

# **NTM Week 2017**

## **NTM classification for Intellectual Property**

### **1. Starting point**

**Progress discussion**

### **2. Steps forward**

**Product concordance**

**MAST Meeting  
Geneva, September 2017**



## How classification may help traders

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- Provide information on IP rights that exist on a traded product in country of export destination
- Do I need to comply with someone's IP rights - do I need a license for my product?



# Working group on IP

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- WIPO
- WTO
- UNCTAD



# Classification proposed for IP chapter

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Patents	N1
Industrial designs	N2
Geographical indications	N3
Copyright	N4
Trademarks	N5
Other (n.e.s.)	N9

Follows the WIPO classification for the types of IP rights.  
This was largely accepted

The difficulty resides in finding a successful way to assign the rights to the affected products, in terms of HS coding.

# Product concordance

## "Easy" cases

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- **Industrial designs, N2**
  - Industrial designs are registered in the Global Design WIPO database with the name of the industrial product to which the design corresponds, so the matching with HS classification is direct.
- **Geographical indications, N3**
  - Geographical indications are registered in national GI registers. Mostly agricultural products, some handicraft products. Direct matching with HS classification.
- **Trademarks, N5**
  - WIPO Global Brand Database uses the NICE classification, Class A for goods and Class B for services. Class A can be directly matched with HS code (example "Chemicals" both under NICE and HS)



# Product concordance

## Complex cases

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- Trademarks, N5
  - NICE Class B on Services - match to HS? Only products
- Copyright, N4
  - Not all jurisdictions require registration
  - Not possible to link HS to comprehensive copyright database



# Product concordance

## Complex cases

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- Patents, N1
  - Registration does not refer to a product, but a technology
    - WIPO International Patent Classification (IPC)
    - IPC code may be used to check patent status of technology (WIPO "Patentscope" database)
  - How to match HS and IPC ? One product may comprise multiple technologies
  - Are we sure that matching / concordance provides the trader with legal certainty? Or a mere likelihood that its product is (not) affected by a patent?



# Product concordance

## Complex cases

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- Patents, N1
  - Is concordance necessary for the trader?
  - Alternative 1: apply "Patentscope" search directly, using generic name of product
    - Legal certainty? Impossible for trader to interpret patent claims
  - Alternative 2: ask the patent office directly

### More general:

- Wouldn't this be the best way to ensure legal certainty also in all other cases / IP categories?
- Is there a practical use of developing concordance and a classification system?





# Steps forward.

## How to match products with IP rights

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- Lybbert, Travis J. and Nikolas J. Zolas. 2014
  - *“Getting patents and economic data to speak to each other: An ‘**Algorithmic Links with Probabilities**’ approach for joint analyses of patenting and economic activity.”* Research Policy 43(3): 530-542.
  
- UCDavis University, available under this link:
- <http://www.wipo.int/publications/en/details.jsp?id=3949&plang=EN>
- The actual database created by these researchers is available under this link:
- [http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/xls/ipc\\_technology.xls](http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/xls/ipc_technology.xls)



# Product concordance

ipc4	hs2007_6	probability_weight
A01B	843210	0.438563
A01B	843229	0.389043
A01B	843290	0.125208
A01B	843221	0.023659
A01B	843230	0.023181
A01B	820130	0.000345
A01C	843230	0.566555
A01C	310590	0.215305
A01C	843290	0.169193
A01C	843240	0.045375
A01C	120930	0.00213
A01C	120910	0.001442
A01D	843320	0.430524
A01D	843311	0.173147
A01D	843319	0.173147
A01D	843390	0.171009
A01D	843353	0.026087
A01D	843359	0.026087

Adds to 1

Adds to 1

Adds to 1

Probabilities  
assigned by an  
automatic process

"Most likely product  
to be affected by a  
certain patent"



# Product concordance

- Sometimes, the list of assigned products is long and none of the probabilities is very high
  - e.g. code A23B

ipc4	hs2007_6	probability_weight
A23B	030559	0.1316
A23B	030549	0.113533
A23B	030379	0.108877
A23B	030530	0.097223
A23B	121299	0.093094
A23B	030269	0.068223
A23B	030219	0.066152
A23B	030499	0.017697
A23B	030341	0.015653
A23B	030349	0.015653
A23B	030343	0.014869
A23B	030563	0.014026
A23B	030569	0.013812
A23B	030619	0.013729
A23B	021011	0.012957
A23B	030749	0.011781
A23B	030759	0.011781
A23B	140490	0.010143
A23B	030233	0.00945
A23B	291814	0.008351
A23B	291815	0.008351
A23B	030541	0.007553
A23B	030239	0.007434
A23B	030429	0.006785
A23B	030231	0.006764
A23B	291550	0.006354
A23B	030551	0.006341
A23B	020736	0.005337
A23B	020210	0.004995
A23B	020220	0.004995
A23B	020230	0.004995
A23B	030212	0.004467
A23B	030352	0.004455

# How they do it

## Lybbert and Zolas, 2014

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### A. Match industries (products) with technologies (patents)

- Probability that a certain patent affect one particular industry

WIPO database has all patents with its IPC code/s

### B. Match technologies with industries

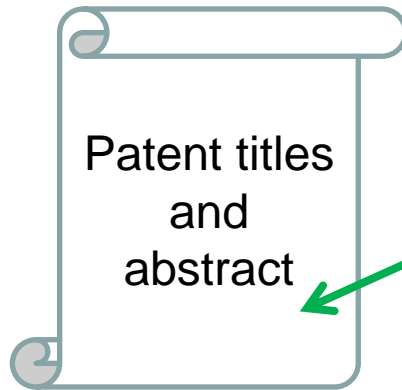
- Probability that a certain product is affected by one particular IPC code



# How they do it

## B. Find the IPC patent codes in the products

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Search terms generated by hand (that represent the industry description)

Identify which patents contain these specific terms

Term 1	# patents	IPC list for those patents
Term 2	# patents	IPC list for those patents
(...)	(...)	(...)

See frequency of IPC in each case.

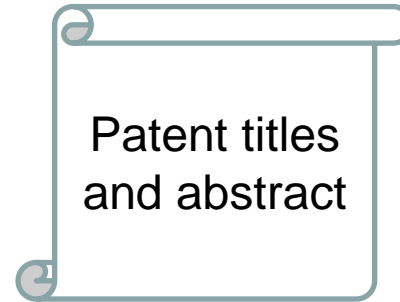
(then re-weigh to reduce noise, because some IPC are less used than others)

These are for identifying industries

# How they do it

## A. Find the products in the patents

Extract keywords from the patents, organized by IPC code



List of extracted keywords, with weight based on frequency appearance

Match them with industry descriptions, using probability weights (match technologies to industries)

IPC 1	Keyword 1	freq
IPC 1	Keyword 2	freq
IPC 1	Keyword 3	freq
IPC 2	Keyword 4	freq
IPC 2	Keyword 5	freq
IPC 2	Keyword 6	freq
(...)	(...)	(...)

Keyword 1	Prob %	Industry x
Keyword 2	Prob %	Industry x
Keyword 3	Prob %	Industry x
Keyword 4	Prob %	Industry x
Keyword 5	Prob %	Industry x
Keyword 6	Prob %	Industry x
(...)		(...)

Then filtered to eliminate noisy IPC

# Product concordance Examples

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IPC code	HS6	Probability
A01D	843320	43.0 %
A01B	843210	43.8 %
A01B	843229	38.9 %

- IPC code A01D would be assigned to HS product 843320,
  - as it has probability of 43% in the match (the highest for that code).
- Patent under the code A01B, would be assigned to the HS products 843210 and 843229,
  - as they have probabilities of 43.8% and 38.9%, respectively.
- Those IPC codes mentioned here are also linked to other HS products but with a much lower probability.



**THANK YOU**

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