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Authority Files & Data Quality

The Data Consumer Perspective

4th ASEAN IP Register Regional Coordinators Meeting and WIPO-ASEAN IT Workshop

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WIPO Standards, CWS and Digitization Initiatives

- WIPO Standards
  - provide a framework for working with information in intellectual property documents
- CWS
  - Committee of WIPO Standards
  - forum to adopt new or revised WIPO Standards, policies, recommendations and statements of principle relating to intellectual property data, global information system related matters, information services on the global system, data dissemination and documentation.

Resources:

https://www.wipo.int/export/sites/www/cws/en/pdf/wipo-standards-flyer-2022.pdf

https://www.wipo.int/standards/en/

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Authority Files as a Data Quality Tool

- Authority File Use Cases
  - Online Search Tools like **ASEAN IP REGISTER** and **PATENTSCOPE**
  - IP Office Digitization Projects
  - PCT Minimum Documentation
- ST 37 – Recommendation for an authority file of published patent documents
  - The Standard: Standard ST.37 (wipo.int)
  - The Guidelines: Authority File of Published Patent Documents Provided by Offices (wipo.int)
  - The portal: Authority File of Published Patent Documents Provided by Offices (wipo.int)

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Authority Files and The Single Version of Truth

- WIPO Patent Data Sources (raw and aggregate)
  - WIPO Statistics Data Center: https://www3.wipo.int/ipstats/
  - Authority File Portal: https://www.wipo.int/standards/en/authority_file.html
  - PATENTSCOPE: https://patentscope.wipo.int/
- Aggregate and Raw Data as received by offices

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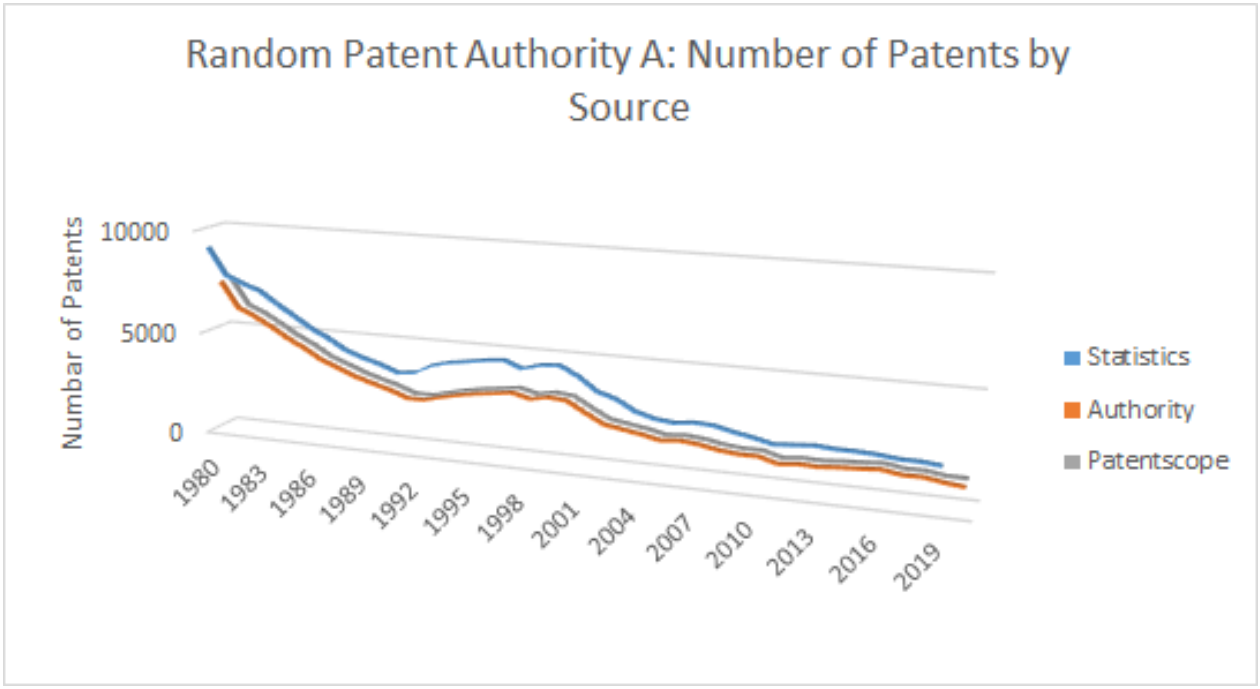
Authority Files and The Single Version of Truth



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Leveraging Authority Files for Enhanced *Data Accuracy*

How do we measure the degree of correspondence between data and the actual features of a real-life entity in patent data?

< (e.g.) Numbering System for Unexamined Publication & Publication of Application >

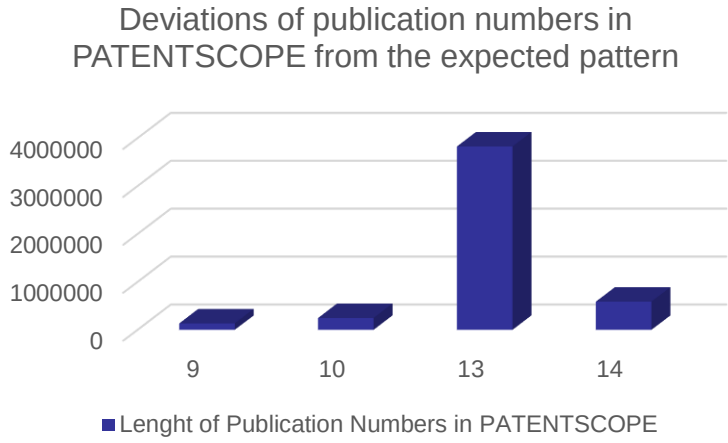
IP Right (2digits) Patent (10), Utility Model (20)		Year (4digits)				Sequence Number (7digits)						
1	0	1	9	8	3	0	0	0	0	0	0	1

< (e.g.) Numbering System for Examined Publication >

IP Right (2digits) Patent (10), Utility Model (20)		Sequence Number (11digits)										
1	0	0	1	1	7	6	9	0	0	0	0	0

Description of KIPO's Authority File: Numbering System

- The Authority File can be used to measure and improve the accuracy of our patent collections such as publication and application numbers or kind codes



- ***The Definition File*** – optional, but crucial in ensuring accuracy (paragraph 36 of WIPO ST.37)

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Preserving *Data Integrity* with Authority Files

How do we ensure that patent data is free from errors, unauthorized modifications and unintended destruction?

- Data Integrity can refer both to referential integrity and to internal consistency (no holes in the data)
- Putting authority files in the center and mapping different sources to them enforces integrity automatically

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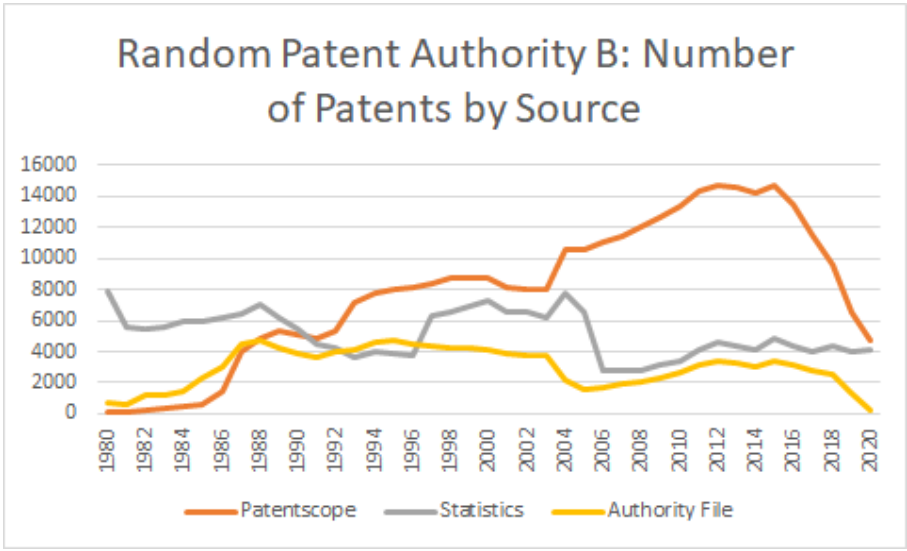
Assessing *Data Completeness* with Authority Files

How can we measure the presence (or absence) of all mandatory data in patent documents?



- Completeness is measured at data set, record and column level
- Authority files
  - designed to be the ultimate source of benchmark data
  - expected to match gazette data
  - should be a superset of any other source of the same data set

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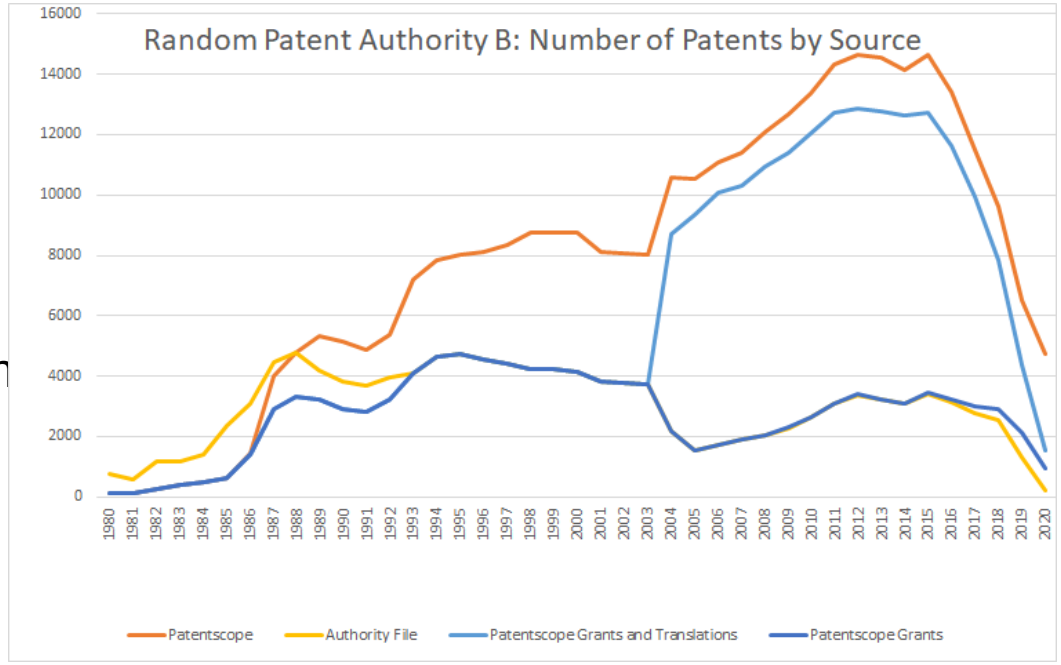
Assessing *Data Completeness* with Authority Files

EXAMPLE

- Dataset Level Completeness
- PATENTSCOPE Kind Codes: A,B,T,U,Y
- Authority File Kind Codes B,T,Y
- No Definition File available
- Conclusion: unusual and sudden increase of numbers due to translations; authority file incomplete as it contains only a subset of all publications
- ST.37 Paragraph 3: «all publication numbers assigned by the IP office"



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Assessing *Data Completeness* with Authority Files

- ST. 37 Paragraph 8 defines the minimum data elements to uniquely identify a patent document: publication information

- ST. 37 Paragraph 9 defines the optional elements – record level completeness
  - Exception codes – very useful to make the line graphs above match perfectly
  - Priority Applications – data enrichment
  - Application identification – extremely useful for identifying priorities – a must for building reliable patent families
  - Text Searchable Information – added for the purposes of PCT Minimum documentation

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The Essential Role of Authority Files in Maintaining *Consistency*

Are patent data values represented consistently within a data set, between and across data sets?

- Consistency can be on record level or a cross-record level
- Example : An authority file where exception Codes are only provided for a portion of the authority file (random date ranges)

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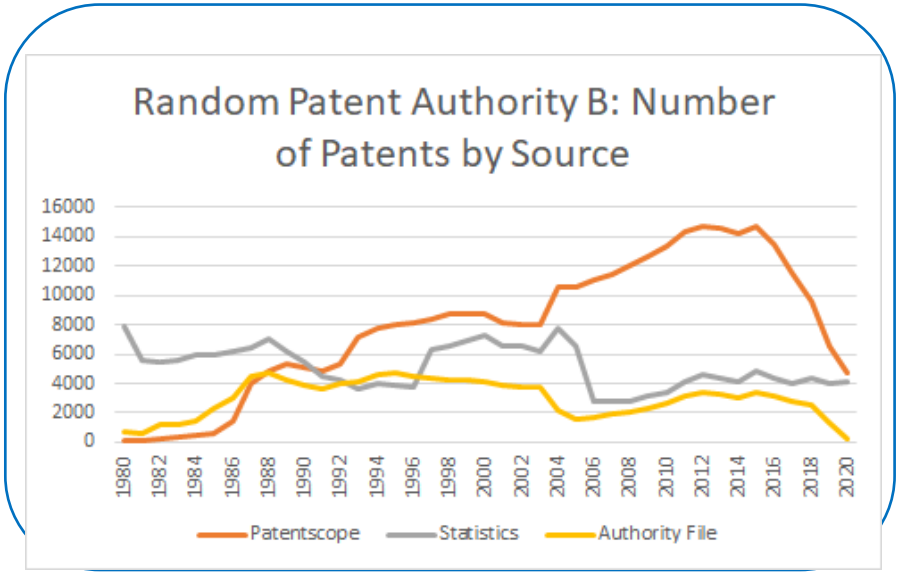
Assessing *Reasonability* with Authority Files

How can we measure how much the data patterns meets expectations?

- Could be based on comparison of benchmark data or past instances of similar data

Example :



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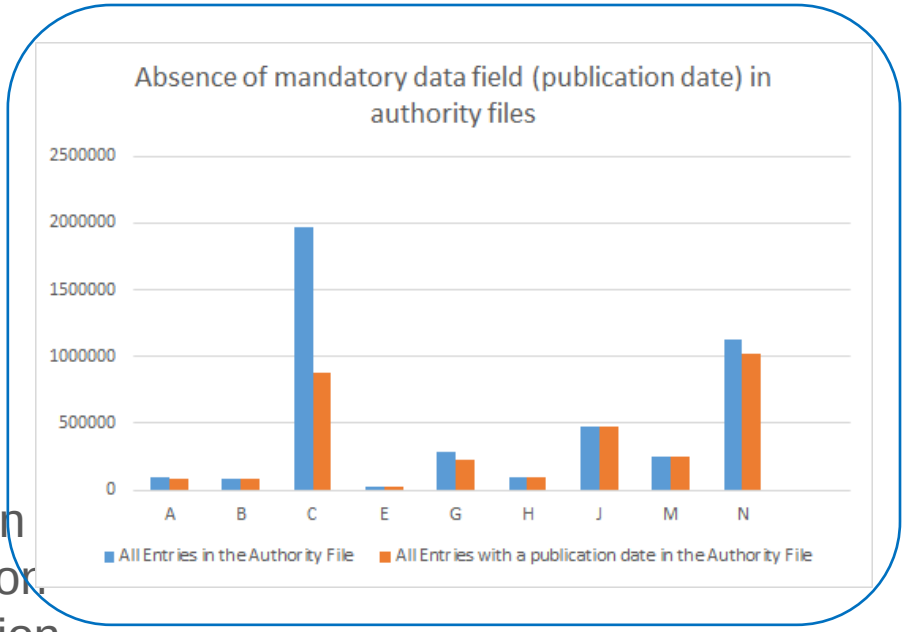
Authority Files: A powerful tool for enforcing *Data Uniqueness*

Is it possible for the dataset to contain the same entity repeated with various identities or presentations?

- A key value relates to one and only one entity.
- Example : Only complete publication including an office code, a publication number, a kind code and a publication date can ensure uniqueness of a record in an authority file



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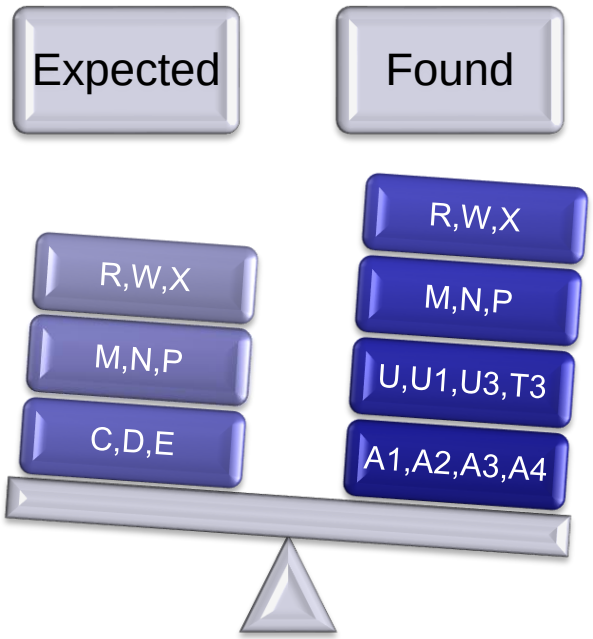
Using Authority Files for *Validation*

Is the data in the dataset consistent with the predefined range or set of acceptable values for the specific variable being analyzed?

- A domain of values could be a set of values, a range of values or rule-based.

Example : Invalid values for Exception Codes



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Timeliness Requirements for Authority Files

How current is the data in the dataset and what is the typical frequency of changes or updates to the data over time?

- ST. 37 recommends at least one annual update of the WIPO Authority File portal in March of each year

IP Office	Authority file	Definition file	Coverage	Remark
AT	XML		1990-01-01 to 2022-03-01	Updated monthly; published here biannually.
AU	HTML		1905-12-04 onwards	Updated quarterly
CA	TXT	PDF	Until 2021-12-31	Comprehensive; CIPO intends to produce an authority file for published patent documents once each year.
CN	HTML	HTML	1985-09-10 onwards	Every six months
CZ	XML (ZIP)	XML (ZIP)*	1903-01-01 onwards	Updated annually
DE	TXT	TXT	Date range up until 2022-03-07; for DE patents and utility models the start of the date range is 1978-01-01. For other types, all data available.	Comprehensive; Updated at a yearly interval
EA	HTML	HTML	1996-07-01 and updated monthly	Authority file is updated on monthly basis https://www.eapo.org/en/?publs=authfile

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Authority Files – User Perspective Summary

- From a user perspective the following should be encouraged
  - Sharing of all publications by the office
  - Sharing of the optional information such as definition file and additional data elements
  - Timely sharing of data
  - Validation of the content of data elements to avoid empty or invalid data
  - Promote collaboration between the authors of statistics and authors of the authority files for a better mutual usage as benchmarks.

- As a community we also need to share any experiences with the digitization of gazettes as the ultimate source for complete and consistent authority files and reflect on ways to reuse and improve those experiences

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THANK YOU

CONTACT:

- WIPO's PATENTSCOPE https://patentscope.wipo.int/
- patentscope-data@wipo.int for data-related issues
- patentscope@wipo.int for feature-related issues
- magdalena.zelenkovska@wipo.int

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