Scalable Policy-aware linked data architecture for privacy, transparency and compliance

Risultati

Informazioni relative al progetto

SPECIAL
ID dell’accordo di sovvenzione: 731601

DOI
10.3030/731601

Progetto concluso

Data della firma CE
4 Novembre 2016

Finanziato da
INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)

Costo totale
€ 3 991 388,75

Contributo UE
€ 3 991 388,75

Coordinato da
GEIE ERCIM
France

Data di avvio
1 Gennaio 2017

Data di completamento
31 Dicembre 2019

Questo progetto è apparso in...
Risultati finali

Demonstrators, pilots, prototypes (17)

Formal representation of the legislation V1
Linked Data representation of the legislation and development of re-usable and extensible policy templates (T2.2).

Final release
The final release will incorporate all feedback from the inhouse robustness testing (T3.6), pilot evaluations (T5.1, T5.2), and hacking challenges (T5.3).

Pilot implementations and testing plans V1
The first pilot release will focus on privacy preserving data processing and aggregation functionality based on D3.2 & D4.1.

Policy Language V2
Development of the Policy Language syntax and algorithms to synthesise policies for derived data (T2.1).

Transparency and Compliance Algorithms V2
Development of transparency and compliance algorithms (T2.4) to assure that any data processing is inline with the policies and the legislation (T2.1, T2.2), and to provide synthesis of policies for mined and aggregated data based on the user context, on top of the designed transparency framework (T2.3).

Transparency & compliance release
This release provides more mature components mainly the transparency components from T4.5 but also the improvements resulting from work in T3.3 and T3.4.

Formal representation of the legislation V2
Linked Data representation of the legislation and development of re-usable and extensible policy templates (T2.2).

**Transparency dashboard and control panel release final release**
The final release will incorporate all feedback from the inhouse robustness testing (T4.4), pilot evaluations (T5.1, T5.2), and hacking challenges (T5.3).

**SPECIAL Website Setup**
The SPECIAL website creation and release

**Policy Language V1**
Development of the Policy Language syntax and algorithms to algorithms to synthesise policies for derived data

**Transparency and Compliance Algorithms V1**
Development of transparency and compliance algorithms (T2.4) to assure that any data processing is inline with the policies and the legislation (T2.1, T2.2), and to provide synthesis of policies for mined and aggregated data based on the user context, on top of the designed transparency framework (T2.3).

**Transparency dashboard and control panel release V1**
This release will include policy and event data visualisation (T4.1) and system interaction (T4.2).

**Transparency dashboard and control panel release V2**
This release includes improvements to the policy and event data visualisation (T4.1) and system interaction (T4.2) and new visualisations to support the transparency and compliance functionality (T4.1 & T4.2).

**Initial setup of policy aware Linked Data architecture and engine**

**Policy & events release**
This release provides more mature components mainly the policy and synthesis management ones (outcomes of T3.4 on which WP3 first focusses). It will also integrate the progress made in the authentication and authorisation (T3.3).

**Transparency Framework V1**
Design of an immutable record of data transactions/transformations, associated to Linked Data access/usage policies (T2.3), which are outcomes og T2.1 and T2.2.

**Transparency Framework V2**
Design of an immutable record of data transactions/transformations, associated to Linked Data access/usage policies (T2.3), which are outcomes og T2.1 and
T2.2.

Documents, reports (19)

**Use case scenarios V2**
Document detailing the use cases and data sharing scenarios provided by SPECIAL partners (T1.1).

**Pilot implementations and testing plans V2**
The second pilot release will extend the data processing and aggregation pilots with transparency and compliance functionality based on D3.4 & D4.3.

**Public challenge report V2**
The results of the public challenges (T5.3) will be documented and used to inform future releases of the platform (D3.6, D4.5).

**Policy, transparency and compliance guidelines V1**
This document will include details on the policy and transparency considerations of the use case, and the compliance requirements against policies.

**Plan for community group and standardisation contribution**
This document will set the basis for the SPECIAL consortium involvement in events/workshops (T6.2.1) and standardisation activities (T6.2.2).

**Final Report of the Community Group**
This report will collect the inputs from the reference group and the efforts of the community group (T6.2.2).

**Public challenge report V1**
The results of the public challenges (T5.3) will be documented and used to inform future releases of the platform (D3.4, D4.3, D3.6 & D4.5).

**Technical requirements V2**
Report on technical requirements and challenges (T1.4) that arise in extending the BDE architecture to cope with all privacy-aware SPECIAL requirements while assuring scalability and security.

**Legal requirements for a privacy enhancing Big Data V2**
This document will include details on the policy and transparency considerations of the use case, and the compliance requirements against policies (T1.3).

**Report on application guideline**
This report will present the findings of the pilots and future implementation plans by the industry partners and beyond.

**Policy, transparency and compliance guidelines V2**
This document will include details on the policy and transparency considerations of the use case, and the compliance requirements against policies (T1.3).

**Technical requirements V1**
Report on technical requirements and challenges that arise in extending the BDE architecture to cope with all privacy-aware SPECIAL requirements while assuring scalability and security.

**Frontend Scalability and Robustness testing report V1**
The results of the usability testing (T4.4) will be documented and used to inform future releases of the platform (D4.3 & D4.5).

**Use case scenarios V1**
Document detailing the use cases and data sharing scenarios provided by SPECIAL partners

**Pilot implementations and testing plans V3**
The final pilots will be delivered at the same time as D3.6 & D4.5 and will incorporate all feedback from the inhouse robustness testing, pilot evaluations and hacking challenges.

**Usability testing report V2**
The results of the usability testing (T4.4) will be documented and used to inform future releases of the platform (D4.3 & D4.5).

**Backend Scalability and Robustness testing report V1**
The results of the scalability and robustness testing (T3.6) will be documented and used to inform future releases of the platform.

**Legal requirements for a privacy enhancing Big Data V1**
Report providing details of all legal and ethical considerations (T1.2), as a main input for the SPECIAL privacy-aware platform

**Scalability and Robustness testing report V2**
The results of the scalability and robustness testing (T3.6) will be documented and used to inform future releases of the platform (D3.4 & D3.6).
Quality, risk and data management plan

An evolving plan that describes the data management life cycle for the project data to be collected and processed along with quality and risk management procedures.

Pubblicazioni

Conference proceedings (29)

Transparent Personal Data Processing: The Road Ahead

Autori: Piero Bonatti, Sabrina Kirrane, Axel Polleres, Rigo Wenning
Pubblicato in: TELERISE: 3rd International Workshop on TEchnical and LEgal aspects of data pRivacy and Security, 2017, Page(s) 337-349
Editore: Springer International Publishing
DOI: 10.1007/978-3-319-66284-8_28

LOD-a-lot. A Queryable Dump of the LOD Cloud

Autori: Javier D. Fernández, Wouter Beek, Miguel A. Martínez-Prieto, Mario Arias
Editore: Springer International Publishing
DOI: 10.1007/978-3-319-68204-4_7

LOD-a-lot: A Single-File Enabler for Data Science

Autori: Wouter Beek, Javier D. Fernández, Ruben Verborgh
Editore: ACM

A New Semantics for Overriding in Description Logics

Autori: Piero A. Bonatti, Marco Faella, Iliana M. Petrova, Luigi Sauro
Pubblicato in: Proceedings of IJCAI-17, 2017, Page(s) 4975-4979
Editore: International Joint Conferences on Artificial Intelligence

Designing a GDPR-compliant and Usable Privacy Dashboard

Autori: Philip Raschke, Axel Küpper, Olha Drozd and Sabrina Kirrane
Pubblicato in: IFIP Summer School 2017, 2018
Editore: Springer
Evaluating Query and Storage Strategies for RDF Archives

**Autori:** Javier D. Fernández, Jürgen Umbrich, Axel Polleres, and Magnus Knuth

**Pubblicato in:** Semantic Web Journal, 2018

**Editore:** Semantic Web Journal

HDTQ: Managing RDF Datasets in Compressed Space

**Autori:** Javier D. Fernández and Axel Polleres

**Pubblicato in:** Extended Semantic Web Conference (ESWC 2018), 2018

**Editore:** Springer International Publishing

A Scalable Consent, Transparency and Compliance Architecture

**Autori:** Sabrina Kirrane, Javier D. Fernández, Wouter Dullaert, Uros Milosevic, Axel Polleres, Piero A. Bonatti, Rigo Wenning, Olha Drozd, and Philip Raschke

**Pubblicato in:** Extended Semantic Web Conference (ESWC 2018), 2018

**Editore:** Springer International Publishing

Fast Compliance Checking in an OWL2 Fragment

**Autori:** Piero A. Bonatti

**Pubblicato in:** Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence, 2018, Page(s) 1746-1752, ISBN 9780-999241127

**Editore:** International Joint Conferences on Artificial Intelligence Organization

**DOI:** 10.24963/ijcai.2018/241

Legislative Compliance Assessment: Framework, Model and GDPR Instantiation

**Autori:** Sushant Agarwal, Simon Steyskal, Franjo Antunovic and Sabrina Kirrane

**Pubblicato in:** Proceedings of the Annual Privacy Forum (APF 2018), 2018

**Editore:** APF 2018

Uncovering Canvas Fingerprinting and Analyzing Its Usage For Web Tracking

**Autori:** Raschke, P. and Küpper, A

**Pubblicato in:** Workshops der Informatik 2018. Lecture Notes in Informatics (LNI)., 2018

**Editore:** Workshops der Informatik 2018

Towards Making Distributed RDF Processing FLINKer

**Autori:** Amr Azzam, Sabrina Kirrane, Axel Polleres

**Pubblicato in:** International Conference on Big Data Innovations and Applications (Innovate-Data 2018, 2018

**Editore:** IEEE

Data Privacy Vocabularies and Controls: Semantic Web for Transparency and Privacy

**Autori:** Piero A. Bonatti, Bert Bos, Stefan Decker, Javier D. Fernández, Sabrina Kirrane, Vassilios Peristeras, Axel Polleres, and Rigo Wenning
SPIRIT: A Semantic Transparency and Compliance Stack  
**Autori:** Patrick Westphal, Javier Fernández, Sabrina Kirrane and Jens Lehmann  
**Pubblicato in:** Proceedings of the Posters and Demos Track of the 14th International Conference on Semantic Systems (SEMANTiCS 2018), 2018  
**Editore:** SEMANTiCS 2018

Enabling Personal Data Processing Control via Dynamic Consent  
**Autori:** Olha Drozd, Rigo Wenning and Sabrina Kirrane  
**Pubblicato in:** OPERANDI 2018: Open Day for Privacy, Transparency and Decentralization (PETS2018), 2018  
**Editore:** PETS2018

Fast Compliance Checking with General Vocabularies  
**Autori:** P. A. Bonatti, L. Ioffredo, I. M. Petrova, L. Sauro  
**Pubblicato in:** ESWC 2020, 2019  
**Editore:** Arxiv

Big Data and Analytics in the Age of the GDPR  
**Autori:** Piero Bonatti and Sabrina Kirrane  
**Pubblicato in:** IEEE Computer Society, 2019, 2019  
**Editore:** TBA

Big Data and Analytics in the Age of the GDPR  
**Autori:** Piero A. Bonatti, Sabrina Kirrane  
**Pubblicato in:** TBA, 2019  
**Editore:** TBA

A More Decentralized Vision for Linked Data  
**Autori:** Axel Polleres, Javier Fernández  
**Pubblicato in:** Proceedings of the 2nd Workshop on Decentralizing the Semantic Web co-located with the 17th International Semantic Web Conference, DeSemWeb@ISWC, CEUR-2165, paper 1, 2018, 2018  
**Editore:** CEUR

Consent Comprehension Made EasyDemo  
**Autori:** Olha Drozd and Sabrina Kirrane  
**Pubblicato in:** Open Day for Privacy, Usability, and Transparency (PUT 2019), 2019  
**Editore:** TBA

ODRL policy modelling and compliance checking
Machine Understandable Policies and GDPR Compliance Checking

**Autori:** Marina De Vos, Sabrina Kirrane, Julian Padget and Ken Satoh  
**Pubblicato in:** 3rd International Joint Conference on Rules and Reasoning (RuleML+RR 2019), 2019 
**Editore:** TBA

I Agree: Customize your Personal Data Processing with the CoRe User Interface.

**Autori:** Piero A. Bonatti, Sabrina Kirrane, Iliana M. Petrova, Luigi Sauro  
**Pubblicato in:** Kuenstliche Intelligenz, 2019 
**Editore:** Arxiv

Real-Time Reasoning in OWL2 for GDPR Compliance.

**Autori:** Olha Drozd and Sabrina Kirrane  
**Pubblicato in:** 6th International Conference on Trust, Privacy and Security in Digital Business, 2019 
**Editore:** TBA

On the logical properties of the nonmonotonic description logic DL^N

**Autori:** P. A. Bonatti  
**Pubblicato in:** Artificial intelligence Journal, 2019 
**Editore:** Arxiv

Privacy-aware Linked Widgets

**Autori:** Javier D. Fernández, Fajar J. Ekaputra, Peb Ruswono Aryan, Amr Azzam, Elmar Kiesling.  
**Pubblicato in:** 1st Workshop on Fairness, Accountability, Transparency, Ethics, and Society on the Web. In conjunction with The Web Conference 2019., 2019 
**Editore:** TBA

Towards Real-Time Web Tracking Detection with T.EX - The Transparency EXtension

**Autori:** Raschke P., Zickau S., Kröger J.L., Küpper A.  
**Pubblicato in:** Naldi M., Italiano G., Rannenberg K., Medina M., Bourka A. (eds) Privacy Technologies and Policy. APF 2019. Lecture Notes in Computer Science, 2019 
**Editore:** Springer, Cham

Creating a vocabulary for data privacy: the first-year report of data privacy vocabularies and controls community group (DPVCG)

Self-Enforcing Access Control for Encrypted RDF

Authors: Javier D. Fernández, Sabrina Kirrane, Axel Polleres, Simon Steyskal

Published in: Extended Semantic Web Conference (ESWC 2017), Issue volume = {10249} year = {2017}, 2017, Page(s) 607-622, ISSN 1611-3349

Editor: Springer International Publishing

DOI: 10.1007/978-3-319-58068-5_37

Non-peer reviewed articles (1)

"Un cruscotto made in "Federico II" per aiutare i cittadini a capirne di più"

Authors: P.A. Bonatti

Published in: Il Mattino, 2018, Page(s) 55, ISSN 1592-3908

Editor: Il Mattino

Peer reviewed articles (1)

HDT crypt: Compression and Encryption of RDF Datasets

Authors: Javier Fernández, Sabrina Kirrane, Axel Polleres

Published in: Semantic Web Journal, 2018, ISSN 1570-0844

Editor: IOS Press

Book chapters (1)

Compliance Using Metadata. Semantic Applications: Methodology, Technology, Corporate Use

Authors: Rigo Wenning, and Sabrina Kirrane

Published in: 2018

Editor: Springer

Set di dati

Set di dati mediante OpenAIRE (1)

The Special Policy Log Vocabulary