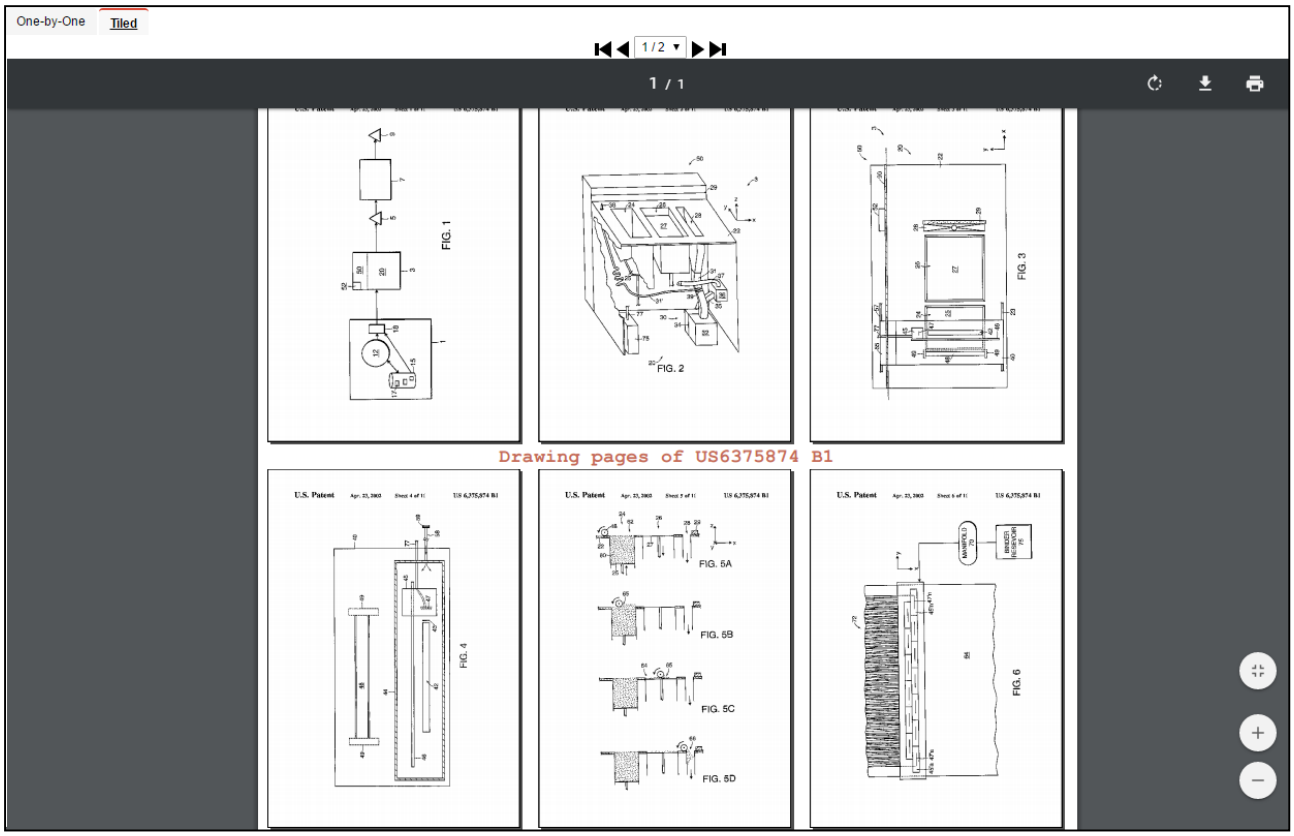
5.9 BULK PDF ORDERING AND CART SUPPORT

In PatSeer you can add PDFs of multiple records to ordering cart for bulk download. You can add multiple records to PDF cart or even a single record.

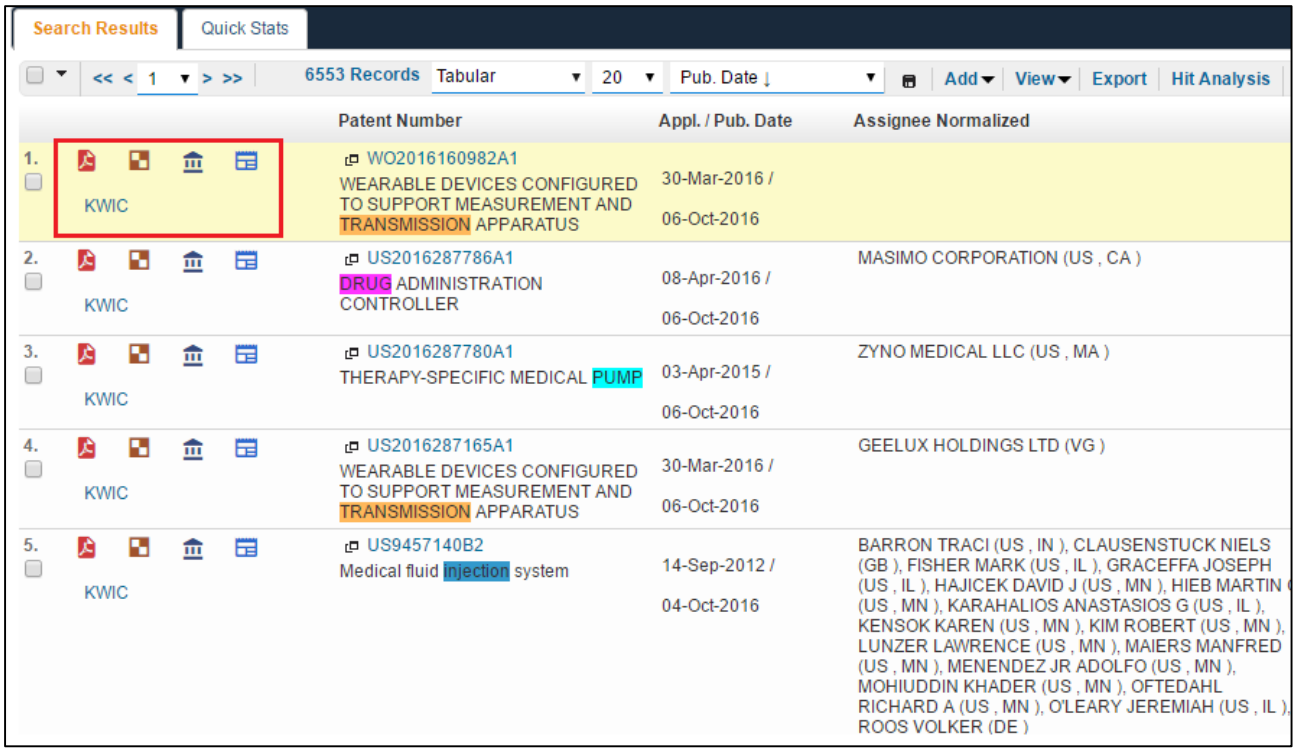


5.10 MOSAICS

PatSeer gives you flexibility to view Mosaics (multiple drawings in one sheet) at a single click. The Mosaics link, accessible through the result view, allows users to view all drawings for a record.

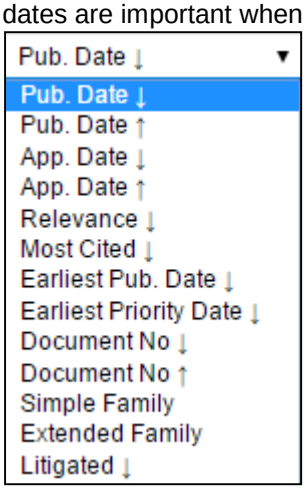


PatSeer provides links to components like PDF, Mosaic, Legal Status, Family Viewer and KWIC in a single view shown below



5.11 SORTING RESULTS

PatSeer result view also provides an option to change the sorting order of the results. The image below represents different options to sort result sets by number of records per page or sort records by relevance, publication date, application date, most cited patent document, document number in descending or ascending order. Records can also be sorted by earliest publication date and earliest priority date; these dates are important when the results are collapsed by one member per family.

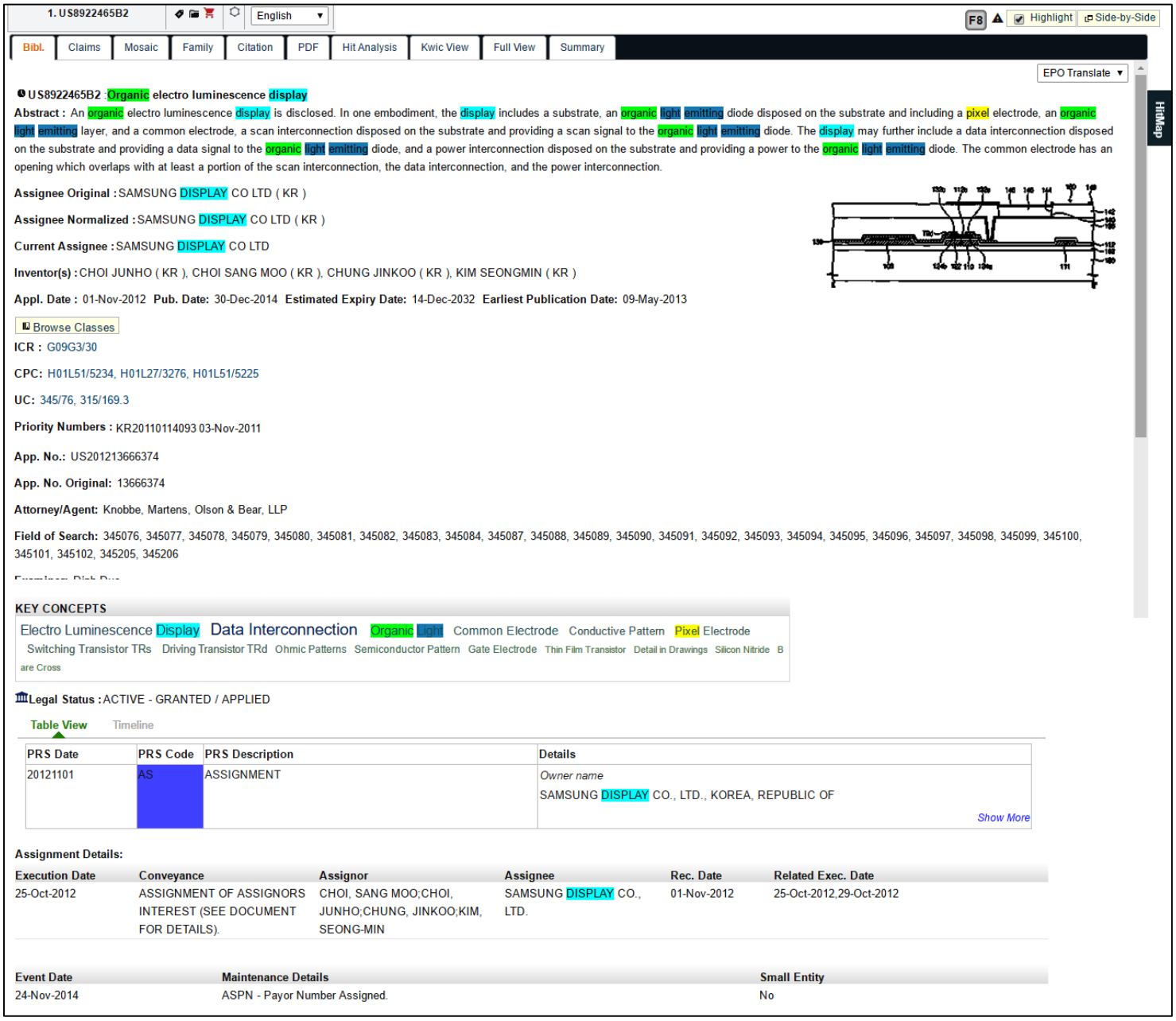


5.12 DETAIL VIEW

In Detailed View users can see various aspects of the record in a new tab by clicking on the record. The reason for opening the record in a new tab is you can drag the tab to an additional monitor so that you can work with the results view on one side and the detailed view on the other monitor simultaneously.

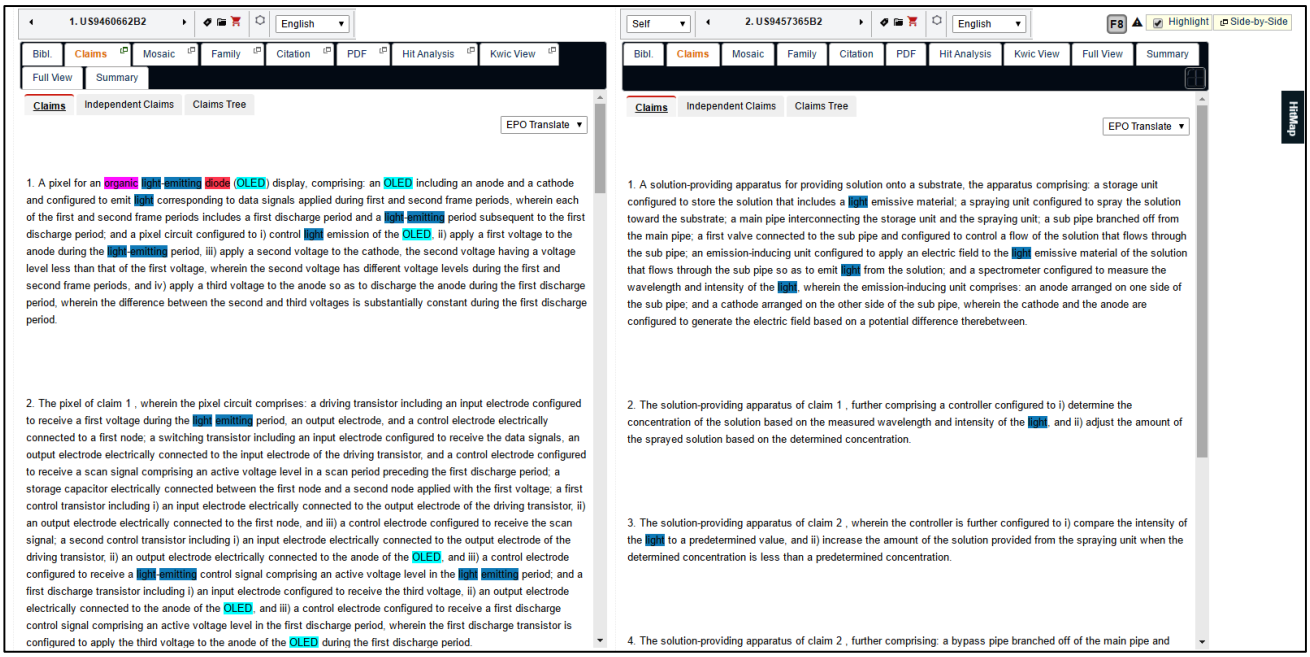
The Detail View shows the bibliographic data, claims, mosaics, family information, citations, PDF, full text of a record. In case of bibliographic data, in addition to title, abstract, assignee inventor, application/ publication dates, classes, you can view current assignee of the record, INPADOC legal status in a formatted table, assignment and maintenance status of the record.

Other important features within this view are you can view and compare record(s) in side-by-side view, claims translator, class definition browser. You can also view respective count of keywords searched and ALSO KWIC option.



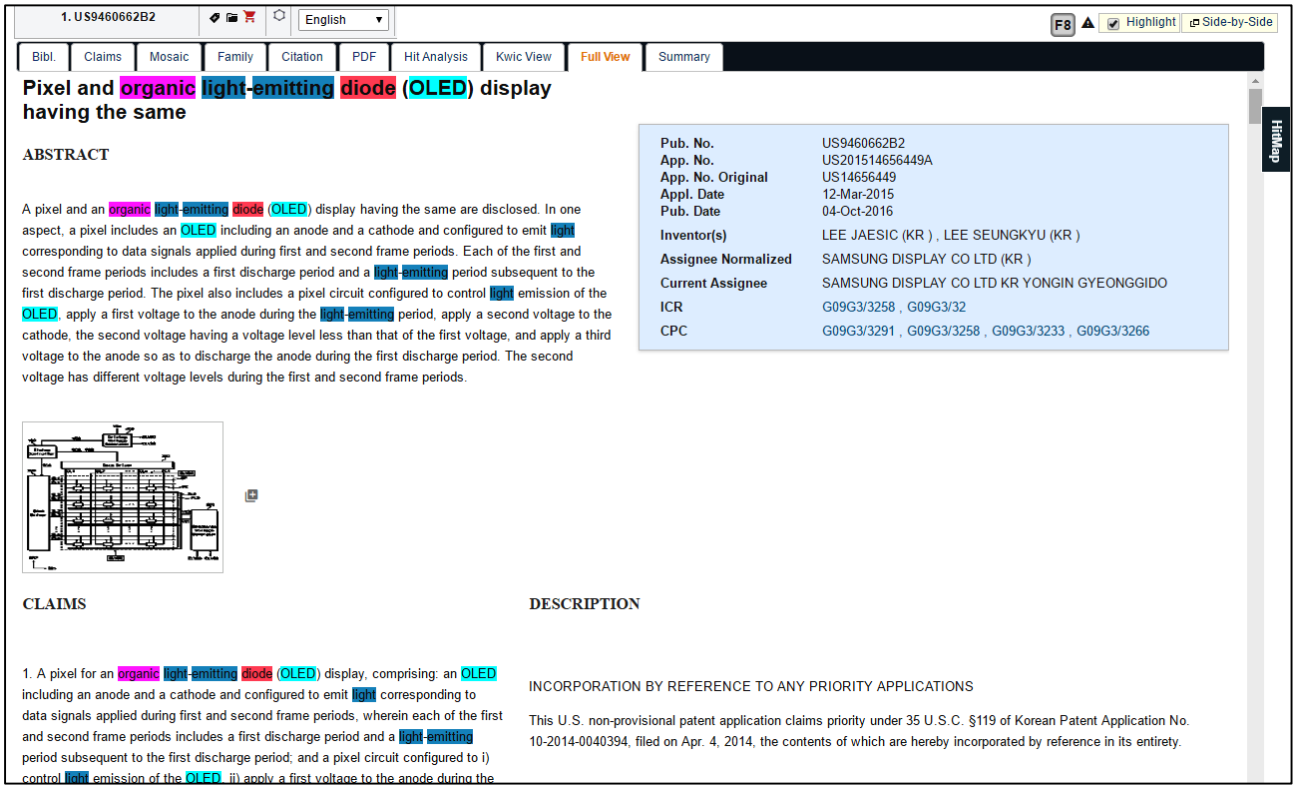
5.12.1 SIDE-BY-SIDE VIEW

In Side-by-Side View, you can browse through multiple aspects of a record at the same time without scrolling. It's easy to browse claims and descriptions on one side, and work with different portions of the record in the other side.
You can not only view details of a single record but also compare it with details of its family/ citing records/ cited records **OR EVEN** with details of any other record in the database.



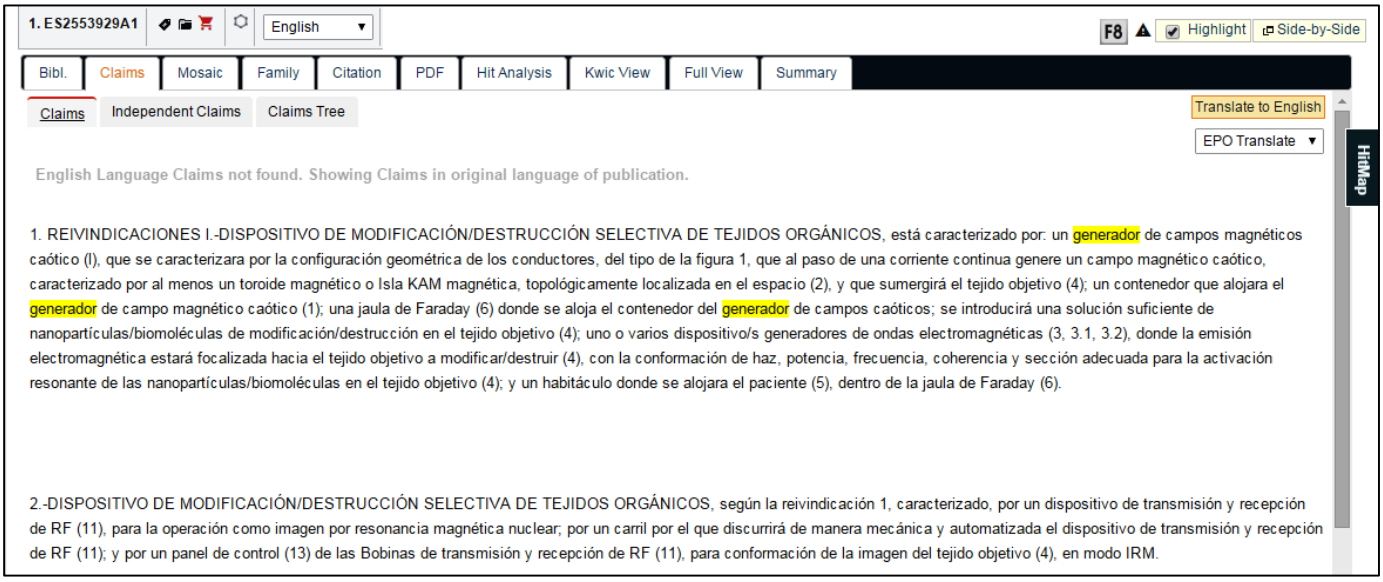
5.12.2 FULL TEXT VIEW

A Full View shows the full text of the record in a single screen.

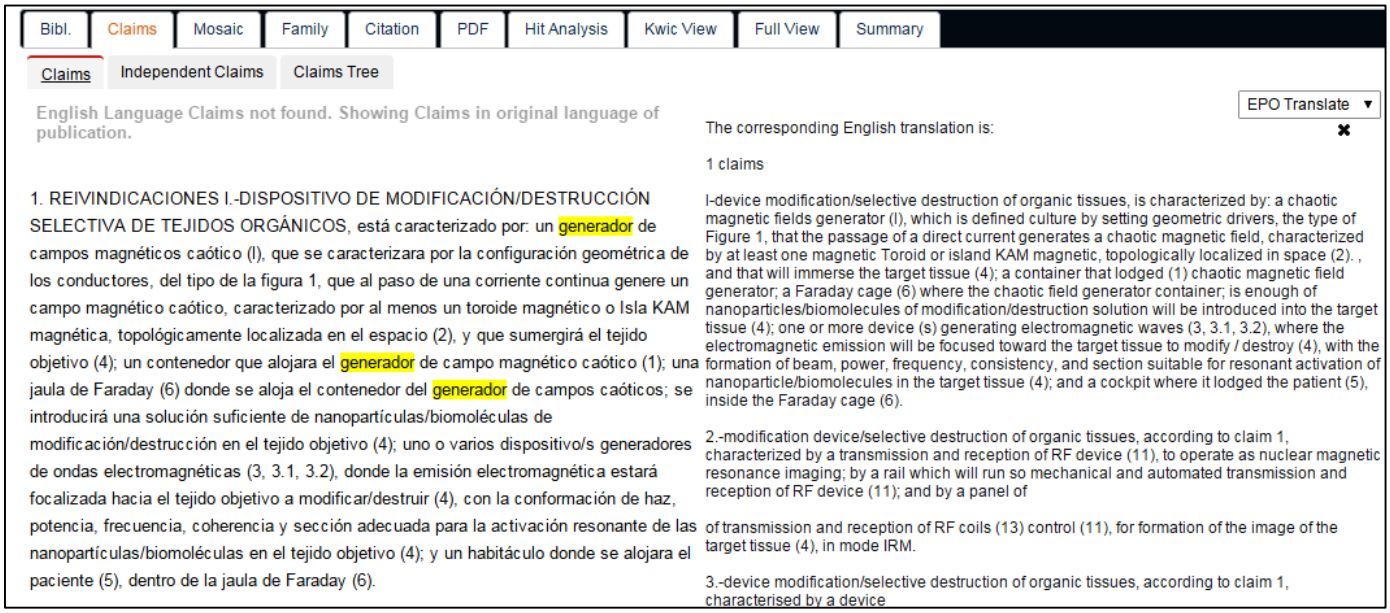


5.12.3 CLAIMS TRANSLATOR

You can translate claims in Non-Latin language to English. This is useful if you are using multilingual terms in your search query and the results have claims in original language.

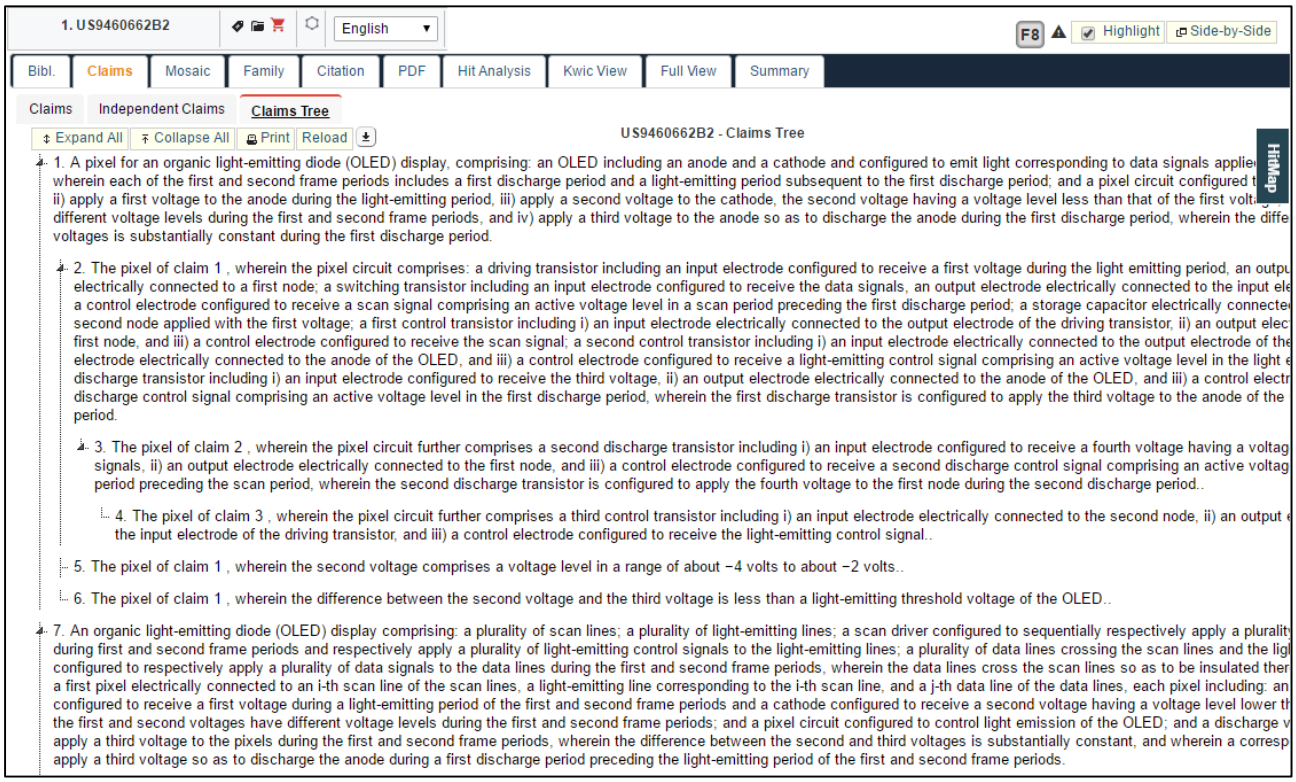


The translated claims appear side-by-side to the original claims for easy comparison and review.



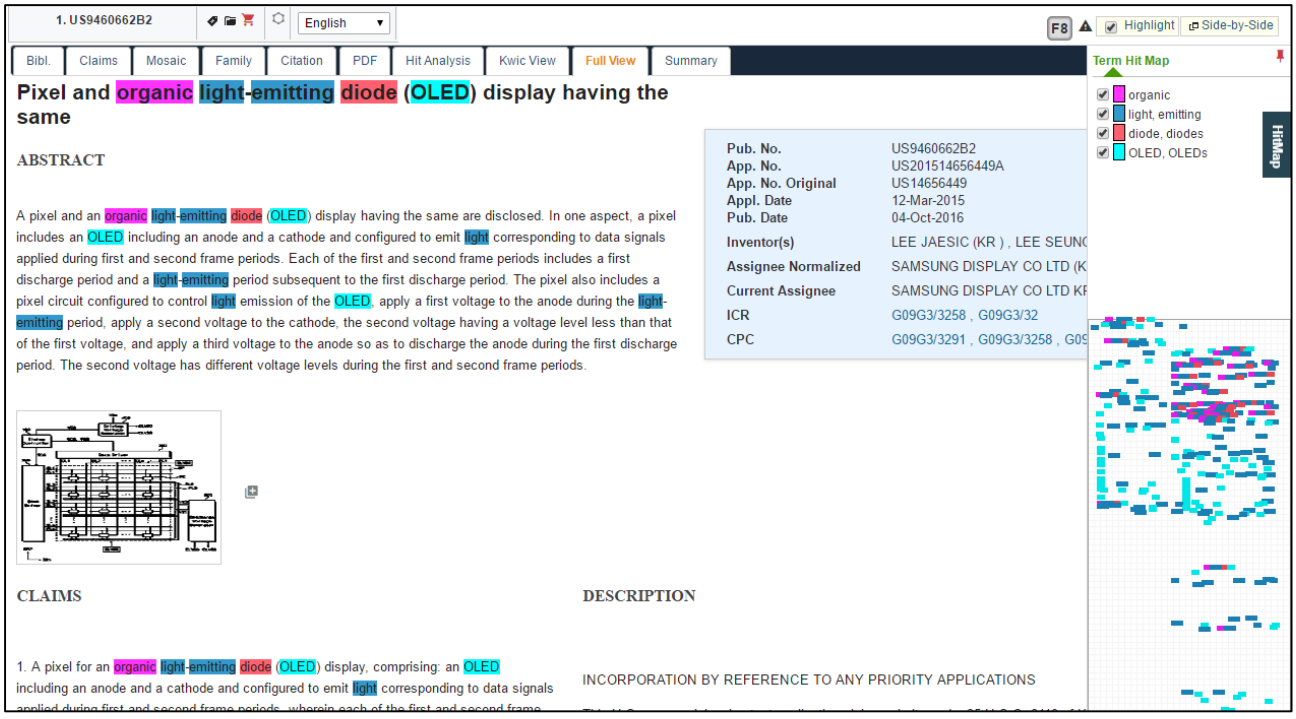
5.13 CLAIMS TREE

This option allows viewing the independent claims in a tree format which can be expanded further to view all dependent claims as shown in the image below



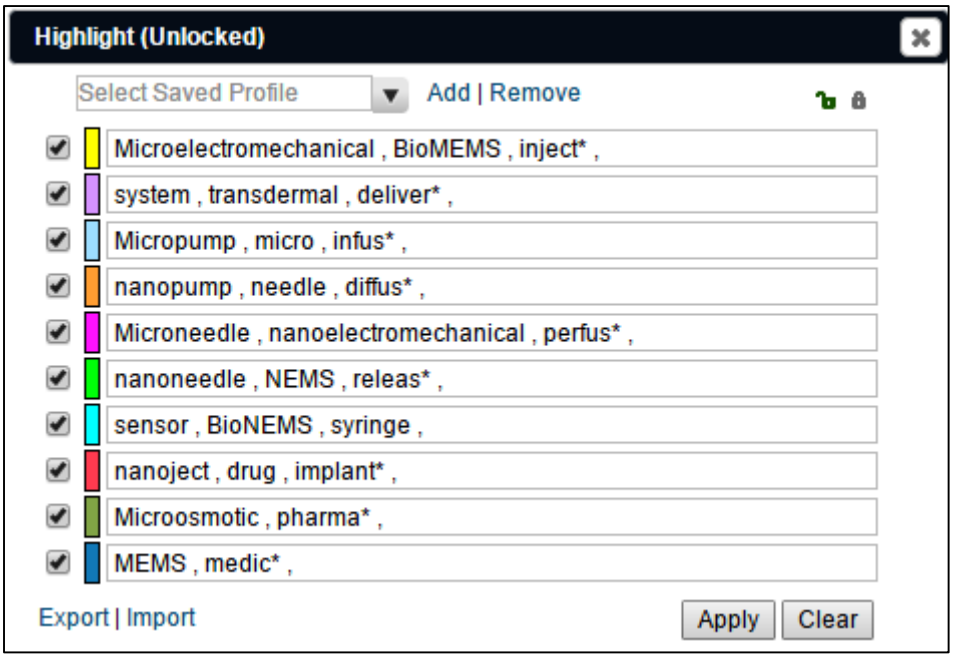
5.14 DOCUMENT HIT MAP

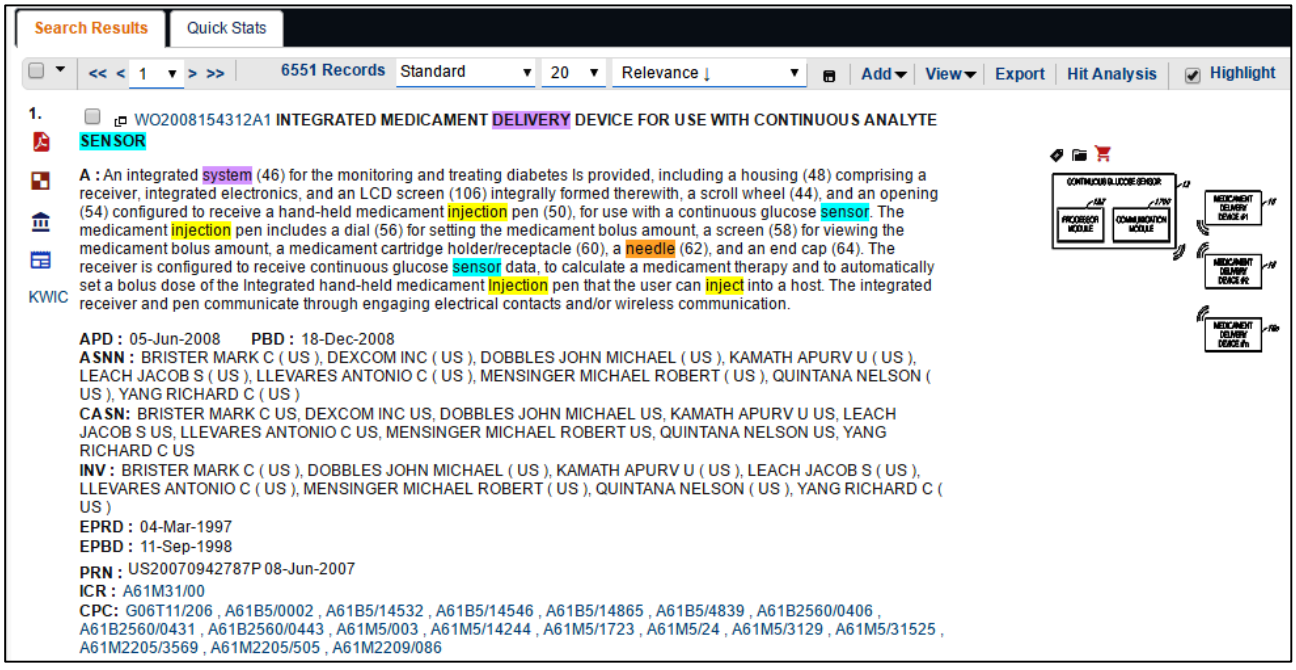
Document Hit Map represents repetition of keywords and where they have appeared in a record, thus providing immediate visual information in various colors.



5.15 TERM HIGHLIGHTING

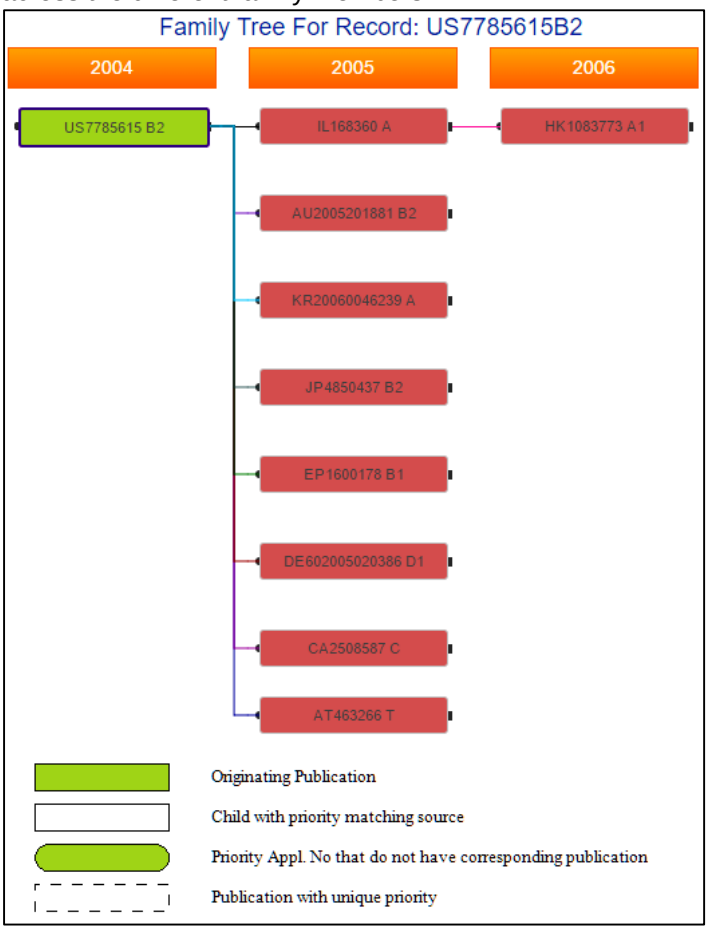
Term Highlighting enables multi-color highlighting which allows the users to identify the whole or partial word as may be necessary and also allow setting multiple words with the same meaning (synonyms) to be highlighted with the same color.
Users can save a set of highlighted terms and their colors in highlighted profiles and quickly apply them to a new search query. Any number of highlighted profiles containing color term sets can be saved.

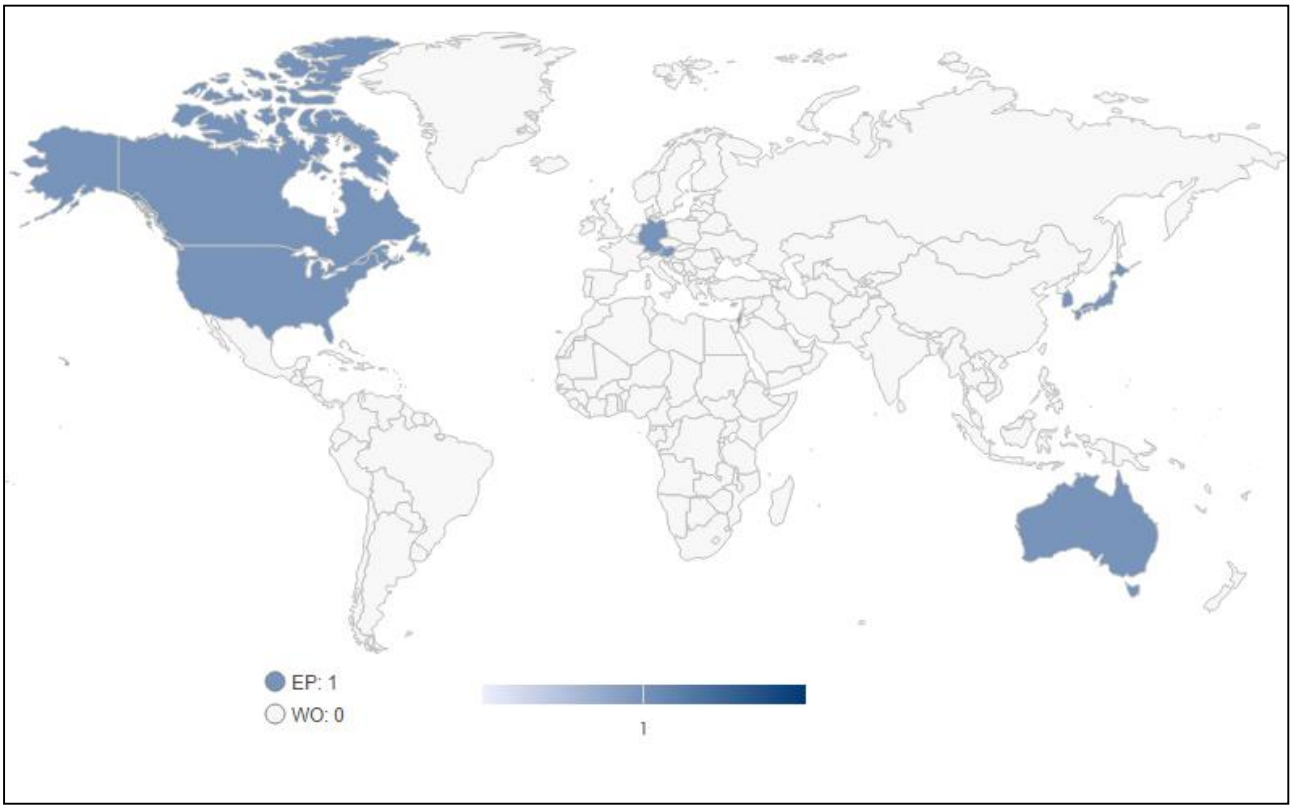




5.16 FAMILY MEMBER ANALYSIS

You can view the relationships between all the publications that result from one original application via the Family Tree viewer. Users can configure their family tree which can be saved/ shared. A family coverage map can also be generated using the option provided. This shows all the regions that have been covered across the different family members.



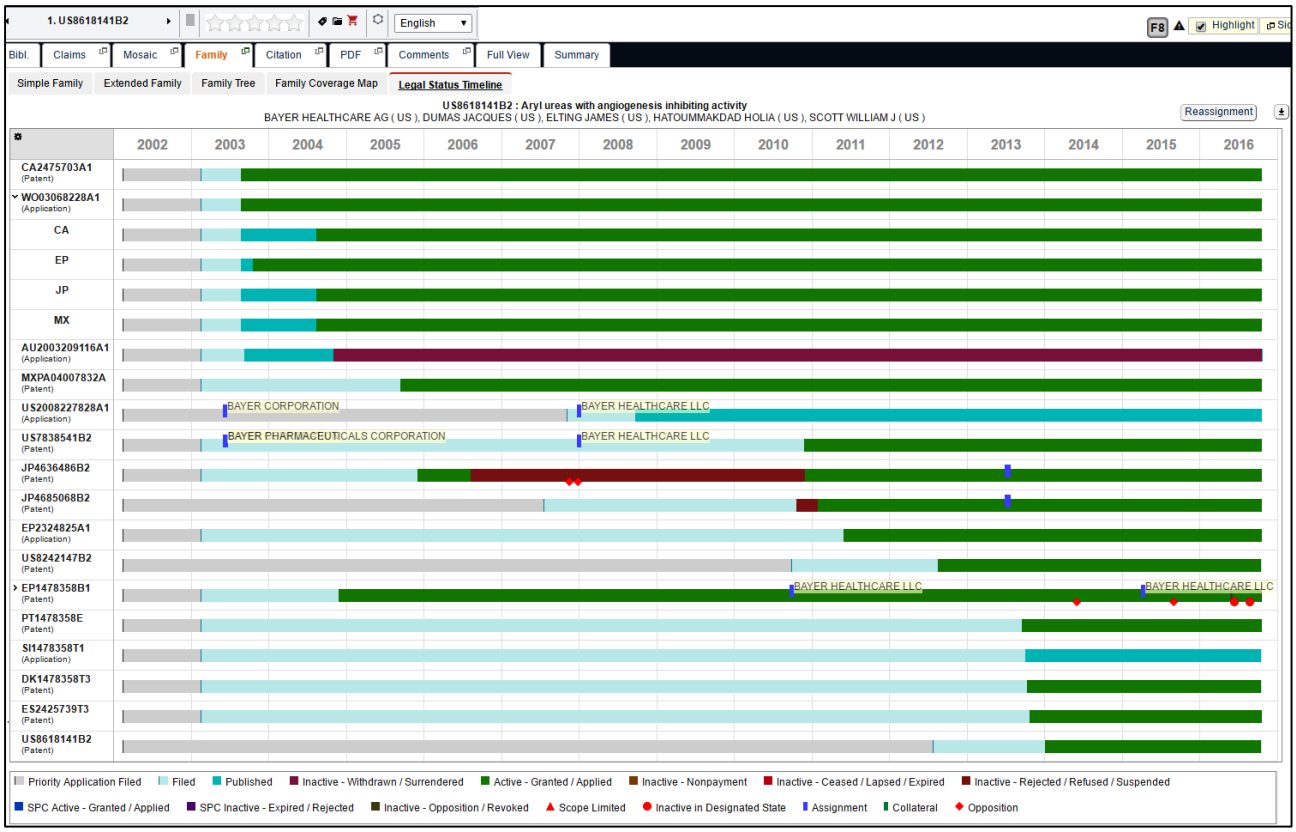


5.17 FAMILY LEGAL STATUS TIMELINE

The Family Legal Status Timeline provides a graphic representation of the legal status changes to all family members during the lifetime of the record. This is based on analysis of the INPADOC family legal status information. The family records are grouped by unique applications and the legal status is analyzed for each application. Not only can you refer to the legal status of all family members but also view the legal status and corresponding events of that member in its designated states of EP/WO.

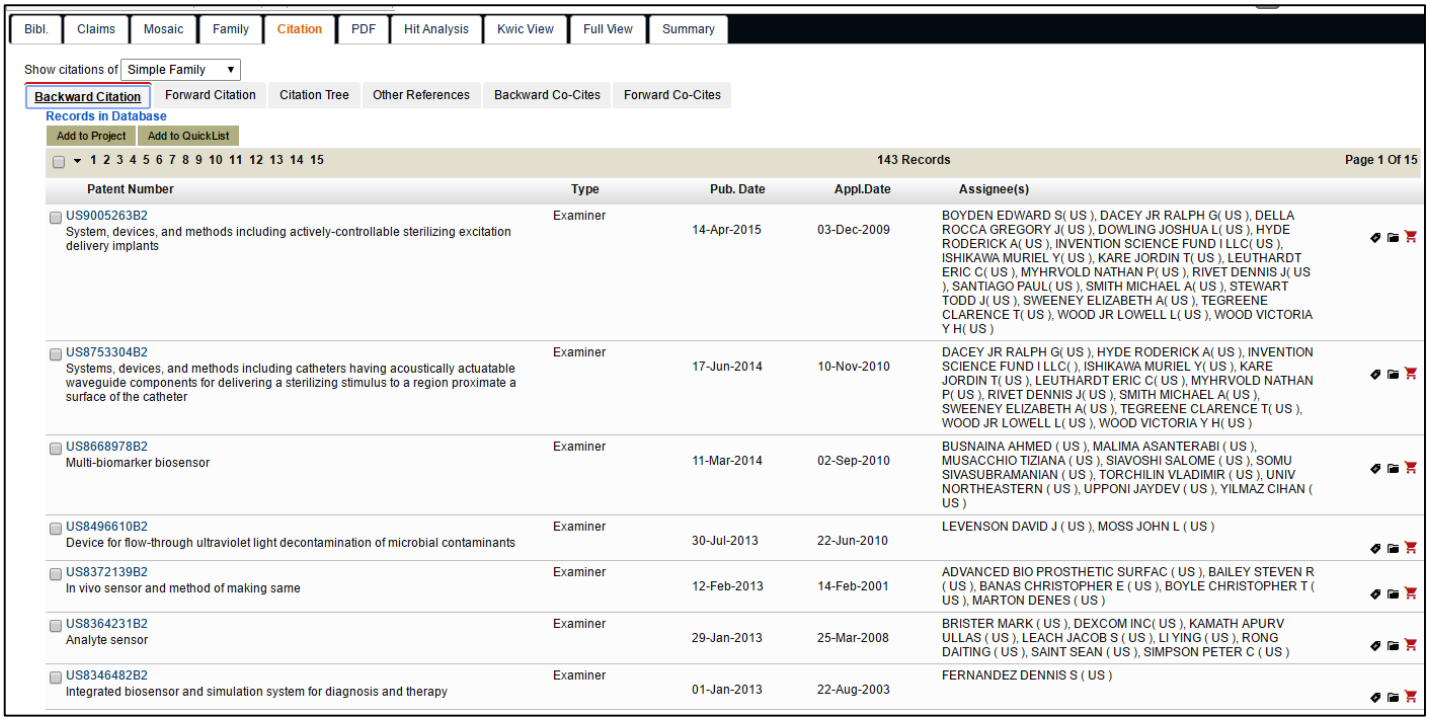
As shown in the image below, the timeline represents legal status events for WO record across its designated states: CA, EP, JP, MX.

Also, if a US record has a change in ownership or there has been a reassignment then that too is indicated in the timeline.

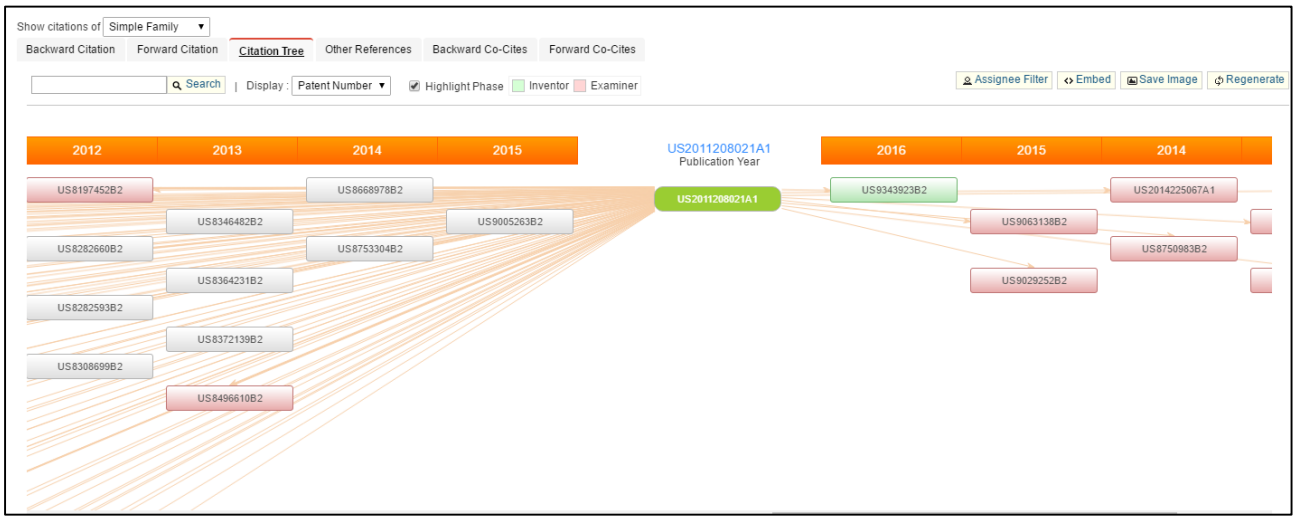


5.18 CITATION ANALYSIS

Citation Analysis shows backward and forward citations in a tabular format with an indication of the Examiner and Inventor phase. Backward and forward citations can be generated not just for the same record but also for its family members.

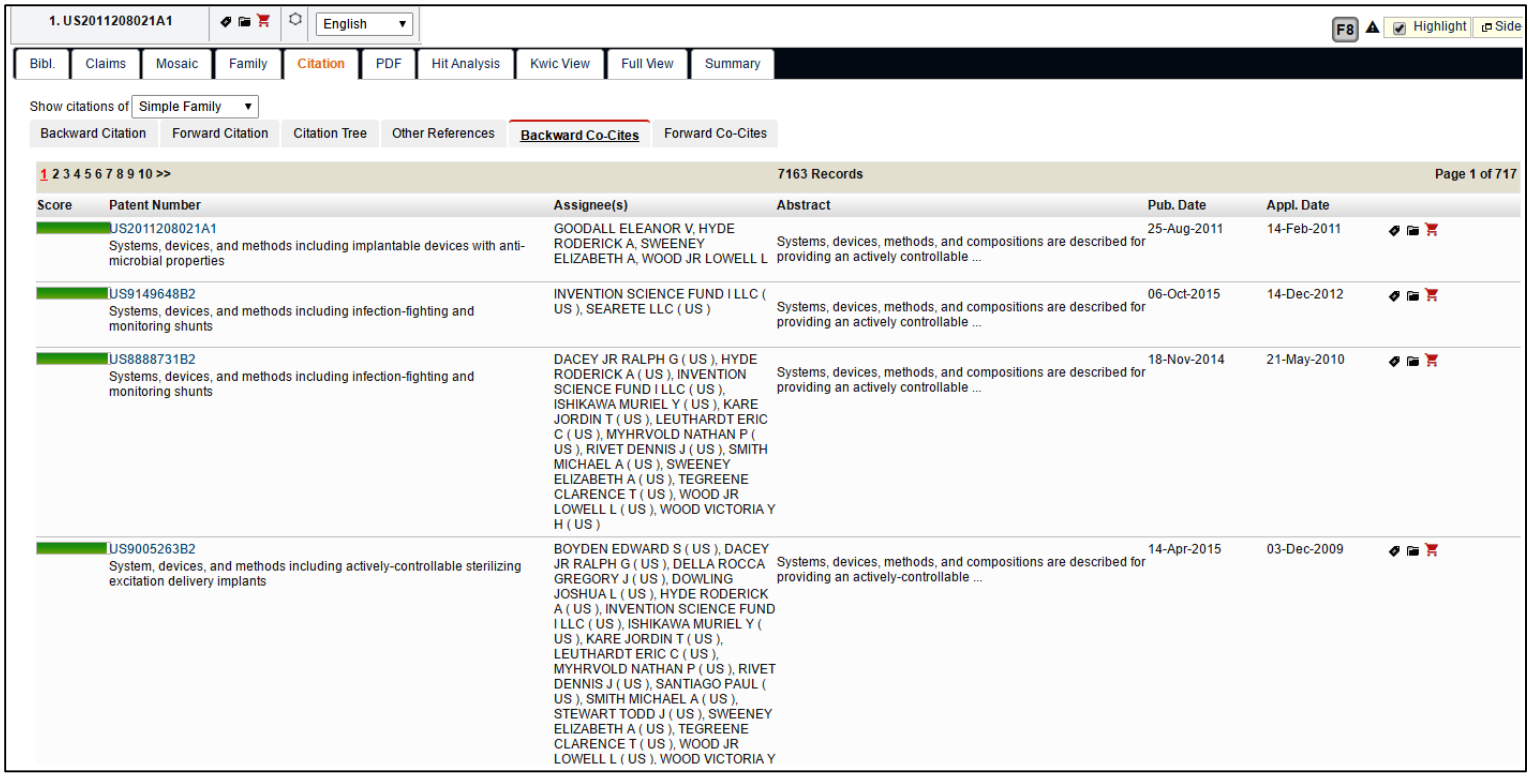


This Tabular View can be displayed in year wise manner as a chronological tree. The inventor and examiner phase can also be highlighted using the option provided, and using the assignee filter, particular assignee can be filtered out.



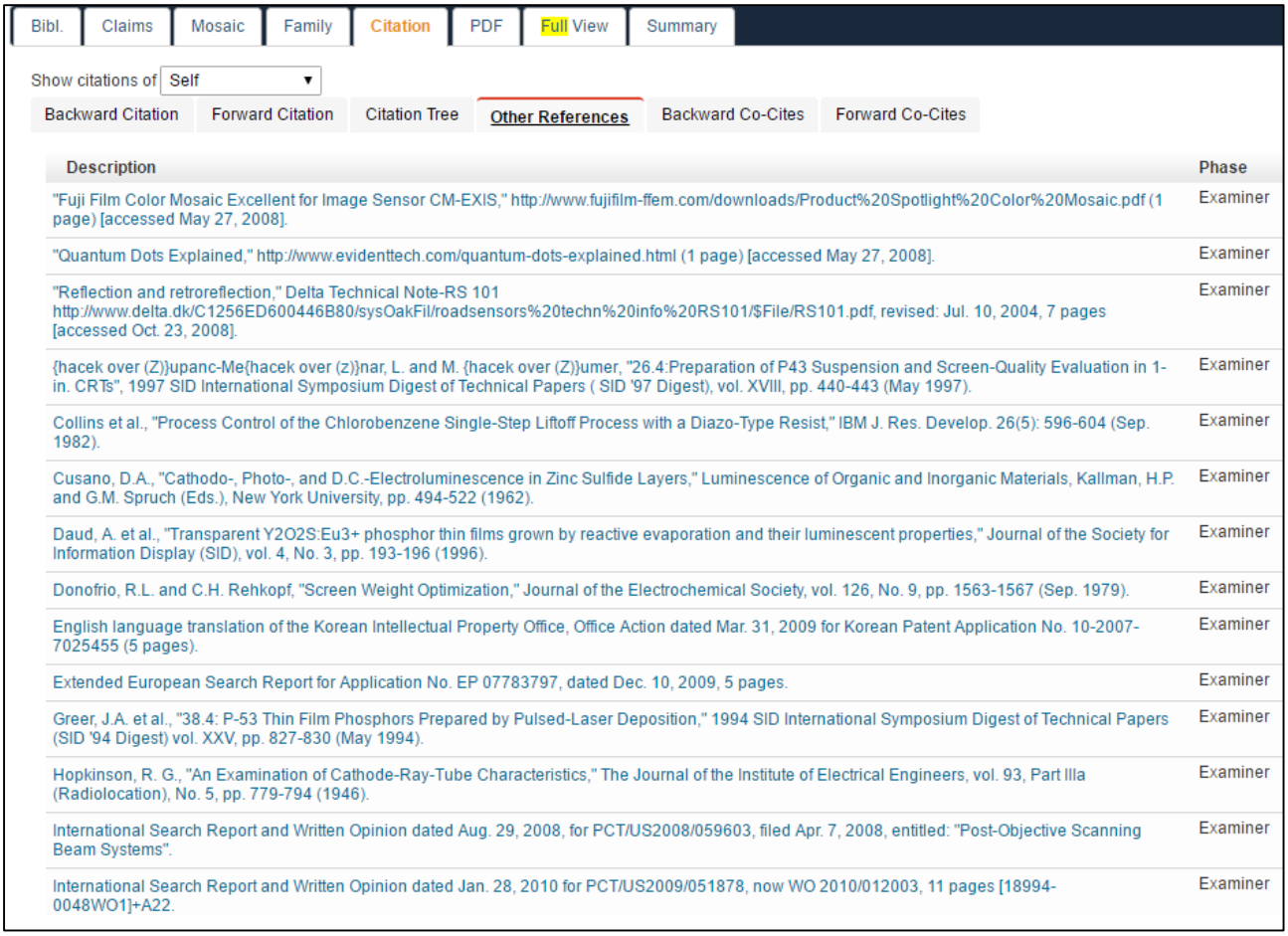
5.19 BACKWARD/ FORWARD CO-CITATIONS

In addition to backward and forward citations, users can see co-citations useful in carrying out infringement or invalidity analysis. Backward Co-Citations are those records that share the same backward citations as the record currently viewed. These records are ranked by the quantity of overlapping number of backward cited records. Co-citation helps in finding records that are similar to the record currently viewed and which may not be present in the backward or forward citation of the records. Similarly, forward co-citations include those records that share the same forward citations as the record being viewed.



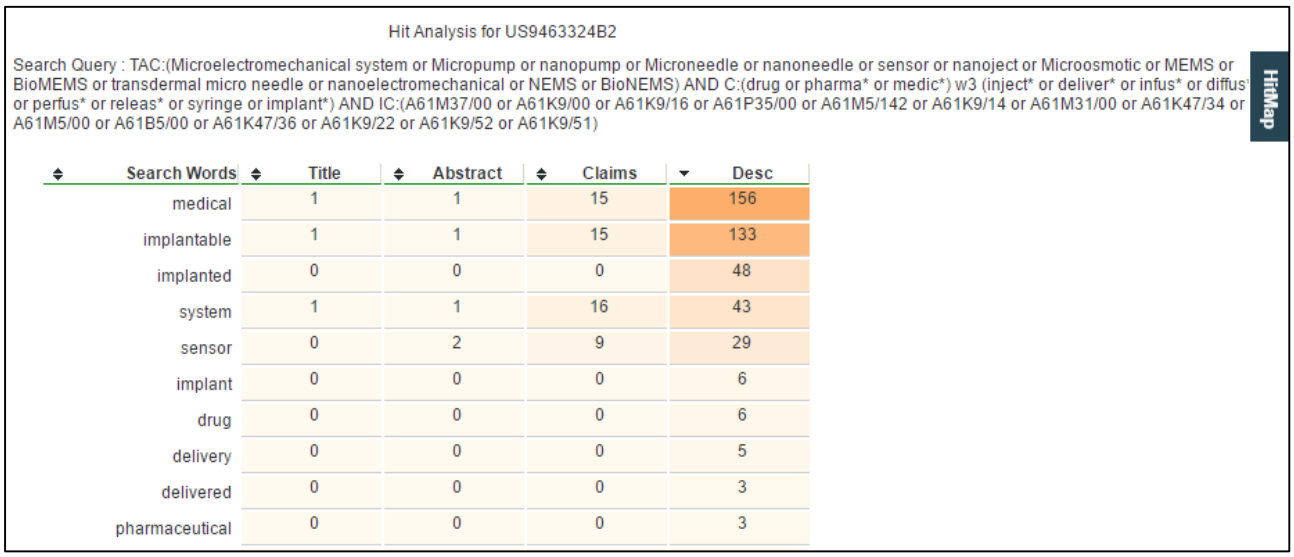
5.20 LINK FOR OTHER REFERENCES FOR GOOGLE SCHOLAR

Patent searchers can read and view non patent literature using the Google Scholar from PatSeer. This option can be accessed within citation tab.



5.21 HIT ANALYSIS

With Hit Analysis, PatSeer provides option of viewing the respective count of keywords searched.



Hit Analysis for US9463324B2

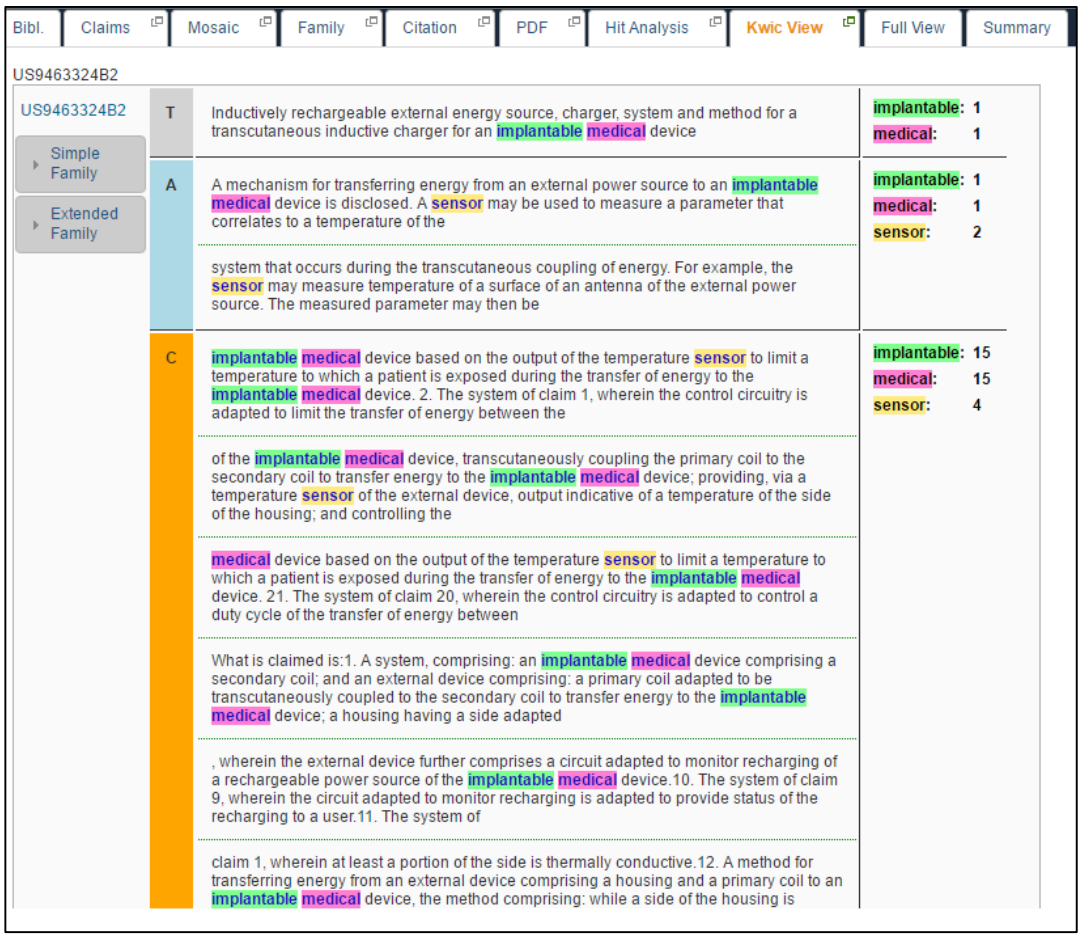
Search Query : TAC:(Microelectromechanical system or Micropump or nanopump or Microneedle or nanoneedle or sensor or nanoject or Microosmotic or MEMS or BioMEMS or transdermal micro needle or nanoelectromechanical or NEMS or BioNEMS) AND C:(drug or pharma* or medic*) w3 (inject* or deliver* or infus* or diffus* or perfus* or releas* or syringe or implant*) AND IC:(A61M37/00 or A61K9/00 or A61K9/16 or A61P35/00 or A61M5/142 or A61K9/14 or A61M31/00 or A61K47/34 or A61M5/00 or A61B5/00 or A61K47/36 or A61K9/22 or A61K9/52 or A61K9/51)

HitMap

Search Words	Title	Abstract	Claims	Desc
medical	1	1	15	156
implantable	1	1	15	133
implanted	0	0	0	48
system	1	1	16	43
sensor	0	2	9	29
implant	0	0	0	6
drug	0	0	0	6
delivery	0	0	0	5
delivered	0	0	0	3
pharmaceutical	0	0	0	3

5.22 KWIC VIEW

The KWIC View helps in locating the keywords according to their occurrence within the excerpts of the text. The query terms are highlighted within the excerpts, and a count of how many times each term appears within each text section is displayed in a column on the right.



Bibl. | Claims | Mosaic | Family | Citation | PDF | Hit Analysis | Kwic View | Full View | Summary

US9463324B2

US9463324B2

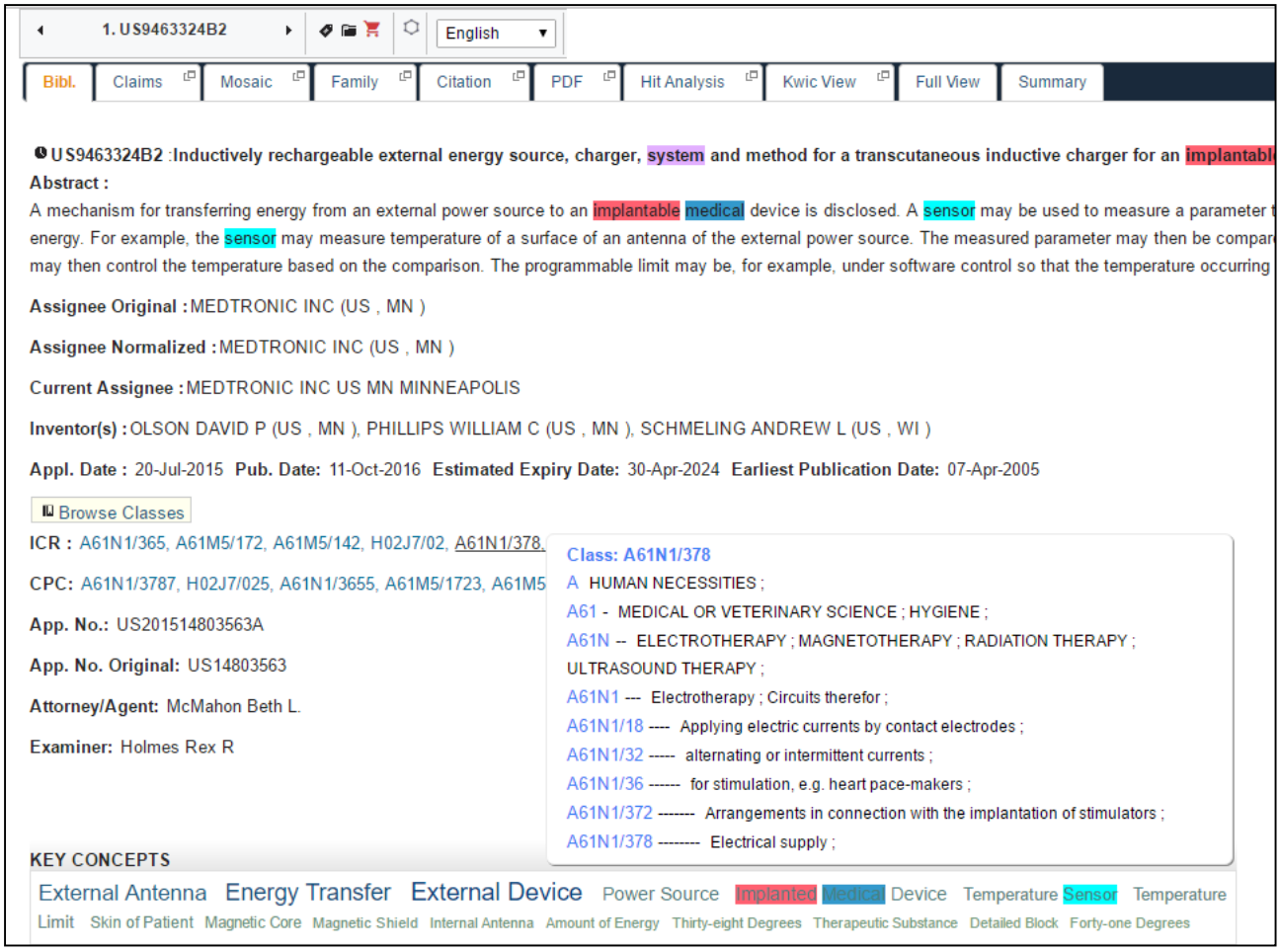
Simple Family

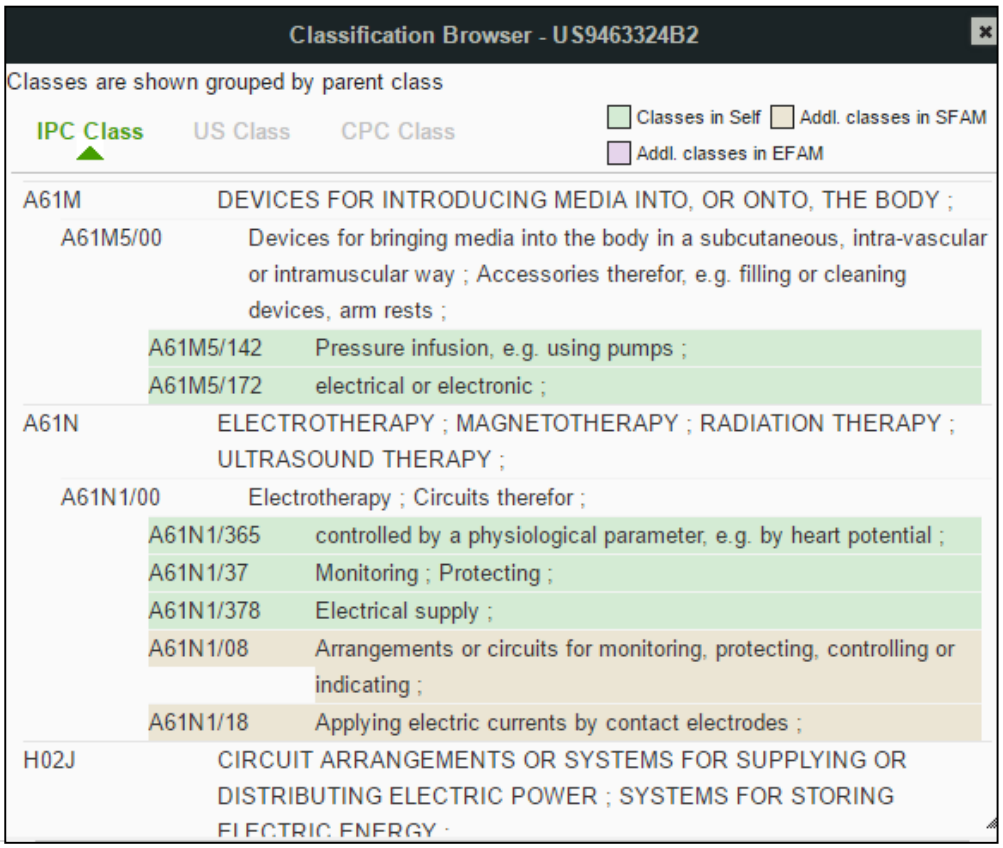
Extended Family

T	Inductively rechargeable external energy source, charger, system and method for a transcutaneous inductive charger for an implantable medical device	implantable: 1 medical: 1
A	A mechanism for transferring energy from an external power source to an implantable medical device is disclosed. A sensor may be used to measure a parameter that correlates to a temperature of the	implantable: 1 medical: 1 sensor: 2
	system that occurs during the transcutaneous coupling of energy. For example, the sensor may measure temperature of a surface of an antenna of the external power source. The measured parameter may then be	
C	implantable medical device based on the output of the temperature sensor to limit a temperature to which a patient is exposed during the transfer of energy to the implantable medical device. 2. The system of claim 1, wherein the control circuitry is adapted to limit the transfer of energy between the	implantable: 15 medical: 15 sensor: 4
	of the implantable medical device, transcutaneously coupling the primary coil to the secondary coil to transfer energy to the implantable medical device; providing, via a temperature sensor of the external device, output indicative of a temperature of the side of the housing; and controlling the	
	medical device based on the output of the temperature sensor to limit a temperature to which a patient is exposed during the transfer of energy to the implantable medical device. 21. The system of claim 20, wherein the control circuitry is adapted to control a duty cycle of the transfer of energy between	
	What is claimed is:1. A system, comprising: an implantable medical device comprising a secondary coil; and an external device comprising: a primary coil adapted to be transcutaneously coupled to the secondary coil to transfer energy to the implantable medical device; a housing having a side adapted	
	, wherein the external device further comprises a circuit adapted to monitor recharging of a rechargeable power source of the implantable medical device.10. The system of claim 9, wherein the circuit adapted to monitor recharging is adapted to provide status of the recharging to a user.11. The system of	
	claim 1, wherein at least a portion of the side is thermally conductive.12. A method for transferring energy from an external device comprising a housing and a primary coil to an implantable medical device, the method comprising: while a side of the housing is	

5.23 CLASS DEFINITION BROWSER

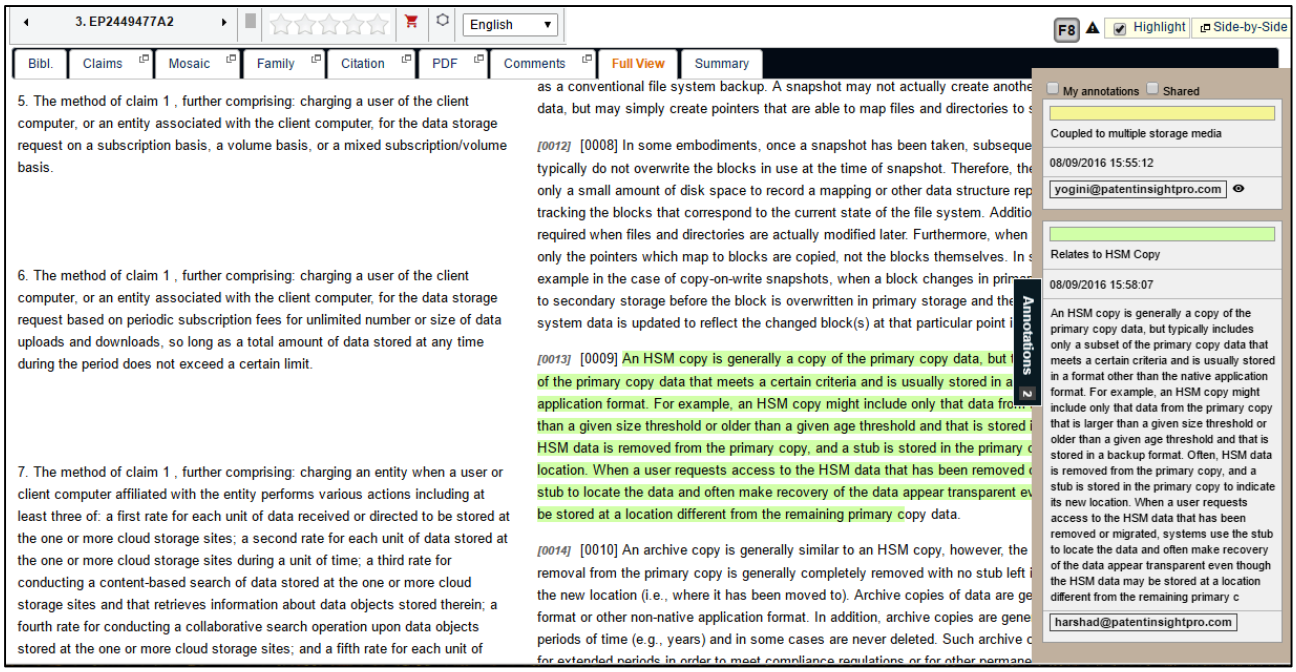
The class definition browser allows you to view the class descriptions for all the classes present in Detail View on a single click. The browser gathers all classes present in the record with its simple/extended family and shows definitions grouped by main class.





5.24 FULLTEXT ANNOTATION

When reviewing patent text, it is not easy and tedious to retrieve relevant information, identify important sections, and make a note of same. Annotations help you in highlighting and adding your notes/ comments to the particular paragraph in the full text of a record. These can be viewed by users with whom the project has been shared.

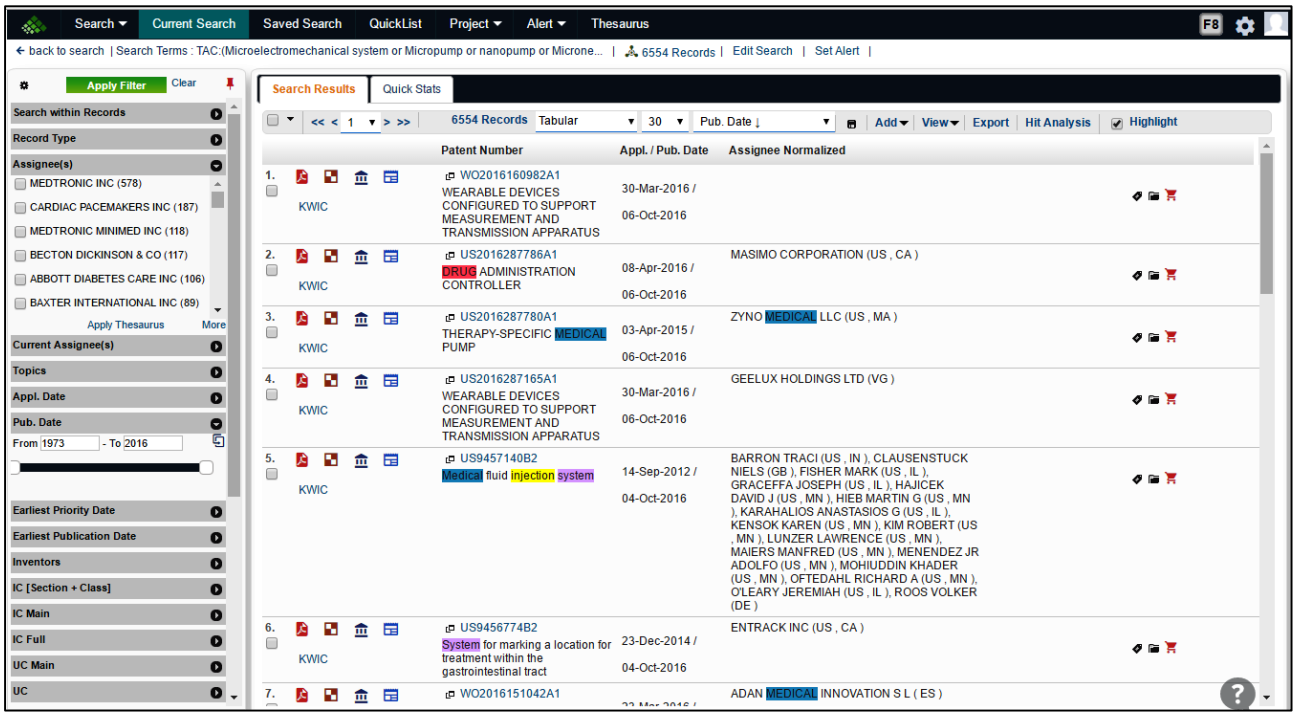


CHAPTER 6 ANALYZING RESULTS

Analyzing the result set to get an overview of the result set is also very easy. PatSeer provides various features which enable the users to get answers to complex IP questions with ease.

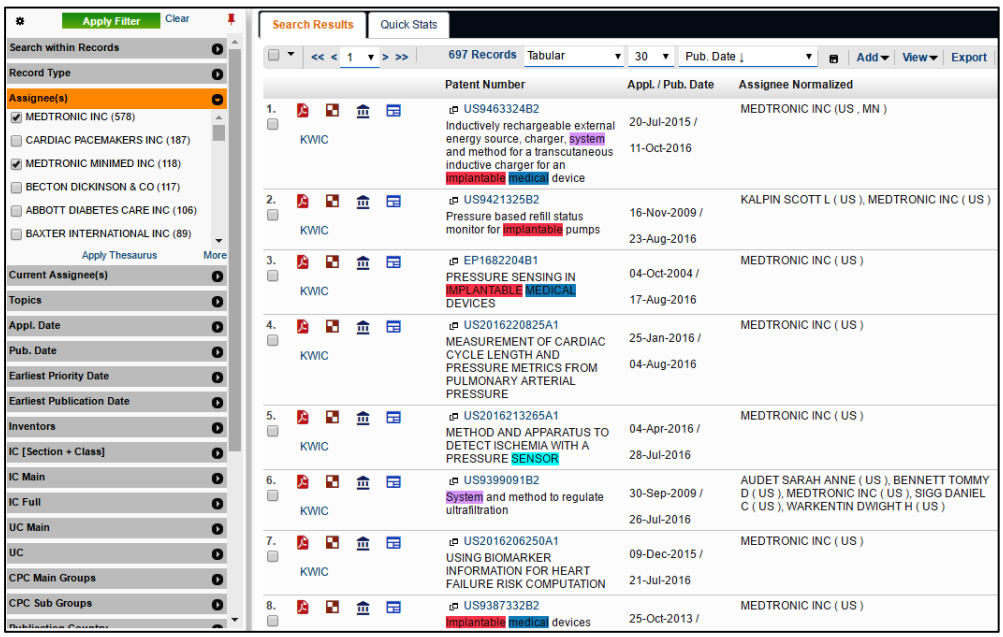
6.1 RESULT FILTERING

PatSeer has a powerful filter to help the users narrow down results. This is one of the unique aspects about Result Filtering that the result set has been integrated with a set of filters that are calculated over the number of hits and that makes for a powerful narrowing and drilling down experience. There are various set of filters available on the left panel to narrow down large number of records. The fields can be expanded to view the text behind the tab.



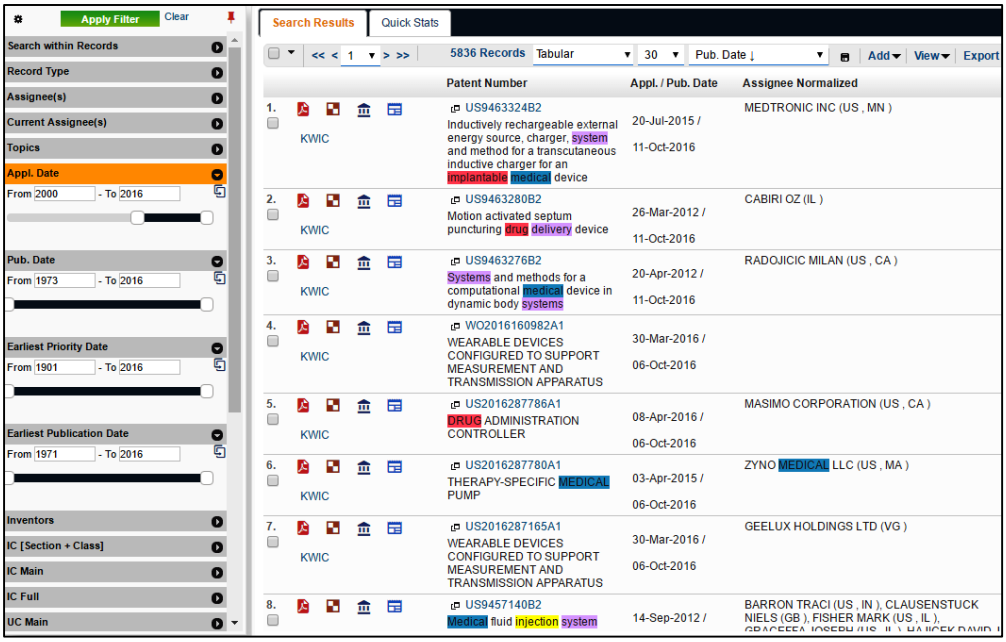
6.1.1 FILTER BY ASSIGNEE NAMES

You can easily view and analyse results of a specific set of assignee by using Assignee filter.



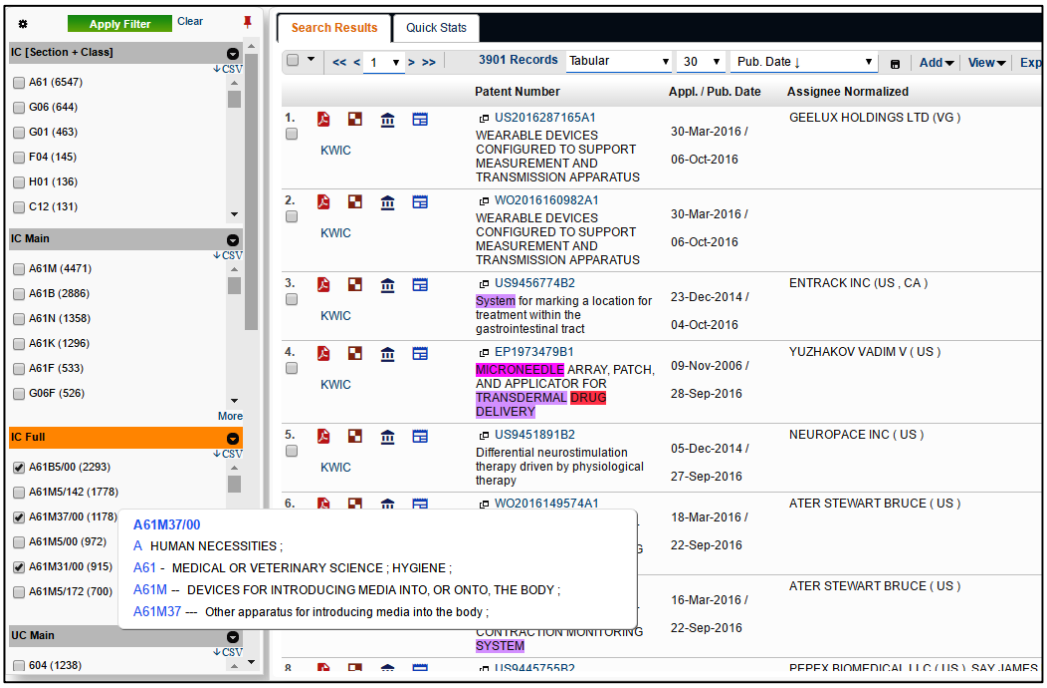
6.1.2 FILTER BY DIFFERENT DATE FIELDS

You can easily narrow down large result set to a specific date/ year.



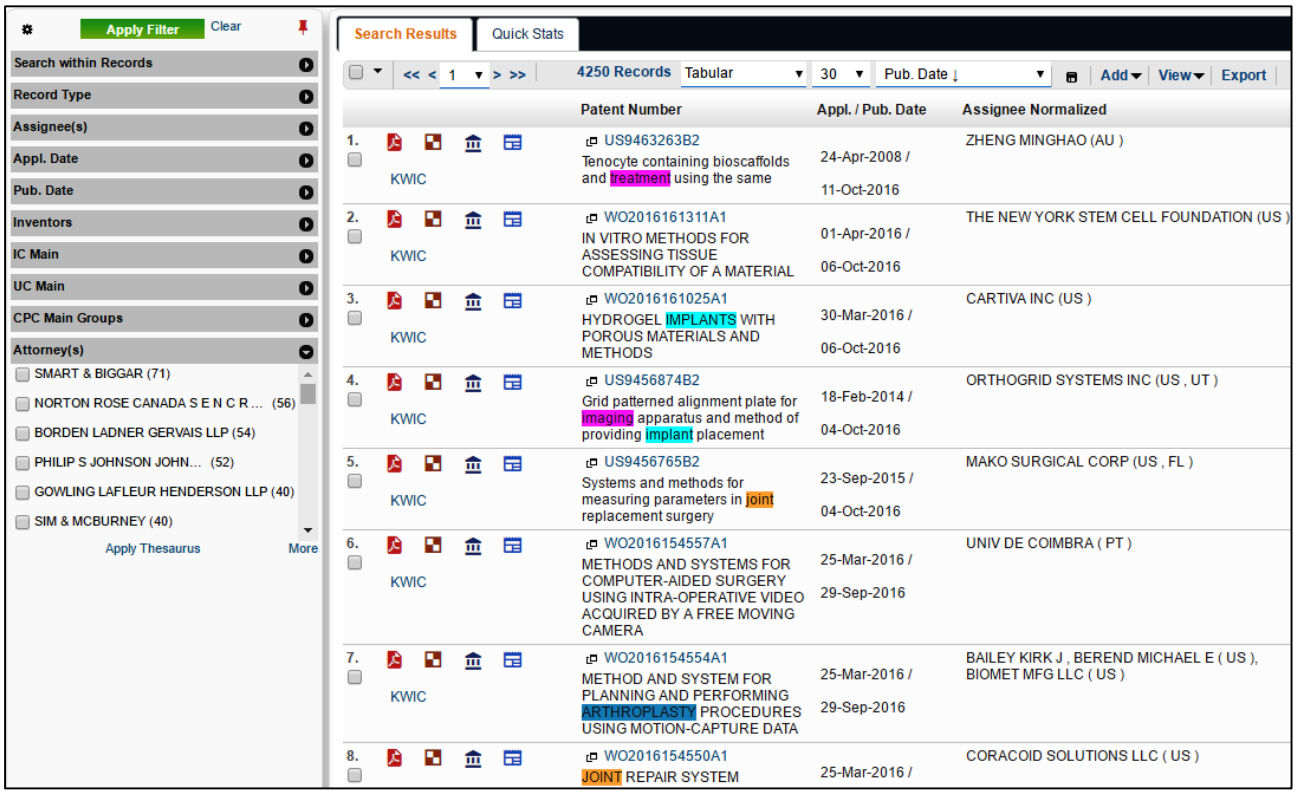
6.1.3 FILTER BY DIFFERENT CLASSIFICATIONS

You can easily view and analyse results of a specific classification (IPC/ CPC/ US) by using respective classification filter. You can even see class definitions for each class within the respective filters. This feature makes it easy to filter specific classes and narrow down result set for further analysis. You can even export the classification to view the class definition and their respective count.



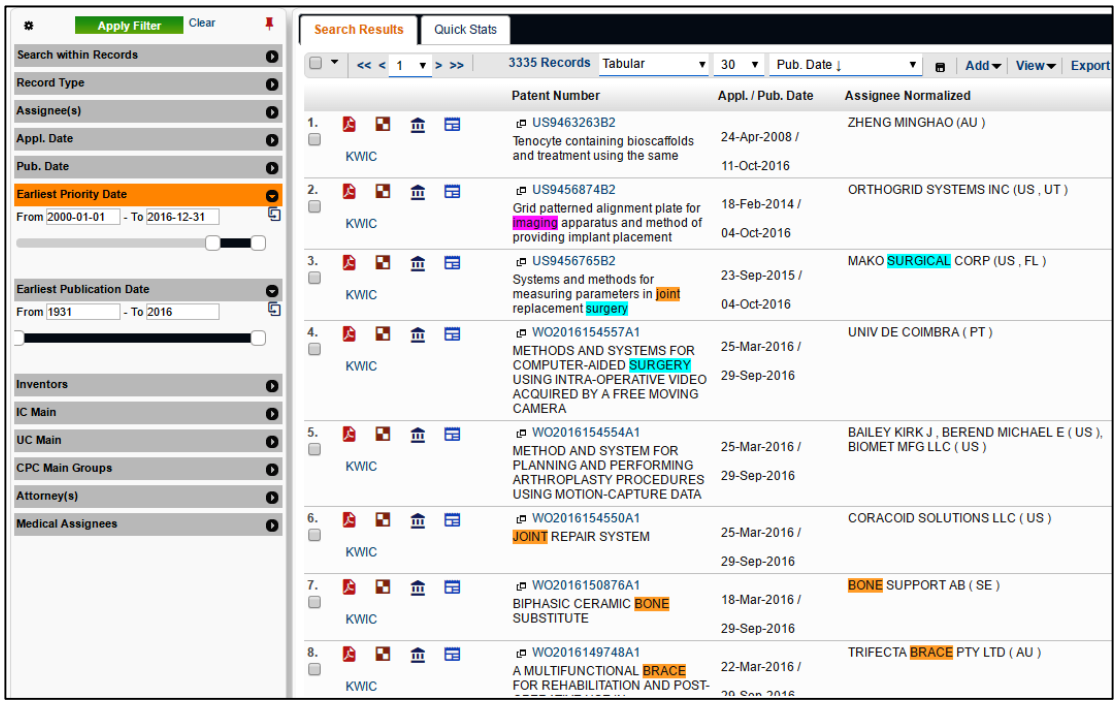
6.1.4 ATTORNEY FILTER

The Attorney Filter is for filtering and analysis purpose. This field makes it easy for you to narrow down result sets to a particular attorney.

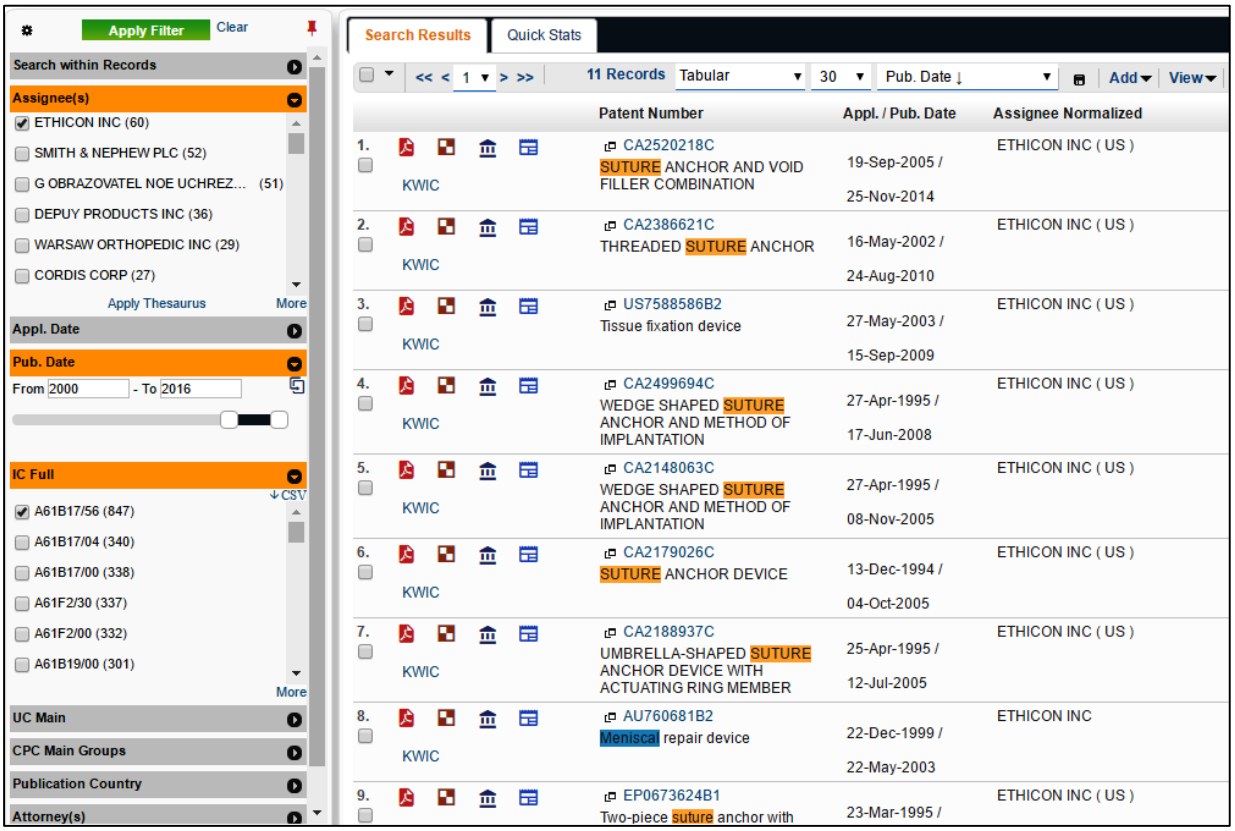


6.1.5 EARLIEST PRIORITY YEAR AND EARLIEST PUBLICATION YEAR FILTER

PatSeer pre-calculates the earliest priority date and earliest publication date from patent families and the information is linked to each record. This field is available for searching as well as filtering.



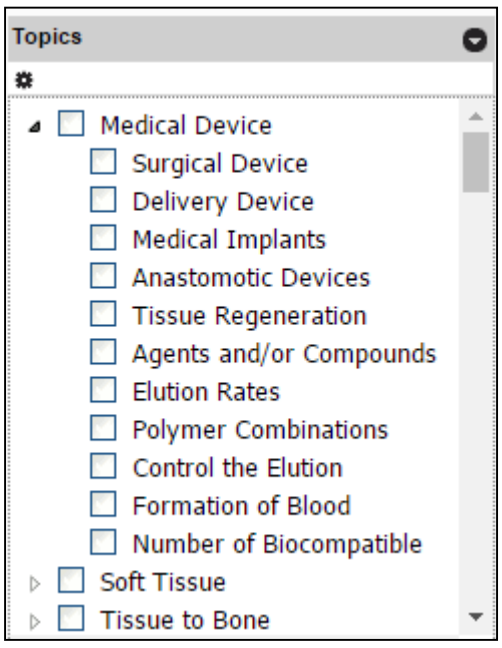
Multiple filters can be combined to narrow down the result set or find answers to complex queries. For example, if we want to see patents of **Top Assignee** in the **Top IC Full Class** and all those that have been published since 2000, the subsequent filters can be expanded and combined to view the relevant records.



6.2 TOPICS

Topics are essentially key concepts/technologies present in the text of your search result. They are available for you to view/filter and analyze. Topics can be generated for any search result set although they will be more accurate for narrower result sets.

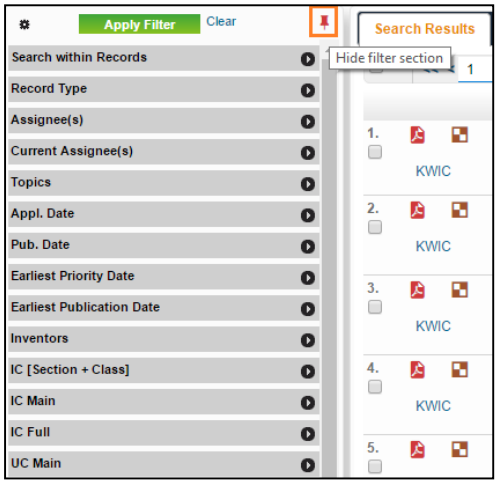
Using Topics you can look up the key sub-technologies present in your search results or within a set of records in a project without having to go through all the results.



6.3 SHOW/HIDE FILTER ITEMS

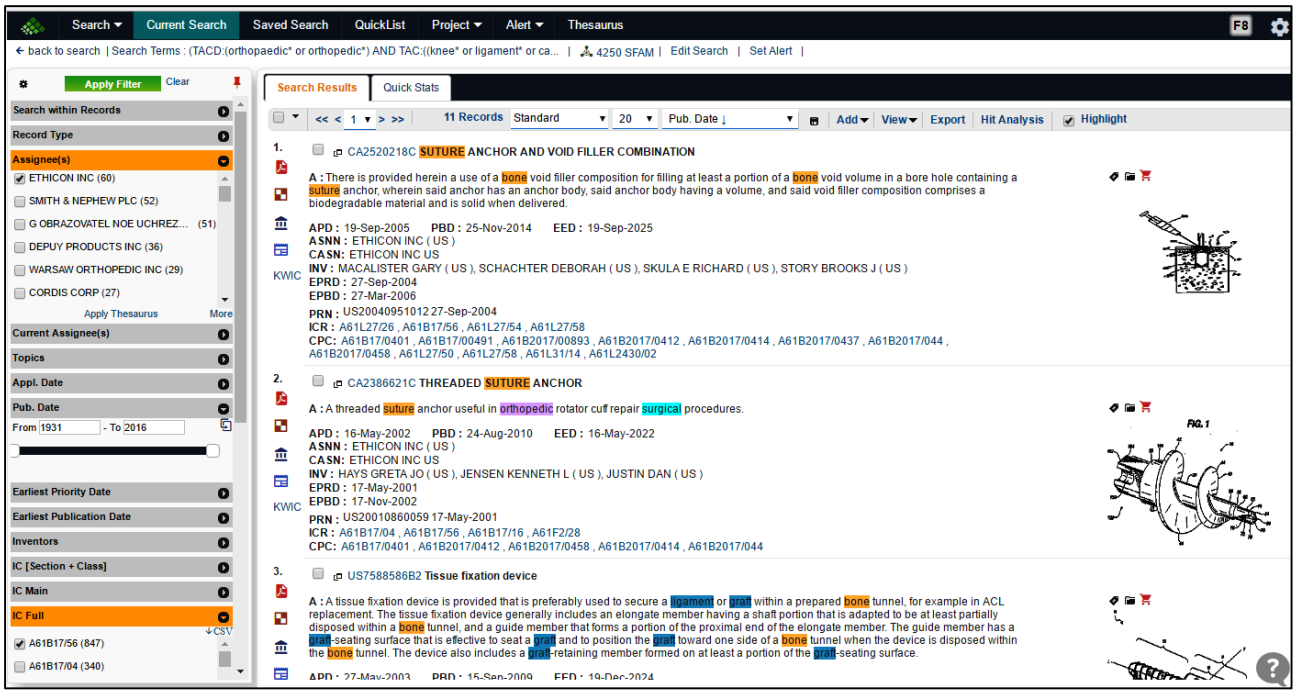
The Show/Hide Filter option allows you to keep only those filters you want to analyze.

In Hide/Unhide Filter you can pin/unpin the filter section to view only the result set and hide the associated filters. This gives you more space for browsing through results and if you are using custom view then you will be able to see more columns.



6.4 HIGHLIGHTING APPLIED FILTERS

All filters that you have applied are highlighted in orange to make them easily distinguishable from the ones that are not applied.



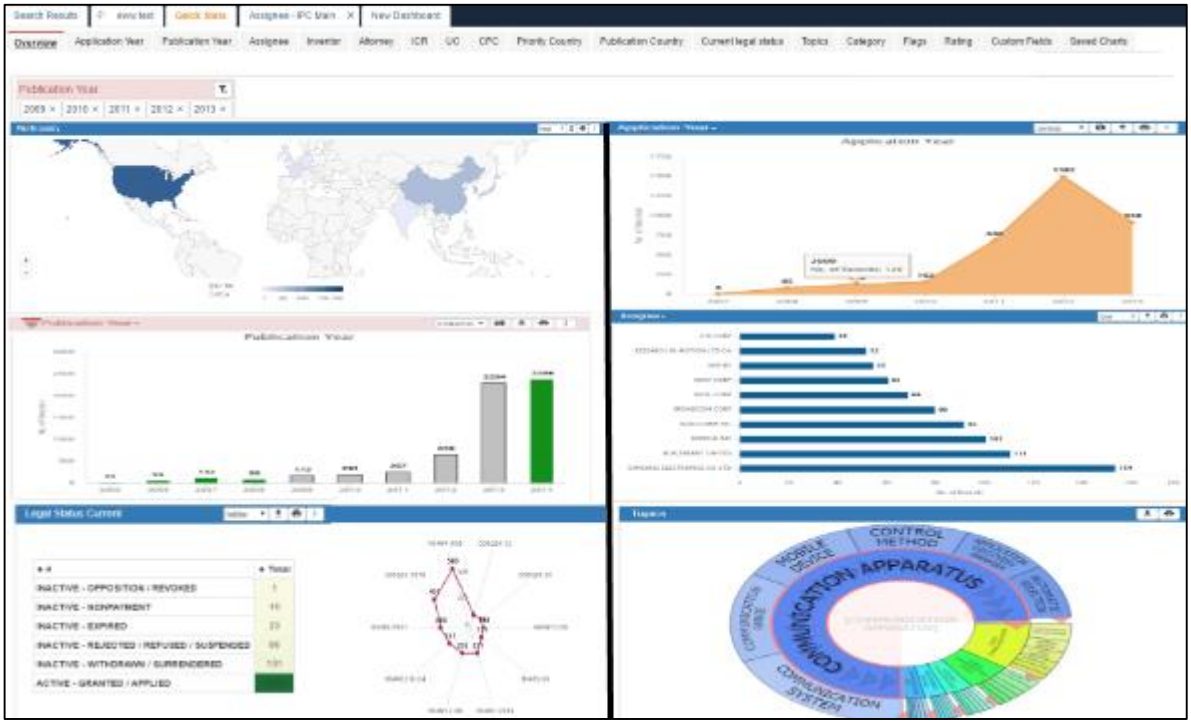
6.5 QUICK STATS

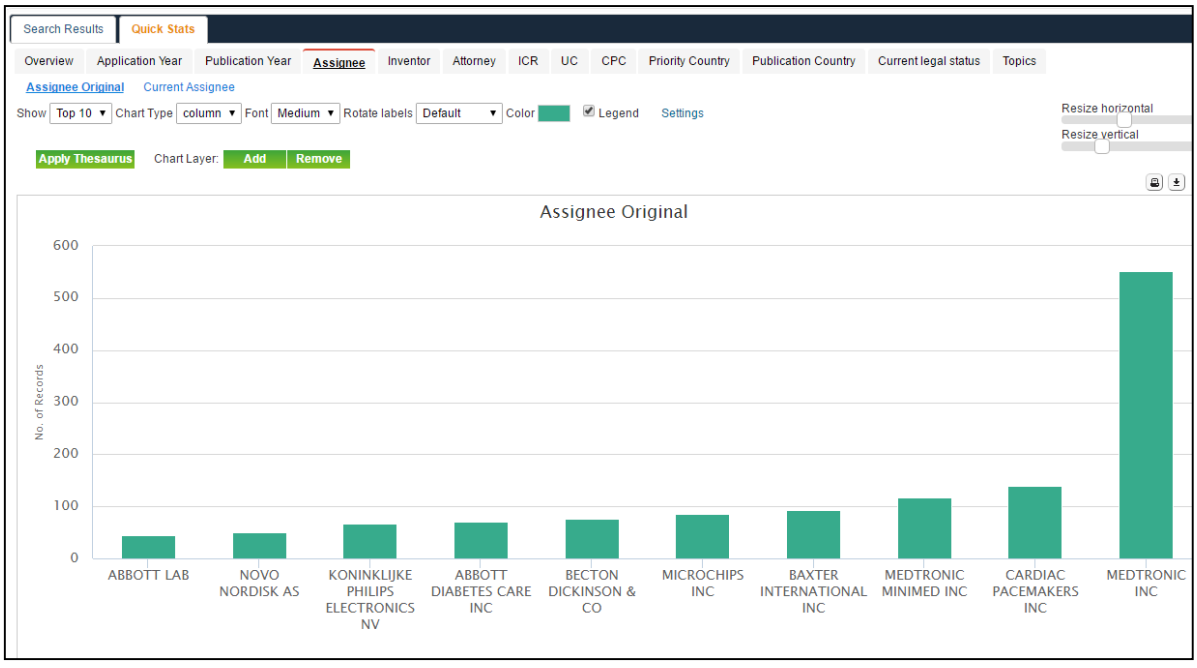
Getting an overview of the result set is also very easy using Quick Stats.

Quick Stats generates charts for various fields such as application year, publication year, top assignees, inventors, IPC, US Class, CPC, priority country, publication country, and current legal status. These charts work directly on your result sets or a filtered portion.

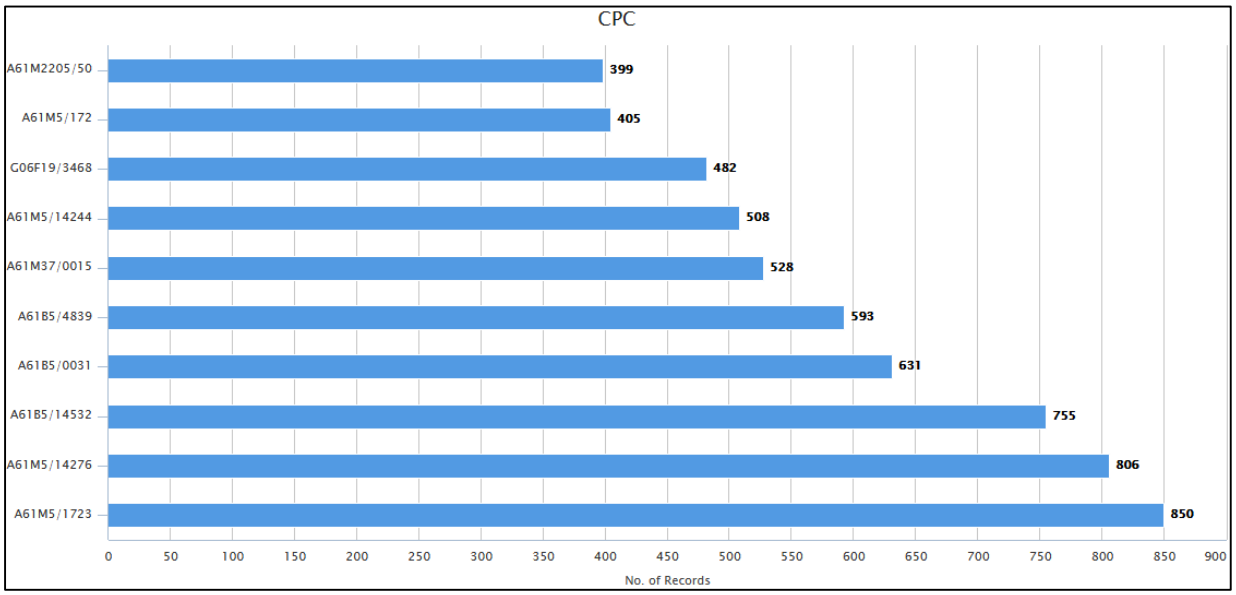
6.5.1 CHARTS OVERVIEW

You can see the most popular charts compiled together in a single view.

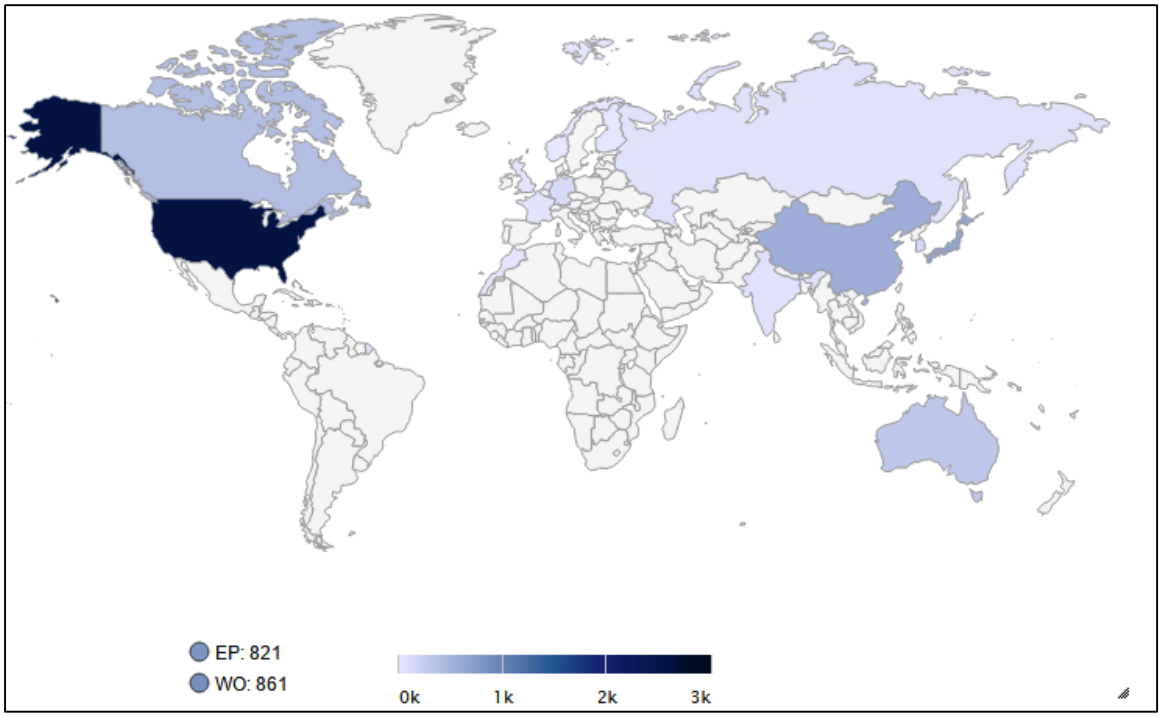




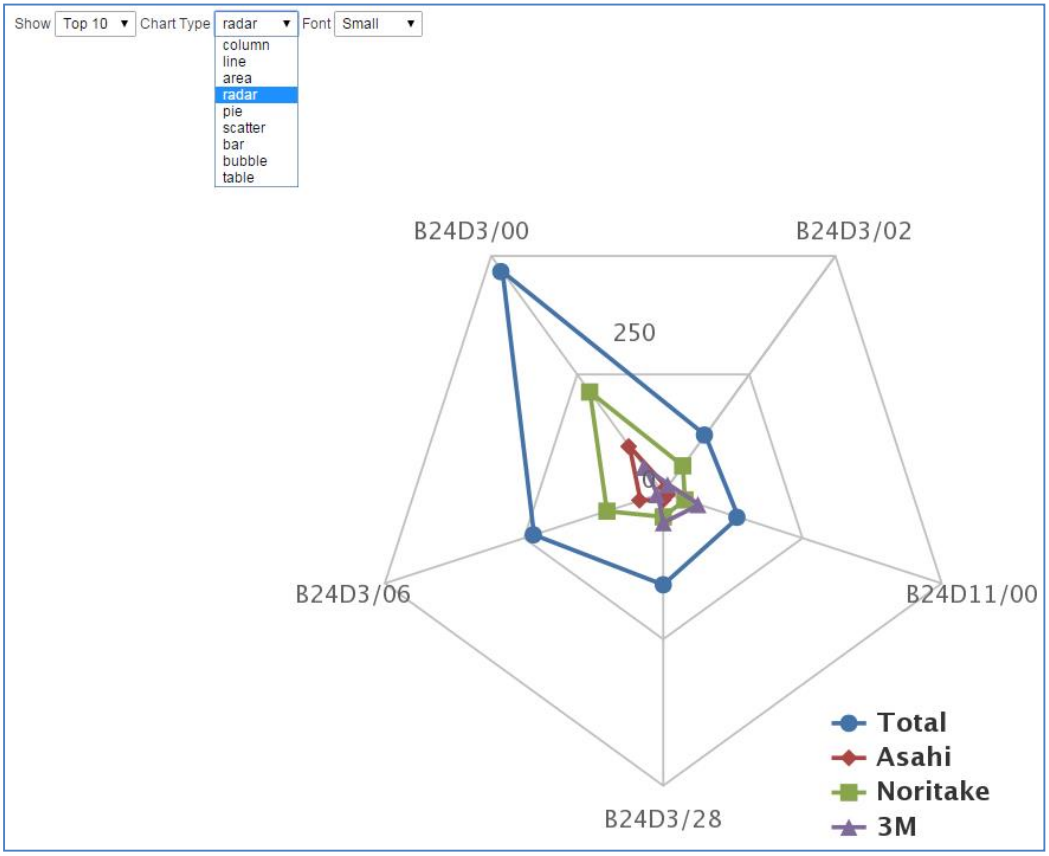
The charts can be changed to any other type of chart such as, line, area, pie, scatter, bar, bubble, or even a heat map



Similarly, you can generate a publication or priority country coverage map as shown below. Within coverage map, you can see the count of records for EP/WO patent authorities separately.

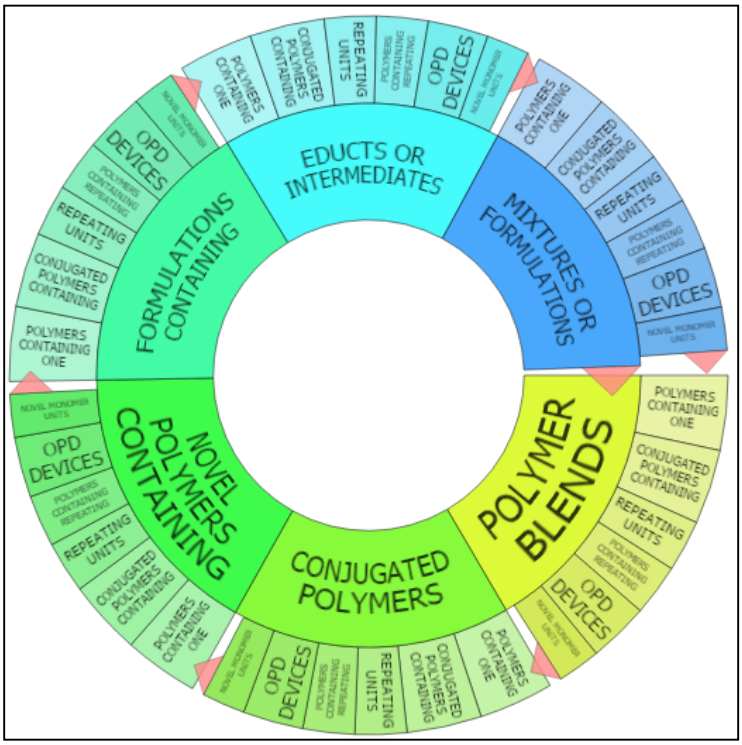


The radar chart allows you to analyze your result sets to a technological spread of patent portfolios of top companies across various subclasses of technologies.
The technologies could be any classification (Ex. IPC shown below), Custom Field/Category (within Project) or even Legal Status.



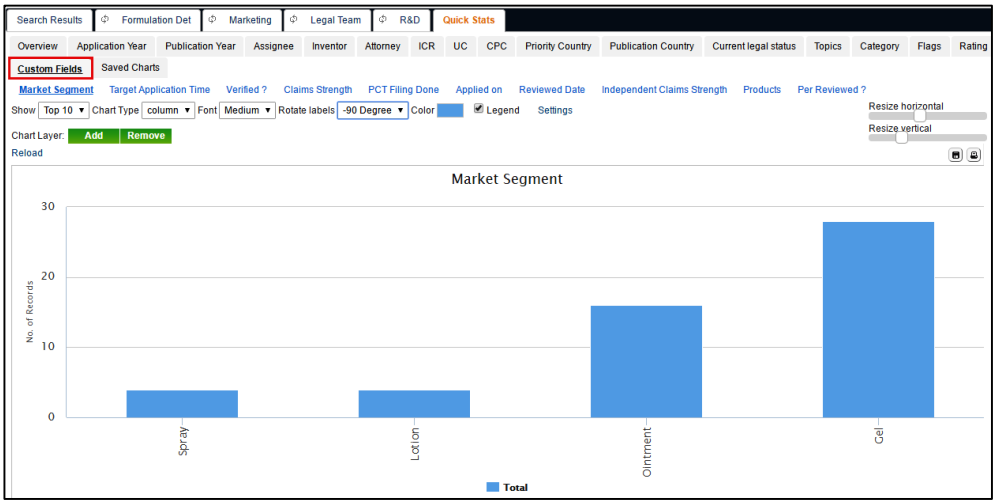
6.5.2 TOPICS MAP

The hierarchical topics data is depicted by concentric circles. The circle in the centre represents the root node, with the hierarchy moving outward from the center. A segment of the inner circle bears a hierarchical relationship to those segments of the outer circle which lie within the angular sweep of the parent segment.



You can view the sub levels of main topic.

PatSeer allows plotting of all and/or any customized fields, flags, and ratings in charts along with standard patent document fields to help you make your charts more business relevant.

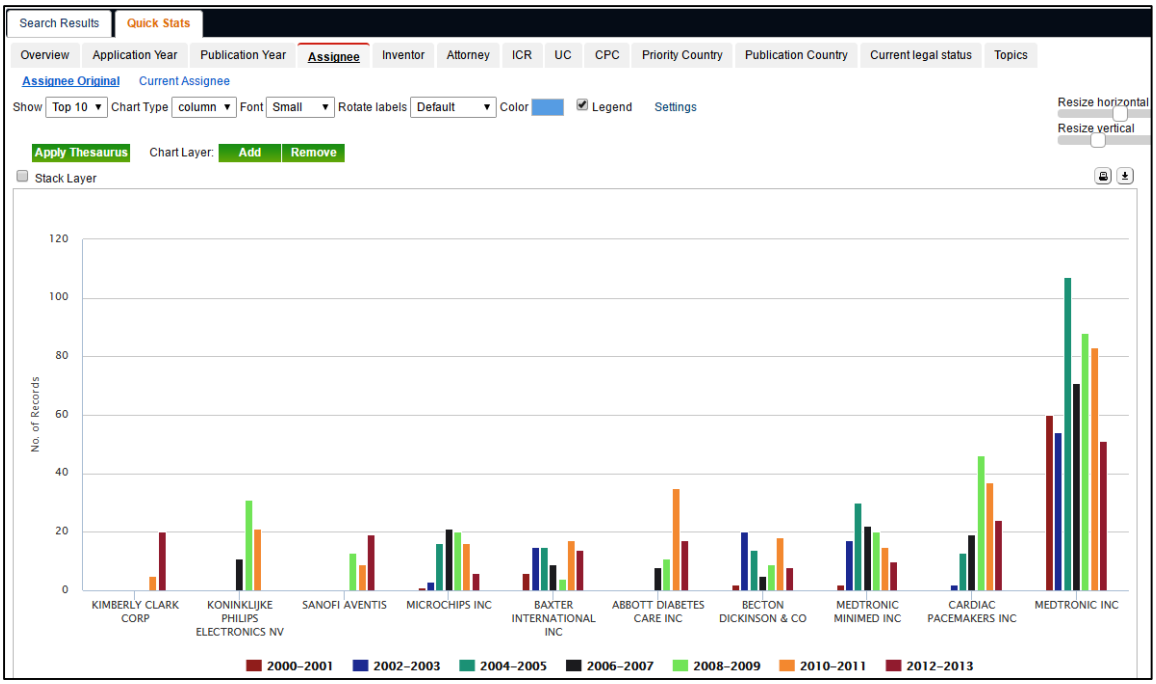


These charts can be downloaded as an image or printed.

6.5.3 CHART LAYERS

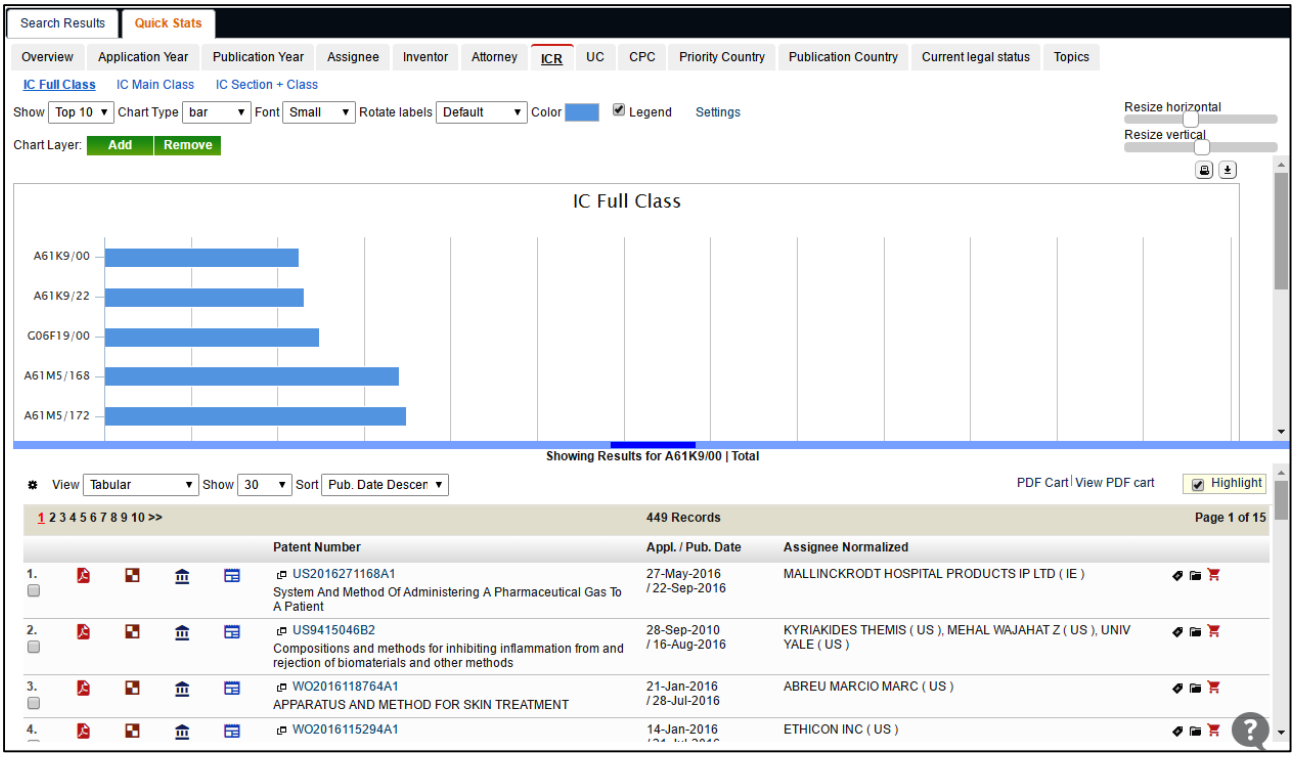
PatSeer includes a unique concept called as chart layering technology. This option allows adding as many layers of charts on top of an existing chart, making it multi-dimensional. This very combination of layers with filters makes complex analysis possible fairly easy and with as minimum learning curve as possible.

The following image represents publication trend of top 10 companies from 2000 to 2013.



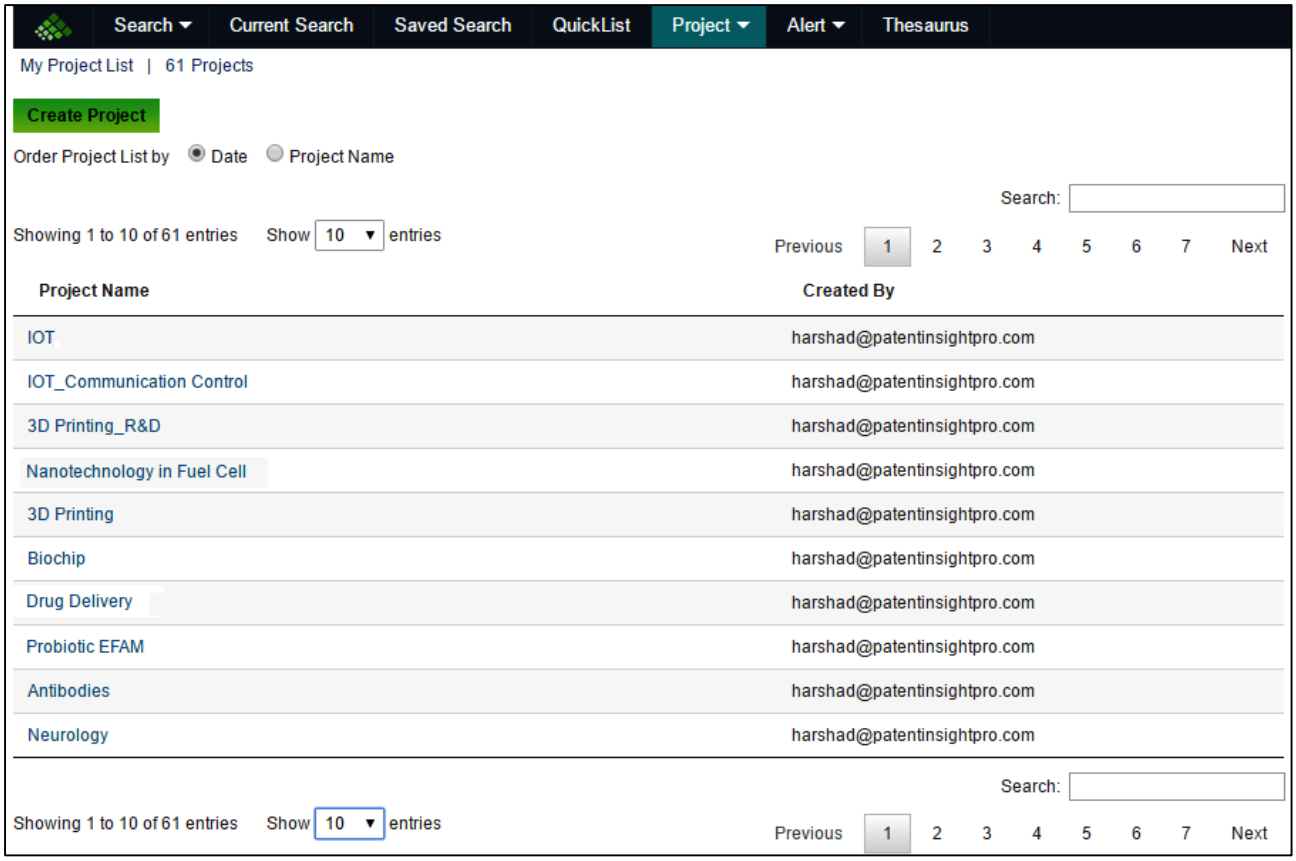
6.5.4 CHART DRILL-THROUGH

All chart items in PatSeer have a drill-down option built-in. The user can view the record by clicking on the chart item and built-in feature shows the particular set of records in the lower panel.



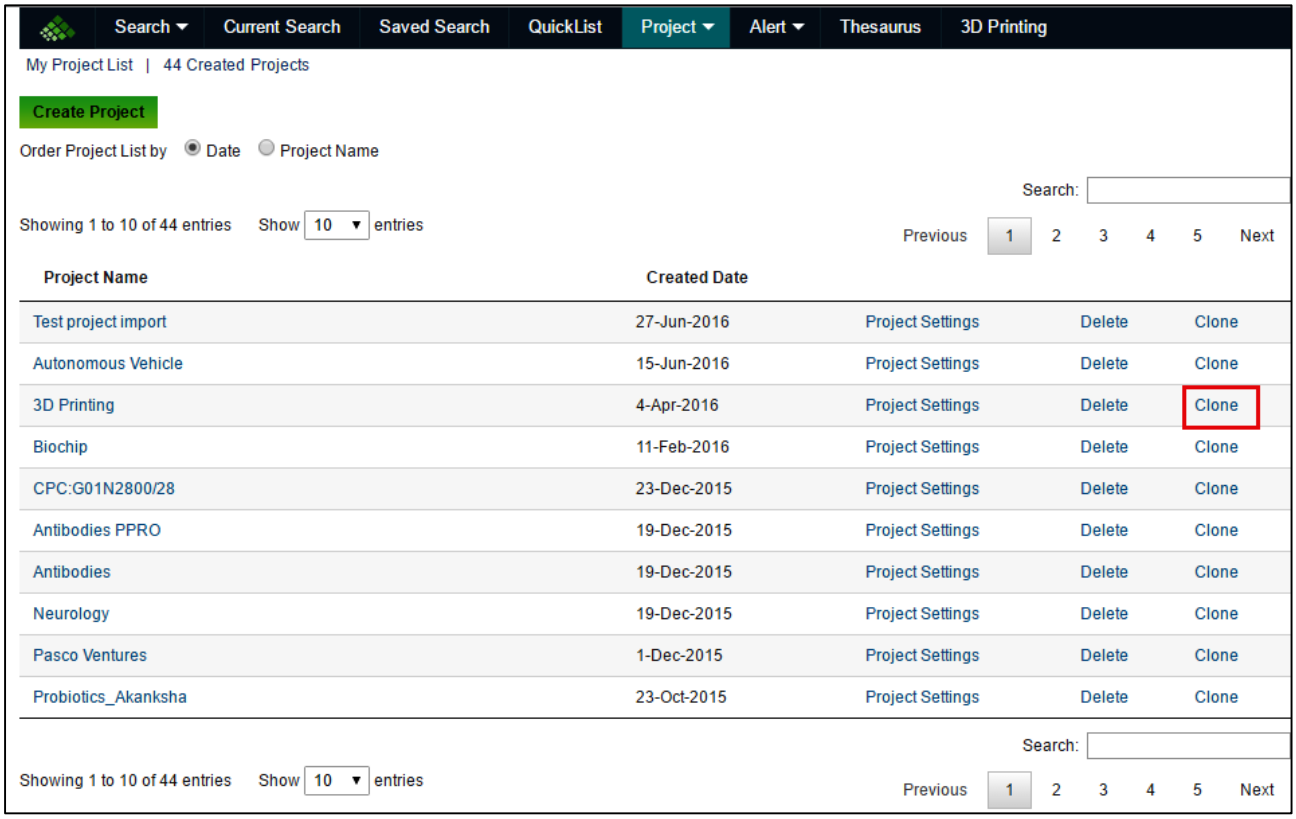
CHAPTER 7 PATSEER PROJECTS

Projects in PatSeer are a lot more than folders holding data. If you are working on a specific technology area, relevant results can be added to a project for further analysis. Within a project, records can be enhanced further by flagging records, adding a rating or even adding a comment to any record.



7.1 CLONE A PROJECT

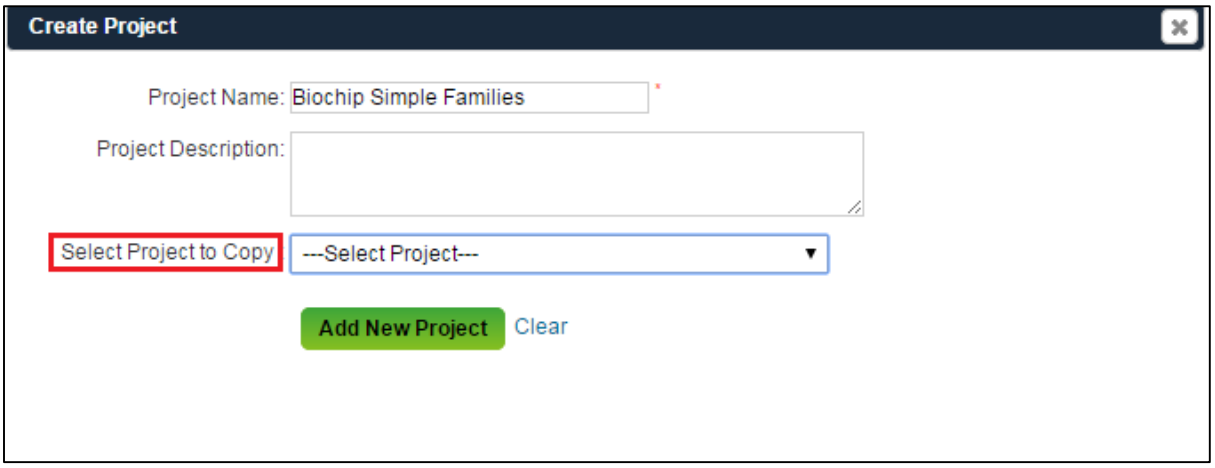
You can replicate a project along with all the data, custom fields, flags and other settings in a single click via the Clone project option. This is useful if you want to maintain a master copy of a project prior to sharing it (with Edit rights) with a client or colleague.



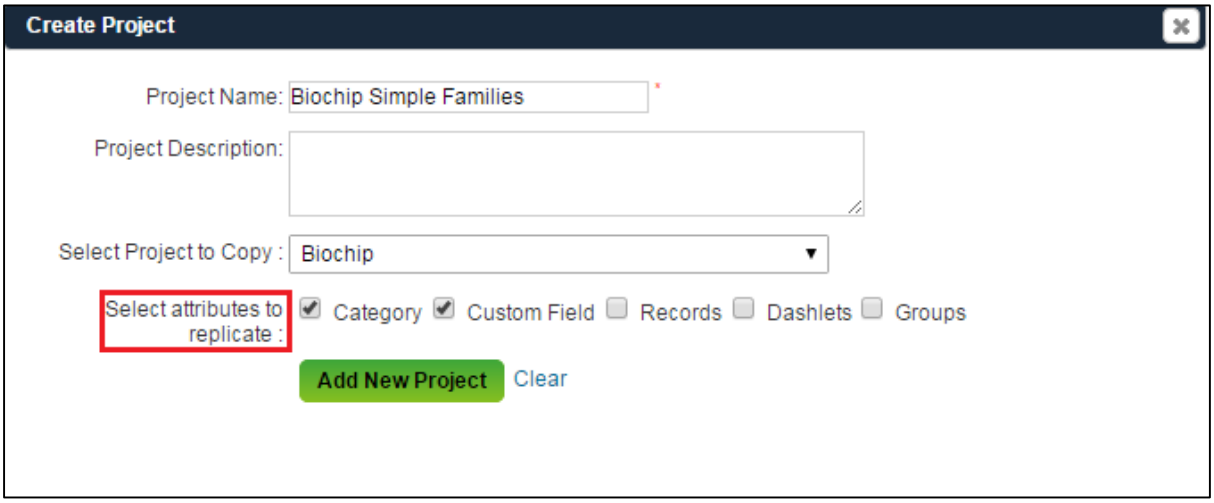
When you open the project, you will be able to view all records along with the categories and other meta data.

7.2 IMPORT RECORDS/ METADATA FROM OTHER PROJECTS

If you are working on multiple projects and would like to retain custom fields, categories, metadata like ratings, flags and comments, PatSeer makes it easy to use all these along with the records. You can reuse the same attributes from some existing project which helps you save time and effort of carrying out same process repetitively.



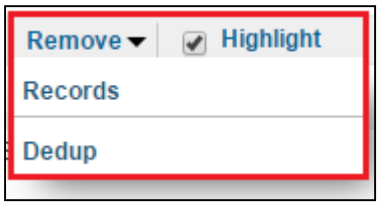
The Select Project to Copy drop down menu contains a list of all the created projects. You can select the appropriate project name and then select all the required attributes from the available list.

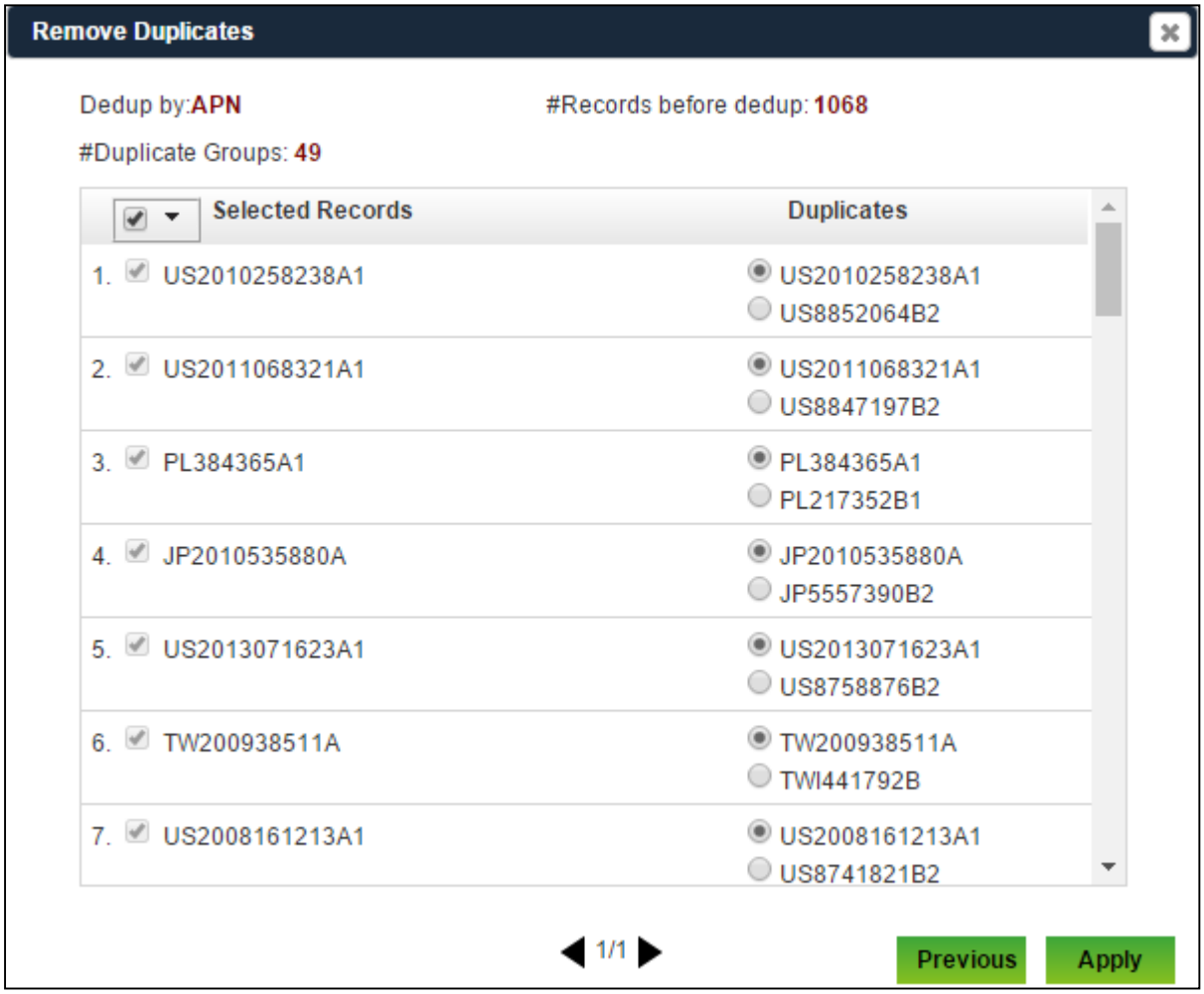


Once the project is created, you will see all the selected attributes copied in your project and if you select the records option you will be able to see the flags, rating and comments assigned to those records in the parent project.

7.3 DEDUPLICATE RECORDS (REDUCE TO ONE MEMBER PER FAMILY)

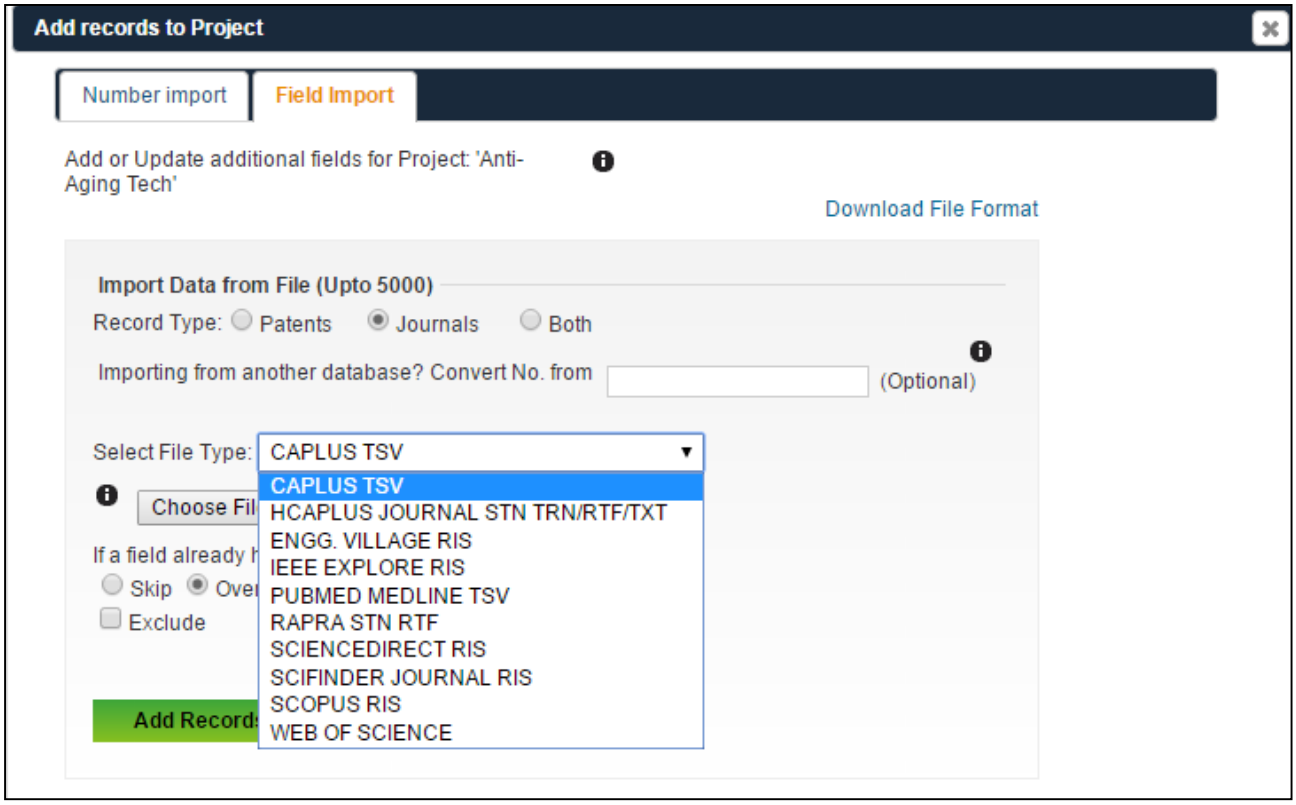
You can de-duplicate records within Projects to one member per family (INPADOC or Simple) or de-duplicate patents and applications. The latter can be useful if you want to have the patent selected in cases where both the patent and its application are present in the project.





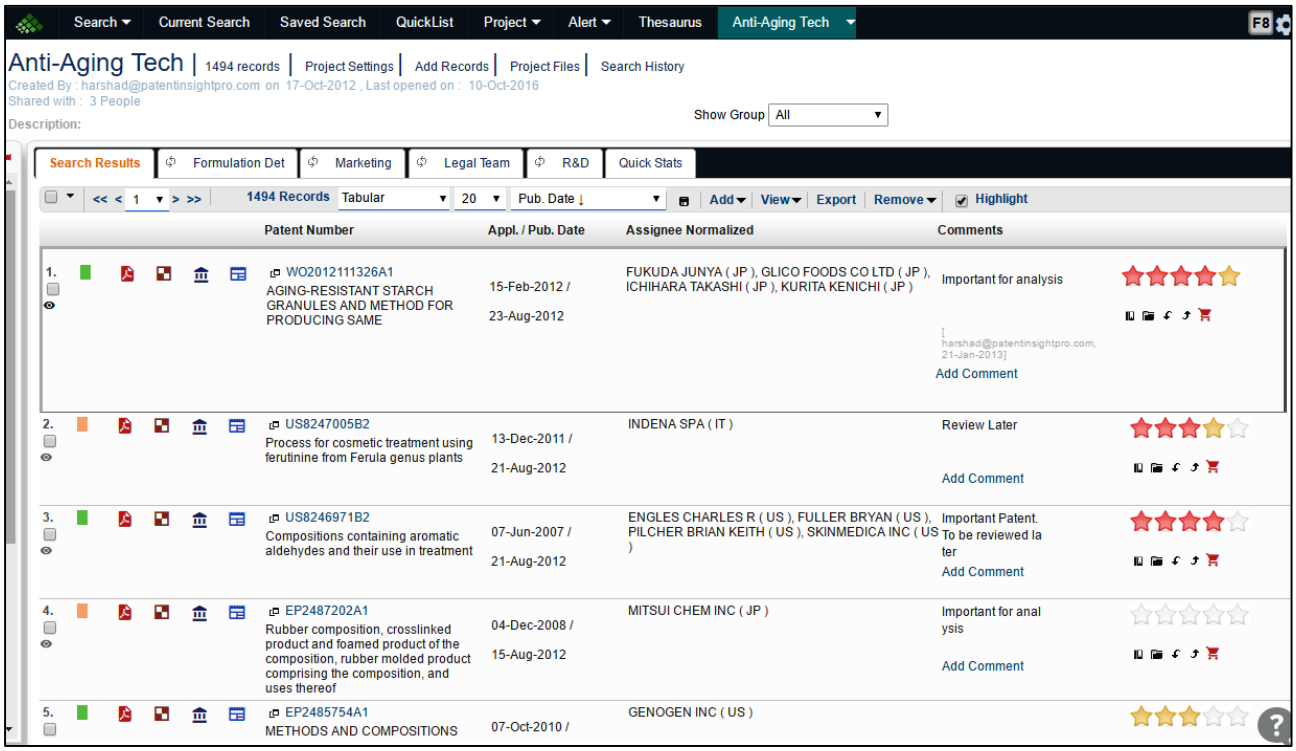
7.4 SUPPORT FOR NON PATENT LITERATURE/ JOURNALS /EXTERNAL RECORDS IN PROJECTS

PatSeer supports importing external records/journal into a project. Popularly used journal sources and their export formats are supported and newer sources are continuously added.

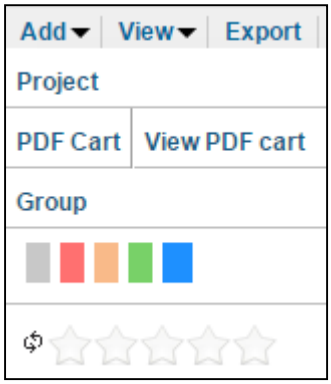


7.5 RATING/FLAG

You can assign a rating or flag to a record to highlight its importance. Both aspects can be used to signify different characteristics of a record.

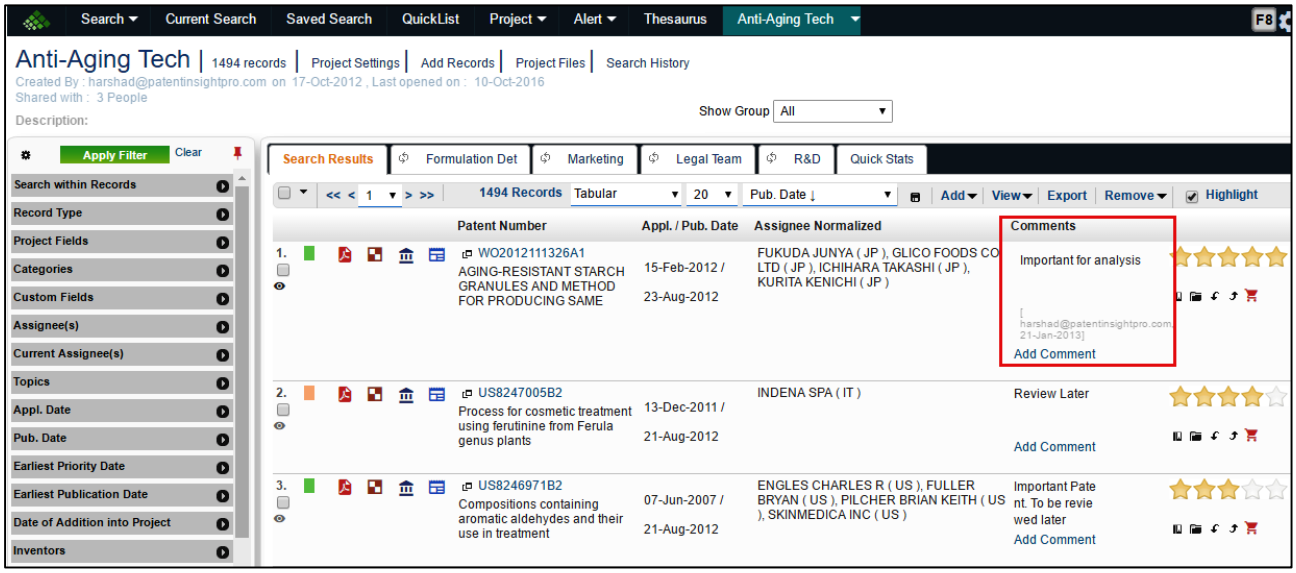


You can assign ratings / flags for multiple records at a single point of time.



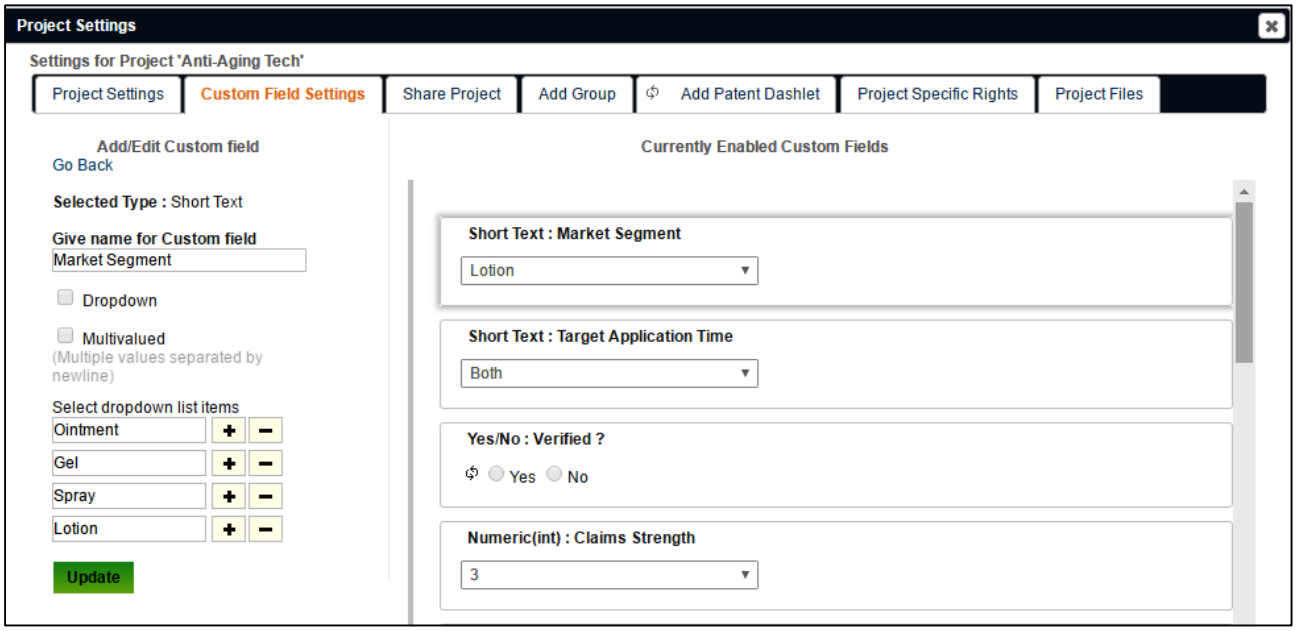
7.6 COMMENTS

Multiple users can comment in a single conversation thread with respect to each patent document. PatSeer also has options for private and open comments to facilitate collaboration between different users who have access to a single project.

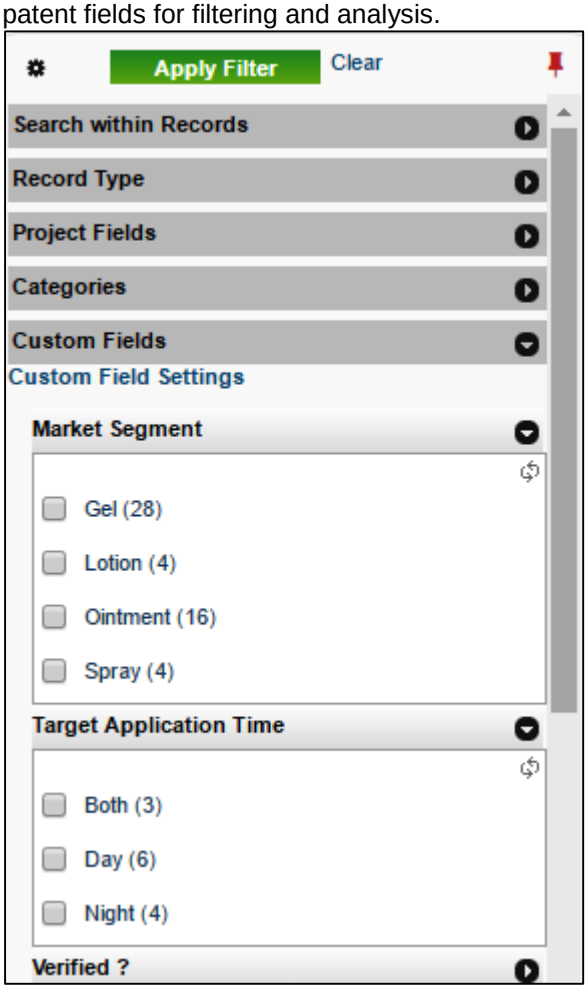


7.7 CUSTOM FIELDS

Users can create number of custom fields for capturing relevant context specific or company specific information to support even more complex patent workflows in organizations for each record in a project. Custom fields can be of different types, for e.g., text, check box kind, yes/no, number limited, pure text custom field, attachment, short text (multivalue) or even multilist (text) and multilist (numeric). You can assign multiple values to the created custom field within Standard View or even from Detail View.

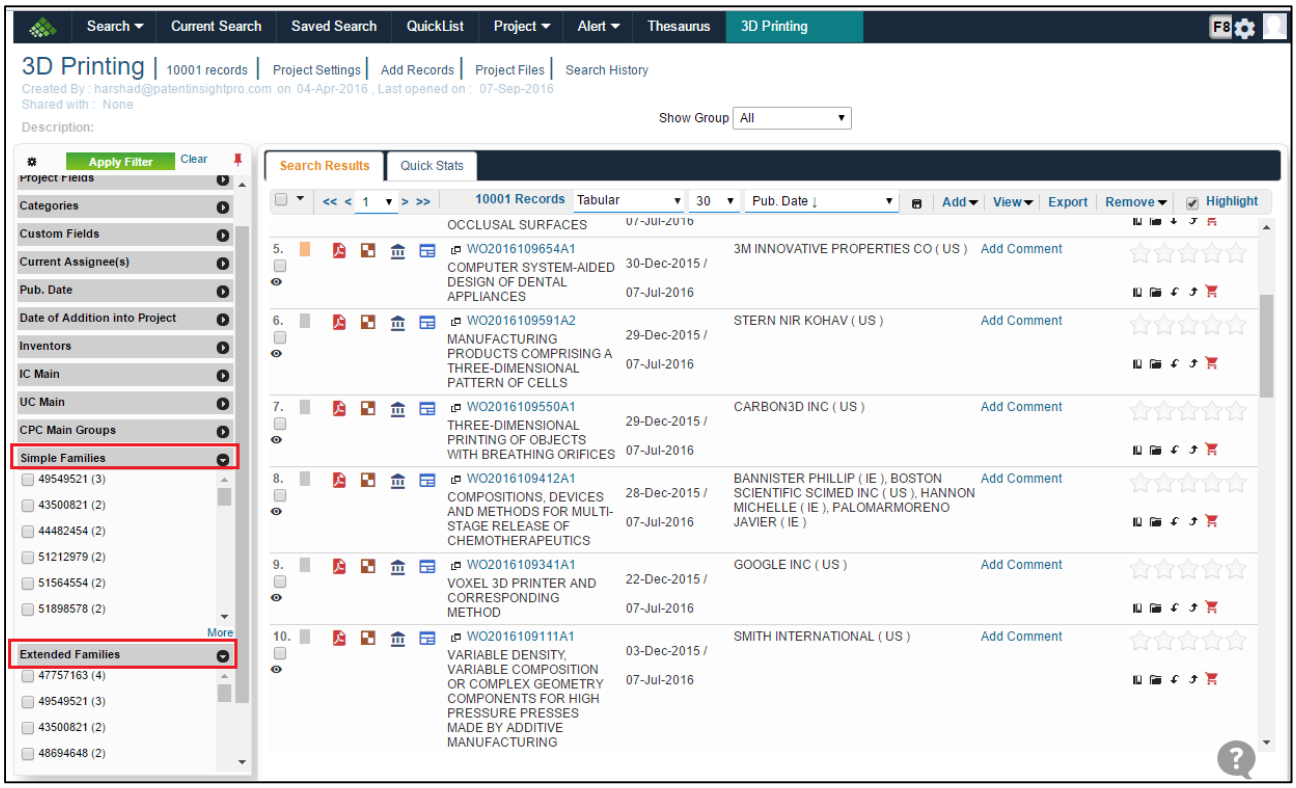


You can even use these fields for filtering and analysis purpose. These fields can be combined with standard patent fields for filtering and analysis.



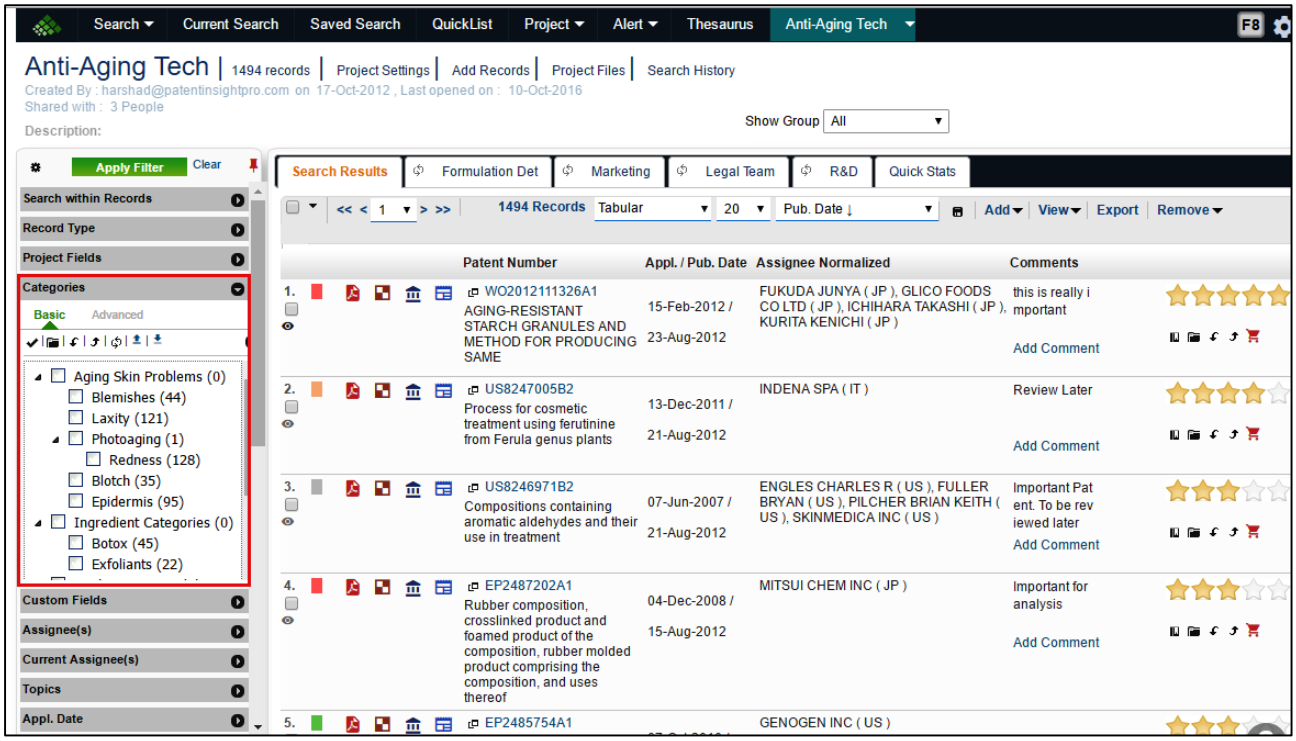
7.8 FILTER RECORDS BY SIMPLE FAMILIES AND EXTENDED FAMILIES

You can analyze your project records by family (and also check if there are duplicate family members in your project).

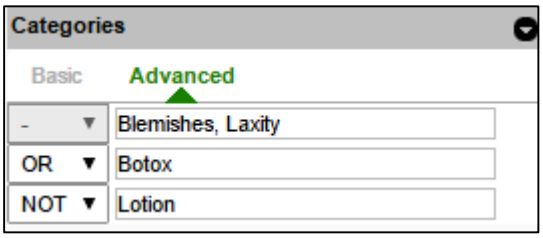


7.9 CATEGORIZATION

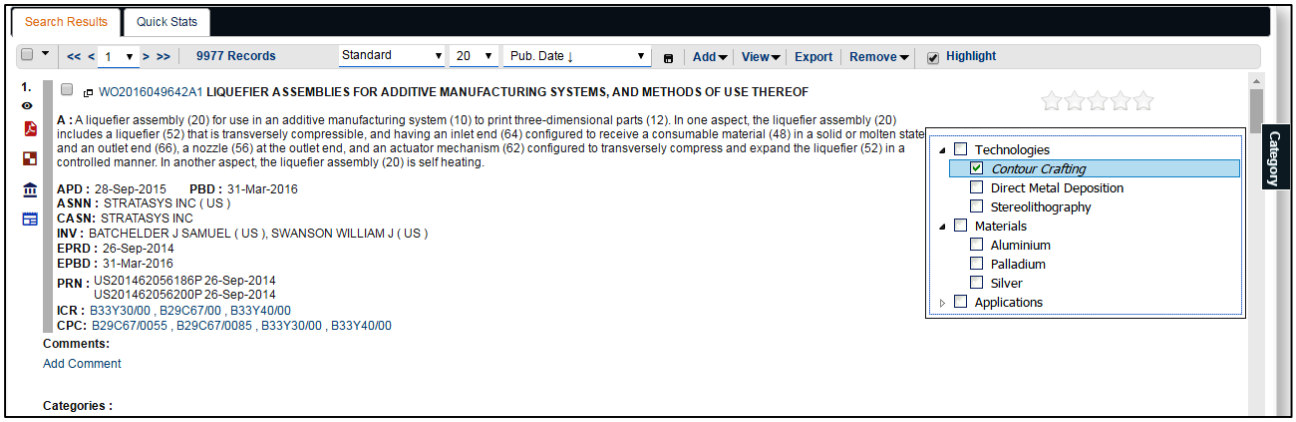
You can define customized clusters and sub-clusters to recreate organizational taxonomies within each project. You can also view the number of records present in each category.



Users can perform complex boolean filtering through multi-level categories to get insights to the relationship shared between different categories.



It's easy to categorize records while reviewing/reading your results in parallel.



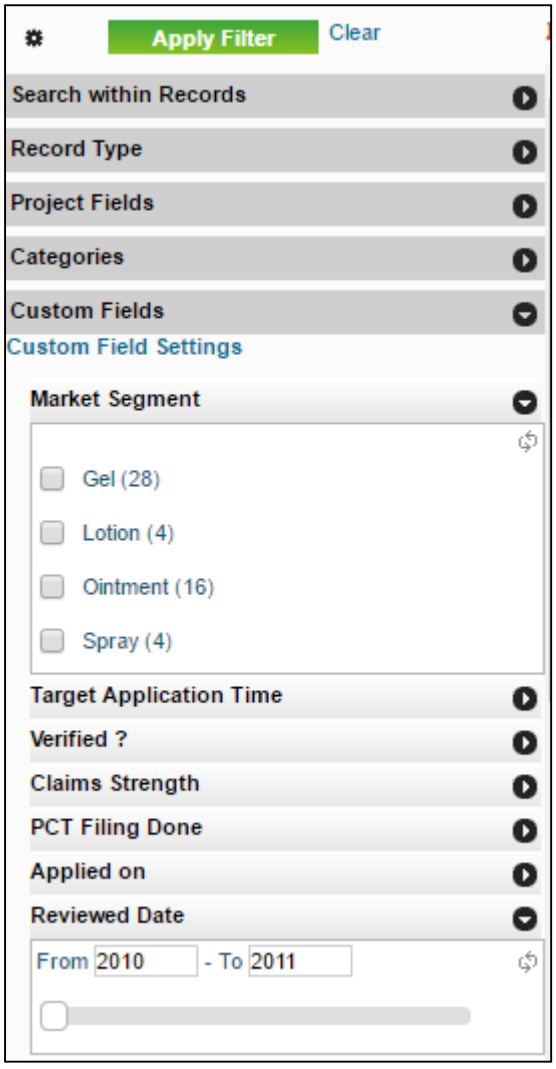
It's also easy to create categories using text or CSV files.

7.10 PROJECT FILTERS

Users can filter the result sets by Viewed / Not Yet Viewed records. The filter layout allows you to filter and analyze different non patent fields like flags, rating, along with Viewed / Not Yet Viewed or annotated records.

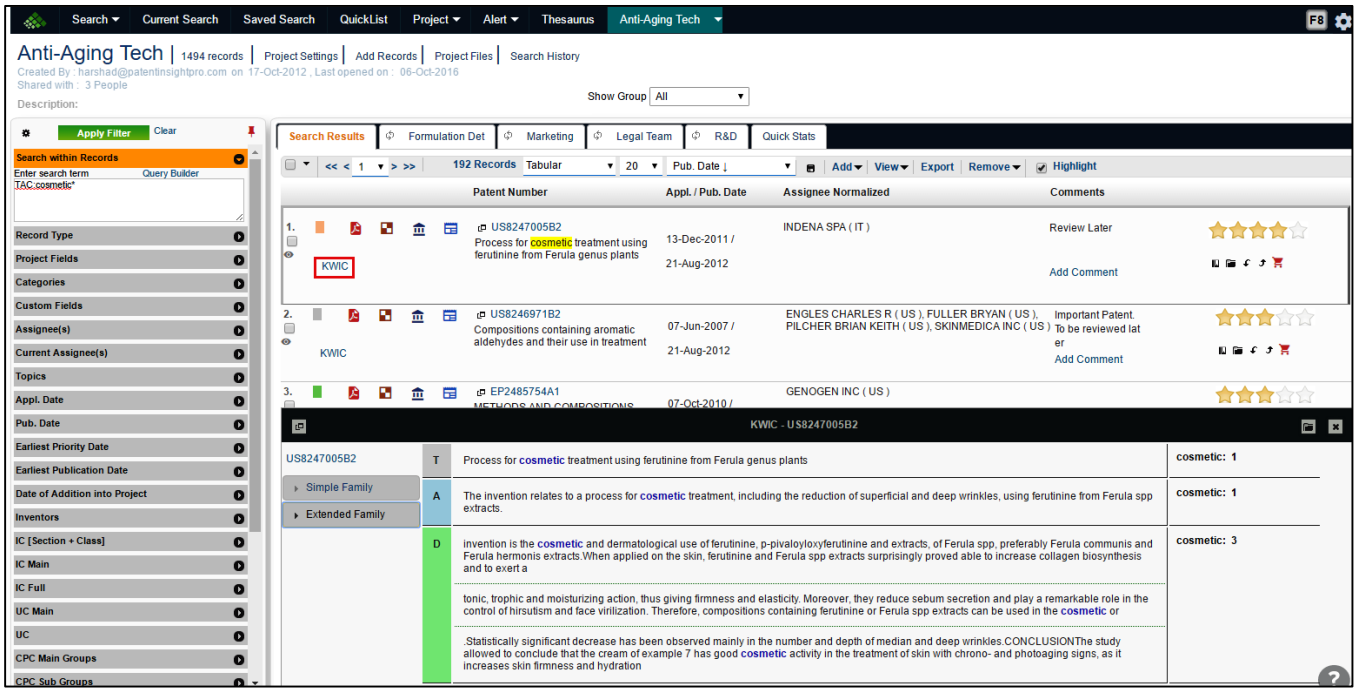
7.11 RANGE FILTERS

Users can use all Numeric and Date type custom fields as a range filter to narrow down a particular range of values. For example, a date type custom field “Reviewed Date” as shown below



7.12 KWIC LINK

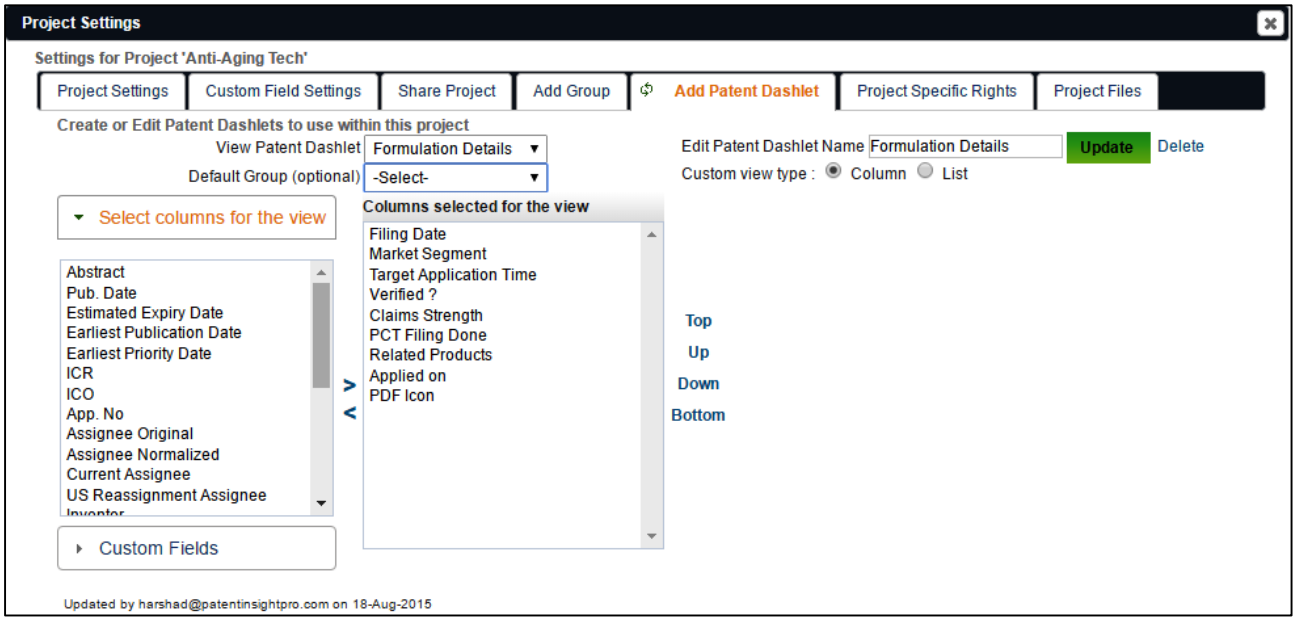
The KWIC View within projects helps in locating the keywords according to their occurrence within the excerpts of the text. It shows all matching hits within their original paragraph (context). This is useful when scanning through the full text of records to match search term hits.

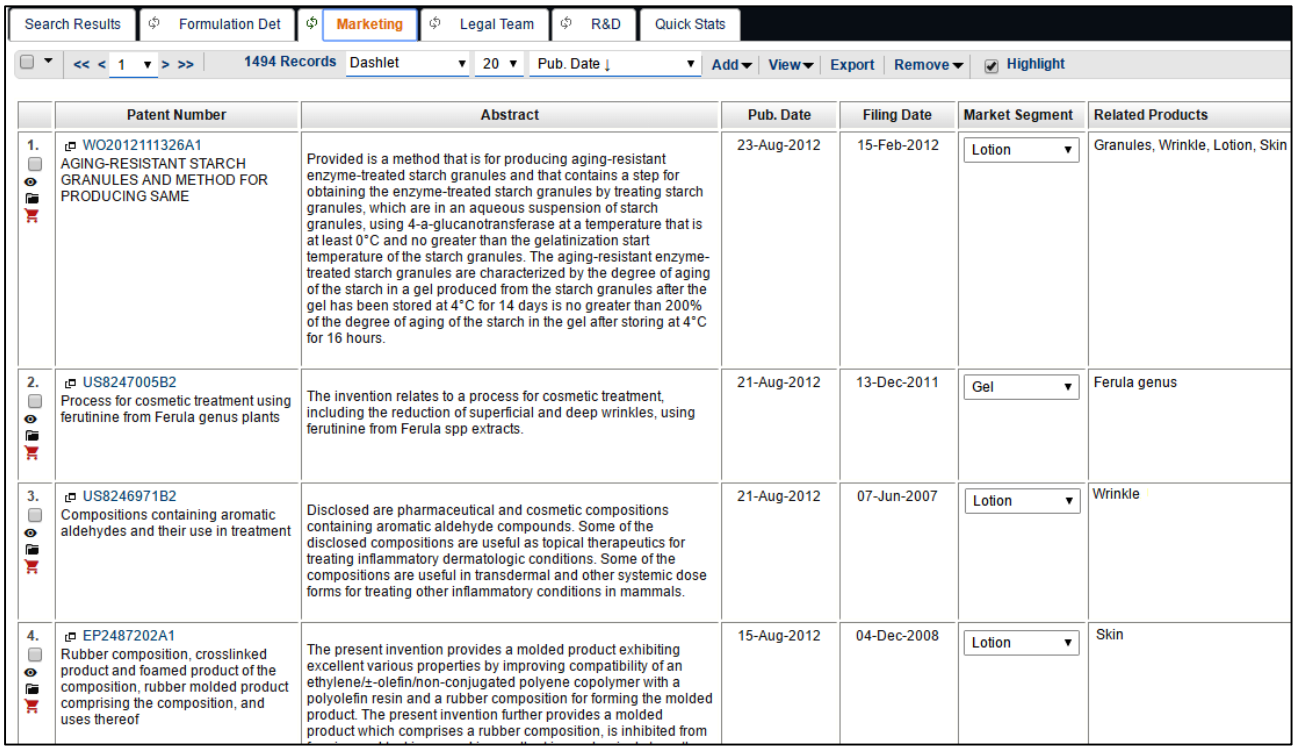


7.13 PATENT DASHLETS®

PatSeer provides an exciting capability within a project which is creation of multiple dashboards called Patent Dashlets®. A Patent Dashlet® is like an interactive custom view which includes patents and additional fields that may have been created in a single table. These configurable and interactive Dashlets® are integrated seamlessly with 'Permission Groups' so that the users share desired Dashlets® with a client or a co-worker instead of the complete project.

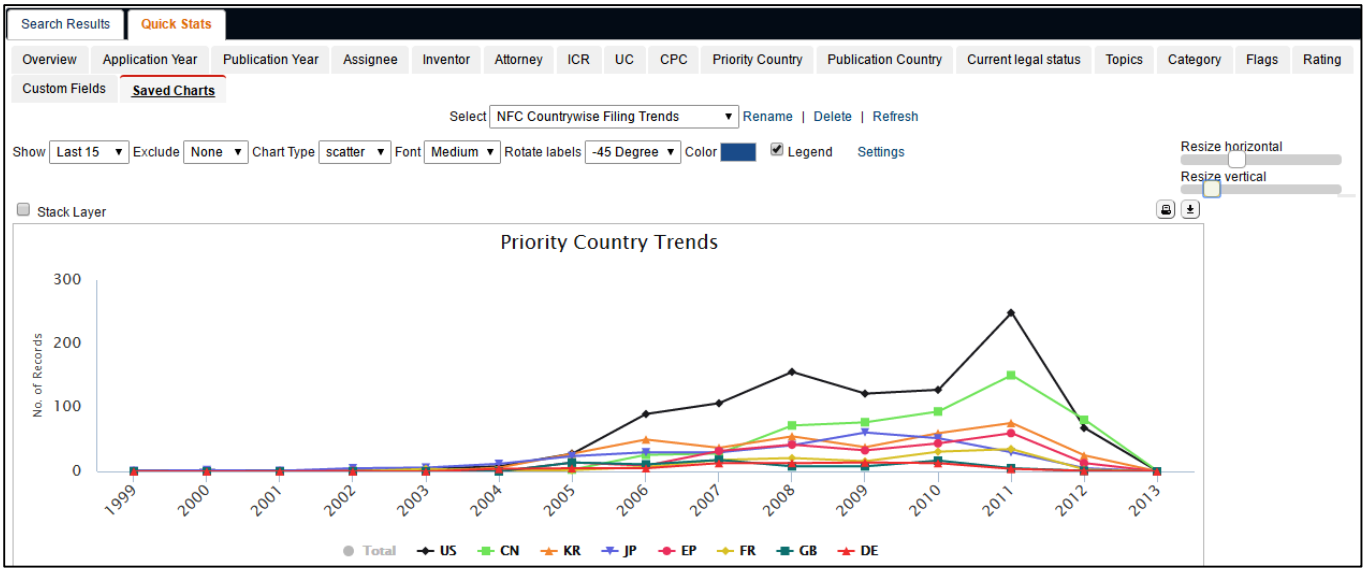
The following snapshot illustrates this feature:





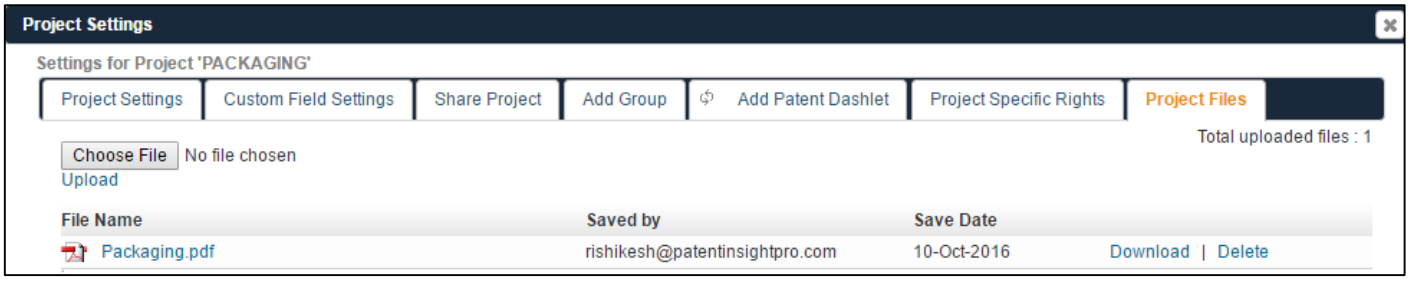
7.14 SAVED CHARTS

You can save charts with comments as desired and selectively share with other users.



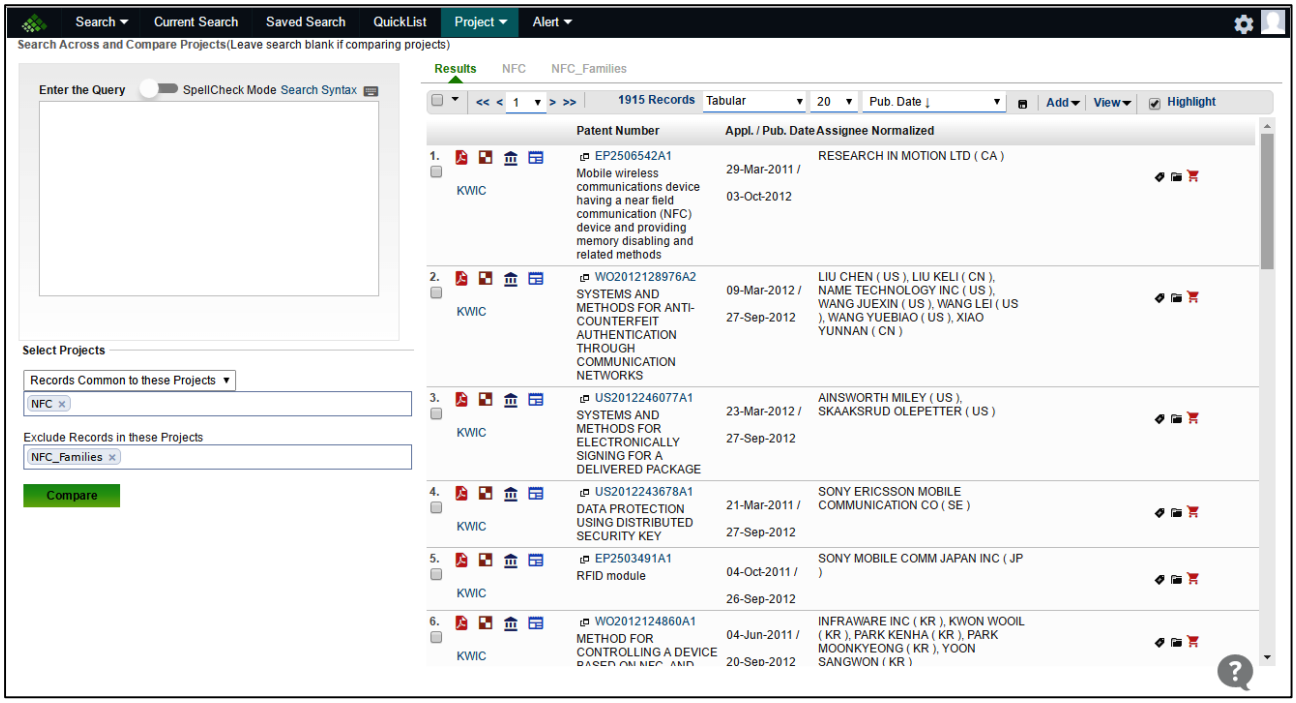
7.15 PROJECT FILES

Users can save any number of attachments in various file formats (Word/Excel/PDF/Images/PPT). Attachments can be saved at project level and also at per-record level.



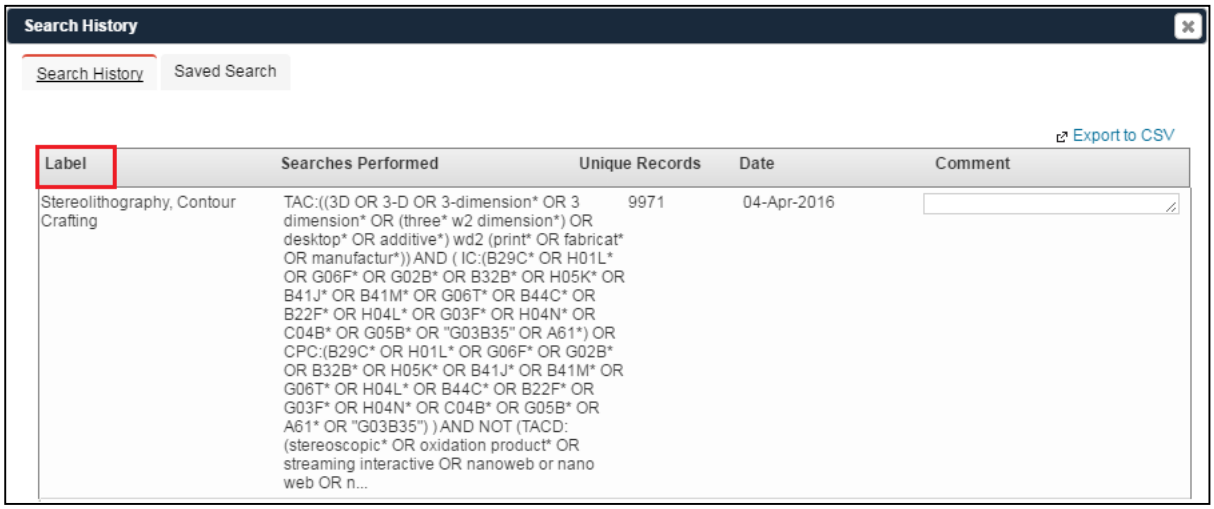
7.16 COMPARING PROJECTS

It's easy to compare and search across multiple projects simultaneously to find which records are common across a set of projects or what extra records are present in this project, etc.



7.17 PROJECT SEARCH HISTORY

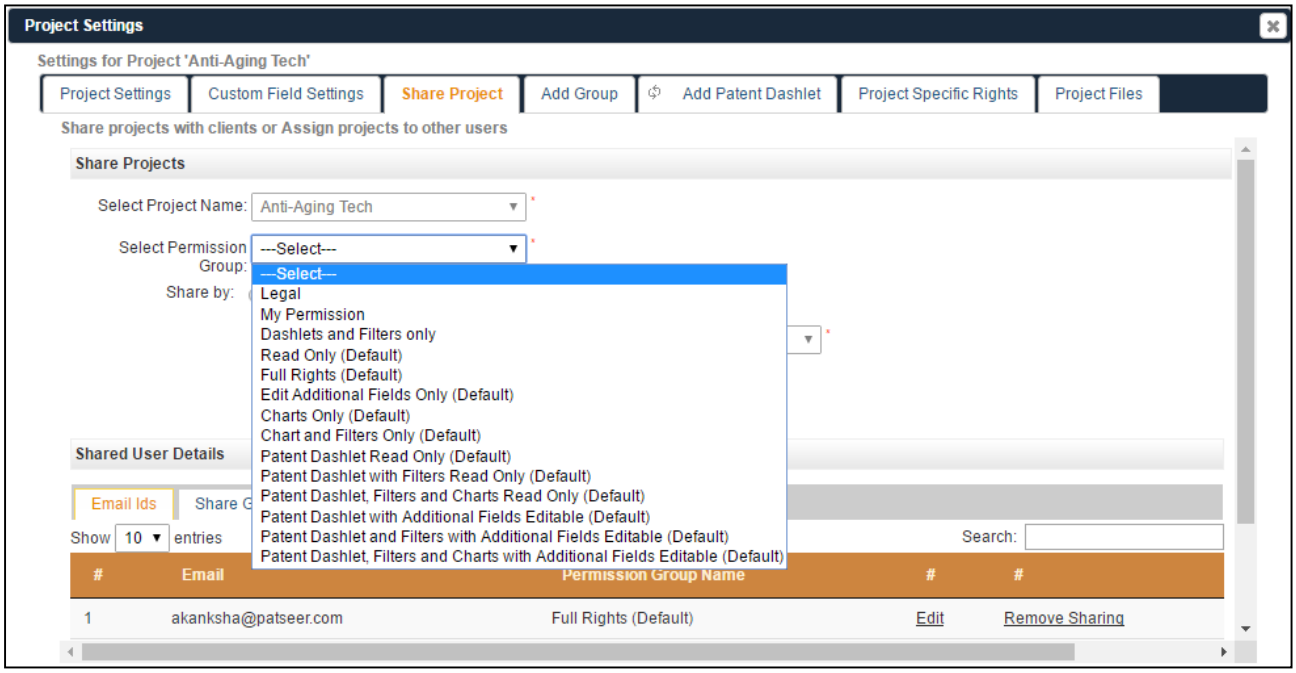
Users can view all originating source (Search Query/Alerts/File Upload) for every record that is added to a project. You can even mark labels to your search history. This helps you keep a track of all the searches you have done for a project and see and export a log of all the searches you have done for a project at any given time.



CHAPTER 8 PROJECT COLLABORATION AND SHARING

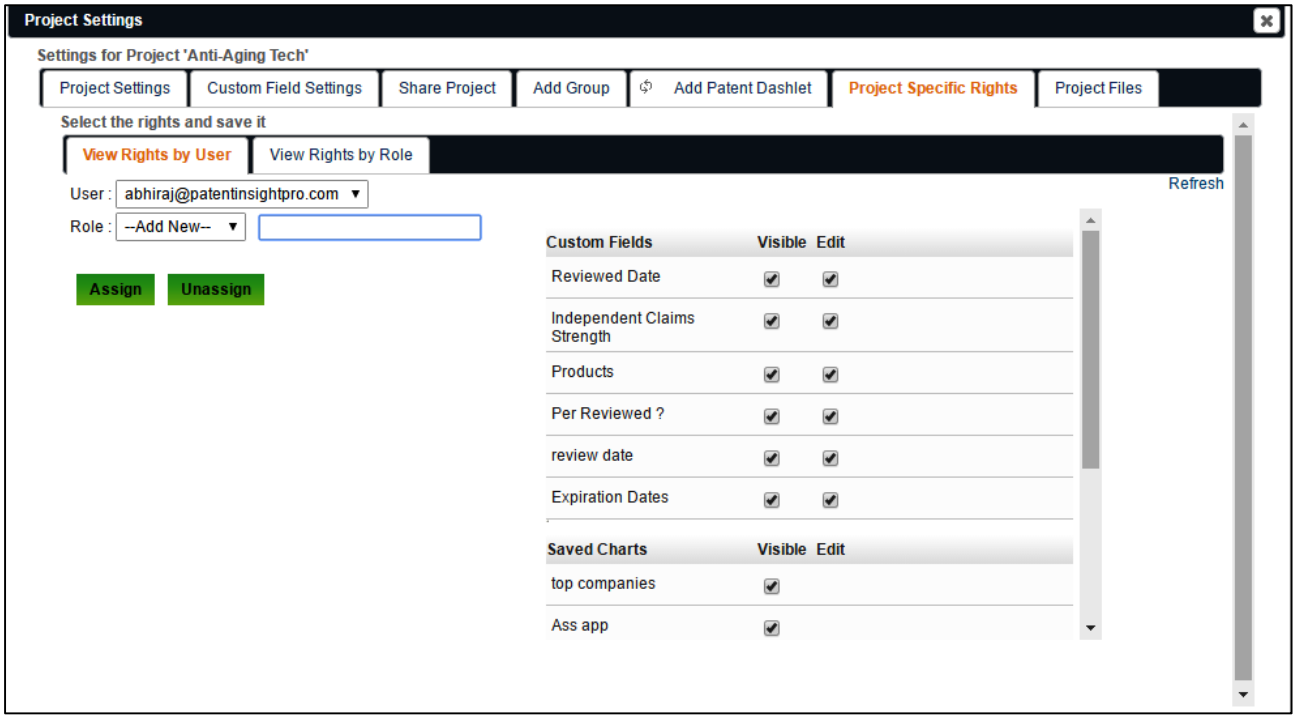
8.1 PROJECT SHARING AND PERMISSION GROUPS

Projects can be shared with either an individual or a group. There are two things to note here, first the person with whom you are sharing the project with doesn't need to be a PatSeer user and second interesting point is in PatSeer the platform can be shared and not just a folder or a static set of records. So the shared user who may not be a PatSeer user can have full functionality within the project. Various permission groups can be created to restrict what the shared user can or cannot do within a project. PatSeer allows a wide range of permission settings that allow the user to decide what exactly is visible or allowed when a project is shared or assigned.



8.2 PROJECT SPECIFIC RIGHTS

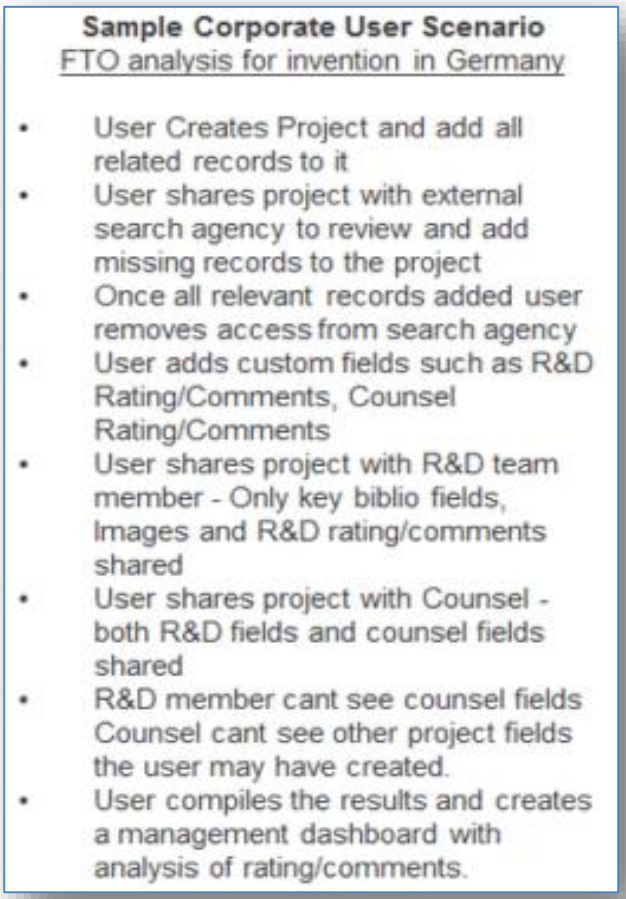
Users can assign rights at user or role level while sharing the project with their clients or colleagues. The project creator can assign roles specific to certain custom fields, Dashlets® or saved charts.

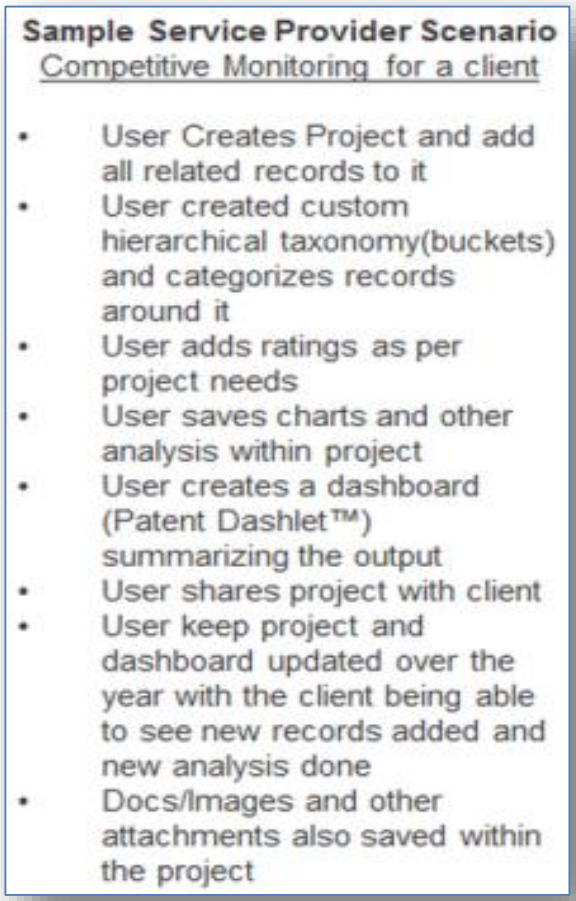


CHAPTER 9 PATSEER COLLABORATION EXAMPLES

PatSeer Project Sharing and collaboration brings a much needed radical change to the way users can collaborate and get patent projects done. PatSeer's sharing capabilities help you effectively and efficiently involving stakeholders, implement project workflows and reduce collaboration and project management costs.

Example scenarios showcasing how PatSeer collaboration can help service providers or corporates in conducting different types of projects like FTO and competitive monitoring are shown below:





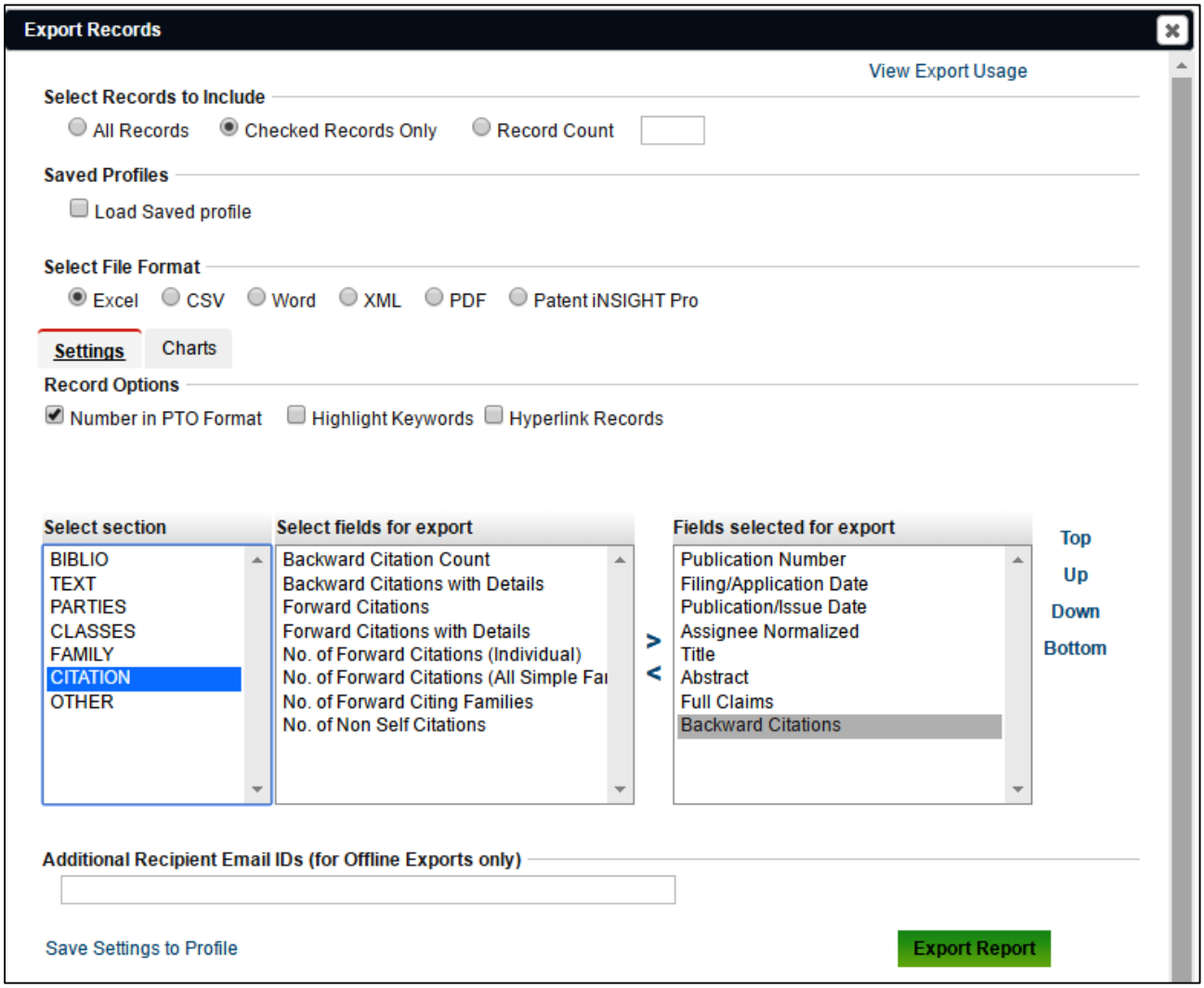
CHAPTER 10 EXPORT OPTIONS

You can export records and charts/ graphs in ready-to-use Word/ Excel/CSV/PDF or even XML formats. You can even replicate result sets into Patent iNSIGHT Pro with ease.

While exporting results users can export:

1. All the family members for each record instead of just the record in the result set when working on SFAM/EFAM de-duped results sets.
2. The publication number of the record as per the format followed by its respective patent office using 'Number in PTO Format'.

The export fields have been classified under different sections. Users can also save fields selected for export for future exports thereby reducing time



APPENDIX A – PATSEER FULL-TEXT COVERAGE (AS OF OCTOBER 2016)

FULL TEXT COVERAGE

PatSeer includes global patent data coverage of 42 Full Text Authorities: EP, WO, US, JP, CN, KR, CA, DE, FR, GB, ES, AU, IN, CH, AT, BR, TH , RU, PH, SE, NO, DK , FI, BE, NL, LU, MX, AP, CO, DD, EA, IL, MA, MC, OA, TW, TJ, KG, BY, UZ, MD, GE.

New countries are scheduled to be added. For latest coverage update please visit http://patseer.com/detailed-coverage/

AUTHORITY	DATA TYPE	DESCRIPTION (LANGUAGE)	START YEAR	PRESENT / STATUS
European (EP) Applications	Bib Data	INPADOC + Original	from 1978	YES
	Full text	Original (EN, DE, FR)	from 1978	YES
European (EP) Granted Patents	Bib Data	INPADOC + Original	from 1980	YES
	Full text	Original (EN, DE, FR)	from 1980	YES
WIPO (WO) Applications	Bib Data	INPADOC + Original	from 1978	YES
	Full text	Original (EN, DE, FR, ES, RU)	from 1978	YES
		Original (KR, JP)	from 2009	YES
United States (US) Applications	Bib Data	INPADOC + Original	from 2001	YES
	Full text	Original (EN)	from 2001	YES
United States (US) Granted Patents	Bib Data	INPADOC + Original	from 1790	YES
	Full text	Original (EN)	from 1976	YES
		OCR Text (EN)	1920-1976	YES
Japan (JP) Applications	Bib Data	INPADOC	from 1970	YES
		PAJ – English abstracts/titles (EN)	from 1976	YES
		Original (JP)	from 1993	YES
	Full text	Original (JP)	from 1993	YES
		Machine Translation (EN)	from 1993	YES
Japan (JP) Utility Models and Granted Patents	Bib Data	INPADOC	from 1928	YES
		Original (JP)	from 1994	YES
	Full text	Original (JP)	from 1994	YES
		Machine Translation (EN)	from 1994	YES
China (CN) Applications and Utility Models	Bib Data	INPADOC	from 1985	YES
		Original (ZH)	from 1985	YES
		Machine Translation (EN)	from 1985	YES
	Full text	Original (ZH)	from 1985	YES
		Machine Translation (EN)	from 1985	YES
China (CN) Granted Patents	Bib Data	INPADOC	from 1993	YES
		Original (ZH)	from 1993	YES
		Machine Translation (EN)	from 1993	YES

	Full text	Original (ZH) Machine Translation (EN)	from 1990 from 1990	YES YES
Korea (KR) Applications, Utility Models and Granted Patents	Bib Data	INPADOC Original	from 1978 from 2006	YES YES
	Full text	Original (KR) Machine Translation (EN)	from 2006 from 2006	YES YES
Canada (CA) Applications and Granted Patents	Bib Data	INPADOC Original	from 1978	YES YES
	Full text	Original (EN)	from 1978	YES
Germany (DE) Applications and Granted Patents	Bib Data	INPADOC Original (DE)	from 1861 from 1981	YES YES
	Full text	Original (DE) Machine Translation (EN)	from 1920 from 1987	YES YES
Germany (DE) Utility Models	Bib Data	INPADOC Original (DE)	from 1928 from 1981	YES YES
	Full text	Original (DE) Machine Translation (EN)	from 1920 from 39/1999	YES YES
United Kingdom (GB) Applications	Bib Data	INPADOC	From 1782	YES
	Full Text	Original (EN)	From 1979	YES
United Kingdom (GB) Grants Patents	Bib Data	INPADOC	From 1947	YES
	Full Text	Original (EN)	From 1920	YES
France (FR) Applications	Bib Data	INPADOC	From 1898	YES
	Full Text	Original (FR) Machine Translation (EN)	From 1920 From 1920	YES YES
France (FR) Granted Patents	Bib Data	INPADOC	From 1900	YES
	Full Text	Original (FR) Machine Translation (EN)	From 1911 From 1911	YES YES
Spain (ES) Patents and Utility Models	Bib Data	INPADOC Original (ES)	from 1919 from 1981	YES YES
	Full text	Original (ES)	from 2004	YES
Australia (AU) Patents and Applications	Bib Data	INPADOC	From 1965	YES
	Full Text	Original (EN)	From 1991	YES
India (IN) Patents	Bib Data	Original (EN)	From 1912	YES
	Full Text	Original (EN)	From 1975	YES
India (IN) Applications	Bib Data	Original (EN)	From 1990	YES
	Full Text	Original (EN)	From 1990	YES

Switzerland (CH) Patents and Applications	Bib Data	INPADOC	From 1888	YES
	Full Text	Original (DE,FR,IT)	From 1995	YES
Austria (AT) Patents and Applications	Bib Data	INPADOC	From 1899	YES
	Full Text	Original (DE)	From 1998	YES
Brazil (BR) Applications	Bib Data	INPADOC	From 1974	YES
	Full Text	Original (PT)	From 1989	In Progress
Thailand (TH) Patents	Full Text	Original (Thai)	From 1982	YES
Thailand (TH) Utility Models	Full Text	Original (Thai)	From 1999	YES
Russia (RU) Patents	Full Text	Original (RU) Machine Translation (EN)	From 1994 From 1994	YES In Progress
Russia (RU) Industrial Design	Full Text	Original (RU)	From 1992	YES
Philippines (PH) Patents	Full Text	Original (EN)	From 1975	YES
Philippines (PH) Utility Models	Full Text	Original (EN)	From 1975	YES
Sweden (SE) Patents	Full Text	Original (SV)	From 1980	YES
Sweden (SE) Applications	Full Text	Original (SV)	From 1980	YES
Norway (NO) Patents	Full Text	Original (NO)	From 1965	YES
Norway (NO) Applications	Full Text	Original (NO)	From 1965	YES
Denmark (DK) Patents and Applications	Bib Data	INPADOC	From 1895	YES
	Full Text	Original (DK) Machine Translation (EN)	From 1980 From 1980	YES
Finland (FI) Patents and Applications	Bib Data	INPADOC	From 1842	YES
	Full Text	Original (FI) Machine Translation (EN)	From 1980 From 1980	YES
Belgium (BE) Applications	Bib Data	INPADOC	From 1993	YES
	Full Text	Original (EN)Machine Translation (EN)	From 1980 (till Sep 2014) From 1980 (till Sep 2014)	YES In Progress
Netherlands (NL) Applications	Bib Data	INPADOC	From 1913	YES
	Full Text	Original (NL) Machine Translation (EN)	From 1980 From 1980	YES
Netherlands (NL) Patents	Bib Data	INPADOC	From 1913	YES
	Full Text	Original (NL)	From 1997	YES

		Machine Translation (EN)	From 1997	
Luxembourg (LU) Applications	Bib Data	INPADOC	From 1933	YES
	Full Text	Original (EN, FR, DE) Machine Translation (EN)	From 1980 From 1980	YES
Mexico (MX) Applications	Bib Data	INPADOC + Original	From 1980 (Till Dec 2015)	YES
	Full Text	Original (ES)	From 1997 (till Dec 2015)	YES
African Regional Industrial Property Organization (AP) Patents	Bib Data	INPADOC+ Original	From 1985(till 2016)	YES
	Full Text	Original (EN)	From 1985(till 2016)	YES
African Regional Industrial Property Organization (AP) Applications	Bib Data	INPADOC+ Original	From 1971(till 2016)	YES
	Full Text	Original (EN)	From 1985(till 2016)	YES
Colombia (CO) Applications	Bib Data	INPADOC +Original	From 1995(till 2016)	YES
	Full Text	Original (ES)	From 1995(till 2016)	YES
German Democratic Republic (DD) Applications	Bib Data	INPADOC+ Original	From 1955(till 2003)	YES
	Full Text	Original (DE)	From 1993 (till 2003)	YES
German Democratic Republic (DD) Patents	Bib Data	INPADOC+ Original	From 1964 (till 1964)	YES
	Full Text	Original (DE)	From 1971 (till 1994)	YES
Eurasian Patent Organization (EA) Applications	Bib Data	INPADOC+ Original	From 1996 (till 2016)	YES
	Full Text	Original (RU)	From 1997 (till 2015)	YES
Eurasian Patent Organization (EA) Patents	Bib Data	INPADOC+ Original	From 1997 (till 2016)	YES
	Full Text	Original (RU)		In Progress
Israel (IL) Applications	Bib Data	INPADOC+ Original	From 1968 (till 2016)	YES
	Full Text	Original (EN)	From 2005 (till 2015)	YES
Israel (IL) Patents	Bib Data	INPADOC+ Original	From 1968 (till 2016)	YES
	Full Text	Original (EN)	From 2005	YES

			(till 2015)	
Morocco (MA) Patents	Bib Data	INPADOC+ Original	From 1977 (till 2016)	YES
	Full Text	Original (FR)	From 1979 (till 2016)	YES
Monaco (MC) Patents	Bib Data	INPADOC+ Original	From 1957 (till 2015)	YES
	Full Text	Original (FR)	From 1958 (till 2011)	YES
African Intellectual Property Organization (OA) Patents	Bib Data	INPADOC+ Original	From 1966 (till 2007)	YES
	Full Text	Original (FR)	From 1966 (till 2007)	YES
Taiwan (TW) Applications	Bib Data	INPADOC+ Original	From 2003 (till 2016)	YES
	Full Text	Original (EN,ZH)		YES In Progress
Taiwan (TW) Patents	Bib Data	INPADOC+ Original	From 1980 (till 2013)	YES
	Full Text	Original (EN,ZH)		YES In Progress
Tajikistan (TJ)	Bib Data	INPADOC+ Original	From 1996 (till 2012)	YES
	Full Text	Original (RU)	From 1996 (till 2012)	YES
Kyrgyzstan (KG)	Bib Data	INPADOC+ Original		YES
	Full Text	Original(UZ)	From 2003 (till 2014)	YES
Belarus (BY)	Bib Data	Original	From 1997 (till 2015)	YES
	Full Text	Original (RU)	From 2002	YES In Progress
Uzbekistan (UZ)	Bib Data	INPADOC+ Original	From 2002 (till 2014)	YES
	Full Text	Original (UZ)	From 2002 (till 2014)	YES
Republic of Moldova (MD)	Bib Data	INPADOC+ Original		YES
	Full Text	Original(RO)	From 2002 (till 2015)	YES
Georgia (GE) Patents	Bib Data	INPADOC+ Original	From 2000 (till 2016)	YES
	Full Text	Original(GE)	From 2001 (till 2015)	YES

Georgia (GE) Granted Utility Model	Bib Data	INPADOC+ Original	From 2000 (till 2016)	YES
	Full Text	Original(GE)	From 2001 (till 2013)	YES

APPENDIX B – PATSEER BIBLIO COVERAGE (AS OF OCTOBER 2016)

BIBLIO COVERAGE

The table below (updated as of 14th **October, 2016**) shows the current updated bibliographic contents of PatSeer

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		PUBLICATION YEAR		PUBLICATION DATE	
COUNTRY	**TYPE**	**EARLIEST**	**LATEST**	**EARLIEST**	**LATEST**
AP – African Regional Industrial Property Organization	Granted Patent	1985	2015	3-Jul-85	31-Aug-16
	Granted Utility Model	2002	2002	6-Jun-02	6-Jun-02
	Patent Application	1971	2015	7-Mar-71	31-Aug-16
AR – Argentina	Granted Patent	1965	2015	11-Feb-65	23-Mar-16
	Utility Model Application	1996	2015	20-Mar-96	23-Mar-16
AT – Austria	Granted Design Patent	2005	2005	15-Nov-05	15-Nov-05
	Granted Patent	1899	2016	10-Jan-00	15-Sep-16
	Granted Utility Model	1994	2016	25-Jul-94	15-Sep-16
	Patent Application	1914	2016	1-May-14	15-Sep-16
AM – Armenia	Granted Utility Model	2009	2009	26-Oct-09	26-Oct-09
	Patent Application	2001	2004	10-Jun-01	17-Mar-04
AU – Australia	Granted Design Patent	1986	2006	9-Oct-86	14-Jul-06
	Granted Innovation Patent	2001	2016	7-Jun-01	6-Oct-16
	Granted Patent	1937	2016	1-Sep-37	6-Oct-16
	Granted Petty Patent	1979	2016	13-Sep-79	6-Oct-16
	Patent Application	1917	2016	14-Mar-17	6-Oct-16
	Petty Patent Application	1985	1987	31-Jan-85	2-Jul-87
BA – Bosnia and Herzegovina	Granted Patent	1998	1999	6-Mar-98	2-Aug-99
	Other	2000	2000	6-Nov-00	6-Nov-00

	Patent Application	1998	2001	28-Dec-98	14-Sep-01
BE – Belgium	Granted Patent	1862	2014	17-Apr-00	2-Sep-14
	Patent Application	1993	2012	26-Jan-93	5-Jun-12
BG – Bulgaria	Granted Patent	1973	2014	15-Feb-73	29-Jul-16
	Granted Utility Model	1994	2014	30-Sep-94	29-Jul-16
	Patent Application	1973	2014	15-Feb-73	29-Jul-16
	Utility Model Application	1994	2006	18-Jan-94	31-Oct-06
BR – Brazil	Design Application	2013	2015	22-Oct-13	11-Aug-15
	Granted Design Patent	2013	2015	8-Oct-13	1-Sep-15
	Granted Patent	1995	2016	17-Jan-95	27-Sep-16
	Granted Utility Model	1972	2016	25-Apr-72	27-Sep-16
	Patent Application	1974	2016	18-Jul-74	27-Sep-16
	Utility Model Application	2015	2015	15-Sep-15	19-Jul-16
BY – Belarus	Other	1997	2013	30-Sep-97	30-Aug-14
CA – Canada	Granted Design Patent	1863	2016	16-Jan-00	22-Sep-16
	Granted Patent	1869	2016	2-Jan-00	1-Oct-16
	Reissued Patent	1973	2014	17-Apr-73	23-Dec-14
CH – Switzerland	Granted Patent	1888	2016	15-Jan-00	30-Sep-16
	Patent Application	1889	2016	15-Jan-00	30-Sep-16
CL – Chile	Design Application	2005	2015	7-Jan-05	29-Jul-16
	Granted Patent	2005	2005	7-Jan-05	3-Jun-05
	Granted Utility Model	2005	2005	18-Mar-05	3-Jun-05
	Patent Application	2005	2015	7-Jan-05	29-Jul-16
	Utility Model Application	2005	2015	7-Jan-05	29-Jan-16
CN – China	Granted Design Patent	2007	2013	21-Mar-07	13-Nov-13
	Granted Patent	1985	2016	10-Sep-85	5-Oct-16
	Granted Utility Model	1985	2016	10-Sep-85	28-Sep-16
	Patent Application	1985	2016	10-Sep-85	28-Sep-16
CO – Colombia	Granted Utility Model	2006	2006	31-May-06	31-May-06

Patent Application	1995	2015	13-Feb-95	31-May-16	
Utility Model Application	2012	2016	17-Dec-12	20-Jun-16	
CR – Costa Rica	Design Application	1996	2015	10-Apr-96	22-Jul-16
	Patent Application	1988	2015	13-Jul-88	29-Jul-16
	Utility Model Application	1996	2015	2-Jul-96	23-May-16
CS – Czechoslovakia (up to 1993)	Granted Patent	1911	2003	25-Aug-11	12-Nov-03
	Patent Application	1964	1992	15-Apr-64	28-Dec-92
CU – Cuba	Design Application	2013	2015	31-May-13	23-Dec-15
	Granted Patent	1983	2012	4-Oct-83	15-Oct-12
	Other	1968	1983	11-Nov-68	30-Sep-16
	Patent Application	1968	2015	12-Mar-68	30-Sep-16
CY – Cyprus	Granted Patent	1921	2016	6-May-21	22-Jun-16
CZ – Czech Republic	Granted Patent	1993	2016	17-Mar-93	20-Jan-16
	Granted Utility Model	1992	2016	16-Dec-92	20-Jan-16
	Patent Application	1993	2016	13-Jan-93	20-Jan-16
DD – German Democratic Republic	Granted Patent	1951	2002	14-Jun-51	24-Jan-02
	Granted Utility Model	1956	1961	16-Jul-56	24-Jun-61
	Patent Application	1955	2003	18-Aug-55	7-Aug-03
DE – Germany	Granted Patent	1877	2016	2-Jan-00	13-Oct-16
	Granted Utility Model	1928	2016	26-Jun-28	15-Sep-16
	Patent Application	1980	2016	5-May-80	13-Oct-16
DK – Denmark	Granted Patent	1895	2016	2-Jan-00	3-Oct-16
	Granted Utility Model	1992	2016	28-Aug-92	23-Sep-16
	Patent Application	1949	2016	22-Aug-49	8-Feb-16
DO – Dominican Republic	Design Application	2005	2016	14-Jun-05	30-Jun-16
	Patent Application	1964	2016	10-May-64	30-Jun-16
	Utility Model Application	2001	2016	31-Dec-01	15-Feb-16
DZ – Algeria	Granted Patent	2000	2005	28-Sep-00	8-Oct-05
EA – Eurasian Patent Office	Granted Patent	1997	2016	31-Mar-97	30-Sep-16

	Patent Application	1996	2016	1-Jul-96	30-Sep-16
EC – Ecuador	Design Application	1990	2015	29-Oct-90	29-May-15
	Patent Application	1990	2015	1-Oct-90	29-May-15
	Utility Model Application	1990	2015	1-Oct-90	30-Apr-15
EE – Estonia	Granted Patent	1996	2016	15-Feb-96	15-Sep-16
	Granted Utility Model	1994	2016	17-Oct-94	15-Sep-16
	Patent Application	1995	2016	15-Dec-95	15-Aug-16
EG – Egypt	Granted Patent	1976	2015	31-Jan-76	23-Jun-16
EP – European Patent Office	Granted Patent	1980	2016	9-Jan-80	12-Oct-16
	Patent Application	1978	2016	20-Dec-78	12-Oct-16
ES – Spain	Granted Patent	1919	2016	16-May-19	5-Oct-16
	Granted Utility Model	1930	2016	16-Feb-30	5-Oct-16
	Patent Application	1827	2016	16-Mar-72	4-Oct-16
	Utility Model Application	1929	2016	16-Oct-29	5-Oct-16
FI – Finland	Granted Design Patent	2012	2012	20-Sep-12	20-Sep-12
	Granted Patent	1922	2016	18-Jul-22	30-Sep-16
	Granted Utility Model	1992	2015	3-Feb-92	31-Aug-16
	Other	1974	2010	26-Jul-74	30-Sep-10
	Patent Application	1842	2015	4-Jan-00	31-Aug-16
	Utility Model Application	1992	2011	2-Jan-92	31-Oct-11
FR – France	Granted Patent	1855	2016	11-May-00	7-Oct-16
	Granted Utility Model	1969	2016	2-Aug-69	7-Oct-16
	Patent Application	1965	2016	10-Dec-65	7-Oct-16
	Utility Model Application	1969	2016	12-Sep-69	7-Oct-16
GB – United Kingdom	Granted Patent	1947	2016	5-Nov-47	12-Oct-16
	Patent Application	1782	2016	2-Jan-00	12-Oct-16
	Reissued Patent	1997	2015	9-Apr-97	24-Aug-16
GC – Gulf Coop. Council	Granted Patent	2002	2012	30-Oct-02	14-Nov-12
GE – Georgia	Granted Patent	2000	2015	10-Jan-00	27-Jun-16

	Granted Utility Model	2000	2015	10-Jan-00	25-May-16
GR – Greece	Granted Patent	1920	2015	10-Dec-20	31-Aug-16
	Granted Utility Model	1988	2015	10-Aug-88	22-Aug-16
	Patent Application	1988	2015	16-Dec-88	21-Sep-16
	Utility Model Application	1990	2015	19-Jan-90	21-Sep-16
GT – Guatemala	Design Application	1972	2015	3-Feb-72	28-Mar-16
	Patent Application	1961	2015	30-Dec-61	17-Jun-16
	Utility Model Application	1986	2015	29-Oct-86	19-Feb-15
HK – Hong Kong (S.A.R)	Granted Patent	1976	2016	5-Mar-76	30-Sep-16
HN – Honduras	Design Application	1996	2015	5-Feb-96	29-Jun-15
	Patent Application	1996	2015	19-Jan-96	12-Oct-15
	Utility Model Application	1996	2015	12-May-96	3-Aug-15
HR – Croatia	Granted Patent	1995	2016	31-Dec-95	23-Sep-16
	Patent Application	1994	2016	30-Apr-94	23-Sep-16
HU – Hungary	Granted Patent	1913	2016	7-Jul-13	28-Sep-16
	Granted Utility Model	1992	2016	28-Aug-92	29-Aug-16
	Patent Application	1970	2016	2-Mar-70	28-Sep-16
	Plant Patent Application	2008	2008	28-Mar-08	28-Mar-08
	Utility Model Application	1992	2011	28-Mar-92	28-Feb-11
ID – Indonesia	Granted Patent	1992	1996	29-Jul-92	30-Oct-96
	Patent Application	1988	2002	26-Nov-88	3-Jan-02
	Simple Patent	1996	2001	22-Jul-96	27-Dec-01
IE – Ireland	Granted Patent	1945	2016	2-May-45	5-Oct-16
	Other	1930	2000	3-Jan-30	13-Dec-00
	Patent Application	1990	2016	14-Mar-90	5-Oct-16
IL – Israel	Patent Application	1968	2015	25-Jan-68	31-Aug-16
IN – India	Granted Patent	1912	2016	5-Feb-12	7-Oct-16
	Patent Application	1990	2016	1990	7-Oct-16
	Design Application	2009	2016	15-May-09	7-Oct-16

IS – Iceland	Granted Patent	1925	2016	1-Apr-25	15-May-16
	Patent Application	1925	2016	26-Sep-25	22-Apr-16
IT – Italy	Granted Patent	1921	2015	28-Nov-21	3-Jun-16
	Granted Utility Model	1978	2014	12-May-78	10-Mar-14
	Patent Application	1953	2015	19-May-53	15-Jul-15
	Utility Model Application	1978	2015	2-Jan-78	1-Jul-15
JO – Jordan	Granted Patent	1971	2015	10-Oct-71	15-Mar-16
JP – Japan	Granted Design Patent	1962	2016	26-Jan-62	3-Oct-16
	Granted Patent	1855	2016	26-Oct-28	5-Oct-16
	Granted Utility Model	1913	2016	6-Feb-13	6-Oct-16
	Patent Application	1954	2016	7-Dec-54	6-Oct-16
	Utility Model Application	1966	1998	12-Dec-66	2-Apr-98
KE – Kenya	Granted Patent	1975	2011	11-Jul-75	30-Aug-11
KR – Republic of Korea	Granted Design Patent	2000	2005	15-Jun-00	22-Sep-05
	Granted Patent	1970	2016	20-Aug-70	13-Oct-16
	Granted Utility Model	1978	2016	10-Jan-78	13-Oct-16
	Patent Application	1983	2016	25-Jan-83	13-Oct-16
	Utility Model Application	1983	2016	25-Jan-83	13-Oct-16
KZ – Kazakhstan	Other	1993	2012	10-Dec-93	16-Apr-12
LT – Lithuania	Granted Patent	1992	2016	15-Oct-92	26-Sep-16
	Patent Application	1994	2016	25-Mar-94	26-Sep-16
LU – Luxembourg	Granted Patent	1946	1988	17-Dec-46	3-May-88
	Patent Application	1933	2015	3-Nov-33	29-Aug-16
	Supplementary Protection Certificate Application	1994	2015	3-Feb-94	16-Aug-16
LV – Latvia	Granted Patent	1993	2016	10-Jun-93	20-May-16
	Patent Application	1994	2016	10-Mar-94	20-May-16
MA – Morocco	Granted Patent	1977	2015	6-Jul-77	31-May-16
MC – Monaco	Granted Patent	1957	2015	13-Dec-57	15-Apr-16
MD – Moldova	Granted	1994	2016	31-Jan-94	30-Sep-

	Patent				16
	Granted Utility Model	1995	2009	30-Jan-95	31-May-09
	Patent Application	1994	2016	30-Sep-94	30-Sep-16
	Plant Patent Application	2003	2004	28-Feb-03	30-Jun-04
	Utility Model Application	1994	2009	31-Aug-94	31-May-09
ME – Montenegro	Patent Application	2010	2011	10-Feb-10	20-Dec-11
MN – Mongolia	Granted Patent	1972	1989	20-Nov-72	15-Jun-89
MT – Malta	Patent Application	1968	1992	25-Jun-68	8-May-92
MW – Malawi	Patent Application	1973	1994	9-May-73	12-Oct-94
MX – Mexico	Granted Patent	1980	2015	2-Jan-80	29-Jan-16
	Granted Utility Model	1992	1992	10-Dec-92	10-Dec-92
MY – Malaysia	Granted Patent	1953	2015	31-Dec-53	30-Aug-16
NI – Nicaragua	Patent Application	2003	2009	5-Nov-03	24-Mar-09
NL – Netherlands	Granted Patent	1913	2015	7-May-13	27-Aug-15
	Granted Supplementary Protection Certificate	1993	2010	1-Jul-93	1-Sep-16
	Other	1981	1981	3-Aug-81	3-Aug-81
	Patent Application	1913	2015	1-Jul-13	6-Sep-16
	Supplementary Protection Certificate Application	1993	2010	16-Feb-93	19-Apr-16
NO – Norway	Granted Patent	1909	2016	19-Jan-09	13-Sep-16
	Granted Supplementary Protection Certificate	2004	2016	1-Jun-04	26-Sep-16
	Other	1998	1998	30-Jan-98	25-Aug-15
	Patent Application	1966	2016	8-Dec-66	29-Aug-16
	Supplementary Protection Certificate Application	2004	2016	5-Jan-04	12-Sep-16
NZ – New Zealand	Patent Application	1978	2016	6-Mar-78	30-Sep-16
OA – African Intellectual Property Organization	Granted Patent	1966	2007	15-Jan-66	13-Apr-07

PA – Panama	Patent Application	1996	2010	20-May-96	27-Jul-10
PE – Peru	Patent Application	1992	2015	19-Apr-92	31-Dec-15
	Utility Model Application	1995	2015	9-Jan-95	29-Dec-15
PH – Philippines	Granted Design Patent	1981	2016	2-Dec-81	11-May-16
	Granted Patent	1975	2016	3-Jul-75	2-May-16
PL – Poland	Granted Patent	1930	2016	30-Oct-30	30-Sep-16
	Granted Utility Model	1996	2016	31-Jan-96	30-Sep-16
	Patent Application	1977	2016	26-Sep-77	26-Sep-16
	Utility Model Application	1993	2016	23-Aug-93	26-Sep-16
PT – Portugal	Granted Patent	1976	2016	12-Mar-76	24-Jun-16
	Granted Utility Model	1967	2015	23-Jun-67	20-Jun-16
	Other	1977	1998	1-Jul-77	31-Aug-98
	Patent Application	1971	2016	1-Nov-71	30-Jun-16
RO – Romania	Granted Patent	1982	2016	30-Sep-82	30-Sep-16
	Granted Utility Model	2011	2016	28-Jan-11	30-Sep-16
	Patent Application	1907	2016	8-Jan-07	30-Sep-16
RS – Serbia	Granted Patent	2006	2015	27-Oct-06	27-Feb-15
	Granted Petty Patent	2006	2015	27-Oct-06	31-Dec-15
	Patent Application	2006	2015	27-Oct-06	31-Aug-16
RU – Russian Federation	Granted Design Patent	1994	2015	25-May-94	16-Apr-15
	Granted Patent	1975	2016	25-Apr-75	10-Oct-16
	Granted Utility Model	1994	2016	25-Jun-94	10-Oct-16
	Patent Application	1995	2016	10-Nov-95	10-Oct-16
SA – Saudi Arabia	Application	2011	2012	9-Jun-11	12-Jul-12
SE – Sweden	Granted Patent	1888	2016	17-Feb-00	4-Oct-16
	Other	1971	2010	4-Jan-71	5-Apr-16
	Patent Application	1948	2016	13-Jul-48	27-Sep-16
SG – Singapore	Granted Patent	1983	2016	25-Feb-83	29-Sep-16
	Patent Application	1995	1995	18-Aug-95	22-Dec-95
SI – Slovenia	Granted Patent	1992	2016	27-Nov-92	29-Jan-16

	Other	1998	2016	30-Jun-98	29-Jan-16
SK – Slovakia	Granted Patent	1993	2016	8-Dec-93	2-Feb-16
	Granted Utility Model	2007	2016	3-May-07	2-Feb-16
	Patent Application	1993	2016	7-Jul-93	3-Oct-16
	Utility Model Application	2008	2016	7-Apr-08	2-Feb-16
SM – San Marino	Design Application	2001	2016	5-Apr-01	1-Jul-16
	Granted Design Patent	2001	2016	5-Apr-01	25-Feb-16
	Granted Patent	2000	2016	16-Feb-00	31-Aug-16
	Patent Application	2000	2015	16-Feb-00	5-May-15
SU – Soviet Union (USSR)	Granted Patent	1919	2011	28-Feb-19	10-Aug-16
SV – El Salvador	Granted Patent	1970	2015	10-Mar-70	24-Jun-16
TH – Thailand	Patent Application	2004	2016	26-Apr-04	5-Feb-16
TJ – Tajikistan	Granted Patent	1996	2007	16-Jul-96	16-Jul-07
	Granted Petty Patent	1990	2015	1-Jan-90	30-Mar-15
	Granted Utility Model	1998	2005	14-Nov-98	6-May-05
	Patent Application	1998	2007	28-Oct-98	5-Jun-07
TR – Turkey	Granted Patent	1973	2005	1-Jan-73	21-Sep-05
	Granted Utility Model	1996	2013	21-Jun-96	21-Jan-13
	Patent Application	1996	2013	21-Jun-96	22-Aug-13
	Utility Model Application	2000	2013	21-Jul-00	21-Jan-13
TT – Trinidad and Tobago	Granted Patent	1994	1995	16-Jun-94	8-Dec-95
TW – Taiwan	Granted Design Patent	2010	2010	1-Jul-10	1-Jul-10
	Granted Patent	1991	2015	21-Jan-91	21-Jul-16
	Granted Utility Model	1991	2015	1-Aug-91	1-Aug-16
	Patent Application	2003	2015	1-May-03	16-Jul-16
UA – Ukraine	Granted Patent	1987	2015	7-Jan-87	26-Sep-16
	Granted Utility Model	2000	2015	16-Oct-00	26-Sep-16
US – United States of America	Granted Design Patent	1865	2016	26-Nov-07	11-Oct-16
	Granted Patent	1790	2016	31-Jul-1790	11-Oct-16

	Granted Plant Patent	1850	2016	18-Aug-31	11-Oct-16
	Patent Application	1975	2016	28-Jan-75	13-Oct-16
	Plant Patent Application	2001	2016	2-Aug-01	13-Oct-16
	Reissued Patent	1839	2016	23-Oct-00	11-Oct-16
	Statutory Invention Registration	1985	2014	3-Dec-85	2-Sep-14
UY – Uruguay	Design Application	2002	2013	31-Jan-02	31-Dec-13
	Granted Design Patent	2013	2016	28-Jun-13	31-Aug-16
	Patent Application	2000	2016	23-Feb-00	31-Aug-16
	Utility Model Application	2002	2016	31-Jan-02	31-Aug-16
UZ – Uzbekistan	Other	1997	2011	30-Dec-97	29-Jul-11
VN – Vietnam	Granted Patent	1984	2014	6-Jul-84	25-Jan-15
	Granted Utility Model	1989	1996	24-Sep-89	25-Oct-96
WO – WIPO	Patent Application	1978	2016	19-Oct-78	13-Oct-16
YU – Yugoslavia	Granted Patent	1964	2006	30-Sep-64	17-Aug-06
	Granted Petty Patent	1997	2006	8-Jan-97	17-Aug-06
	Patent Application	1973	2006	28-Feb-73	17-Aug-06
ZA – South Africa	Granted Patent	1968	2014	6-Sep-68	27-Aug-14
ZM – Zambia	Granted Patent	1986	1991	29-Sep-86	30-Aug-91
	Patent Application	1968	1994	16-Oct-68	25-May-94
ZW – Zimbabwe	Granted Patent	1980	1995	3-Sep-80	25-Jan-95

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