

## Episode 05:

Best Practices for Developing Reliable Freedom-to-Operate Landscapes and Advanced Techniques for Interactive, Reusable FTO Mapping

# Patent Analytics Webinar Series

# 8–Episode Webinar Series



**Episode 01** - Techniques and Analytics for Identifying Valuable Patents and Patents to Abandon  
**Thursday, April 16, 2020 at 12:00 PM CT**

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**Episode 02** - Using Patent Landscapes to Develop IP Rich Products and Valuable Patent Positions  
**Thursday, April 30, 2020 at 12:00 PM CT**

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**Episode 03** - Using Prosecution Analytics to Improve Prosecution Efficiency and Identify Wasteful, Unproductive Prosecution Spending  
**Thursday, May 14, 2020 at 12:00 PM CT**

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**Episode 04** - Using Examiner Analytics to Improve Prosecution Efficiency and Develop Well-informed, Data-Driven Prosecution Decisions and Strategy  
**Thursday, May 28, 2020 at 12:00 PM CT**

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**Episode 05** - Best Practices for Developing Reliable Freedom-to- Operate Landscapes and Advanced Techniques for Interactive, Reusable FTO Mapping  
**Thursday, June 11, 2020 at 12:00 PM CT**

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**Episode 06** - Using White Space Maps to Identify Open Spaces in the Patent Landscape  
**Thursday, June 25, 2020 at 12:00 PM CT**

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**Episode 07** - Using a Patent Analytics Dashboard for IP Strategy, Competitor Surveillance, and Portfolio Management  
**Thursday, July 9, 2020 at 12:00 PM CT**

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**Episode 08** - Using Patent Prosecution History Reports to Increase Prosecution Efficiency and Avoid Unintended Estoppel  
**Thursday, July 23, 2020 at 12:00 PM CT**

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# Today's Presenters...



**Steve Lundberg**

Principal & Chief Innovation Officer  
Schwegman Lundberg & Woessner



**Suneel Arora**

Principal  
Former Senior Engineer at Cardiac  
Pacemakers (Guidant Corp.)  
Schwegman Lundberg & Woessner



**Tyler Nasiedlak**

Principal  
Former Chief Patent Counsel  
Guidant Corporation/Boston  
Scientific Corp (CRM/CV)  
Schwegman Lundberg & Woessner



**Mark Stignani**

Analytics Chair & Firm  
Compliance Officer  
Former Chief Patent Counsel  
Thomson  
Schwegman Lundberg & Woessner

## What exactly are FTOs and what are they used for?

An “FTO” is a Freedom To Operate analysis that determines which, if any, patents or patent applications present an infringement risk to a particular product or service.

# What you will learn today

- Who uses FTO and to what purposes
- When they are most useful
- Strategic insights/Business Actions Available
- Making your FTO evergreen
- How FTO/Mappings are generated
- Overview of tools

# Questions Answered

and

# Use Cases

## Questions Answered:

- Will my new product infringe an issued patent?
- Will my new product possibly infringe a pending application when it issues?

## Typical use cases:

- New Product Development
- New Feature on Existing Product
- Acquisition of a new company
- Investment into a startup



# FTO Benefits

- Avoid unnecessary infringement suits and allegations
- Align development with "open" IP space
- Enhance ability to develop patentable technology
- Identify opportunities

# FTO Fundamentals

## Is it feasible or even necessary to do an FTO

- How to handle incremental improvements?
- How to get a comfort level with products too complex to do complete clearance?

## Scope of FTO Inquiry

- Do you clear every part of the proposed product?
- Or only the combination of parts you want to make?

## Timing of FTO Process

- Do I design a product first and then clear it?
- Or do I first do the FTO, and then design product?

## Defining Proposed Product for Clearance

- If I don't have a final design, how do I do an FTO?
- How do I specify a design to clear if I don't have one yet?



# How Deep Do I Go?

## FTO's can be done at different depths of inquiry:

- US Competitors only vs. Competitors in Asia
- Aggressive competitors only
- FTE's only
- All patents
- US/EP vs other international

## Each level has pros and cons

- Competitors and FTEs most likely to notice an infringement, but can be done cheaper and faster
- All patents is more time consuming and expensive, but provides full picture and possibly opportunities to acquire a troublesome patent
- US and EP may both be important for med tech, but not always

# Finding the Relevant Art

## Using keyword/semantic search:

- Perform iterative keyword searches
- Zero in on most relevant search results

## Using forward/backward citations

- Starting with set of relevant art, do forward/backward citation analysis
- Reiterate

## Using time-based criteria

- Find inception point for the technology
- Search in that time period

## Using competitors and or tech sectors

- Search competitors
- Search by CPC classification

# Filtering the First Cut

- Filter out irrelevant results
- Identify the relevant results to analyze for FTO
- How to filter:
  - Review stacks of printed patents
  - Review folders full of PDF's
  - Review in a DB
  - Review in a spreadsheet

# Reviewing the "Pile" for FTO

## Old fashion way

- Look at each patent one by one with design team
- Identify ways to avoid each patent
- Write up a report
- Start over if design changes from scratch

## Better way:

- Review an interactive spreadsheet-based FTO map that keys off of key novelty of each patent
- Patent coverage stated in terms readily understood by engineers/scientists
- Note relevance or non-relevance of each patent
- Reiterate design ideas as many times as you want
- Update map as new patents issue
- Reiterate again

# FTO pitfalls/tricks

## Avoid

- Snapshot/One-N-Done
  - Consider Evergreen FTOs
- Single Source Searches
  - Patents/NPL/TM/Web
- Relying on FTO searches alone
- Only using legal team

## Do

- Use your/competitor glossary
- Develop Core Concepts
- Develop Synonyms for Claims
- Partner with your Technologist
- Understand equivalents in claims
  - Review File Histories

# How Claim Abstraction Helps FTO

- **Claims largely define a patents value**
- **Claims between patents may be...**
  - Abstracted
  - Harmonized
  - Mapped
- **Thus claims may be assigned ontologies**
  - Similar to case law headnotes

# Patent Analysis v. Spec/Claim Abstraction





# Abstracting: Case Law vs. Patent Claims

(By Opinion) OCTOBER TERM, 2006 1

Syllabus

NOTE: Where it is feasible, a syllabus (headnote) will be released, as it has been in the past, in connection with this case at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Free Press*, 403 U.S. 551, 555.

**SUPREME COURT OF THE UNITED STATES**

Syllabus

**KSR INTERNATIONAL CO. v. TELEFLEX INC. ET AL.**

CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

No. 04-1350 Argued November 28, 2006—Decided April 30, 2007

To control a conventional automobile's speed, the driver depresses or releases the gas pedal, which interacts with the throttle via a cable or other mechanical link. Because the pedal's position in the footwell normally cannot be adjusted, a driver wishing to be closer or further from it must either reposition himself in the seat or move the seat, both of which can be imperfect solutions for smaller drivers in cars with deep footwells. This prompted inventors to design and patent pedals that could be adjusted to change their locations. The *Asano* patent reveals a support structure whereby, when the pedal location is adjusted, one of the pedal's pivot points stays fixed. *Asano* is also designed so that the force necessary to depress the pedal is the same regardless of location adjustments. The *Hedding* patent reveals a different, sliding mechanism where both the pedal and the pivot point are adjusted.

In newer cars, computer-controlled throttles do not operate through force transferred from the pedal by a mechanical link, but open and close valves in response to electronic signals. For the computer to know what is happening with the pedal, an electronic sensor must translate the mechanical operation into digital data. Inventors had obtained a number of patents for such sensors. The so-called '566 patent taught that it was preferable to detect the pedal's position in the pedal mechanism, not in the engine, so the patent disclosed a pedal with an electronic sensor on a pivot point in the pedal assembly. The *Saath* patent taught that to prevent the wires connecting the sensor to the computer from chafing and wearing out, the sensor should be put on a fixed part of the pedal assembly rather than in or on the pedal's footpad. Inventors had also patented self-contained modular sensors, which can be taken off the shelf and attached to any



Headnotes

16 KSR v. Teleflex, 550 U.S. 398 (2007)

16 KSR v. Teleflex, 550 U.S. 398 (2007)

16 KSR v. Teleflex, 550 U.S. 398 (2007)

## Claimscape® Mapping

What is claimed is:  
 1. A method, comprising:  
 delivering an electric stimulus from a lead situated within a body to a phrenic nerve at a controlled rate, wherein the electric stimulus is delivered in a region proximate a wall of a heart, wherein the electric stimulus is delivered from an electrode on the lead, the electrode being located on or within the heart.



(+ Attorney)



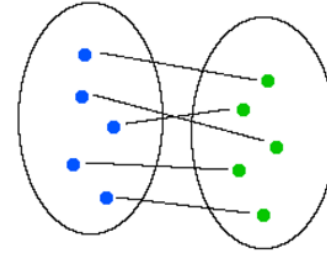
## Scope Concepts

- What the claims say about the technology
  - Limitations
  - Varying Levels of Abstraction

# Output of FTO Claim Mapping

- **Interactive Excel Spreadsheet**

- Usable by anyone
  - Outside Patent Counsel
  - Inside Patent Counsel
  - Engineers!!!
  - Best Practice = Outside Patent Counsel + Inside Patent Counsel + Engineers
- Embeds “All Elements Rule” for infringement
  - If a scope concept in claim is absent from the design, can rule out that claim
  - If the scope concept appears in many claims, can eliminate many claims
  - Exclusionary tool: patent attorney reviews all claims that have not been ruled out
- Easily updatable as new patents issue
  - “Chart once, use forever”



# FTO Report Claim Mapping Format



A	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL							
<b>Title</b>	Potential Relevance		Expandable spinal implant and surgical method											Replacement disc	Middle expandable intervertebral disk implants	Artificial vertebral body	Vertebral prosthesis	Telescoping spinal factor	Spinal implantation methods utilizing a middle expandable implant	Anterior interbody fusion device	Vertebral body prosthetic implant with slidably positionable stabilizing member		Spin																				
<b>Patent#</b>			5,053,193											5,035,116	5,111,218	5,290,912	5,306,910	5,326,223	5,390,683	5,397,364	5,443,515	5,511,218																					
<b>Assignee Name</b>			Spine-Tech, Inc. (Minneapolis, MN)													Alphatec (Palm Desert, CA)	MAN Ceramics GmbH (Düsseldorf, DE)			Danek Medical, Inc. (Memphis, TN)	Implex Corporation (Allentown, NJ)		AcroMed Corp																				
<b>Filing Date</b>			Apr 19, 1990											May 10, 1990	Feb 22, 1991	Sep 03, 1991	Aug 27, 1992	Feb 04, 1993	Aug 20, 1993	Oct 12, 1993	Jun 26, 1994		Apr 2																				
<b>Total Claims</b>			23											12	6	15	8	3	11	16	10	18	20																				
<b>Claim# (Independent)</b>			1	10	11	12	14	15	21	22	24	25	28	1	5	11	1	4	6	7	1	10	15	1	1	9	1	3	3	10	1	16	1	1	7	12							
<b>Potential Relevance (3=High (Red), 2=Med (Yel), 1=Low (Green))</b>			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
<b>Scope Concept (Appearance, Asc.)</b>	<b>Rating (1-3)</b>	<b>Claims Mapped</b>	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					
Implant including separation of the each rib deformable in response to a deforming force to change from a first shape to a second shape (distal rib expand, each on its own, the force, from ribs to distal end of each rib)	3	11																																									
Implant that is adjustably expandable (centrically or laterally) to use far applied a deforming force (distal linear force) to a plurality of deformable ribs to urge the ribs from a first size and shape to a larger, second size and shape	3	10																																									
Implant having a hallux/2nd or hallux/3rd configuration	3	28																																									
Implant comprising linear and/or portion, wherein the linear portion is rather than the portion	2	3																																									
Implant having an inner portion that includes a first material than a material of an outer portion	2	3																																									
Implant including a frame material	1	3																																									
Linear portion of an implant comprising flexible formed polyethylene	1	1																																									
Coating on internal portion of an individual implant to seal and radially secure the (1) the end of the portion of the implant to the disk space into which the implant is inserted, and (2) the size greater than end portion of the implant	1	11																																									
Implant that is cylindrically shaped or rotationally cylindrically shaped	1	15																																									
Introducing cancellous bone particles into a disk space between two adjacent vertebrae	1	5																																									
Retaining a rod portion of the length of an implant, the retention causing an internal portion of the implant to seal and radially secure the end of the portion of the implant to the disk space into which the implant is inserted	1	3																																									
Constructing an adjacent vertebrae medially to an implant to close off a disk space between two vertebrae	1	2																																									
Implant having two hallux components adjacent medially to one another with a skirt, wherein each of the two hallux components comprise an anchoring window at an end abutting a vertebra	1	3																																									
Implant having two hallux components that are axially to prevent motion relative to each other, when desired	1	4																																									
Implant having two hallux components that each have an appendage that includes an anchor portion	1	3																																									
Implant having a tubular structure being formed from two hallux portions being connected to each other by connection of end hallux portions to the other	1	1																																									
Implant having a tubular structure being formed from two hallux portions being connected to each other by connection of end hallux portions to the other	1	1																																									
Implant including a spring	1	10																																									
Implant having a tubular cap for a tube	1	8																																									
Implant having a first end connected to a second end for an expandable spinal vertebra, wherein the first end is connected to the second end by a first end of a first portion to accommodate at least a portion of one of a second	1	2																																									

← Independent claims

Claims Needing Further Review are Automatically Identified (in red)



**Key**

- Red square: Current Interest
- Yellow square: Future Interest
- Grey square: Not of interest

# Key Take-Aways

- **FTOs involve Multi-sourced Highly Nuanced Data**
  - Detailed Human Analysis - Required
  - Resolve Data Inconsistencies by Hand
  - Claims are Key
- **Commercial FTO Mappings requires Review**

# The Schwegman Analytics Advantage



SLW has been helping its clients find and improve high value patents for over 20 years and has invested heavily in its Analytics processes and tools for the last decade and is now expert at helping.

- More efficient work
- Shorter timelines
- Higher quality and key strategies
- IP Operations
- Fixed Fees/AFAs
- Tracking metrics
- Non-traditional providers

**Thank You For Your Interest  
Questions?**

These materials are for general informational purposes only. They are not intended to be legal advice, and should not be taken as legal advice. They do not establish an attorney-client relationship.