



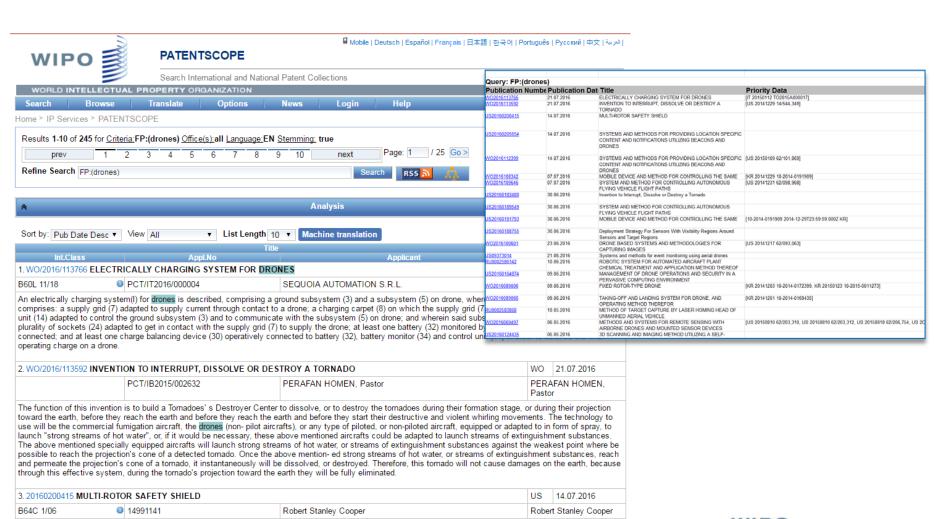
# Different Types and Objectives of Patent Analysis

Porto Alegre 20 October 2016

Irene Kitsara

IP Information Officer, Access to Information and Knowledge Division

### After the patent search results what?



The Multi-Rotor Safety Shield (MRSS) provides a complete and substantial encasement system which can be secured about a Drone, protecting a multitude of aircraft

any kind, and atmospheric changes as example, from disabling the Drone and can protect people, places or things from high velocity spinning exposed rotor/propellers.

components from contact with any outside disturbance and which can protect the sensitive components from dust, water, wind, rain, snow, fingers, toes, appendages of

The MRSS provides rigid non-permeable platform for attaching or incorporating additional safety devices as found in the Drone industry (or other industries) resulting in a safety device that completely prevents the loss a Drone due to the catastrophic failure of any Drone system or combination of systems which would typically result in

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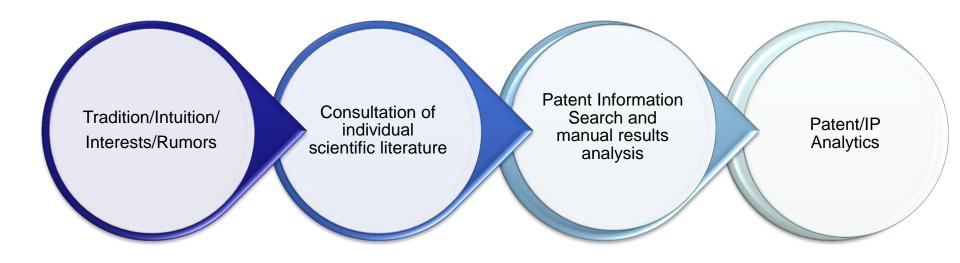
### What is patent analysis?

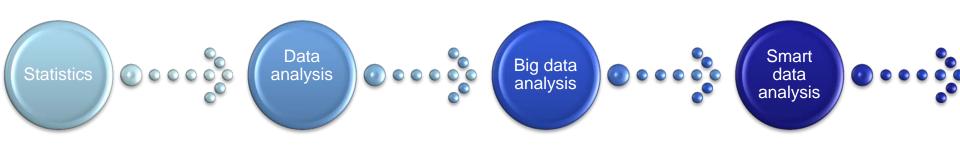
Transformation of raw patent data through patent search (patent databases) into comprehensive for non-experts patent analysis (breakdown and analysis of the results, visualization, conclusions)





# Evolution of analytics to support decision-making and IP management





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# Important considerations to define objectives of a successful patent analysis

- Who is the analysis intended for? Needs assessment
- How will this analysis have **added value** to the report recipient and his/her **decision making process**? Effective support tool for decision making
- How will the analysis **save time** to the recipient? Efficiency of the report and appropriateness of information and presentation of it



## How are decisions taken and how does patent information help?

- Cross sectoral/disciplinary effort: many aspects taken into account (Science/Policy/Economics/Business/Marketing)
  - Policy/prioritization issues
  - Relevant market definition and analysis
  - Competitors activity and analysis
  - Economic/financial aspect
  - Risk
- Patent Information: important source of information
  - Technical
  - Business data
  - Legal



# Different types of patent analysis and similar products

- Patent Landscape Reports
- Freedom to Operate Analysis
- Portfolio analysis
- Business/Competitive intelligence report
- Technology Watch/Alerts
- Technology Bulletins
- General Statistics



## What can be the objective of a patent analysis?

- Technology scouting and whitespaces/business opportunities
- Policy discussions/decisions
- R&D decision-making and prioritization
- Investment and collaboration decisions
- Technology transfer
- Patent valuation
- Patent portfolio assessment
- Competitors monitoring



# What is the added value of patent analysis?

- Presents patent data, search results and findings in a structured way
- Creates an output that makes technical data easily understood by non-experts
- Includes visualization of the results making the information easily and fast to digest
- Facilitates interdisciplinary dialogue between various stakeholders



### Let's start with some terminology...

And look closer at the different patent analysis types



### What is a Patent Landscape?



« Patent map »

Source: WIPO PLR on Electronic

Waste Recycling

- Fuzzy term, often expressed in different ways, e.g.:
  - Patent Map, Patent Cartography
  - Business Intelligence,Competitive Intelligence
- Various definition approaches:
  - from very narrow (just a graphical representation)
  - to very broad (Freedom to Operate analysis)



### PLR Terminology and Methodology



#### Patent Landscape Reports

Patent landscape reports describe the patent situation for a specific technology in a given country, region or on the global level. They usually start with a state-of-the-art search for the technology of interest in suitable patent databases. The results of the search are then analyzed to answer specific questions, e.g. to identify certain patterns of patenting activity (Who is doing what? What is filed where?) or certain patterns of innovation (innovation trends, diversity of solutions for a technical problem. collaborations). An essential component of each patent landscape report is the visualization of these results in order to facilitate their understanding, and certain conclusions or recommendations based on the empirical evidence provided by the search and analysis.



Interview with Matthew Luby: How to Define a Patent Landscape

Posted on August 23, 2011 by jmornini

Matthew Luby: A patent landscape is a survey of patent and non-patent literature that seeks to answer one or more business objectives. The parameters of the patent landscape are really defined by the individual objectives of the project.



#### FAQ - Patent statistics and patent mapping

#### What is patent mapping?

Patent mapping is essentially the visualisation of the results of statistical analyses and text mining processes applied to patent documents. Patent mapping allows you to create a visual representation of information from and about patent documents in a way that is easy to understand. It is an excellent tool for assessing large sets of patent data. Using bibliographic data you can identify which technical fields particular applicants are active in, and how their filing patterns and IP portfolios change over time. It is also possible to find out which countries lead in which fiel

#### What Is Patent Landscaping?

What exactly is a "patent landscape", and why is it useful?



Posted by Mike Lloyd on Thursday, 19 July 2012 Font size: 3 9 Comments Subscribe to this entry

Intellectual Property

patent data

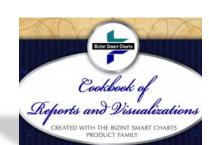
Second Edition

The Patent Guide

A handbook for analysing and interpreting



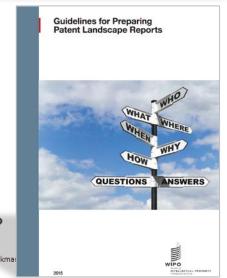






#### Developing a patent landscape methodology

Stuart J Smyth\* and Sara McPhee-Knowles\* and Andrew Baker\* and



By Nathalie Gosset, eHow Contributor

### What is a Patent Landscape Report (PLR)?

- Research and analysis of innovation patterns and patenting trends in a specific technological field/geographical area using patent information
- Content and analysis types customized to the concrete needs
- It can have a very narrow to a very broad scope and serve various needs, e.g. WIPO PLR on atazanavir and the PLR on animal genetic resources
- Geographical coverage can vary and can have or include country focus (e.g. BRIC countries)
- It typically does not include legal status information, yet in some cases such data forms part of the report



### What kind of questions can a PLR answer?



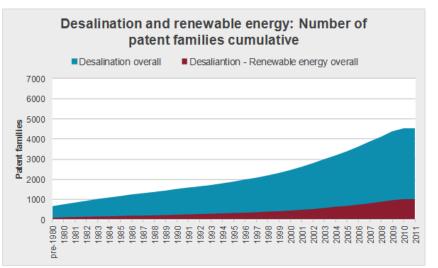
(The Answer to The Ultimate Question of Life, the Universe, and Everything, The Hitchhiker's Guide to the Galaxy, Douglas Adams)

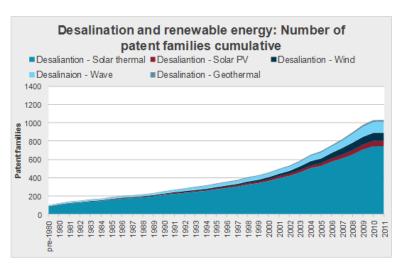
- Which technology trends exist in which geographical areas and how have they developed over time?
- Are there gaps or **white spaces**, i.e. areas with little patent protection, that permit business opportunities or give them an added value?
- Which players are the most active in a said technical area and what is their specific focus and strategy?
- Which other patents are relevant for a company's activities or a product development/commercialization? (Infringement/FTO, licensingin, collaborations)
- Which patents are about to expire? Which technologies move in the public domain and provide business opportunities?
- What is the patent portfolio of competitors and what is the impact on the company's portfolio and activities? Correlation and effect on value

# What kind of analysis can be included in a Patent Landscape Report?



#### General trends vs. trends in subsectors





Source: WIPO PLR on Water desalination and the use of renewable energies

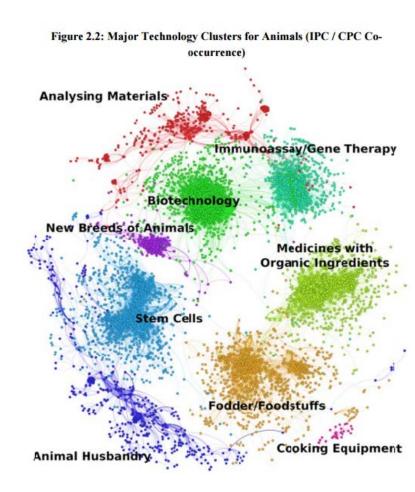
- Help identify promising, emerging or saturated technology areas
- Identification of potential niche technologies



### Clustering of prominent technology areas



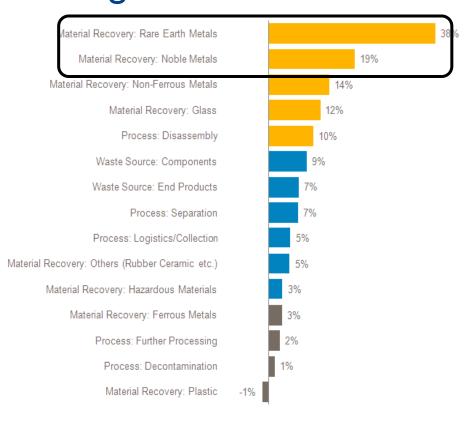
Thematic Concept (Themescape) of E-Waste Landscape



Network mapping in Animal Genetic Resources PLR



# The E-Waste example: Growth rate in patenting reflecting recent/growing market needs/regulatory changes



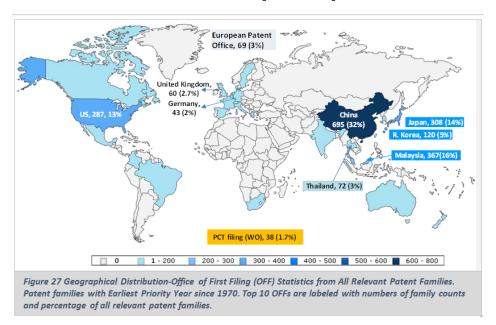
Patenting Activity Trends in E-waste by Subject Matter; Annual Growth/Decline 2006-2010 (based on Earliest Year of First Filing)

- Rare Earth Metals: 90%primary extraction in CN –not an open commodity
- Focus on Rare Earth recovery due to importance for electric consumer goods
- Growth in patenting activity related to silver: change of EU solder regulation (replacement of lead by silver and copper)



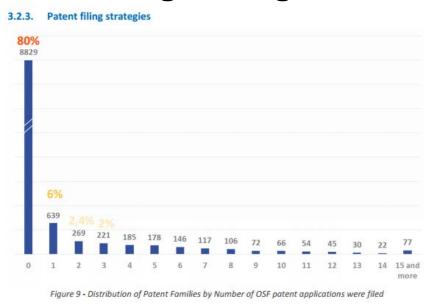
# Geographical distribution of patent protection

#### **General trends (OFF)**



#### Source: WIPO PLR on Palm Oil

#### **Patent filing strategies**

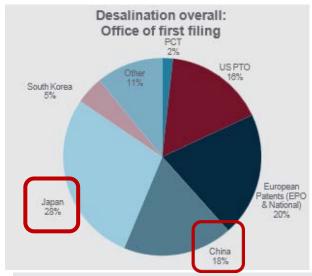


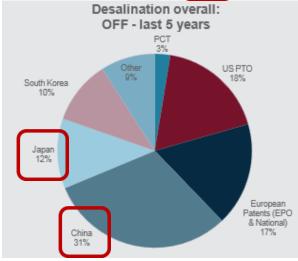
Source: WIPO PLR on Microalgae



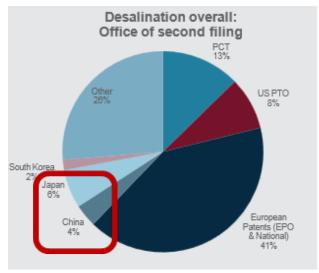
#### Geographical distribution of patent protection

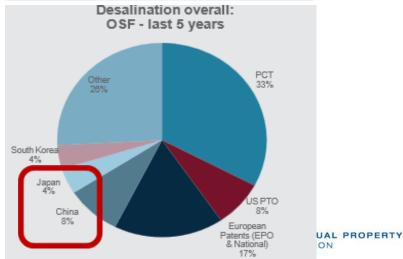
## Office of first filing (OFF) – indicator of innovation





## Office of second filing (OSF) – choice of strategic importance

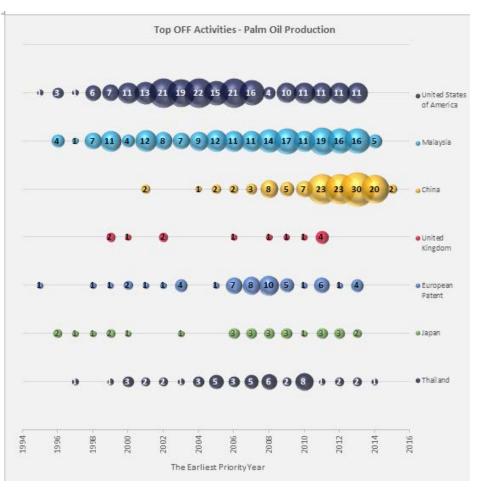




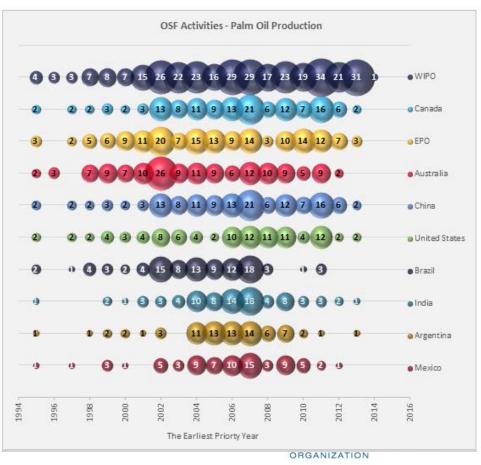
Source: WIPO Desalination PLR

## OFF and OSF as indicators of innovation and potential market

#### Top OFF – Filings over time



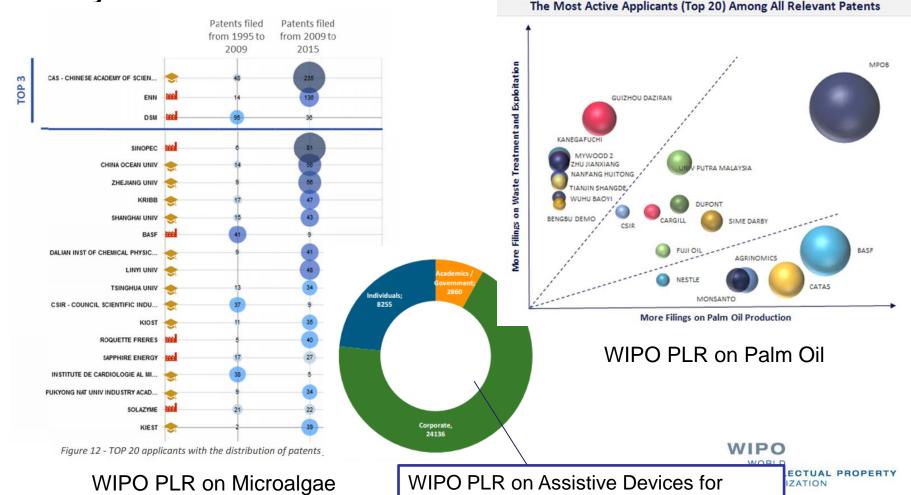
## **Top OSF – Indirect market analysis**



**Key players focus areas** 

## Major players in a field, profile, new players, change in focus and strategy

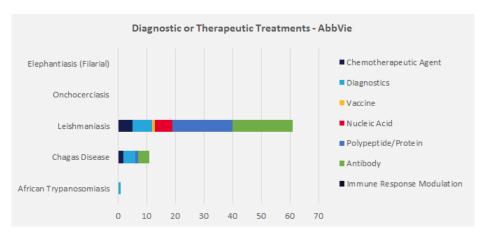
Key players, profile, recent activity



Visually and Hearing Impaired Persons

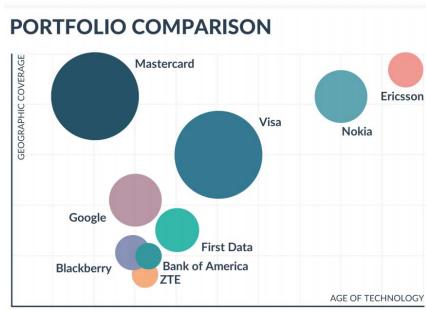
### Specific applicants analysis

## Applicant focus and portfolio



WIPO Selected Neglected Diseases PLR

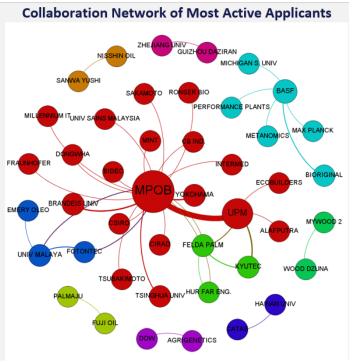
## Geographical coverage and age of technology



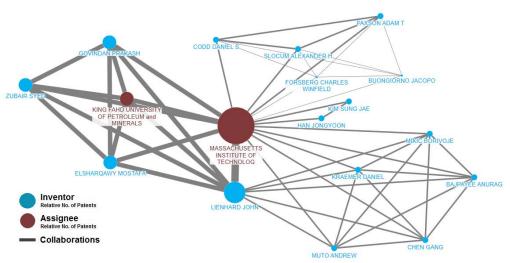


### Co-assignments and collaboration networks

### **Co-assignments – applicants collaboration networks**



#### **Applicant-inventors collaboration network**



WIPO Palm Oil Production PLR

WIPO Desalination PLR



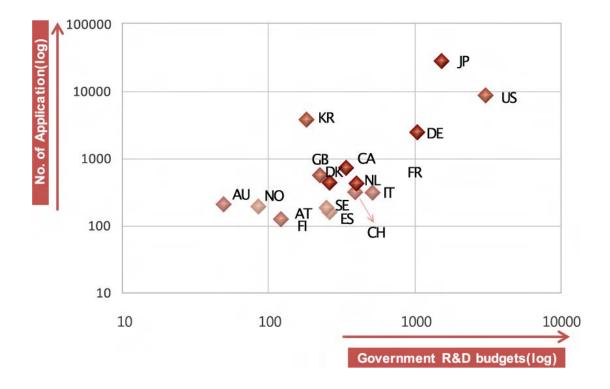
### Matching patents to products

Assignee / Inventor Name	SHI, YANG; (CN)		
Patent / Publication Number	WO2010135909A1		
Title	STEAM HEATING METHOD USING SOLAR ENERGY AND SOLAR STEAM COOKER		
Patent Image  A  13  12  13  12  13  12  13  12  13  14  15  16  17  18  10	Product Image		
Reference Link	http://jiadeshun.gmc.globalmarket.com/products/details/portable-solar-cooker-104919.html  http://jiadeshun.gmc.globalmarket.com/products/details/portable-solar-		
	cooker-104920.html		

Source: WIPO PLR on Solar Cooking



### Combining patent with non-patent data



Source: IEA, Energy Technology R&D Statistics 2007

R&D in- and output, patenting activity as indicator of innovation

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### Patent Landscape Reports in a nutshell

- Patent based analysis tailored to specific needs
- IP management and internal/external valuation support tool:
  - more focused approach and informed decisions
  - avoidance of duplication of work, waste of resources and infringement of 3<sup>rd</sup> party IP rights
  - Who is doing what (e.g. top applicants, inventors) where?
  - Market trends and potential, uniqueness and value of own IP assets and market position, tech transfer possibilities
  - identification of own potential and position in a given or emerging market and comparison to competitors
  - facilitation of local and international cooperation and identification of potential for synergies
  - Additional, non patent-data completing the puzzle, e.g. econometric /competitor analysis, case studies, licensing information, M&As etc.

# OTHER PATENT ANALYSIS TYPES



### Freedom to Operate Analysis/Clearance

- Resembles a Patent Landscape Report terms often confused
- Sophisticated and costly analysis, usually performed before a new product is introduced in the market
- Objective: make sure there are no third party IP rights infringement when a product is launched in the market
- Key differences to a PLR:
  - Type of conducted patent search-granularity of search and claim analysis of granted patents
  - Country-market specific
  - Legal status information
- There is never a 100% real "FTO"



### **Technology Bulletins**

## **Example: Spanish Patent Office: Intelligent Car**



La integración de las tecnologías de la Información y Comunicaciones (TIC) en vehículos e infraestructuras viales se ha mostrado muy provechosa a la hora de obtener soluciones avanzadas a los problemas del transporte de hoy en día.

Los Sistemas de Coches Inteligentes buscan facilitar la interacción entre el conductor, el vehículo y la carretera, de manera que los sistemas autónomos de abordo se complementan con sistemas que cooperan entre los diferentes vehículos o entre los vehículos y las infraestructuras, para mejorar, de este modo, aspectos de gran relevancia, tales como la reducción de la reducción de la contaminación y la reducción de la contaminación.

El presente boletín, elaborado por la Unidad de Información Tecnológica de la Oficina Española de Patentes y Marcas (OEPM), pretende revisar la evolución de la innovación, en el marco de las patentes de las tecnologias TIC en relación con algunos de los sectores prioritarios contemplados en el desarrollo del "Coche Inteligente", tales como: los sistemas de gestión optimizada del tráfico, las redes sensoriales o de comunicaciones integradas en los vehículos, los sistemas de gestión de plazas de aparcamiento o de peajes, y los sistemas de notificación de accidentes o averías a servicios de emergencia u otros conductores cercanos.

Vigilancia Tecnológica

De este modo, el boletín, de periodicidad trimestral, recogerá las publicaciones mas recientes de solicitudes internacionales de patente (solicitudes PCT) publicadas en el trimestre inmediatamente anterior a su etaboración. Se ha restringión el ámbito de este boletín a solicitudes PCT por considerarse que al ser estas solicitudes con las que las empresas pretenden proteger sus invenciones en distintos países, se corresponden con invenciones de una cierta relevancia tecnológica.

#### CONTENIDO:

- Gestión del tráfico
- Redes vehiculares
- Gestión de aparcamientos y peajes
- Notificación de accidentes
- Otras referencias

#### NIPO: 073-15-017-1



Oficina Española de Patentes y Marcas

#### What does it include?

#### **GESTIÓN DEL TRÁFICO**

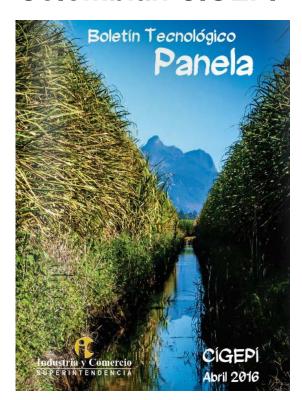
Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

WO 2016052837	DILAB CO LTD	Traffic monitoring system	
WO 2016045832	BOSCH GMBH ROBERT	Method and device for creating a motion model of a road user	
WO 2016051817	HITACHI CONSTRUCTION MACHINERY	Traffic management control device	
WO 2016038415	UNIV UMM AL QURA	Automatic update of crowd and traffic data using device monitoring	
WO 2016045851	BOSCH GMBH ROBERT	Method and device for monitoring a traffic area	
WO 2016055917	HERE GLOBAL BV	Probe based variable speed sign value	
WO 2016057540	HANNAH MARC R	Managed access system for traffic flow optimization	
WO 2016078414	ZTE CORP	Method, apparatus and system for controlling changing of traffic lights	
WO 2016067679	SUMITOMO ELECTRIC INDUSTRIES	Traffic signal control device, computer program, and traffic signal control method	
WO 2016086139	ISPD INC VARMA SAMIR SARFATI DANIEL	System and method for traffic decongestion	
WO 2016068273	MITSUBISHI ELECTRIC CORP	In-vehicle device, automatically driven vehicle, automatic drive assist system, automatic drive monitoring device, road management device, and automatic drive information collection device	
WO 2016067336	NISSAN MOTOR	Travel control information data structure and travel control device	
WO 2016070121	RYHORCHUK KENT W GOLD EZRA	Parking and traffic analysis	

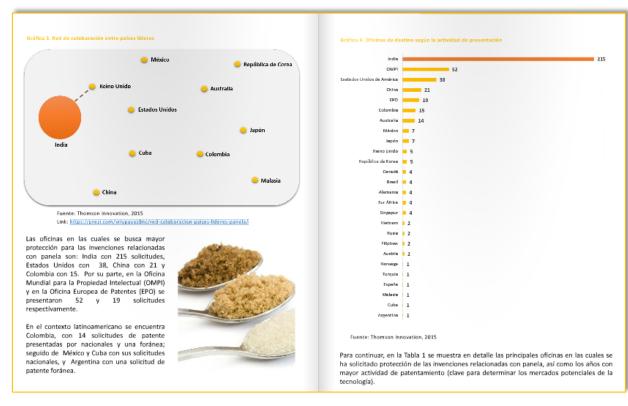


# Technology Bulletins can also look different though...

#### Colombian CIGEPI



#### How do the Colombian Bulletins look like?





## Technology Watch/Alerts/Surveillance/Monitoring

- Updates/information on new patents in a given area of interest
- Usually limited to a list of patents and their bibliographic data/representative drawing or link to the full document





### **General Statistics**





## Reports on patents in the public domain

Número 57

## Informe de Tecnologías de Dominio Público

Accesorios para pesca deportiva y recreación

Junio de 2016



#### 1.2. Soporte para caña de pescar

TITULAR	INVENTOR	N° DE PUBLICACIÓN	USO DE LA PATENTE
Williams, Rodney	Williams, Rodney	US6357639	Dominio público en
EE.UU.			Chile.

#### RESUMEN

La invención es un dispositivo para afirmar una caña de pescar a la pierna del pescador, que permite mantener sus manos libres para que pueda hacer otras tareas, mientras pesca.

Consiste en una funda duradera y resistente al agua con un bolsillo principal. Que se ajusta a la pierna de un pescador con un velcro.

Contiene un tubo de plástico que se apoya en el bolsillo principal para recibir de forma desmontable el mango de una caña de pescar y proporcionar su único apoyo.

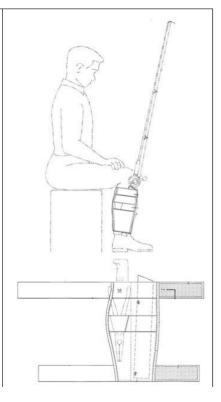
#### CLASIFICACIÓN INTERNACIONAL (CIP)

A01K97/10 Accesorios para la pesca con caña. Soporte para caña.

F41C 33/02 Estuches, es decir, fundas para pistolas, p. ej. para revólveres, que incluyen medios para llevarlas o para llevarlas puestas, p. ej. en la cintura o bajo el brazo.
A45F5/00 Dispositivos destinados a sujetar o transportar a mano determinados artículos; Dispositivos destinados a sujetar o transportar utilizables en viajes o en el camping.

#### **ACTIVIDADES ECONÓMICAS RELACIONADAS**

Pesca / Actividades al aire libre





### Mixed analysis types

## "Technology Radar" (INPI Brazil) – Infographic Element

#### **FTO element**

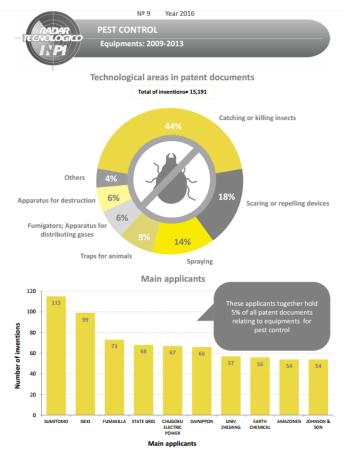




Gráfico 4: Liberdade de operação no Brasil – Equipamentos para controle de praga



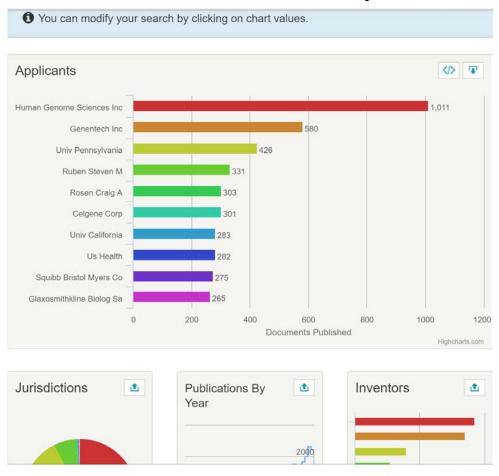
# Portfolio/competitors analysis/Business/Competitive Intelligence alysis types typical in the private sector

- Typical private sector analysis types
- As part of "business intelligence" and costly analysis types, not available in public websites
- Information considered as "competitive intelligence"
- Includes aspects like analysis of competitors, analysis of own portfolio, litigation cases, patent valuation, market analysis, licensing agreement, social media/blogs and news analysis, patent strength etc, risk assessment, M&As etc.



### Interactive analytics / Dashboards

#### The user selects his analysis criteria/filters





e.g. the Lens

#### Conclusions

- Different types of patent analysis serving different needs
- No consistent terminology many overlaps and some misconceptions
- A good patent analysis can support decisions, yet not a panacea



Thank you!

Irene.Kitsara@wipo.int