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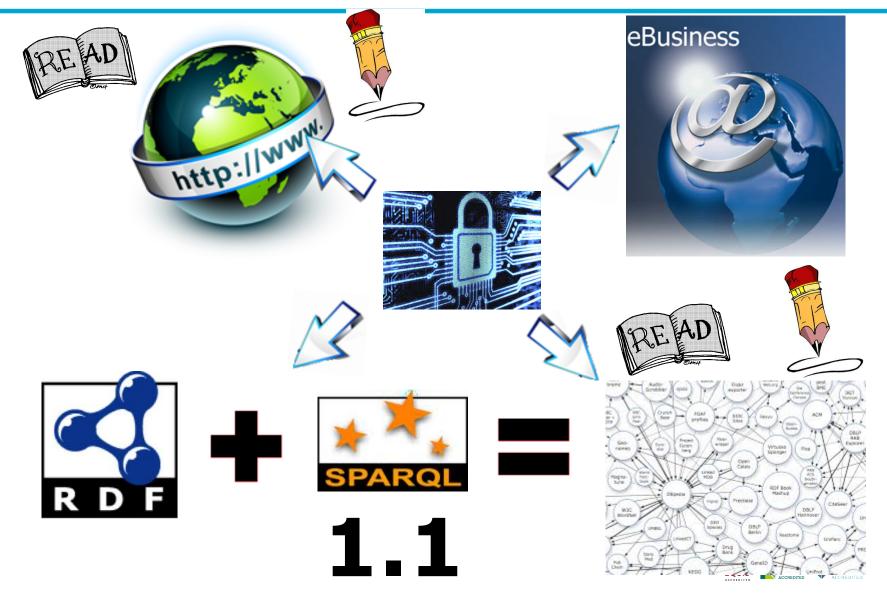
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Policy Based Research

Sabrina Kirrane Vienna University of Economics & Business MIT 27th September 2018

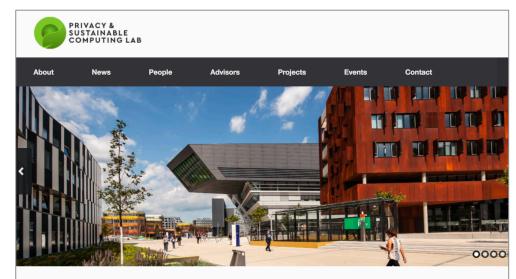








- Privacy & Sustainable Computing Lab
- Launched September 2016: launch event with various important stakeholders: technologists, standardization, activists...
- Mission: Developing sustainable and privacy-preserving computer systems by bringing together computer science & human-centric behavioral science



Privacy & Sustainable Computing Lab

The increasing ubiquity of IT and data in corporate infrastructures and innovation endeavours, as well as the rising pervasiveness of computing in our daily lives, leads to the question how information systems can be build in a private, secure, ethical and value-driven manner. Current IT systems often fail to deliver on these requirements, commonly characterised as "soft" requirements, while aspects of technical functionality dominate.

The Privacy & Sustainable Computing Lab aims at setting new standards in research, education and practice to address ethical issues in computing.

http://www.privacylab.at/





Dr. Ben Wagner (Director)







Prof. Sarah Spiekermann (Mgt Board)

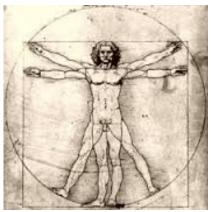
Prof. Axel Polleres (Mgt Board)





Privacy & Sustainable Computing ^b A multidisciplinary perspective...

Online Privacy Public Policy and Legislation Ethical Design



Humanities

Net Neutrality Fragmentation Open Data Open Standards



Computer Science

Big Data Analytics

Artificial Intelligence

Data Science



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MISSION

Developing sustainable and privacypreserving computer systems by bringing together computer science & human-centric behavioral science.



The General Data Protection Regulation (GDPR)



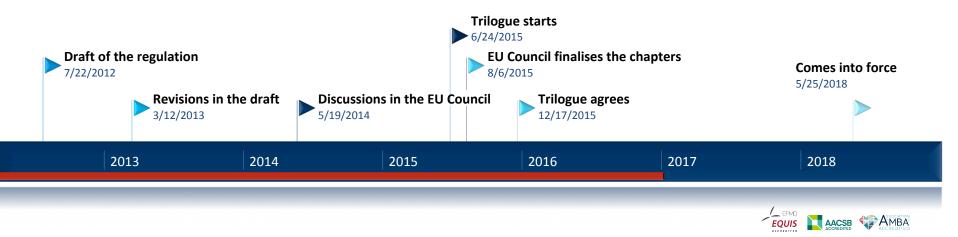
What does GDPR mean for your business?

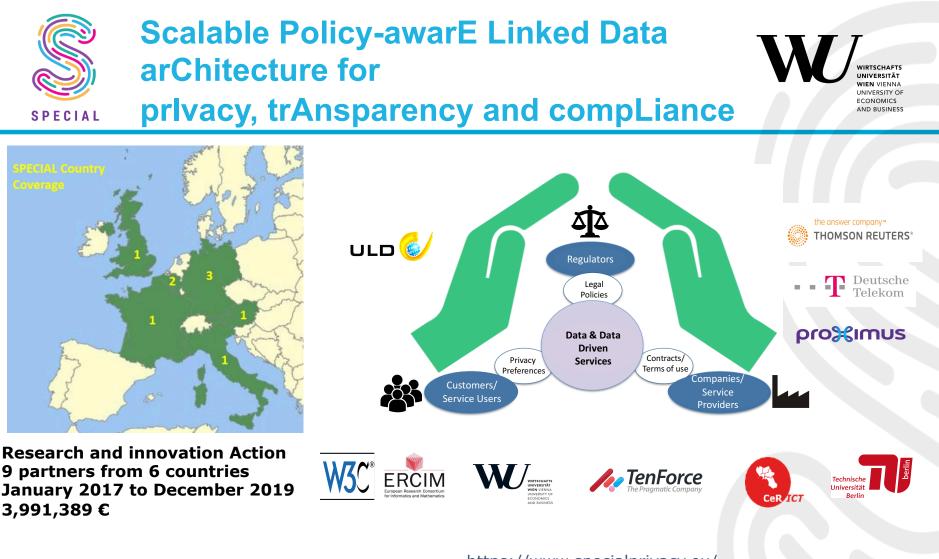


The General Data Protection Regulation (GDPR) is a new EU data protection regulation that will come into force on 25 May 2018.

"The GDPR emphasises transparency, security and accountability by data controllers and processors, while at the same time standardising and strengthening the right of European citizens to data privacy."

[Source: Dataprotection.ie]





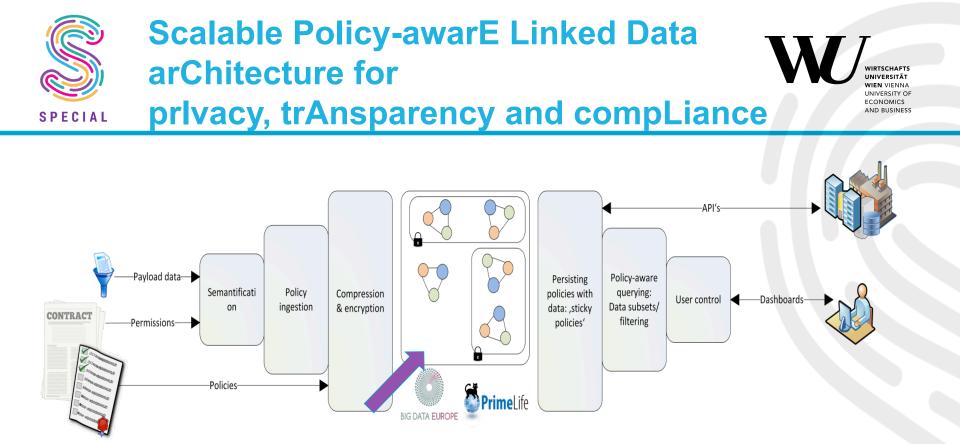
https://www.specialprivacy.eu/



Horizon 2020 European Union funding for Research & Innovation

This project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 731601





SPECIAL uses the Linked Data paradigm

- All data items are identified by Internationalised Resource Identifiers (IRI's)
- By using HyperText Transfer Protocol (HTTP) IRI's everything is potentially linkable
- IRI's allow SPECIAL to associate usage constraints with personal data at different levels of granularity

A Scalable Consent, Transparency and Compliance Architecture Sabrina Kirrane, Javier D. Fernández, Wouter Dullaert, Uros Milosevic, Axel Polleres, Piero Bonatti, Rigo Wenning, Olha Drozd and Philip Raschke Proceedings of the Posters and Demos Track of the Extended Semantic Web Conference (ESWC 2018)

https://www.specialprivacy.eu/project-news/134-architecture-video

Data Licensing Clearance Center





DATA LICENSES CLEARANCE CENTER

💋 INDEPENDENT

PIRATES HOOKED Bought a Kodi box? You're probably under investigation, UK's official copyright protectors warn

As UK officials try to tackle copyright infringement, people who buy illegal IPTV boxes 'may be investigated'

EXCLUSIVE By Margi Murphy 4th May 2017, 11:05 am Updated: 4th May 2017, 11:06 am

COMMENT NOW

KODI box owners "may be investigated" as part of a crackdown on copyright material across the UK.

That's according to the chief executive of FACT, the federation against copyright theft, who warned that soon "some poor, unfortunate person may be the first that is made an example of".



Recent European Court of Justice ruling means:

Anyone caught streaming TV shows, films and sports events illegally using websites, torrents and Kodi add-ons could technically face a decade behind bars.

DIGITAL ECONOMY ACT: ILLEGAL KODI STREAMS COULD NOW LAND USERS IN PRISON FOR 10 YEARS

Amazon and the Premier League are also cracking down on illegal streams fed to media players running Kodi / REUTERS/Tobias Schwarz

Authorities are becoming increasingly concerned about media players loaded with the open-source software and a variety of third-party add-ons

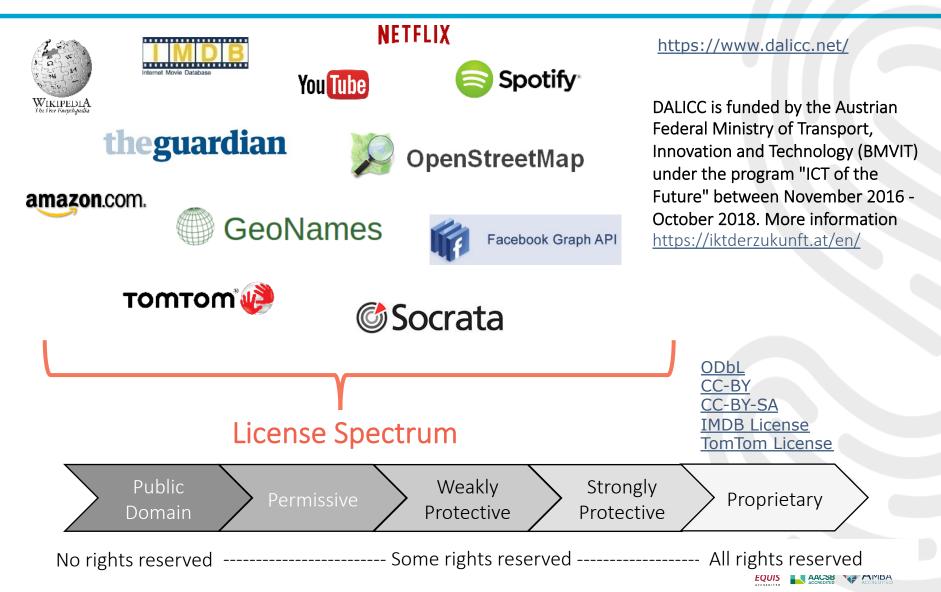
http://www.independent.co.uk/life-style/gadgets-and-tech/news/digitaleconomy-act-kodi-stream-illegal-users-prison-10-years-sentencecopyright-data-sharing-a7716131.html

https://www.thesun.co.uk/tech/3478956/bought-a-kodi-box-youre-probably-under-investigation-uks-official-copyright-protectors-warn/

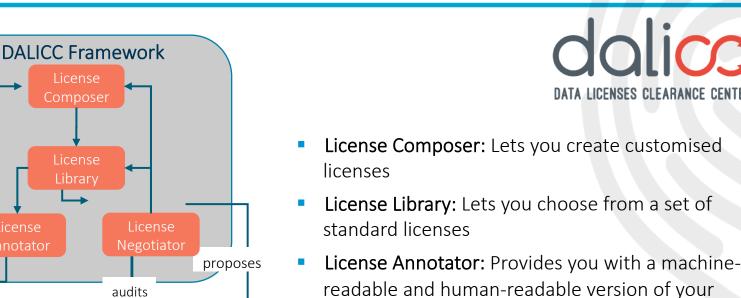


DATA LICENSES CLEARANCE CENTER Data Licensing Clearance Center

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dalicc **Data Licensing Clearance Center** DATA LICENSES CLEARANCE CENTER



license

License Negotiator: Checks compatibility, detects conflicts and supports conflict resolution

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Composer Library consults audits tags Compatibility Data Set License 1 Conflict Detection Conflict Resolution Data Set License 2 Data Set License Derivative License Data Set Work 1...N License N

Modeling and Reasoning over Data Licenses Oleksandra Panasiuk, Simon Steyskal, Giray Havur, Anna Fensel and Sabrina Kirrane Proceedings of the Posters and Demos Track of the Extended Semantic Web Conference (ESWC 2018)

Consent and Control Interfaces

CHANGES TO THIS POLICY We will notify you before we make m inges to this policy and give you an opportunity to review the revived e deciding if you would like to nices of the policy in our archive. CONTACT US Low ur personal data and

our Data Protection Officer at ca nav also contect us at:

If you reside elsewhere, then Fitbit, Inc., a US company, is the data controller that provides you with the Services. You new contact us at

Attr: Legal Department (Privacy Policy) 199 Fremont Street, 14th Floor San Francisco, CA 94105

Archive of Previous Privacy Policies

ing or Limiting Data Use. In addition to the various controls that you and de in a Designated Country, you can seek to restrict our langed your data in contain discussionces. Please note that you ca plete your account at any time.

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have collected the personan mumanon or a creat under the reasons meaning age without perental consent, we will take steps to delete the information as soon as possible. Parents who believe that their child has submitted personal

OUR INTERNATIONAL OPERATIONS AND

operate internationally and transfer information to the United States and in countries for the purposes described in this policy.

We rely an multiple legal have to load/by survey particular data assued the sector. These heads are concerned for \$10 kB and 2 data with Phoney Belder and provide the sector of the contracted classes by particulars. You may subject to capital the multiple contracted classes by particulars. You may subject to capital the sector of t

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Filbl, Inc.

allows parents to set up accounts for their children to use with select Fifbl This also power to a via up accounts for their children is one with velocit PIA devices ("Children's Account"), children's Accounts are within velocit to any appear many play for Children's Accounts within velocities within the filter to a via the sea accounts, which regulation what helemation are of an all services, and have are use and there that historisations. Nevering a guardiants must conserve to the use of their child's data in accountances with the Phany Phalpy the Children's Accounts in works to constrain an account

Persons under the age of 13, or any higher minimum age in the jurisdiction where that person resides, are not permitted to create accounts unless their perent has converted in accordance with applicable line. If we learn that we have collected the personal information of a child under the relevant minima.

INFORMATION SECURITY

We work hard to keep your data safe, We use a combination of technical, administratuate, and physical controls to maintain the security of your data. This installant using Throught Lange Security ("TAS") to encrypt neury of our Services Norms that of tesamility or storing data is completely users, however, if you have a security-related concern, please contact <u>Conterent Support</u>.

DATA TRANSFERS

Editing and Deleting Data. Your account writing: let you change and delete your personal information. For instance, you can sold or delete the profile data you provide and delete your account if you wish. If you choose to delete your account, please note that while most of your If you choose to deline your account, please note that while most of your biomation wile be ended within 28 dials. It may take you bo days to delete at dryour information, like the data recorded by your PDM device and other data stored in our backup systems. This is due to be site and completely of the spheres we use to skere data. We may also preserve data for legal researces or to gravent have, including as described in the <u>blace</u> transmittan's Sharmal evolution.

POLICIES FOR CHILDREN

You may direct us to disclose your information to othe use our community features like the forums, 7-day lea When you access or use our Services, we receive certain usage dets. This includes information about your interaction with the Services, for example, laws. If you reside in a Designated social tools. For certain information, we provide you with a right to lodge a complaint with your local data the Irish Data Protection Core when you yies or search content, install emilirations or software, create or rmation is visible to other a coviati information is available bere log into your account, pair your device to your account, or open or interact ou choose to participate in a challenge, RETENTION

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TO ACCESS AND CONTROL

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We also collect data about the devices and computers you use to access We also called data about the devices and compares you use to access the Bravices, including P address the inverser type, insugars, operating system, Pibli or mobile device information including device and application identifiend, the referring web progs, pages withind, location (depending on the permissions you have granted us), and cookie information.

HEALTH AND OTHER SPECIAL CATEGORIES OF PERSONAL DATA To the extent that n we collect is health data or another

The Services include features that use precise location data, including GPS signals, divice sensers, WHP access paints, and cell tower IDs. We called this type of data if you grant us access to your location. You can elvery to

remove our access using your Fitbit device or mobile device settings. We

may also derive your approximate location from your IP address

To the water that information we called its health data or another special onlogging of generated data saligitor to the Baregenee Mislan's General Data Protection Regulation (*COMPL), we mick for your explicit consent to process that data. We obtain this consent separately when you below actions leading to our altabating the data, for example, when you par your device to your and our altabating the data. account, grant us access to your exercise or activity data from another service, or use the female health tracking feature. You can use your count settings and tools to withdraw your convent at any time. In by slopping use of a feature, removing our access to a this unpaining your device, or deleting your data or your accou

HOW WE USE INFORMATION

LOCATION INFORMATION

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the controls we give you over your information, and the measures we take to keep it safe.

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ion is required to create an account on our Services, such as parter nerre, email address, personant, date of birth, gender, height, weight, and in scree. Genes your mobile talephone number. This is the only momention you have to provide to create an account with us. You may also

ose to provide other types of information, such as a profile photo.

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We use cookies and similar technologies for the purposes described above. For

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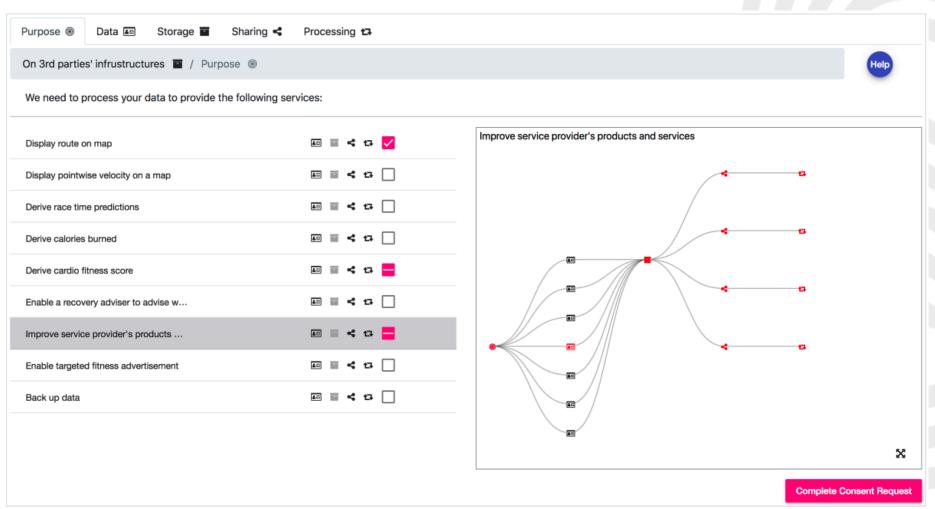
WHEN YOU AGREE OR DIRECT US TO SHARE

described below

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Consent and Control Interfaces



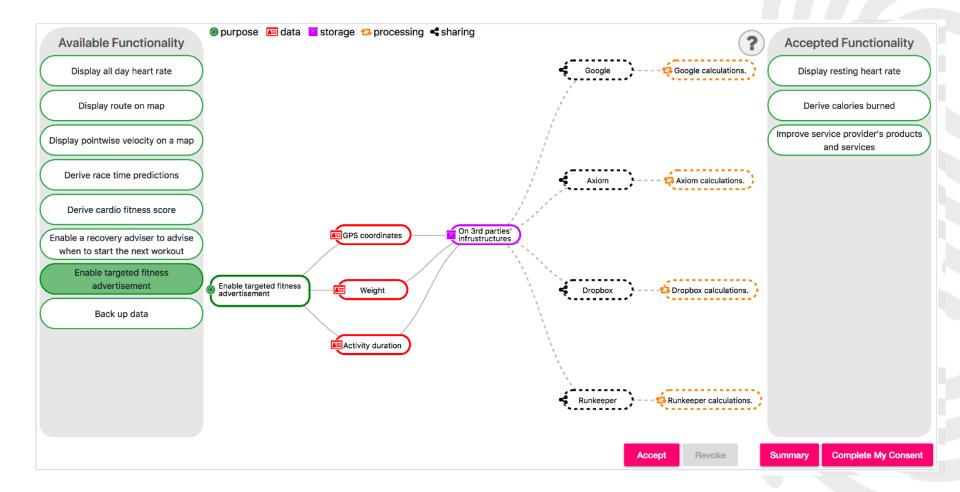
Olha Drozd and Sabrina Kirrane Conference paper currently under review



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Consent and Control Interfaces



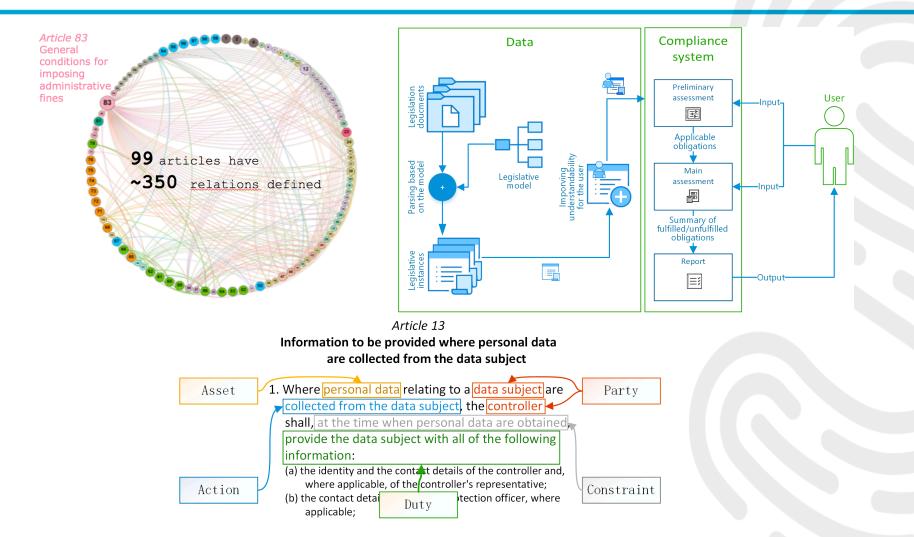


Olha Drozd and Sabrina Kirrane Conference paper currently under review



Regulatory Compliance Assessment

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Legislative Compliance Assessment: Framework, Model and GDPR Instantiation Sushant Agarwal, Simon Steyskal, Franjo Antunovic and Sabrina Kirrane Proceedings of the Annual Privacy Forum (APF 2018)



Regulatory Compliance Assessment

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Legislative Compliance Assessment: Framework, Model and GDPR Instantiation Sushant Agarwal, Simon Steyskal, Franjo Antunovic and Sabrina Kirrane Proceedings of the Annual Privacy Forum (APF 2018)



Towards a Legal Knowledge Graph

Temporal Tagger	Identification	Normalization	Events	Relations
HeidelTime	✓	✓	-	-
SUTime	✓	✓	-	-
GUTime	1	1	✓	1
CAEVO	✓	✓	1	1
ClearTK-TimeML	1	-	✓	1
SynTime	1	-	-	-
TERNIP	✓	✓	-	-
TIPSem	✓	✓	1	1
USFD2	*	*	-	*
UWTime	1	1	-	-

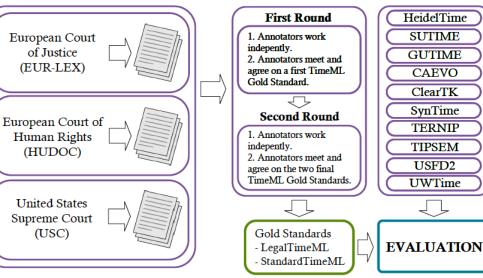
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ECHR	10	4	725	13
ECJ	10	32	5304	32
USC	10	25	5072	37

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DOCUMENT COLLECTION

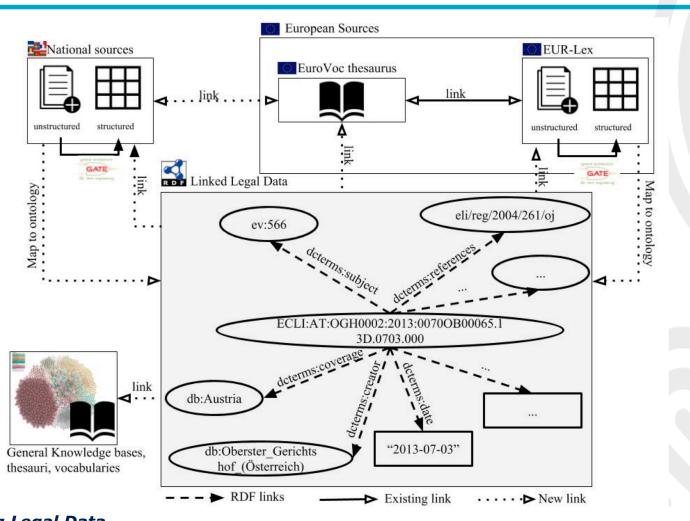
ANNOTATION

TAGGING



TempCourt: Temporal Gold Standard and Benchmark for the Legal Domain María Navas-Loro, Erwin Filtz, Víctor Rodríguez-Doncel, Axel Polleres, and Sabrina Kirrane Journal Paper Under review

Towards a Legal Knowledge Graph

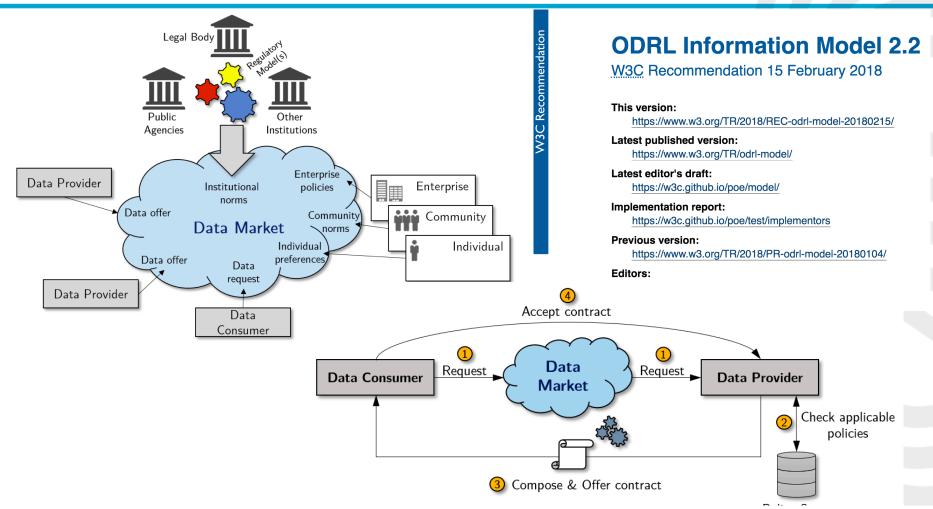


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Interlinking Legal Data Erwin Filtz, Sabrina Kirrane and Axel Polleres Proceedings of the Posters and Demos Track of the 14th International Conference on Semantic Systems (SEMANTICS 2018)

Policy Driven Data Markets

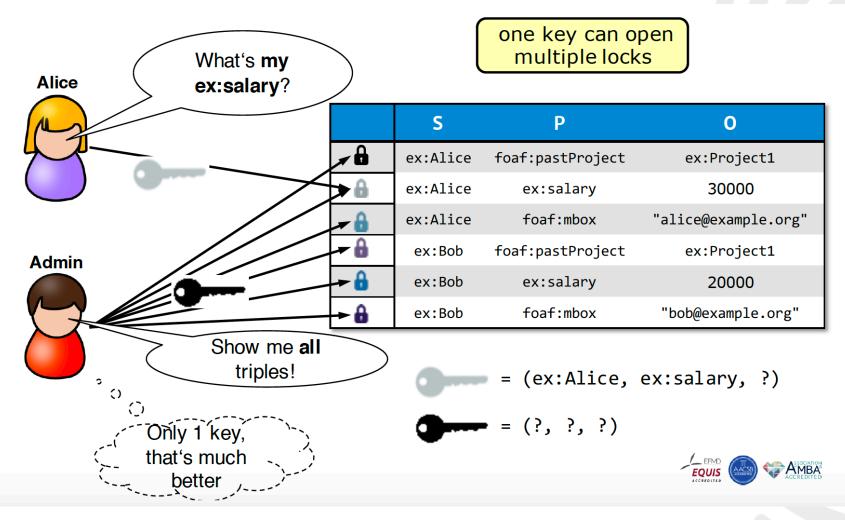




If you can't enforce it, contract it: Enforceability in Policy-Driven (Linked) Data Markets Simon Steyskal and Sabrina Kirrane Proceedings of the Posters and Demos Track of the 11th International Conference on Semantic Systems (SEMANTICS 2015)

RDF Encryption based on Patterns

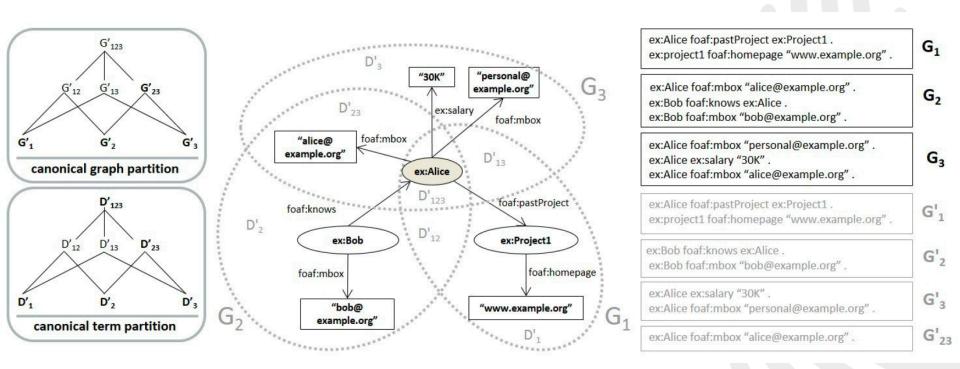




Self-Enforcing Access Control for Encrypted RDF Javier D. Fernández, Sabrina Kirrane , Axel Polleres , and Simon Steyskal Proceedings of the Extended Semantic Web Conference (ESWC 2017)



Combining RDF Compression and Encryption



HDT crypt : Efficient Compression and Encryption of RDF Datasets Javier D. Fernandez, Sabrina Kirrane, Axel Polleres, and Simon Steyskal The Semantic Web Journal (to appear)

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- Combine policies and legal knowledge graphs
- Federated Semantic Data Management with policies
- An algebra for combining Description Logic policies
- A reference architecture for enhancing the Linked Data platform with policies and transparency
- A unified framework for representing and reasoning over policies (Privacy policies, regulatory constraints, business rules, social norms)



Thank you / contact details





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