

Semantifying the Governance of Data in Europe



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POLITÉCNICA

Motivation

A new wave of regulations regarding the use and governance of data is being proposed and discussed for adoption in the European Union countries [1]. Among them, the Data Governance Act (DGA), approved on May 30th, 2022, was proposed to improve data availability and promote trust in data intermediation services across the EU [2].

By promoting an interoperable Web of Linked Data, Semantic Web technologies can be leveraged to model conditions for re-use of public data, to declare the permissions and use requests of data holders and data users in a machine-readable format or to keep records of the processing activities performed by the new organisations introduced by the DGA.

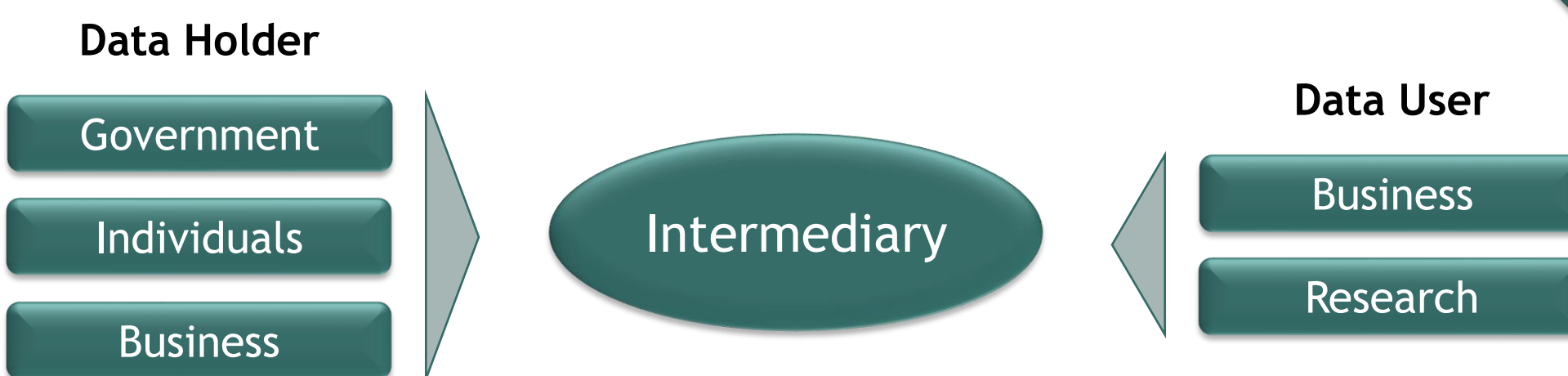
How can Semantic Web technologies be used to fulfil the new set of rights and obligations posed by the Data Governance Act?

Requirements

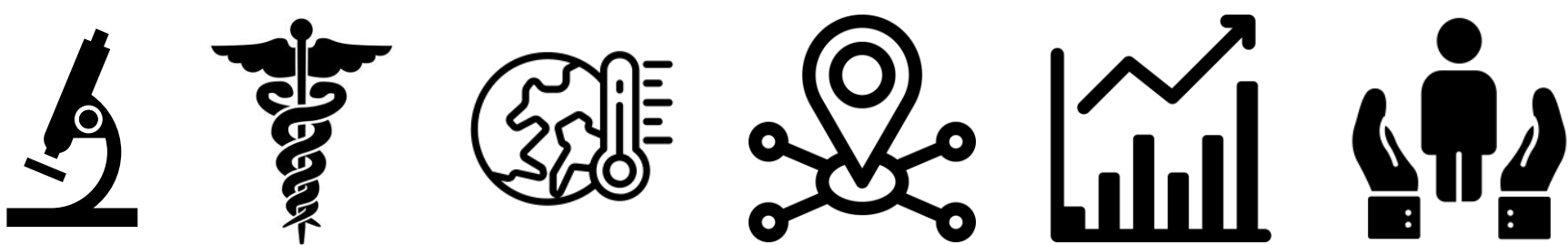
R1. Re-use of protected data held by public sector bodies

- Conditions of the re-use publicly available
- Governed by contract between the parties
- Guidance and technical support on the formatting and storage of the data

R2. Data intermediation services



R3. Sharing data for altruistic purposes



R4. European Data Innovation Board

- Consistent practice of data altruism across the EU
- Guidelines for the creation of common European data spaces
- Supervise the activity of authorities for data intermediation services

Scenarios

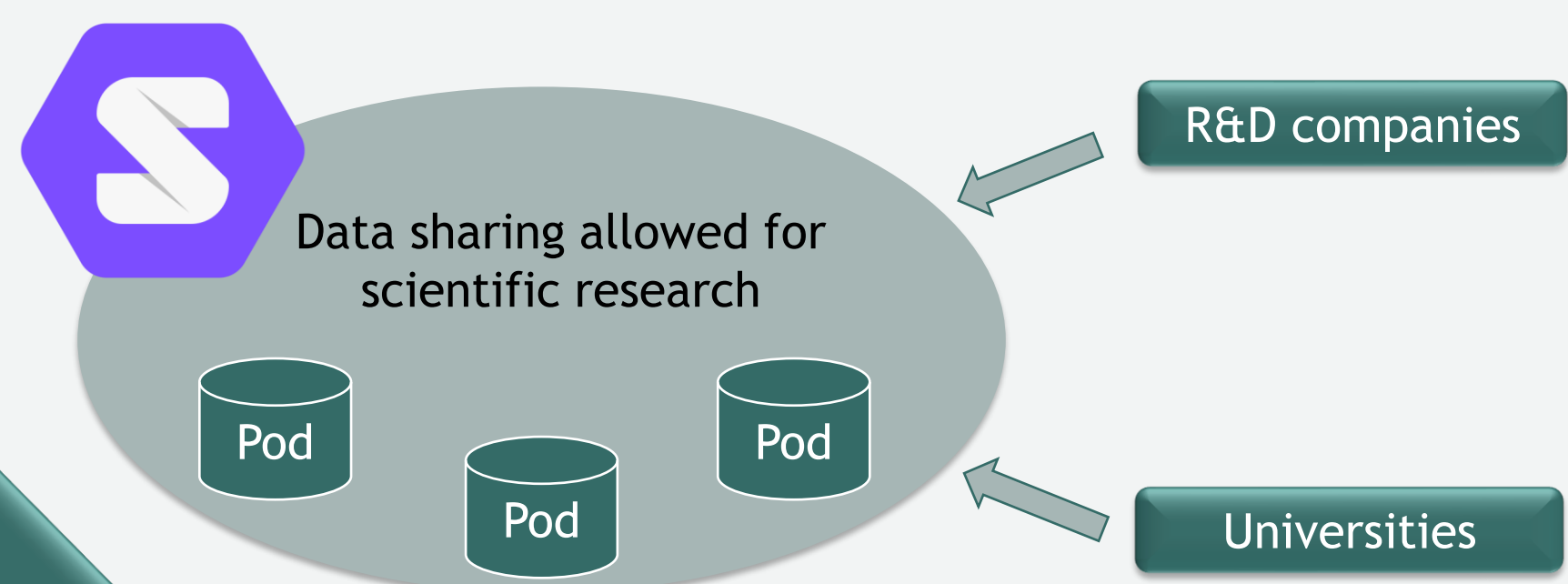
Policies for the (re)use of data

- Permissions and duties for the processing of public-sector data
- Conditions for data sharing by intermediation services
- Policies to share data for altruistic purposes

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX odrl: <http://www.w3.org/ns/odrl/2/#>
PREFIX oac: <https://w3id.org/oac/>
PREFIX dpv: <https://w3id.org/dpv#>
```

```
:policy-1 a odrl:Policy ;
  odrl:profile oac ;
  odrl:permission [
    odrl:target oac:Demographic ;
    odrl:action odrl:use ;
    odrl:constraint [
      odrl:leftOperand oac:Purpose ;
      odrl:operator odrl:isA ;
      odrl:rightOperand dpv:AcademicResearch ] ] .
```

Solid Pod providers as intermediaries for personal data



Data Interoperability

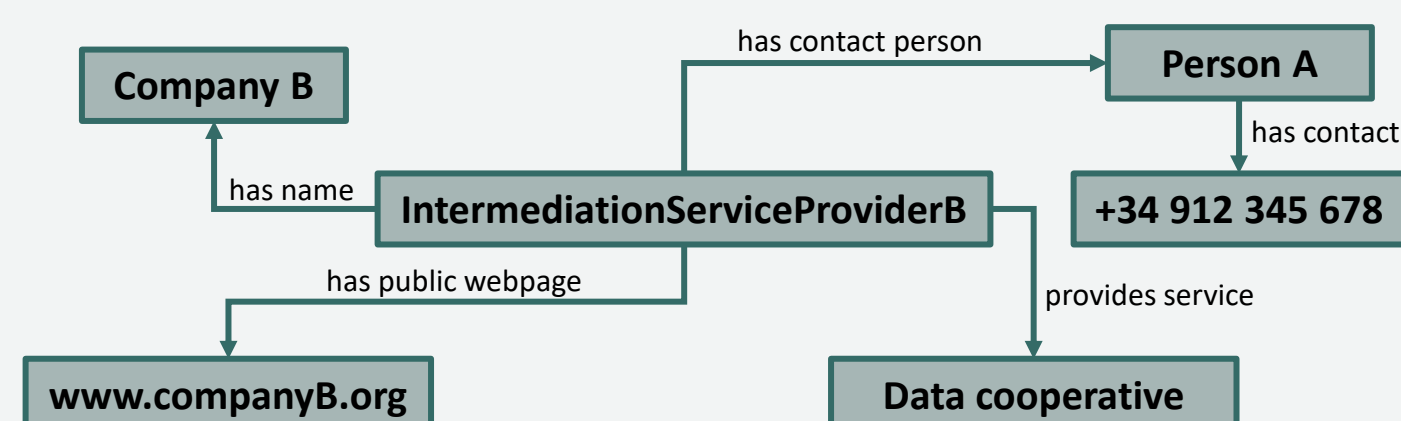
European data altruism consent form

```
PREFIX dpv: <https://w3id.org/dpv#>
PREFIX dct: <http://purl.org/dc/terms/>
PREFIX dpv-pd: <https://w3id.org/dpv/dpv-pd#>
PREFIX dga: <https://example.com/dga#>
```

```
:consentRecord-1 a dpv:Consent ;
  dct:hasVersion "v1" ;
  dpv:hasIdentifier <https://anne.pod/private/consent/record1> ;
  dpv:hasDataSubject <https://anne.pod/profile/card#me> ;
  dpv:hasProvisionBy <https://anne.pod/profile/card#me> ;
  dpv:hasProvisionTime "2022-09-14T14:24:31" ;
  dpv:hasPersonalDataHandling [
    a dpv:PersonalDataHandling ;
    dpv:hasPurpose [
      a dga:ImproveMobility ;
      dpv:hasLegalBasis dpv:Consent ;
      dpv:hasPersonalData dpv-pd:Location ;
      dpv:hasProcessing dpv:Use, dpv:Store ;
      dpv:hasDataController [
        a dpv:DataController, dga:DataAltruismOrganisation ;
        dpv:hasName "Company A" ;
        dpv:hasContact "companyA@example.com" ] ] ] .
```

Records of activities

Auditing the activity of data altruism organisations / data intermediation services / public sector bodies



References:

- 1 - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A European strategy for data, 2020. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0066>
- 2 - Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance and amending Regulation (EU) 2018/1724 (Data Governance Act), 2022. URL: <http://data.europa.eu/eli/reg/2022/868/oj/eng>



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