Patent Search Strategies and Techniques

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Innovation and Technology Support Section

WIPO

Gaborone – 10 March 2016

CONTENTS

- The Context
- Search Strategies
- Search Techniques
- Basic Search Strategy

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THE CONTEXT

- Access to Information and Knowledge:
  - In this context, information means:
    - *Technical*: information found in a patent document
    - *Scientific*: information found in an article, a thesis, a journal, an e-book
  - The current presentation will focus on HOW to access technical information which means *information found in a patent document*

THE CONTEXT (continued)

- What is a patent document ?
  - A Patent Document discloses an invention or a technology in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art

- What does a Patent Document contain?
  - A Bibliographic data
  - A description and drawings
  - Claims
  - Citations and references

THE CONTEXT (continued)

- Where can a patent document be found?
  - In a national patent registry (Nigeria, USPTO, etc.)
  - In a regional patent registry (ESPACENET) or regional IP registry (OAPI, ARIPO)
  - In an international specialized database (PATENTSCOPE)
- Nowadays, a lot of national registries especially in Africa are still working on paper which is the opposite of patent or IP registries of industrialized countries which are digitized

SEARCH STRATEGIES (see WIPO Guide, pp. 13-24)

- Patent information can be searched by using:
  - Keyword
  - International Patent Classification
  - Dates (e.g. priority date, application date, publication date, grant date)
  - Patent reference or identification numbers (application number, publication number, patent number
  - Names of applicants/assignees or inventors
  - Data ranges: [….TO….] Documents with a publication date (DP) between two date ranges (ex: DP: [20151231 TO 20160331] -> = documents with a publication date (DP) between 31 December 2015 and 31 March 2016

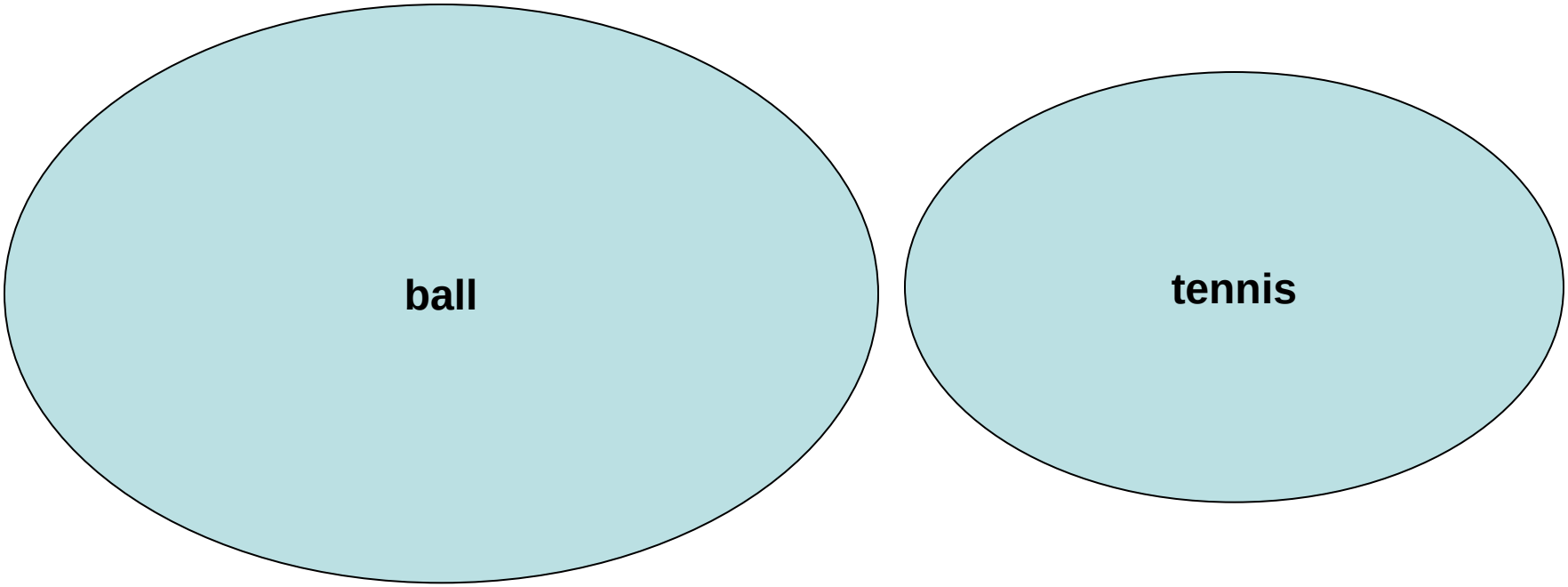
SEARCH TECHNIQUES (see WIPO Guide, pp. 13-16)

- Patent information can be searched by using:
  - Boolean Operators (AND, OR, ANDNOT, XOR)
  - Adjacent or Proximity Operators (NEAR)
  - Truncations: primary root by using an operator called a wildcard, usually an asterisk (*), a question mark (?), a dollar sign ($), or a percent sign (%)
  - Nesting: Use of parentheses ( ) to *organize search*
  - Phrases: Use of quotation marks (« ») to surround a *single search*

Exercises with Boolean Operators (AND, ANDNOT, OR, XOR)

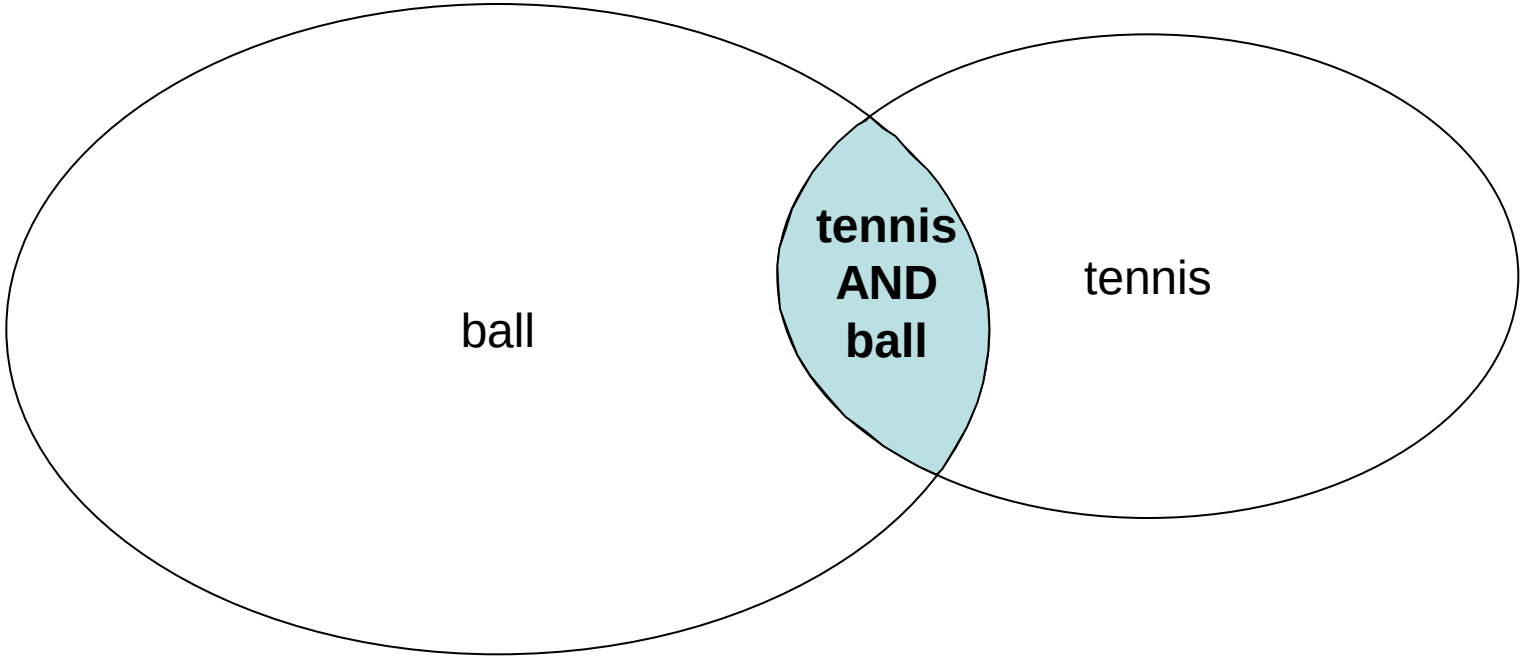
- Tennis **AND** Ball: documents having **both** the word « Tennis » and « Ball »
- Tennis **ANDNOT** Ball: documents having the word « Tennis » **but not** the word « Ball »
- Tennis **OR** Ball: documents having **either** the word « Tennis » or the word « Ball » **or both**
- Tennis **XOR** Ball: documents having the word « Tennis » or the word « Ball » **but not both**
- Tennis **NEAR** Ball: documents having both the words « Tennis » and « Ball » **within a certain number of words of each other (5 words in PATENTSCOPE)**

Boolean Operators



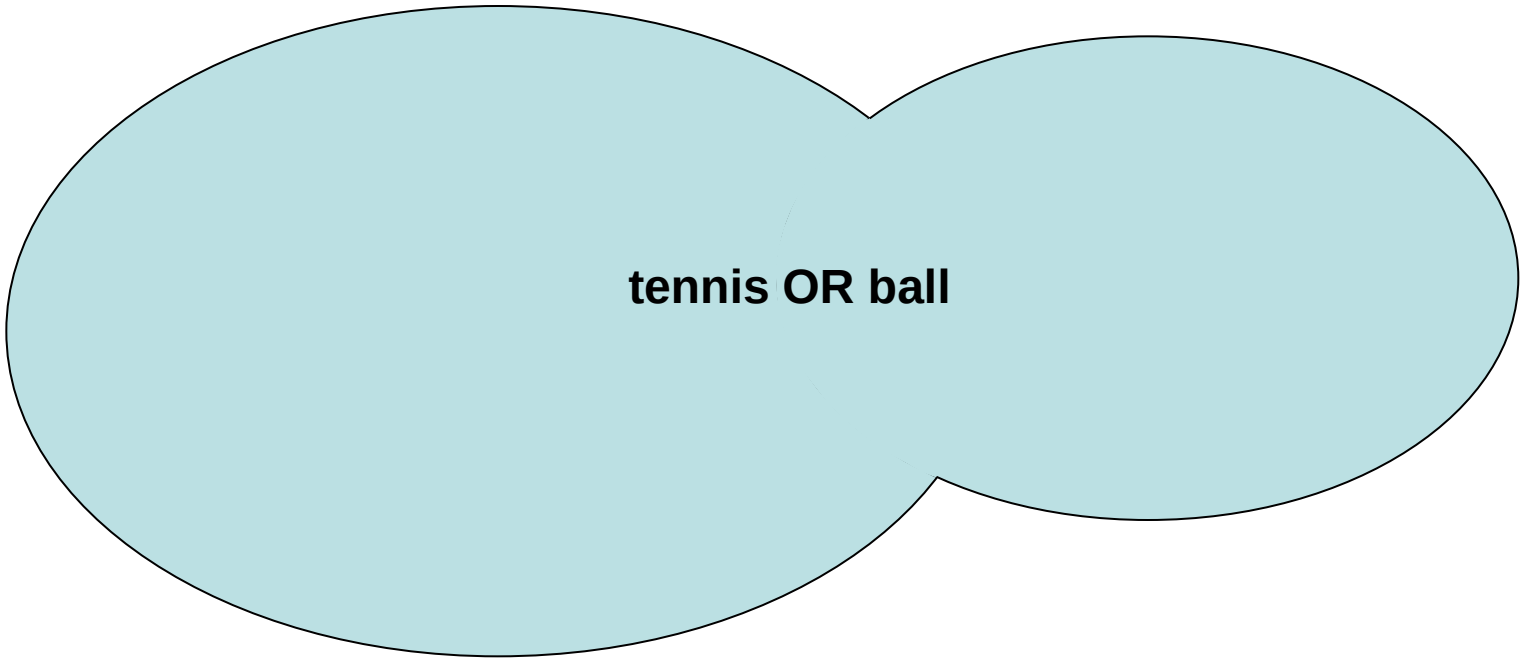
- Results in PCT collection (English titles):
  - **195** (tennis)
  - **2,454** (ball)
  - **2,649 total**

Boolean operators : AND



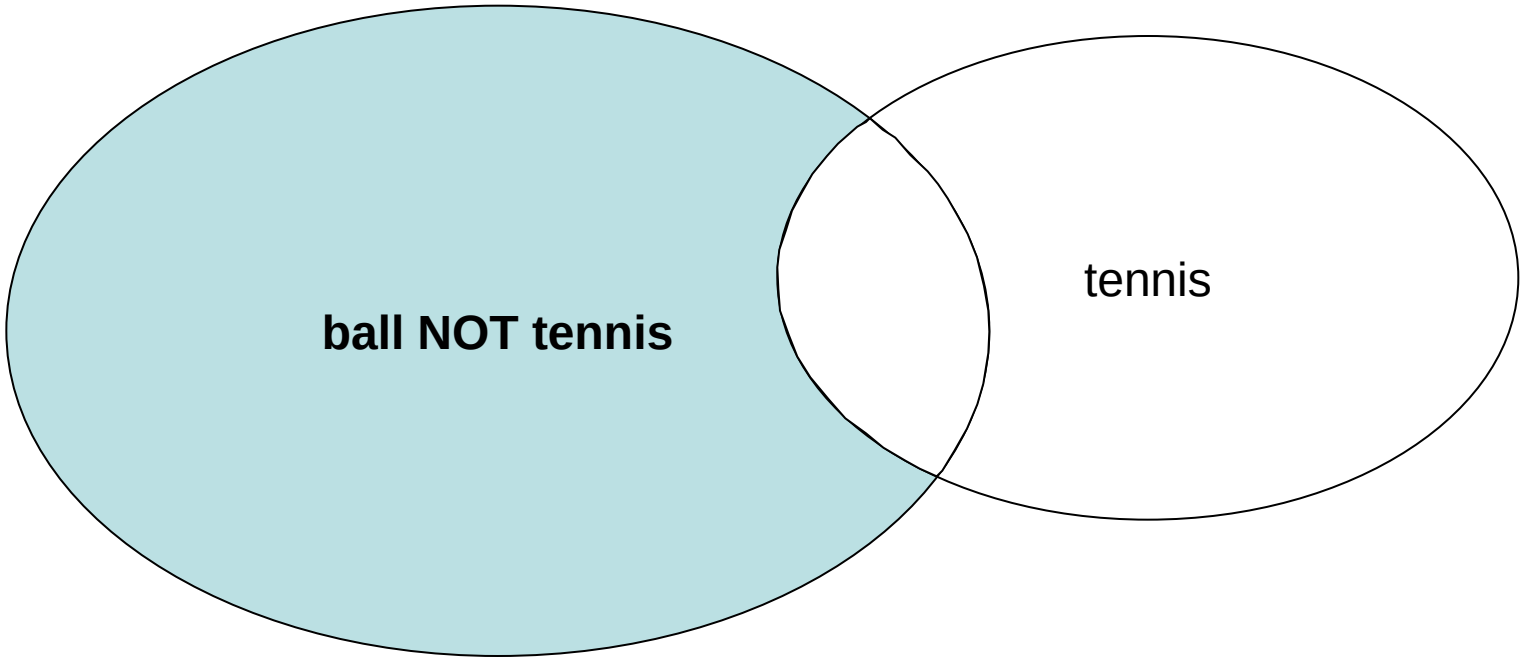
- Results in PCT collection (English titles)
  - **34** (tennis AND ball)

Boolean operators : OR



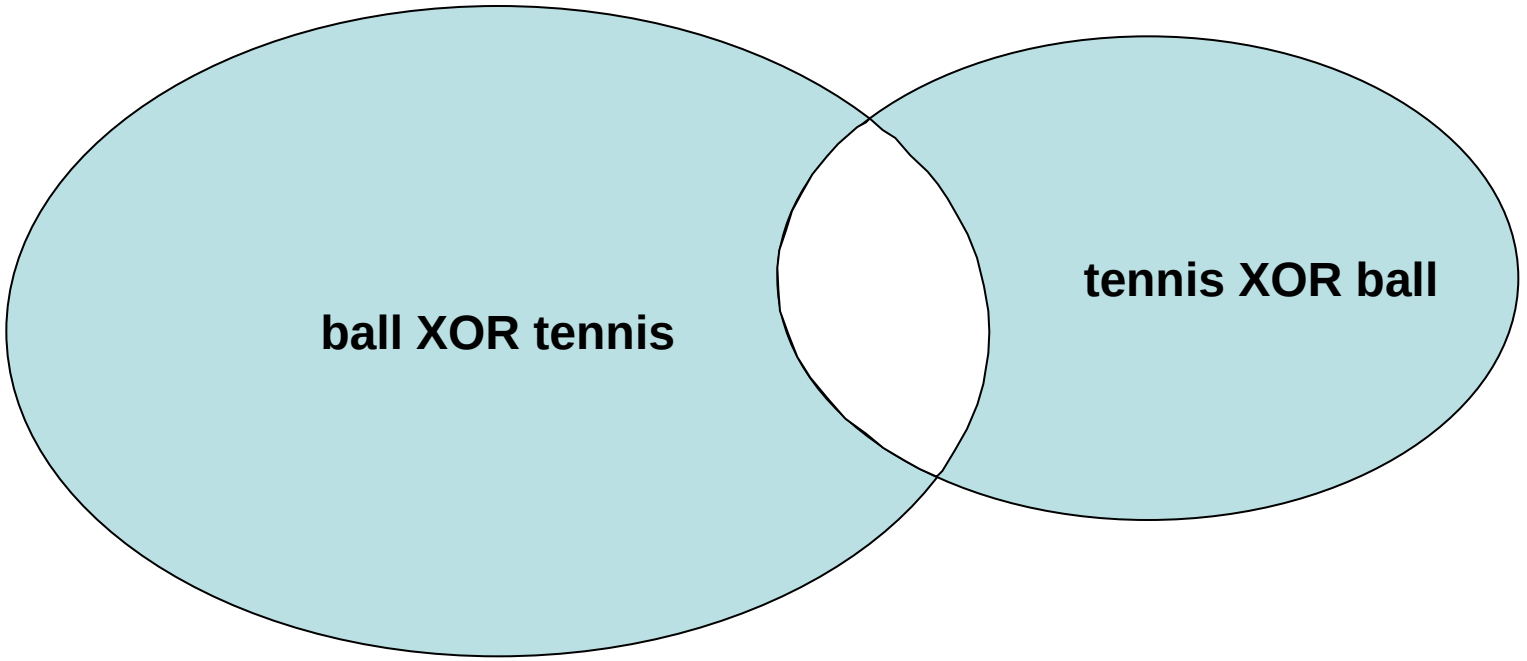
- Results in PCT collection (English titles)
  - **2,615** (tennis OR ball)

Boolean operators : NOT (or ANDNOT)



- Results in PCT collection (English titles)
  - **161** (tennis NOT ball)

Boolean operators : XOR



- Results in PCT collection (English titles)
  - **2,581** (tennis XOR ball)

Proximity operators: Rationale

- corn AND fertilizer

WO 2008/040445 also describes that 4-{[(6-chloropyrid-3-yl)methyl](methyl)amino}furan-2(5*H*)-one can be present in its commercially available formulations and in the use forms, prepared from these formulations, as a mixture with other active compounds, such as insecticides, attractants, sterilizing agents, bactericides, acaricides, nematicides, fungicides, growth-regulating substances, herbicides, safeners, fertilizers or semiochemicals.

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■ ■ ■

In an embodiment of the invention, the invention is directed to the use of the combination, mixture or composition according to the invention for controlling pests which occur in rice, cotton, tea, vegetables, sugar cane, soybean, potato, top fruits, corn, vine, ornamentals, rangeland and pastures, canola.

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Proximity operators: Function

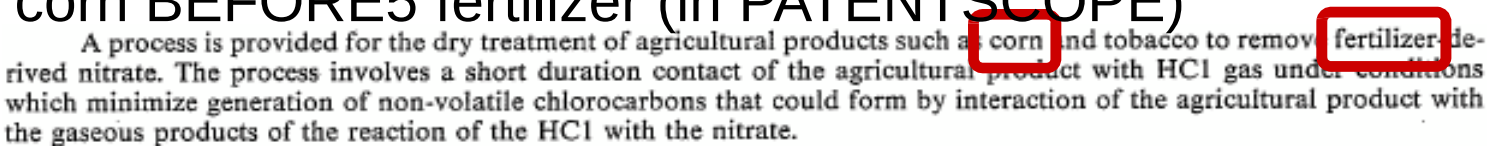
- Define the maximum "distance" (number of terms) between search terms

  → Ensure that search terms are "in context" with each other

Proximity operators: Ordered

- Ordered: Search terms must be in given order (and
  within specified distance)

  corn BEFORE5 fertilizer (in PATENTSCOPE)

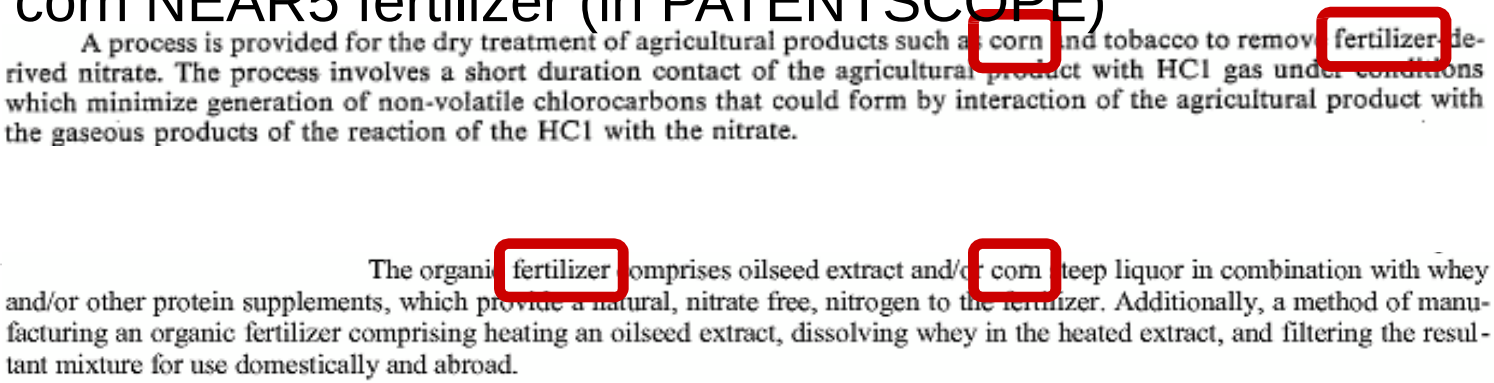


A process is provided for the dry treatment of agricultural products such as corn and tobacco to remove fertilizer-derived nitrate. The process involves a short duration contact of the agricultural product with HC1 gas under conditions which minimize generation of non-volatile chlorocarbons that could form by interaction of the agricultural product with the gaseous products of the reaction of the HC1 with the nitrate.

Proximity operators: Unordered

- Unordered: Search terms can be in any order (and within
  specified distance)

  corn NEAR5 fertilizer (in PATENTSCOPE)



A process is provided for the dry treatment of agricultural products such as corn and tobacco to remove fertilizer-derived nitrate. The process involves a short duration contact of the agricultural product with HCl gas under conditions which minimize generation of non-volatile chlorocarbons that could form by interaction of the agricultural product with the gaseous products of the reaction of the HCl with the nitrate.

The organic fertilizer comprises oilseed extract and/or corn steep liquor in combination with whey and/or other protein supplements, which provide a natural, nitrate free, nitrogen to the fertilizer. Additionally, a method of manufacturing an organic fertilizer comprising heating an oilseed extract, dissolving whey in the heated extract, and filtering the resultant mixture for use domestically and abroad.

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Question

- How would you carry out a search for inventions related to blood pressure?

Photo source: Pia von Lützau

Boolean operators: AND

- How would you carry out a search for inventions related to blood pressure?

- blood AND pressure

→ No context

Photo source: Pia von Lützau

Proximity operators

- How would you carry out a search for inventions related to blood pressure?

- blood AND pressure

→ No context

- blood BEFORE1 pressure

→ Works, but not supported by all database systems

Photo source: Pia von Lützau

Phrases

- How would you carry out a search for inventions related to blood pressure?

- blood AND pressure

→ No context

- blood BEFORE1 pressure

→ Works, but not supported by all database systems

→ **"blood pressure"**

Photo source: Pia von Lützau

Comparison: AND, proximity, phrases

- AND: both terms required, no context required

  → Broadest search

- Proximity: both terms required, in context

→ Narrower search (depending on distance)

- Phrases: exact phrase required (e.g. words compound)

  → Narrowest search

Nesting: Rationale

- apples AND oranges OR bananas

Nesting: Rationale

- apples AND oranges OR bananas

or

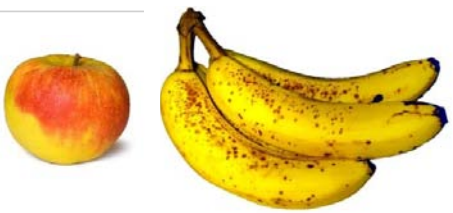
?

Photo source: Evan Amos, Zoofari, Amada44 (Wikimedia)

Nesting: Rationale

- apples AND oranges OR bananas

or



?

Photo source: Evan Amos, Zoofari, Amada44 (Wikimedia)

Nesting: Rationale

- apples AND oranges OR bananas


or

?

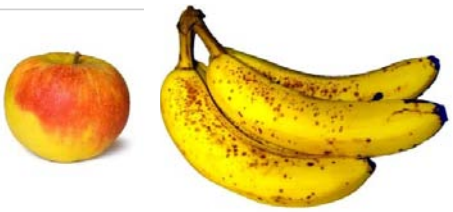

or

?

Photo source: Evan Amos, Zoofari, Amada44 (Wikimedia)

Nesting

- (apples AND oranges) OR bananas

or

- apples AND (oranges OR bananas)

or

Photo source: Evan Amos, Zoofari, Amada44 (Wikimedia)

Question

- How would you carry out a search for all manner of inventions related to electricity?

Photo source: Dmitri G (Wikimedia)

Key concepts

- electricity
- electrical
- electric
- electronic
- electromagnetic
- …

Boolean operators: OR

- electricity
- electrical
- electric
- electronic
- electromagnetic
- …

→ electricity OR electrical OR electric OR electronic OR electromagnetic …

Wildcard operators

- electricity
- electrical
- electric
- electronic
- electromagnetic
- …

Wildcard operators

- **electr**icity
- **electr**ical
- **electr**ic
- **electr**onic
- **electr**omagnetic
- …

Wildcard operators

- **electr**icity
- **electr**ical
- **electr**ic
- **electr**onic
- **electr**omagnetic
- …

→ electr*

(* represents a given number of characters)

Scenario

- A shipping company would like to improve its logistics management.
- You've been asked to perform a search for inventions related to radio frequency identification (RFID) tags used to track the movement of containers.

Key concepts

radio frequency identification RFID containers

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Phrases

"radio frequency identification" RFID containers

→ Identify compound words

Boolean operators

"radio frequency identification" OR RFID AND containers

→ Indicate relationships between concepts (synonyms and additional concepts)

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Nesting

("radio frequency identification" OR RFID) AND containers

→ Resolve ambiguous logic

Wildcard operators

("radio frequency identification" OR RFID) AND container*

→ Include variants (here: plural form)

Search

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Search: Results

Sort by: Pub Date Desc | View: All | List Length: 10

No	Ctr	Title	PubDate	Int.Class	Appl.No	Applicant	Inventor
1.	WO	WO/2013/063415 - AVOIDING THE MISAPPLICATION OF CONTENTS IN ONE OR MORE CONTAINERS	02.05.2013	A01M 7/00	PCT/US2012/062154	PETERSON, John	PETERSON, John
		I A method for avoiding the misapplication of contents in one or more containers, the method comprising: providing a first smart label (e.g. RFID tag), the first smart label comprising first information corresponding to a first recipe for a first composition to be applied by a machine to crops in a first portion of a field, the first recipe based on geofence information for the first portion of the field; and assigning by a processor the first smart label to a first container that stores the first composition and color coding said container.					
2.	US	20130099901 - Systems and Methods for Secure Supply Chain Management and Inventory Control	25.04.2013	G06K 7/01	13710267	Mojix, Inc.	Jones Christopher R.
		Systems for encoding and reading RFID tags on a collection of items are shown. One embodiment of the invention includes a plurality of items, where each item possesses an item identifier string, and a plurality of RFID tags, where an RFID tag is affixed to each of the items and each RFID tag is encoded with a code word element generated using at least all of the item identifier strings. In many embodiments, the collection is a plurality of goods contained within a case, pallet, container or storage area.					
3.	WO	WO/2013/059839 - CONTAINER SEAL SECURITY DEVICE	25.04.2013	G08B 13/14	PCT/ZA2012/000064	JOLLIFFE, Harry	JOLLIFFE, Harry
		ABSTRACT A tamper indicating device 10 for a seal for a container includes a locking unit comprising a holder 12 which spans a conventional locking bolt 22 and receives an insert 14 for securing the tag 20 of the locking bolt in position. The device has an RFID facility electronically linked with at least one identity code associated with the locking bolt 22 and/or the container number. The device 10 is for single - use and once locked in place is required to be broken to be removed.					

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		I A method for avoiding the misapplication of contents in one or more containers, the method comprising: providing a first smart label (e.g. RFID tag), the first smart label comprising first information corresponding to a first recipe for a first composition to be applied by a machine to crops in a first portion of a field, the first recipe based on geofence information for the first portion of the field; and assigning by a processor the first smart label to a first container that stores the first composition and color coding said container.					
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Using citations and references

- Application description prior art explanation
- Search report citations
  - Document categories:
    - X: novelty destroying
    - Y: inventive step destroying
    - A: state of the art technical background

INTERNATIONAL SEARCH REPORT

International Application No
PCT/AT 02/00172

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B62M3/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B62M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	FR 516 494 A (DANEL FRANCOIS-LEOPOLD-AUG) 19 April 1921 (1921-04-19) abstract; figures	1 4
Y	US 5 628 710 A (HERVIG DANA P) 13 May 1997 (1997-05-13) abstract; figures	4
X	FR 2 753 953 A (FRECHAUT JEAN) 3 April 1998 (1998-04-03) abstract; figures	1
A	WO 00 68067 A (BADARNEH ZIAD) 16 November 2000 (2000-11-16) abstract; figures	1,4,5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 September 2002	17/09/2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Wagner, H

Form PCT/ISA/210 (second sheet) (July 1992)

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Basic Search Strategy (I) (applicable to any patent search)

1. Find keywords expressing the essential concept of invention *(alternatively, start with IPC, i.e. in step 4. and then use keywords)*
2. Find synonyms of these keywords from:
   - technical dictionaries
   - documents already found in this technical field
   - patents classifications
   - Tools such as CLIR
3. Carry search to see first broad results indicating also more synonyms and classifications

Basic Search Strategy (II)

4. Find useful patent classification symbols
5. Use keyword search to find the most relevant classification (compare different classifications if necessary as regards their relevance to your search)
6. Carry out search to find relevant classified documents

Basic Search Strategy (III)

7. Combine the results of the classification search with additional features of the searched technology using keywords
8. Iterate this procedure
9. In general, start broadly (recall) and narrow down (precision) to relevant documents as search progresses
10. Read carefully a manageable number of documents

Thank you for your kind attention!

ituku.elangibotoy@wipo.int

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