# RISIS







# The ISI-Trademark Data Collection (ISI-TM)

### Eu-SPRI Annual Conference Oslo June 9-11 2021



## What are trademarks and what can be expected from them as an innovation indicator?



- Trademarks refer to **signs** in general
  - words, phrases, symbols, designs or combination of these 

    are used as brands and tools for individual identification of goods and services
- Potential to cover a large number of innovative activities and can thus be seen as a complementary indicator to patents
  - allows us to look into innovations in services



#### Advantages

• Timeliness, closeness to the market, allow us to look at portfolios of IPRs (in combination with patents, utility models, designs, etc.)

#### Disadvantages

- existing classification scheme is very broad and cannot (easily) be adapted to more specific topics
- trademarks are only registered and not examined (only compliance with formal regulations)
   and filing costs are low 

  very hard to identify "innovative" trademarks

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### Two Trademark Datasets in RISIS RISIS







About 100,000 applications p.a. from 1996 to 2020

#### **Bibliographic information**

- Trademark number (ID)
- Applicant/owner, incl. address
- Dates (application, registration,...)
- Representative, incl. address
- Type (word, figurative, sound,...)
- Language
- Opposition

#### Classifications

- 45 classes (Nice)
- Vienna classes (figurative elements)



About 300-400k applications p.a. from early 19th century

#### **Bibliographic information**

- Trademark number (ID)
- Applicant/owner, incl. address
- Dates (application, registration,...)
- Attorney name
- Legal status

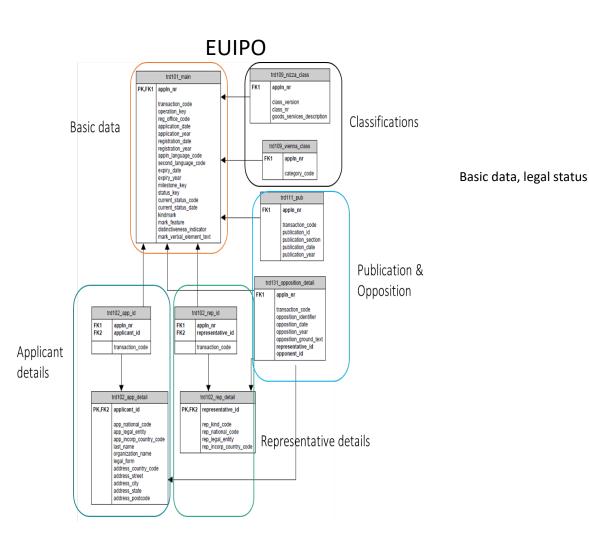
#### Classifications

- 45 classes (Nice)
- U.S. classification

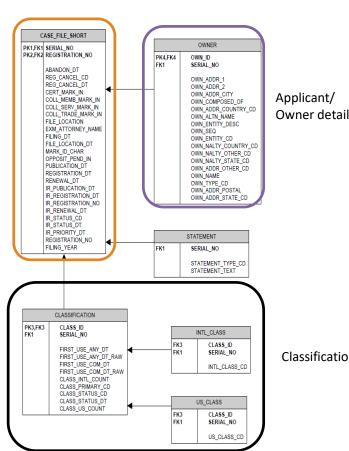
Images: <a href="https://euipo.europa.eu/ohimportal/en/">https://euipo.europa.eu/ohimportal/en/</a>, <a href="https://euipo.europa.eu/ohimportal/en/">https://euipo.europa.e

### SQL Database Scheme: EUIPO & **USPTO** (selected tables)





#### USPTO USPTOMARK19J - Trademark - Short

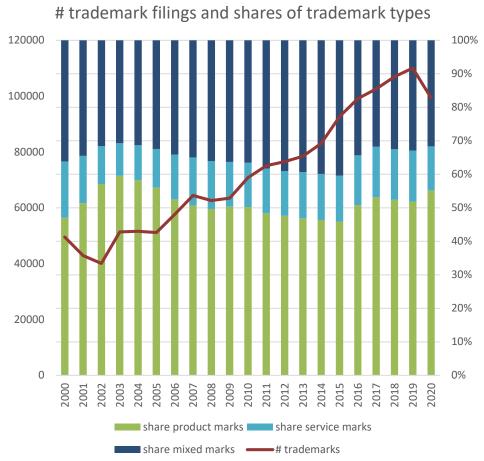


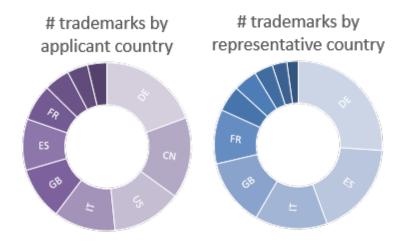
Classificatio

## Basic statistics — EUIPO filings RISIS







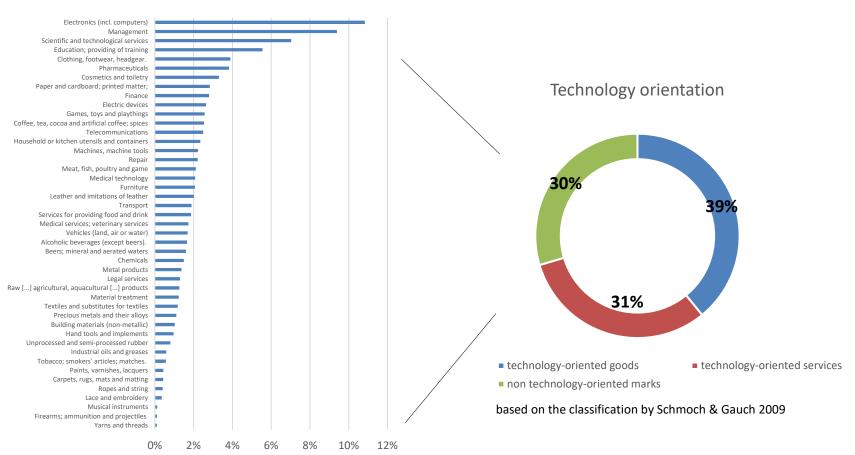




## Field classifications — EUIPO filings



#### Share of NICE fields in total filings

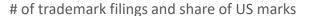


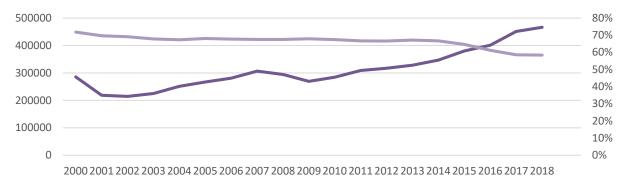
Source: EUIPO

### Basic statistics – USPTO filings





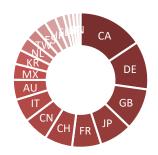




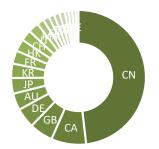
Total US share

# trademarks by applicant country, 2010

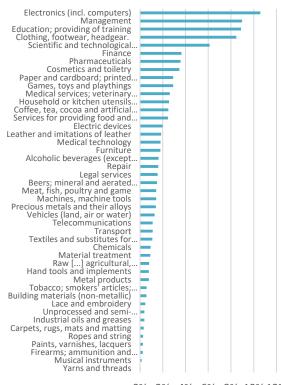
# trademarks by applicant country, 2018



Source: USPTO



#### Share of NICE fields in total filings



0% 2% 4% 6% 8% 10% 12%

### How to access the data?



#### Several possibilities

- 1. Research visits at ISI with direct access to the raw data (once the pandemic allows)
- Data extracts based on clear specifications, e.g. "micro dataset of all trademarks by French applicants in NICE classes 1-15"



https://upload.wikinedia.org/wikipedia/comr b/9/33/Yes\_We%27re\_Open.jpg/320px-Yes\_We%27re\_Open.jpg

- 3. <u>Aggregated tables</u>: ready-to-use tables of trademarks by WIPO35 (patent classification) or by 45 NICE classes, years (2005-2019) and countries (EU27, EFTA, OECD); also possible on request: lists of trademarks for pre-defined technology/product/service fields
- 4. Remote data processing, i.e. pre-written SQL scripts by users and send back the results → only for cases where 1-3 is not an option
- Integration of the full relational database into the RCF
  - Apply for access via: <a href="https://rcf.risis2.eu/datasets">https://rcf.risis2.eu/datasets</a>
    - Metadata at: https://rcf.risis2.eu/dataset/14/metadata



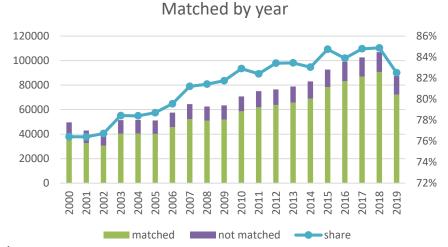
# Database Extensions — Classification & Matching

## Generating a classification for trademark filings - A String Matching approach

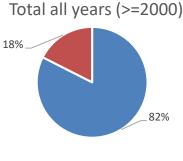




- Generation of a fine-grained classification scheme for more in-depth field analyses and the opportunity to identify innovative trademarks
- Approach: Match (partly)
   standardized text by which the
   applicant can describe his/her
   trademark with the pre-defined
   keyword list by the WIPO



Matched ~1.3m of ~1.6 million EUIPO trademarks between 2000 and 2019



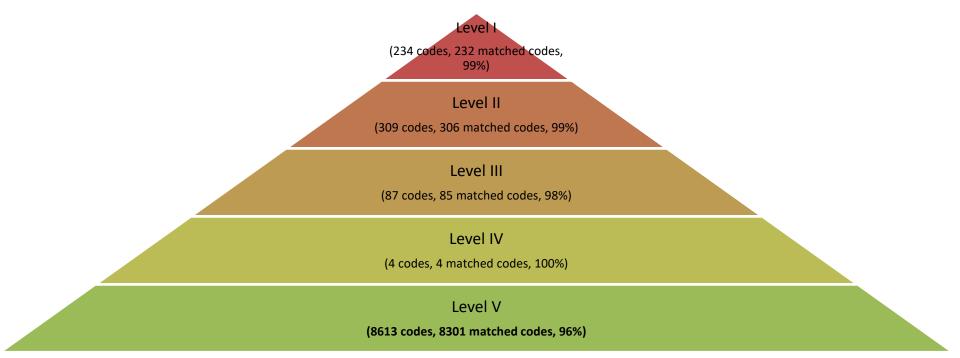
Not matched

Matched

→ For more than 80% of all trademarks, a sub-level classification is now available

### Classification setup





NICE Cla	ss Lvl_1_name	Lvl_2_name	Lvl_3_name	Lvl_4_name	Lvl_5_name	Lvl_5_nr
12	VEHICLES	LAND VEHICLES	GENERAL	GENERAL	wheelbarrow	120218
12	VEHICLES	LAND VEHICLES	MOBILITY CONVEYANCES	GENERAL	wheelchair	120062
12	VEHICLES	LAND VEHICLES	RAIL VEHICLES	GENERAL	locomotive	120138
12	VEHICLES	PARTS AND FITTINGS	PARTS FOR LAND VEHICLES	POWERTRAINS	motorcycle eng.	120286
12	VEHICLES	PARTS AND FITTINGS	PARTS FOR LAND VEHICLES	POWERTRAINS	motor electric	120109

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## Shares of trademarks within level I class "information technology and audio-visual, multimedia and photographic devices" at level 5, world, 2018



computer 6,1%	compact disc 2,7%		casi 1,7º	%	portabl player 1,5%	le medium	loud 1,5	dspeaker %	
	smartphones 2,1%	calculate machine 1,4%		case for smartphones 1,3%	mous 1,3%			mera 396	
computer hardware	tablet computer	microphone 1,4%							
3,9%	2,096			cabinet for loudspeaker 1,2%		camcorder 1,2%		cover for	
	datum process apparatus	sound reproduction apparatus 1,4%							
	1,9%			computer keyboard 1,2%					
headphone						USB flash drive 1,1%			
2,8%	computer peripheral device 1,8%	smartwatches 1,4%		monitor		1,170			
				1,2%		protective film adapt for smartphones 1,0%			

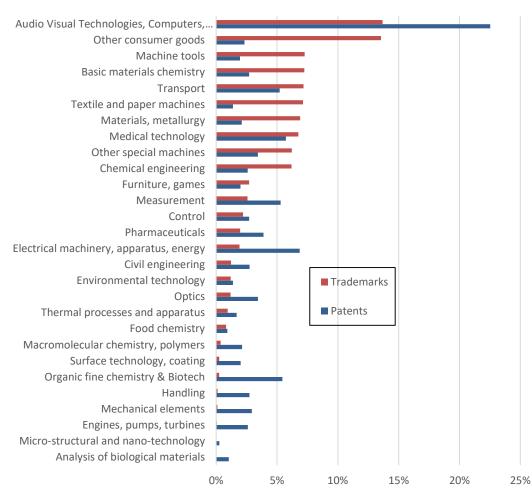
## Concordance Scheme of patents and trademarks based on technology fields



Idea: Generate a

 Idea: Generate a common classification for patents and trademarks, so we are able to compare country (and firm) profiles on a common denominator

→ Basis: Technology field classification of the WIPO (35 fields) and "Level 1 classes" in trademarks



## Matching of trademark data: FirmReg to EUIPO



- Aim
  - Find information on trademark applicants in EUIPO that match (or are similar to) a company name FirmReg
- **Approach:** Calculate the similarity of company names from FirmReg to applicant names EUIPO. A certain degree of similarity determines the selection of the respective pair of entries as a "match". Similarity is calculated based on a Levenshtein distance based algorithm with several steps.

FirmReg					
	step 1-3	step 1-4			
Total matches	175366	847464			
Unique firms covered	95868	248443			
as % of total FirmReg	25,38%	65,76%			
Unique applicants covered (EUIPO)	20243	35035			
as % of total applicants (year>2000)	4,19%	7,25%			

## What to do with the data? RISIS

- Trademark data allow us to take a closer look into innovation in service sectors
- With the new classification, we are able delineate trademark indicators on a fine-grained technology level and provide policy advice on this basis
- In addition, we are on the way to differentiate innovative from "non-innovative" trademarks
- The connection of trademarks with patents gives us the opportunity to dig deeper into IPR profiles of companies/countries and their relation to other firm-specific data (e.g. FirmReg)

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RESEARCH INFRASTRUCTURE FOR SCIENCE AND INNOVATION POLICY STUDIES

### THANK YOU!

European Forum for Studies of Policies for Research and Innovation







ZENODO.ORG/COMMUNITIES/RISIS









**RISIS2 EU PROJECT** 







**LINKEDIN.RISIS.COMMUNICATION** 



































