

STN[®]

Performing Effective Freedom
to Operate Searches on STN[®]

STN Patent Forum

July 2005

Session Agenda

- Freedom to Operate (FTO)
- Files, strategies and tools for FTO search, analysis and visualization
- Current awareness for FTO searches

Why Does Freedom to Operate Matter?

- *Merck KGaA v. Integra (on certiorari at the Supreme Court, 2005)*
- On April 20, 2005, oral arguments heard by U.S. Supreme Court

Session Agenda

- **Freedom to Operate (FTO)**
- Files, strategies and tools for FTO search, analysis and visualization
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Obtaining a patent does not mean you have freedom to operate

- A patent gives the assignee the right to stop *others* from making, using and selling the invention covered by the patent claims
- A patent does not provide the assignee with the right to practice the invention, if the invention infringes on other assignees' dominant or overlapping patent claims

Patent assignees need freedom to operate...

- In order to develop, test, manufacture and market a product, device or service
- To avoid infringing the valid IP rights of others
- To produce or market in a country or region of interest

Freedom to operate is assessed at multiple points in the business cycle

- Investigate at the beginning of technology development
- Provide assurance to potential investors and partners
- Consider acquisition of a patent portfolio by purchase or license

Restricted FTO is a costly problem for organizations worldwide

- Inability or delay in commercializing a product, device or service because it would infringe on one or more patents
- Options
 - Infringe the blocking patents
 - Expensive and time-consuming litigation
 - Forced withdrawal from market
 - Payment of damages
 - Develop a design around

Obtaining a license from each blocking patent holder can be difficult

- Can attempt to purchase, license or cross-license blocking patents, but ...
 - Patent owners may be unwilling to license the needed technology
 - New project may depend on multiple innovations, the rights to which may be held by many others
 - Licenses must be negotiated in each country
 - Licensing technology can be cost prohibitive

Restricted FTO can be addressed by less costly options

- Conduct a FTO determination to assess whether apparent blocking patents
 - Are still in force
 - Were issued in the country or region of market interest
 - Would actually be infringed by the product, device or service
 - Are legally valid
- May have exemption for experimental use, FDA submission

Freedom to operate determinations require multiple searches

- **Clearance search** for issued or pending blocking patents that disclose or claim a product, process or device of interest
- **Invalidity search** for prior art to invalidate potential blocking patents
- **Current awareness searches** to monitor initial blocking patents, find new blocking patents and new prior art

FTO determination is a complex process

1. Conduct a *clearance search* to find patents documents claiming and disclosing the product, device or service of interest
2. Conduct a title search of blocking patents to identify ownership
3. Order and review blocking patent file wrappers

FTO determination is a complex process – (cont'd)

4. Conduct prior art *invalidity search* of blocking patents
5. Conduct legal research and analysis of pertinent case law
6. Prepare written opinion, analyzing:
 - Patents believed not infringed
 - Blocking patents believed invalid
 - Blocking patents that could be designed around
 - Blocking patents to license

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- Freedom to Operate (FTO)
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STN provides resources for FTO searching of claimed technology

- Files with searchable claims fields
- Files with searchable patent classification fields
 - Original classifications are based on claims
 - ICM, NLCM, INCLM
- Files with structures from Markush claims
 - MARPAT[®], MARPATprevSM
- Files with displayable claimed sequence locations
 - DGENE

Search STN files with text searchable claim fields for FTO clearance

- 8 STN files with text searchable **claim** fields
 - USPATFULL/USPAT2
 - EPFULL
 - FRFULL
 - GBFULL
 - PATDPAFULL
 - PCTFULL
 - WPIFV
- Claim /CLM
- Main claim /MCLM
- Exemplary claim /ECLM
- Claims are also displayable with text labels in IFIPAT, IFICDB

Example 1: FTO Claim text search

Search Question: Conduct a text search in the claims of patents to determine freedom to operate.

Search Strategy

to do an FTO claims text search...

1. Run a preliminary search in a file that allows claim searching
2. Extend the search to a multiframe environment
 - Create a custom cluster that contains all files which support claim searching
3. Display records of interest

Search a single file, limiting the search to the /CLM field

```
=> S ((NANOFIBER? OR NANOFIBR?) (L) BIOACTIVE) /CLM
L1          4 ((NANOFIBER? OR NANOFIBR?) (L) BIOACTIVE) /CLM

=> D L1 1 BIB HIT

L1  ANSWER 1 OF 4  USPATFULL on STN
AN  2005:111616  USPATFULL Full-text
TI  Nanofibrillar structure and applications including c
    culture
IN  Shindler, Melvin S., Piscataway, NJ, UNITED STATES
    Chung, Hoo Young, Bloomington, MN, UNITED STATES
PI  US 2005095695      A1    20050505
AI  US 2003-703169     A1    20031105 (10)
DT  Utility
FS  APPLICATION
LREP  MERCHANT & GOULD PC, P.O. BOX 2903, MINNEAPOLIS, MN, 55402-0903, US
CLMN  Number of Claims: 135
ECL   Exemplary Claim: 1
DRWN  6 Drawing Page(s)
LN.CNT 2185
```

Searching in the claims identifies patents conveying legal rights to the technology.

```
CLM  What is claimed is:
      1. A nanofibrillar structure comprising an environment for
      proliferation and/or differentiation of cells in cell culture
      comprising one or more nanofibers and a substrate, wherein the
      nanofibrillar structure is defined by a network of one or more
      nanofibers...
```

Create a cluster of the STN patent files containing a searchable claim field

```
=> SET CLUSTER
ENTER CLUSTER NAME OR (?):.CLAIMFILES
ENTER LIST OF FILE NAMES OR (?):USPATFULL, USPAT2, PCTFULL, EPFULL, FRFULL,
                                GBFULL, PATDPAFULL, WPIFV
MORE FILES, (NONE) OR ?:NONE
CLUSTER '.CLAIMFILES' DEFINED AS 'U
                                FRFULL,GBFULL, PATDPAFULL, WP
SET COMMAND COMPLETED
```

Use the SET CLUSTER command to create a custom cluster.

```
=> INDEX .CLAIMFILES
INDEX 'USPATFULL, USPAT2, PCTFULL, EPFULL, FR
      WPIFV'
ENTERED AT 12:27:59 ON 05 MAY 2005
8 FILES IN THE FILE LIST IN STNINDEX
```

Use the INDEX command to preview the cluster to identify files having hits in the claims.

```
=> S ((NANOFIBER? OR NANOFIBR?) (L) BIOACTIVE)/CLM
      4 FILE USPATFULL
      4 FILE PCTFULL
```

2 FILES HAVE ONE OR MORE ANSWERS, 8 FILES SEARCHED IN STNINDEX

```
L1 QUE ((NANOFIBER? OR NANOFIBR?) (L) BIOACTIVE)/CLM
```

Extend the search to files identified during the INDEX search

```
=> FILE USPATFULL PCTFULL

=> S ((NANOFIBER? OR NANOFIBR?) (L) BIOACTIVE)/CLM
L2          4 FILE USPATFULL
L3          4 FILE PCTFULL

TOTAL FOR ALL FILES
L4          8 ((NANOFIBER? OR NANOFIBR?) (L) BIOACTIVE)/CLM

=> SET DUPORDER FILE
=> DUP REM L4
PROCESSING COMPLETED FOR L4
L5          8 DUP REM L4 (0 DUPLICATES REMOVED)
           ANSWERS '1-4' FROM FILE USPATFULL
```

Use the (L) proximity operator to capture search terms recited in the dependent claims.

The FTO search can be run in multiple files, more comprehensively identifying patents *claiming* the product or service of interest.

Display records of interest

You may also browse the answers using the no cost D SCAN format or the D KWIC format (which includes hit terms and 20 words on either side).

=> D BIB HIT

L5 ANSWER 3 OF 8 USPATFULL on STN

AN 2004:128037 USPATFULL

TI Embolic device made of nanofibers

IN Lee, Elaine, Sunnyvale, CA, UNITED STATES

Seifert, Paul Steven, Oregon House, CA, UNITED STATES

PA Scimed Life Systems, Inc. (U.S. corporation)

PI US 2004098023 A1 20040520

AI US 2002-295727 A1 20021115 (10)

FS APPLICATION

CLM What is claimed is:

1. A vaso-occlusive device, comprising: a core member; and a fibrous structure carried by the core member, the fibrous structure comprises one or more strands of **nanofibers**.

. . .

6. The vaso-occlusive device of claim 1, wherein the fibrous structure comprises a **bioactive** agent.

Search STN files with searchable patent classification fields for FTO clearance

- > 50 STN files have a searchable patent technology **classification** fields

- AEROSPACE
- BIOBUSINESS®
- BIOSIS®
- CA/CAPLUSSM files
- CASREACT®
- DPCI
- ENCOMPPAT
- ENERGY
- EPFULL
- FRFULL
- GBFULL
- IFIPAT
- INPADOC
- LITALERT®
- PAPERCHEM2
- PATDPA
- PATDPAFULL
- PATDPASPC
- PCTFULL
- RAPRA
- RDISCLOSURE
- TULSA
- USPATALL
- WPINDEX/WPIFV

Four patent classification systems can be searched and displayed on STN

- U.S. National Classification (NCL)
- International Patent Classification (IPC)
- European Classification (ECLA)
- Japanese Patent Classification (F-terms)

Example 2: FTO Classification search

Search Question: Compare the results of an FTO search conducted without NCL codes to one that includes NCL codes in the search query.

Search Strategy

to do an FTO classification search...

1. Run a preliminary free-text search in a file that allows claim searching
2. Extend the search to include NCL coding
 - NCL classes may be found in the NCL thesaurus of USPATFULL or by visiting <http://www.uspto.gov/web/offices/opc/>
3. Display records of interest

Including the patent classification codes uncovered 378 additional documents

```
=> FILE USPATALL
```

```
=> S (HUMAN (L) NERVOUS (L) CELL#)/CLM
```

```
L1          778 FILE USPATFULL
```

```
L2          31 FILE USPAT2
```

```
TOTAL FOR ALL FILES
```

```
L3          809 (HUMAN (L) NERVOUS (L) CELL#)/CLM
```

```
=> S (HUMAN (L) NERVOUS (L) CELL#)/CLM OR 435368000/NCL
```

```
L4          1138 FILE USPATFULL
```

```
L5          49 FILE USPAT2
```

```
TOTAL FOR ALL FILES
```

```
L6          1187 (HUMAN (L) NERVOUS (L) CELL#)/CLM OR 435368000/NCL
```

```
=> S L6 NOT L3
```

```
L7          360 FILE USPATFULL
```

```
L8          18 FILE USPAT2
```

```
TOTAL FOR ALL FILES
```

```
L9          378 L6 NOT L3
```

Display a record of interest

=> D 1 BIB HIT CLM

L9 ANSWER 1 OF 378 USPATFULL on STN

AN 2005:111627 USPATFULL

TI Use of cyclic AMP and ascorbic acid to produce dopaminergic neurons
from

embryonic stem cells

IN Carpenter, Malissa K., London, CANADA

Thies, R. Scott, Pleasanton, CA, UNITED STATES

PI US 2005095707 A1 20050505

AI US 2004-9504 A1 20041210 (11)

PRAI US 2000-205600P 20000517 (60)

US 2000-213739P 20000622 (60)

US 2000-257608P 20001222 (60)...

FS APPLICATION

LREP GERON CORPORATION, 230 CONSTITUTION DRIVE, MENLO PARK, CA, 94025, US

NCL NCLM: 435/368.000

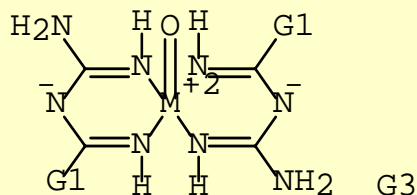
CLM What is claimed is:

1. A method for making dopaminergic neuronal cells from human embryonic stem (hES) cells, comprising: a) differentiating hES cells into a neural progenitor cell population in which at least 60% of the cells are Nestin positive; b) culturing the Nestin positive progenitor cells in a culture medium comprising a neurotrophin, and either cyclic adenosine monophosphate (cAMP) or a compound that elevates intracellular cAMP levels; and c) harvesting a cell...

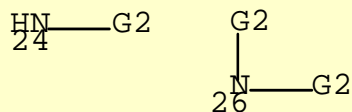
Search STN files with Markush structure fields for FTO clearance

- MARPAT, MARPATprev

MSTR 1



G1 = NH2 / 24 / 26



G2 = Me / Et / Pr-n / Pr-i / Bu-n / cycloalkyl / Ph /
CH2CH2Ph

G3 = V

MPL: claim 1

This MARPAT record displays a Markush structure for vanadium biguanide complexes from Chinese Patent CN1476828 claim 1. MPL= Markush patent location

DGENE records indicate where a sequence occurs

=> D BIB PSL

```
L1 ANSWER 19 OF 140 DGENE COPYRIGHT 2005 The Thomson Corp on STN
AN ADW05652 DNA DGENE
TI Detecting the presence of bacteria, yeast and mold in test samples
comprises employing a polymerase chain reaction and primer and probe
sets that are based on the genes of Alicyclobacillus, Geobacillus, or
molds and yeasts.
IN Wang H; Luo H; Connor C; Schwartz S; Yousef A; Wan K
PA (WANG-I) WANG H.
(LUOH-I) LUO H.
. . .
PI US 2004265850 A1 20041230 187
AI US 2003-727261 20031202
PRAI US 2002-430202P 20021202
US 2003-500736P 20030905
US 2003-513246P 20031022
DT Patent
LA English
OS 2005-047614 [05]
DESC 16S rRNA gene-specific PCR primer - SEQ ID 9.
PSL Claim 2; SEQ ID NO
```

Search these STN files to identify patents *disclosing* a product, device or service

- Patent Full Text Files
 - USPATFULL, USPAT2, EPFULL, FRFULL, GBFULL, PATDPAFULL, PCTFULL
- Broad coverage patent family files
 - CAplus, INPADOC, WPI
- National patent files
 - IFI, FRANCEPAT, JAPIO, KOREAPAT, PATDPASPC, RUSSIAPAT

Other STN files are useful for FTO clearance and invalidity searching

- Legal Status
 - INPADOC, IFICLS, IMSPATENTS, PCTFULL, FRFULL, GBFULL, PATDPAFULL, BIOTECHABS, BIOTECHDS, DGENE, LITALERT, IFIPAT, CAplus
- Structure searchable files
 - CAS REGISTRYSM, BEILSTEIN, GMELIN, DRUGU, PS, CASREACT[®], CHEMINFORMRX, DJSMONLINE, MARPAT, MARPATPREV, WPINDEX/WPIDS/WPIX
- Reaction searchable files
 - CASREACT, CHEMINFORMRX, DJSMONLINE, PS
- Sequence searchable files
 - REGISTRY, DGENE, GENBANK[®], PCTGEN

FTO search strategies

- Key word
 - Full text files
 - Search claims fields (CLM, ECLM, MCLM)
 - Bibliographic files
 - Take advantage of indexing and thesauri
- Patent classification for emerging technologies
 - Business methods (US CL 705)
 - Nanotechnology (US CL 977)
- Inventors, assignees, licensees (business files)
- Citing and cited patents and references
- Patent family
- Legal Status

The type of invention guides the search strategy

- Invention Categories
 - Product
 - Composition
 - Manufacture
 - Device or apparatus
 - Method of making
 - Method of using
 - Improvement of any of these

The type of invention guides the search strategy (cont'd)

Type of Invention	Search Strategies						
Product	RN	Names	Classification	Structures Specific and Markush	Properties	Citation	Sequences
Device		Keyword	Classification			Citation	
Method of making		Keyword	Classification	Reactions		Citation	CAS Roles
Method of using		Keyword	Classification	Reactions		Citation	CAS Roles

Example 3: FTO product search

Search Question: Search for FTO information with respect to analogs, derivatives and formulations of Xolair, including:

- Blocking patents and published applications,
- Patent family information,
- Patent assignee and inventor information,
- Patent Countries, and
- Legal status information.

Search Strategy

to do an FTO product search...

1. To identify blocking patents and published patent applications, search
 - Systematic, trade and laboratory names
 - Registry numbers
 - Structures (Specific and Markush)
 - Properties
 - Sequences, if applicable
 - Patent classifications for product

Search Strategy, *cont*

2. Identify blocking patent families
3. Citation search to find related patents
4. Search and analyze priority, filing, publication, issue and expiration dates
5. Analyze results to identify inventors and assignees

Find the substance in REGISTRY

```
=> FILE REG
FILE 'REGISTRY' ENTERED AT 13:47:47 ON 05 MAY 2005

=> S XOLAIR/CN
L1          1 XOLAIR/CN

=> D
L1  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2005 ACS on STN
RN  242138-07-4  REGISTRY
ED  Entered STN:  28 Sep 1999
CN  Immunoglobulin G1, anti-(human immunoglobulin E Fc region) (human-
    mouse monoclonal E25 clone -G1TE25 - gamma - chain) - diazotized
    OTHER NAMES:
CN  Omalizumab
CN  rhuMab-E 25
CN  Xolair
FS  PROTEIN SEQUENCE
...
SR  US Adopted Names Council (USAN)
LC  STN Files:  ADISINSIGHT, BIOSIS, BIOTECHNO, CA, CAPLUS, DDFU, DRUGU,
    EMBASE, IMSDRUGNEWS, IMSPATENTS, IMSRESEARCH, IPA, MRCK*, PHAR,
    PROUSDDR, TOXCENTER, USAN, USPAT2, USPATFULL
    (*File contains numerically searchable property data)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
*** USE 'SQD' OR 'SQIDE' FORMATS TO DISPLAY SEQUENCE ***
```

For more comprehensive retrieval, begin the substance search in the REGISTRY file to identify other names and registry numbers. Note hit STN files listed in the LC field.

SELECT information for searching in other files

```
=> SEL CHEM
```

```
E1 THROUGH E6 ASSIGNED
```

```
=> D SEL
```

```
E1          1      IMMUNOGLOBULIN G1, ANTI-(HUMAN IMMUNOGLOBULIN E FC  
REGION) (HUMAN-MOUSE MONOCLONAL E25 CLONE PSVIE25  
.GAMMA.-CHAIN), DISULFIDE WITH HUMAN-MOUSE MONOCLONAL  
E25 CLONE PSVIE25 .KAPPA.  
-CHAIN, DIMER/BI
```

```
E2          1      OMALIZUMAB/BI
```

```
E3          1      RHUMAB-E 25/BI
```

```
E4          1      XOLAIR/BI
```

```
E5          1      242138-07-4/BI
```

```
E6          1      339543-13-4/BI
```

SELECT CHEM extracts chemical names and current and deleted registry numbers for search in other files.

```
=> QUE E1-E6
```

```
L2      QUE ("IMMUNOGLOBULIN G1, ANTI-(HUMAN IMMUNOGLOBULIN E FC REGION)  
(HUMAN-MOUSE MONOCLONAL E25 CLONE PSVIE25 .GAMMA.-  
CHAIN), DISULFIDE WITH HUMAN-MOUSE MONOCLONAL E25 CLONE  
PSVIE25 .KAPPA.-CHAIN, DIMER"/BI OR OMALIZUMAB/BI OR  
"RHUMAB-E 25"/BI OR XOLAIR/BI OR 242138-07-4/BI OR  
339543-13-4/BI)
```

Find information in CAPLUS

```
=> FILE CAPLUS
```

```
=> S L2 AND PATENT/DT
```

```
4688571 PATENT/DT
```

```
L3 14 L3 AND PATENT/DT
```

```
=> D TI 1-14
```

```
...
```

```
L3 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
```

```
TI Method of treating airway diseases with beta-adrenergic inverse  
agonists
```

```
...
```

```
L3 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
```

```
TI Combination antihistamine medications
```

```
...
```

```
L3 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
```

```
TI Combination treatments for allergic disease comprising administering  
an anti-IgE antibody and antiallergic compound
```

```
...
```

```
L3 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
```

```
TI Compositions for use in treating IgE-associated disorders
```

```
...
```

```
L3 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
```

```
TI Antibody diversity generation
```

This search retrieves patents which disclose or claim the substance by any of its names or registry numbers. Some of these patents may be relevant to FTO with respect to new derivatives, analogs or formulations of Xolair.

Extend the search to additional files using the SELECTed terms from REGISTRY

```
=> FILE WPINDEX INPADOC
```

```
=> S L2
```

```
L4          4 FILE WPINDEX
```

```
L5          0 FILE INPADOC
```

```
TOTAL FOR ALL FILES
```

```
L6          4 L2
```

```
=> D TI 1-4
```

```
L6 ANSWER 1 OF 4 WPINDEX COPYRIGHT 2005 THE THOMSON CORP on STN
```

```
TI Composition used for treating e.g. asthma, chronic obstructive  
pulmonary disease, cystic fibrosis, dyspnea, emphysema, pain, allergic  
rhinitis and cancer, comprises carrier, non-glucocorticoid steroids  
and anti-immunoglobulin E antibody.
```

```
...
```

```
L6 ANSWER 3 OF 4 WPINDEX COPYRIGHT 2005 THE THOMSON CORP on STN
```

```
TI Use of anti-IgE antibody and antiallergic compound in the manufacture  
of medicament for the treatment allergic disease e.g. allergic asthma,  
perennial allergic rhinitis and atopic dermatitis.
```

Merge answer sets from multiple file substance search

=> FILE CAPLUS WPINDEX INPADOC

=> DUP IDE L3 L6

PROCESSING COMPLETED FOR L3

PROCESSING COMPLETED FOR L6

L7 18 DUP IDE L3 L6 (INCLUDES 4 SETS OF DUPLICATES)
 ANSWERS '1-14' FROM FILE CAPLUS
 ANSWERS '15-18' FROM FILE WPINDEX

Retain records from all files to maximize retrieval from extended patent family search.

Find extended patent family members

```
=> FSEARCH L7
*** ITERATION 1 ***
SEL L7 1- PN,APPS
L8          SEL L7 1- PN APPS :      126 TERMS
L12         97 L8

*** ITERATION 2 ***
SEL L12 1- PN,APPS
L8          SEL L7 1- PN APPS :      178 TERMS
L12         99 L8

*** ITERATION 3 ***
SEL L12 1- PN,APPS
L8          SEL L7 1- PN APPS :      180 TERMS
L12         99 L8

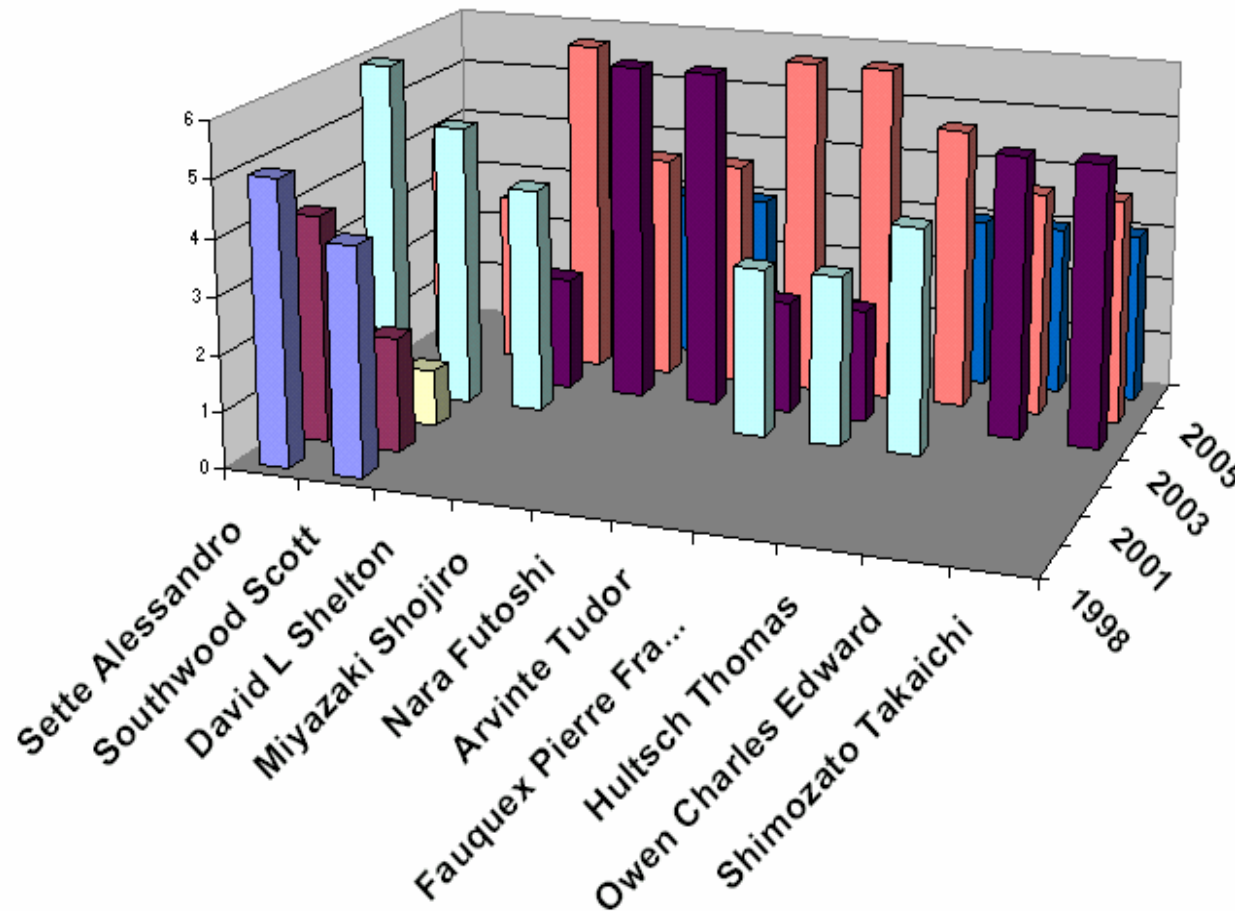
FSORT L12
L13         99 FSO L12

          13 Multi-record Families   Answers 1-99
            Family 1                 Answers 1-4
            Family 2                 Answers 5-6
            ...
            Family 12                Answers 85-93
            Family 13                Answers 94-99
          0 Individual Records
```

The patent family search identified 13 multi-record patent families and retrieved 81 additional extended patent family records.

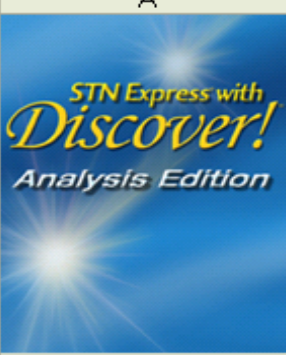
Use STN Express[®] Analyze Plus to visualize inventor information

Analysis of Inventor by Publication Year



Analyze Plus works in concert with MS Excel to provide 3-D charts. This chart visualizes inventor publication patterns related to Xolair patents.

STN Express Analyze Plus also cross-tabulates assignee information

	A	B	C	D	E	F	G	H
1		1998	2000	2001	2002	2003	2004	2005
2	Novartis			1	11	10	16	6
3	Genentech				12	8	18	4
4	Epimmune	5	4	2	5		4	
5	Sankyo					6	4	3
6	Maxygen			3	4			3
7	Inverseon							4
8	Pharmexa						4	
9	Sette A	2	1	1	2		1	
10	Southwood S	2	1	1	2		1	
11	Arvinte T				1	1	2	
12	Ball H A							3
					1	1	2	

The Analyze Plus co-occurrence matrix is interactive and will link you directly to documents of interest. This cross-tabulation provides an analysis of patenting patterns by assignees over time, ranked by frequency.

Analyze country coverage for international FTO

	A	B	C	D	E	F	G
1		CN	DK	GB	JP	US	WO
2	WO		3	6	3	31	12
3	US			6	3	23	17
4	EP			6	3	12	17
5	AU		2	3	2	13	10
6	JP			3	3	9	12
7	BR			6	3	3	11
8	CA			3	1	6	12
9	CN	1		2		2	1
10	IL			1		2	3
11	GB			2			
12	KR				1	1	
	MV					2	1

Application countries for Xolair-related patents are listed in column A. Freedom to operate in these countries may have to be negotiated. Priority countries are listed in row 1, indicating earliest filings and possibly Xolair markets of greater interest.

Extend the search to other STN files

```
=> FILE IMSPATENTS
=> S L2
L7      676 ("IMMUNOGLOBULIN G
          (HUMAN-MOUSE MONO
          DISULFIDE WITH H
          .KAPPA.-CHAIN, D
          25"/BI OR XOLAIR
=> D 12 ALL
L7      ANSWER 12 OF 676  IMSPATENT
AN      2004:12783  IMSPATENTS
SO      Patents International, (28
CN      Generic Name: omalizumab; o
CN      Lab Code: rhuMab-E25
CN      Trade Name: XOLAIR
RN      242138-07-4
STR     STRUCTURE DIAGRAM IS NOT AVAILABLE
CC      R3C Non-Steroidal Respiratory Anti-inflammatories; R1B Systemic
          Rhinologicals; R6A Systemic Antihistamines; R3X All Other
          Bronchodilators
APP     asthma; allergy; allergic rhinitis
PA      Protein Design (USA)
. . .
```

The IMSPATENTS file contains patent coverage and legal status information for commercially significant drugs, useful for FTO studies. In this example, we search the names and RNs for Xolair to find comprehensive information about patents disclosing and claiming the product. This portion of the record provides information about the substance, its classifications and applications.

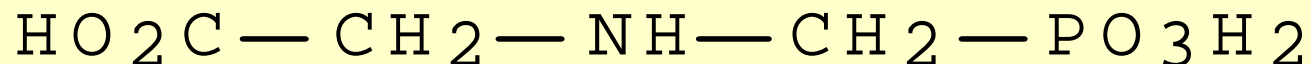
IMSPATENTS records provide priority, application, and expiration information

	Number	Publication Date	Expiration Date
PI	US 6180370	20010130	20180130
PRAI	US 1988-290975	19881228	
	US 1989-310252	19890213	
TX	Expiry Comments: Extensions possible Country Comments: US 6180370 claims a method of producing a humanised immunoglobulin which specifically binds to an antigen. The bibliographic data on US 6180370 indicate that this patent has been subject to a terminal disclaimer, but the details of this have not been given. The expiry date should therefore be earlier than the date quoted. On 8 June 1995 the amendments to the US patent law under the General Agreement on Tariffs and Trade (GATT) came into force. The estimated expiry date of US 6180370 is not affected.		
AB	Numerous humanized immunoglobulins originate from the Protein Design patent family quoted here. Bevacizumab, daclizumab, efalizumab, lintuzumab, omalizumab, palivizumab, gemtuzumab ozogamicin and tr... here covers...		

This portion of the IMSPATENTS record provides patent number and date data for Xolair, including patent expiration information.

Example 4: FTO structure search for analogs, variants and derivatives

Search Question: Conduct a structure clearance search for FTO information with respect to analogs, derivatives and formulations of glyphosate, identifying blocking patents and published applications.



Search Strategy

to do an FTO structure/analog/derivative search...

1. Use CASLINK to find specific substances in REGISTRY and generic substances in MARPAT
 - Patents associated with substances are automatically retrieved
2. Display records of interest

CASLINK provides access to specific and generic substance information

```
=> FILE CASLINK
```

```
FILE 'CAPLUS' ENTERED AT 14:
FILE 'MARPAT' ENTERED AT 14:
FILE 'MARPATPREV' ENTERED AT
FILE 'REGISTRY' ENTERED AT 1
```

```
=>
```

```
Uploading C:\CASNC\STN Expre
L1 STRUCTURE UPLOADED
```

```
=> S L1 SSS SAM
```

```
S L1 SSS SAM FILE=REGISTRY ...
```

```
100.0% PROCESSED 97 ITERATIONS 46 ANSWERS
```

```
FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH **COMPLETE**
```

```
L2 46 SEA SSS SAM L16
```

```
S L2 SSS SAM FILE=MARPAT ...
```

```
100.0% PROCESSED 161 ITERATIONS 6 ANSWERS
```

```
FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH **COMPLETE**
```

```
PROJECTED ITERATIONS: 2463 TO 3977
```

```
PROJECTED ANSWERS: 6 TO 267
```

```
L3 6 SEA SSS SAM L16
```

Markush patent claims claiming substances of interest and their variants can be identified by a CASLINK substructure search. In this example, the sample substructure search identifies 6 patents in the MARPAT file having Markush claims that cover glyphosate.

Run the full file search

```
=> S L1 SSS FULL
S L1 SSS FUL FILE=REGISTRY
100.0% PROCESSED      1984 ITERATIONS      826 ANSWERS
L4              826 SEA SSS FUL L1

S L4 SSS FUL FILE=MARPAT ...
100.0% PROCESSED      3210 ITERATIONS      201 ANSWERS
L5              201 SEA SSS FUL L16

S L5 SSS FUL FILE=MARPATPREV ...
100.0% PROCESSED         2 ITERATIONS         0 ANSWERS
L6              0 SEA SSS FUL L16

S L6 FILE=CAPLUS
L7              5973 FILE CAPLUS

DUP REM L5 L4 L6
L8              6126 DUP REM L6 L5 L7 (48 DUPLICATES REMOVED)
                ANSWERS '1-201' FROM FILE MARPAT
                ANSWERS '202-6126' FROM FILE CAPLUS

=> S L8 AND P/DT
L14             1723 DUP REM L13 L12 L9 (37 DUPLICATES REMOVED)
                ANSWERS '1-201' FROM FILE MARPAT
                ANSWERS '202-1723' FROM FILE CAPLUS
```

A full file structure search identifies 201 patent records in MARPAT that claim glyphosate and its analogues and derivatives and 1522 patent records in CAPLUS that disclose and possibly claim glyphosate and its analogues and derivatives.

Display records of interest

=> D 1 BIB FQHIT

L14 ANSWER 1 OF 1723 MARPAT COPYRIGHT 2005 ACS on STN DUPLICATE 1

AN 138:56079 MARPAT

TI Method for producing .alpha.-aminophosphonic acids by the reaction of hexahydro triazine derivative with triorgano phosphate

IN Wulff, Christian; Orsten, Stefan; Oftring, Alfred

PA BASF Aktiengesellschaft, Germany

SO PCT Int. Appl., 43 pp.

CODEN: PIXXD2

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2003000702	A1	20030103	WO 2002-EP6901	20020621
...					
	DE 10130134	A1	20030102	DE 2001-10130134	20010622
	EP 1401847	A1	20040331	EP 2002-780837	20020621
...					
	BR 2002010528	A	20040622	BR 200	
	US 2004236144	A1	20041125	US 200	
PRAI	DE 2001-10130134		20010622		
	WO 2002-EP6901		20020621		
OS	CASREACT 138:56079				

Display the first MARPAT record in the answer set in bibliographic, first query hit format.

The FQHIT display format provides the first query-related hit structure from MARPAT

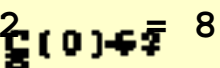
=> D FQHIT

L23 ANSWER 1 OF 6126 MARPAT COPYRIGHT 2005 ACS on STN DUPLICATE 1

MSTR 1

G1—G14

G1 = alkyl<(1-200)> (SO (1-4) G2)

G2  8

G3 = OH

G14 = 6



Again, note the location of the substance within the claim information.

MPL: claim 1

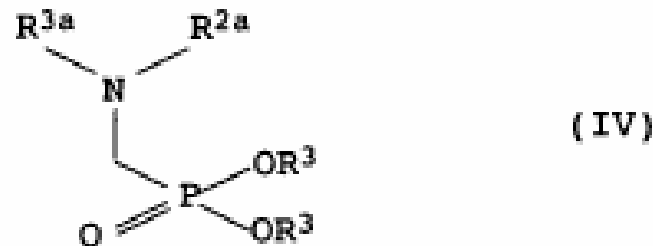
NTE: substitution is restricted

NTE: also incorporates claim 2, structure IV

Here is the claim referenced in the MARPAT record

Außerdem betrifft die vorliegende Erfindung Phosphono-Verbindungen der Formel IV, bei denen die Reste die oben angegebene Bedeutung haben, und deren Herstellung gemäß Schritt (a) des erfindungsgemäßen Verfahrens zur Herstellung von α -Aminophosphonsäuren. Der Rest $R^{2a} = R^2$ und R^3 hat die für R^{3a} angegebenen Bedeutungen.

25



30

Die Verbindungen der Formel II sind bekannt und können in bekannter Weise oder analog zu bekannten Verfahren hergestellt werden. Beispielsweise kann man ein Amin $X-CH_2-NH_2$ mit einer Formaldehydquelle, wie wässrige Formalinlösung oder Paraformaldehyd, zur Reaktion bringen, beispielsweise durch Lösen des primären Amins in der wässrigen Formalinlösung. Das gewünschte Hexahydrotriazin

CAplus displays also provide hit structures

=> D 202 BIB HITSTR

L14 ANSWER 202 OF 1723 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:347164 CAPLUS
TI Plant genes for enzymes for biosynthesis of aromatic volatiles and
their use in the development of plant products with novel flavors and
aromas
IN Klee, Harry J.; Tieman, Denise
PA University of Florida Research Foundation,
SO PCT Int. Appl., 98 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APP. NO.	STN NO.
	-----	----	-----	-----	-----
PI	WO 2005035752	A2	20050421	WO 2004-US32599	20041001
...					
PRAI	US 2003-508568P	P	20031003		
	US 2004-558504P	P	20040331		
IT	INDEXING IN PROGRESS				
IT	1071-83-6, Glyphosate				
CN	Glycine, N-(phosphonomethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)				

Display the first CAplus record in the answer set in bibliographic, hit structure format.

HO2C-CH2-NH-CH2-PO3H2

Session Agenda

- Freedom to Operate (FTO)
- Files, strategies and tools for FTO search, analysis and visualization
- **Current awareness for FTO searches**

Run *current awareness searches* to update the clearance and invalidity searches

- Search updates are necessary...
 - to find new blocking patents
 - to monitor blocking patent families
 - to find new prior art to invalidate blocking patents
 - even after invention is marketed

Example 5: Setting up a multi-file FTO current awareness search

Search Question: Set up a multiframe current awareness alert to monitor FTO information on histone methylation.

Search Strategy

to set up a multfile FTO alert...

1. Use INDEX to determine files of interest
2. Search the query in the claims (/CLM) field
3. Remove duplicate answers
4. Set up the alert

Use INDEX to determine files of interest

```
=> INDEX .CLAIMFILES
```

```
INDEX 'USPATFULL, USPAT2, PCTFULL, EPFULL, FRFULL, GBFULL, PATDPAFULL,  
WPIFV'
```

```
=> S (HISTONE# (L) (METHYLAS## OR METHYLAT?))/CLM
```

```
41 FILE USPATFULL
```

```
3 FILE USPAT2
```

```
72 FILE PCTFULL
```

```
8 FILE EPFULL
```

```
3 FILE GBFULL
```

```
5 FILES HAVE ONE OR MORE ANSWERS, 8 FILES SEARCHED IN STNINDEX
```

```
L1 QUE (HISTONE# (L) (METHYLAS## OR METHYLAT?))/CLM
```

```
=> FILE HITS
```

```
FILE 'PCTFULL' ENTERED AT 12:12:58 ON 10 MAY 2005 ...
```

```
FILE 'USPATFULL' ENTERED AT 12:12:58 ON 10 MAY 2005 ...
```

```
FILE 'EPFULL' ENTERED AT 12:12:58 ON 10 MAY 2005 ...
```

Search the claims in files which contain hits, and remove duplicates

```
=> S (HISTONE# (L) (METHYLAS## OR METHYLAT?))/CLM
L2          72 FILE PCTFULL
L3          41 FILE USPATFULL
L4           8 FILE EPFULL
L5           3 FILE USPAT2
L6           3 FILE GBFULL

TOTAL FOR ALL FILES
L7          127 (HISTONE# (L) (METHYLAS## OR METHYLAT?))/CLM

=> DUP REM
ENTER L# LIST OR (END):L7
PROCESSING COMPLETED FOR L7
L8          124 DUP REM L7 (3 DUPLICATES REMOVED)
           ANSWERS '1-72' FROM FILE PCTFULL
           ANSWERS '73-113' FROM FILE USPATFULL
           ANSWERS '114-121' FROM FILE EPFULL
           ANSWERS '122-124' FROM FILE GBFULL
```

124 unique patents
from five files with
searchable claim
fields are retrieved.

Set up the multifile alert

```
=> ALERT
ENTER MULTIFILE SDI TYPE (MFILE) OR END:MFILE
MULTIFILE SDI GENERAL PARAMETERS
-----
ENTER MULTIFILE SDI REQUEST NAME ('AA002/S'), OR END:HISTMETH/S
ENTER TITLE (NONE):HISTONE METHYLATION PATENT CLAIMS
ENTER COST CENTER (STN PAT FORUM) OR NONE:FTO
ENTER METHOD OF DELIVERY (OFFLINE), ONLINE, OR EMAIL:EMAIL
ENTER EMAIL ID (5913C):RAGGEDROBIN@INVISIBLES.COM
MPARR@CAS.ORG
RECEIVE DELIVERY NOTIFICATION? (Y)/N:N
ELIMINATE PREVIOUSLY SEEN ANSWERS WITH EACH SDI RUN? Y/(N):Y
HIGHLIGHT HIT TERMS? (Y)/N:Y
SEND SDI WITH NO ANSWERS? (Y)/N:Y
ENTER SDI EXPIRATION DATE 'YYYYMMDD' OR (NONE):NONE
-----
```

For a multi-file alert, first set up the general alert parameters, then continue with the specific parameters for each file to be monitored.

Set file-specific parameters for each file

```
MULTIFILE SDI FILE SPECIFIC PARAMETERS: PCTFULL
```

```
-----
```

```
ENTER COMPONENT SDI REQUEST NAME ('AA002/S') OR END:HISTMETHPCT/S
```

```
ENTER QUERY L# FOR MULTIFILE SDI REQUEST OR END:L2
```

```
ENTER UPDATE FIELD CODE (UP) OR ?:UP
```

```
ENTER PRINT FORMAT (STD) OR ?:STD
```

```
ARCHIVE ANSWERS? Y/(N):N
```

```
REDISTRIBUTE ANSWERS? Y/(N):N
```

```
ENTER MAXIMUM NUMBER OF HITS TO BE PRINTED PER RUN (100):100
```

```
SORT SDI ANSWER SET (N)/Y?:N
```

```
-----
```

You may use a different query in each file if desired.

```
MULTIFILE SDI FILE SPECIFIC PARAMETERS: USFATFULL
```

```
-----
```

```
ENTER COMPONENT SDI REQUEST NAME ('AA002/S') OR END:HISTMETHUS/S
```

```
ENTER QUERY L# FOR MULTIFILE SDI REQUEST OR END:L3
```

```
ENTER UPDATE FIELD CODE (ED) OR ?:UP
```

```
ENTER PRINT FORMAT (STD) OR ?:STD
```

```
ARCHIVE ANSWERS? Y/(N):N
```

```
REDISTRIBUTE ANSWERS? Y/(N):N
```

```
ENTER MAXIMUM NUMBER OF HITS TO BE PRINTED PER RUN (100):100
```

```
SORT SDI ANSWER SET (N)/Y?:N
```

```
ENTER SDI RUN FREQUENCY - EVERYUPDATE, (WEEKLY), MONTHLY, OR ?:WEEKLY...
```

Set file-specific parameters for each file, con't

```
-----  
...  
MULTIFILE SDI FILE SPECIFIC PARAMETERS: GBFULL  
-----  
ENTER COMPONENT SDI REQUEST NAME ('AA002/S') OR END:HISTMETHGB/S  
ENTER QUERY L# FOR MULTIFILE SDI REQUEST OR END:L6  
ENTER UPDATE FIELD CODE (UP) OR ?:UP  
ENTER PRINT FORMAT (STD) OR ?:STD  
ARCHIVE ANSWERS? Y/(N):N  
REDISTRIBUTE ANSWERS? Y/(N):N  
ENTER MAXIMUM NUMBER OF HITS TO BE PRINTED PER RUN (100):100  
SORT SDI ANSWER SET (N)/Y?:N  
ENTER SDI RUN FREQUENCY - (EVERYUPDATE), MONTHLY, OR ?:MONTHLY  
  
MULTIFILE SDI HAS BEEN SAVED AS SDI REQUEST 'HISTDEM/S'  
QUERY L2 HAS BEEN SAVED AS SDI REQUEST 'HISTMETHPCT/S' FOR FILE PCTFULL  
QUERY L3 HAS BEEN SAVED AS SDI REQUEST 'HISTMETHUS/S' FOR FILE USPATFULL  
QUERY L4 HAS BEEN SAVED AS SDI REQUEST 'HISTMETHEP/S' FOR FILE EPFULL  
QUERY L5 HAS BEEN SAVED AS SDI REQUEST 'HISTMETHUS2/S' FOR FILE USPAT2  
QUERY L6 HAS BEEN SAVED AS SDI REQUEST 'HISTMETHGB/S' FOR FILE GBFULL
```

Alert profiles are stored on the STN server

=> D SAVED/S

NAME	CREATED	NOTES/TITLE
-----	-----	-----
HISTMETH/S	10 MAY 2005	SDI MFILE REQUEST HISTONE METHYLATION
HISTMETHEP/S	10 MAY 2005	EPFULL MEMBER OF SDI HISTMETH/S HISTONE METHYLATION
HISTMETHGB/S	10 MAY 2005	GBFULL MEMBER OF SDI HISTMETH/S HISTONE METHYLATION
HISTMETHPCT/S	10 MAY 2005	PCTFULL MEMBER OF SDI HISTMETH/S HISTONE METHYLATION
HISTMETHUS/S	10 MAY 2005	USPATFULL MEMBER OF SDI HISTMETH/S HISTONE METHYLATION
HISTMETHUS2/S	10 MAY 2005	USPAT2 MEMBER OF SDI HISTMETH/S HISTONE METHYLATION

For more information

CAS e-Seminar WebEx Recorded Events

Date	e-Seminar Title
March 29, 2005	Improving Searches by Including Patent Classification Codes
January 25, 2005	Multiple Methods of Keeping Current
September 26, 2004	Advanced MARPAT Techniques
April 23, 2004	Patent Citation Searching

And more!

<http://casevents.webex.com>

(Filter by product=STN and category=patents)

Summary

- FTO is a moving target in an evolving patent landscape
- Most relevant patents may not have issued yet (backlogs at PTOs)
- Identification of relevant patents can be a challenge
- STN resources and tools can help you to conduct more effective FTO searches

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Performing Effective Freedom
to Operate Searches on STN

STN Patent Forum

July 2005