



**Engaging Content**  
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# GDPR Data Interoperability Model

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Ireland's European Structural and  
Investment Funds Programmes  
2014-2020  
Co-funded by the Irish Government  
and the European Union



European Union  
European Regional  
Development Fund



International reach: data about any EU citizen



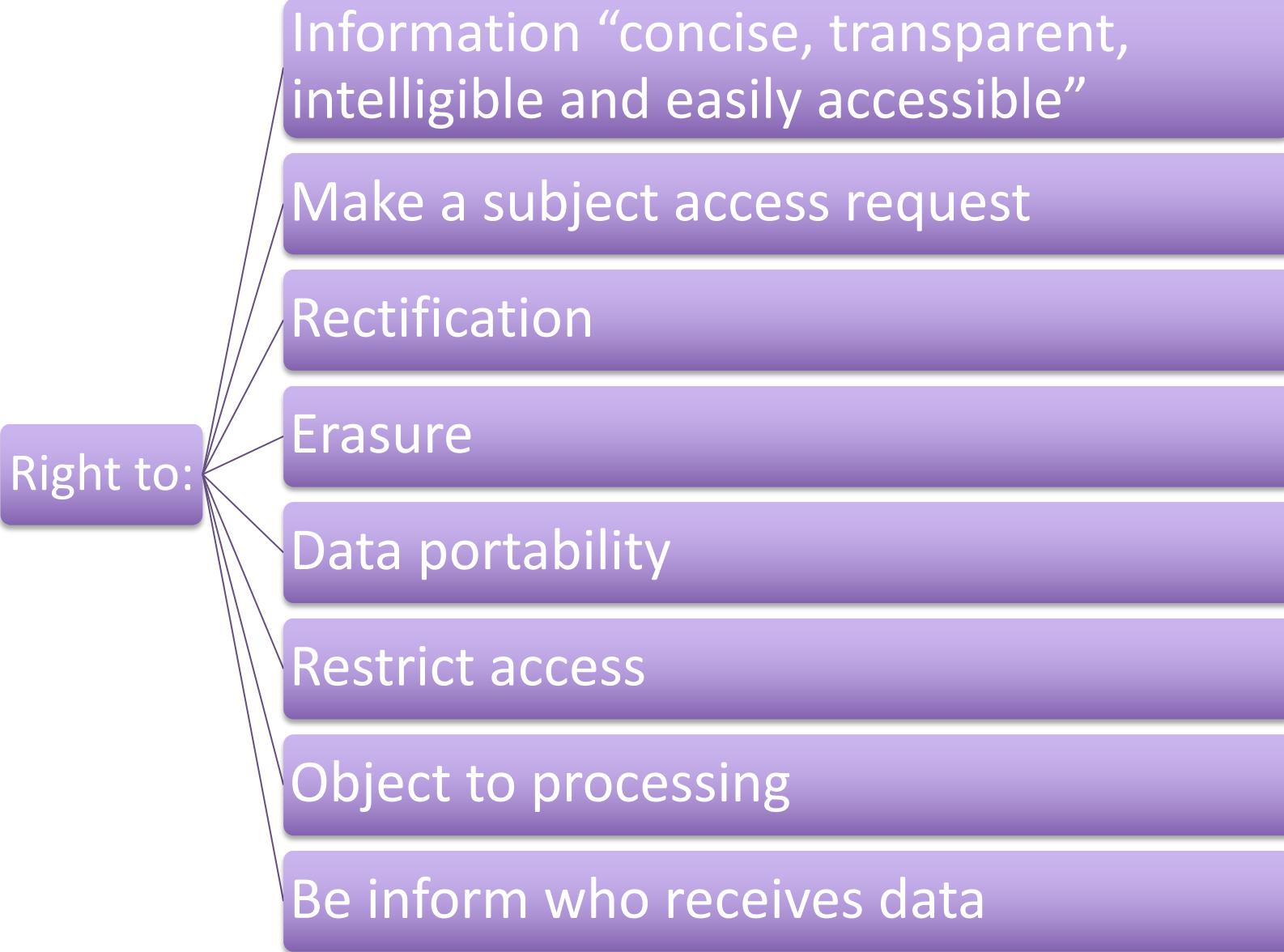
Fines upto €20M or 4% of global turnover



Must Demonstrate compliance



Processing lawful only through Informed Consent



Role of entities

Information flows

Interoperability reference  
points

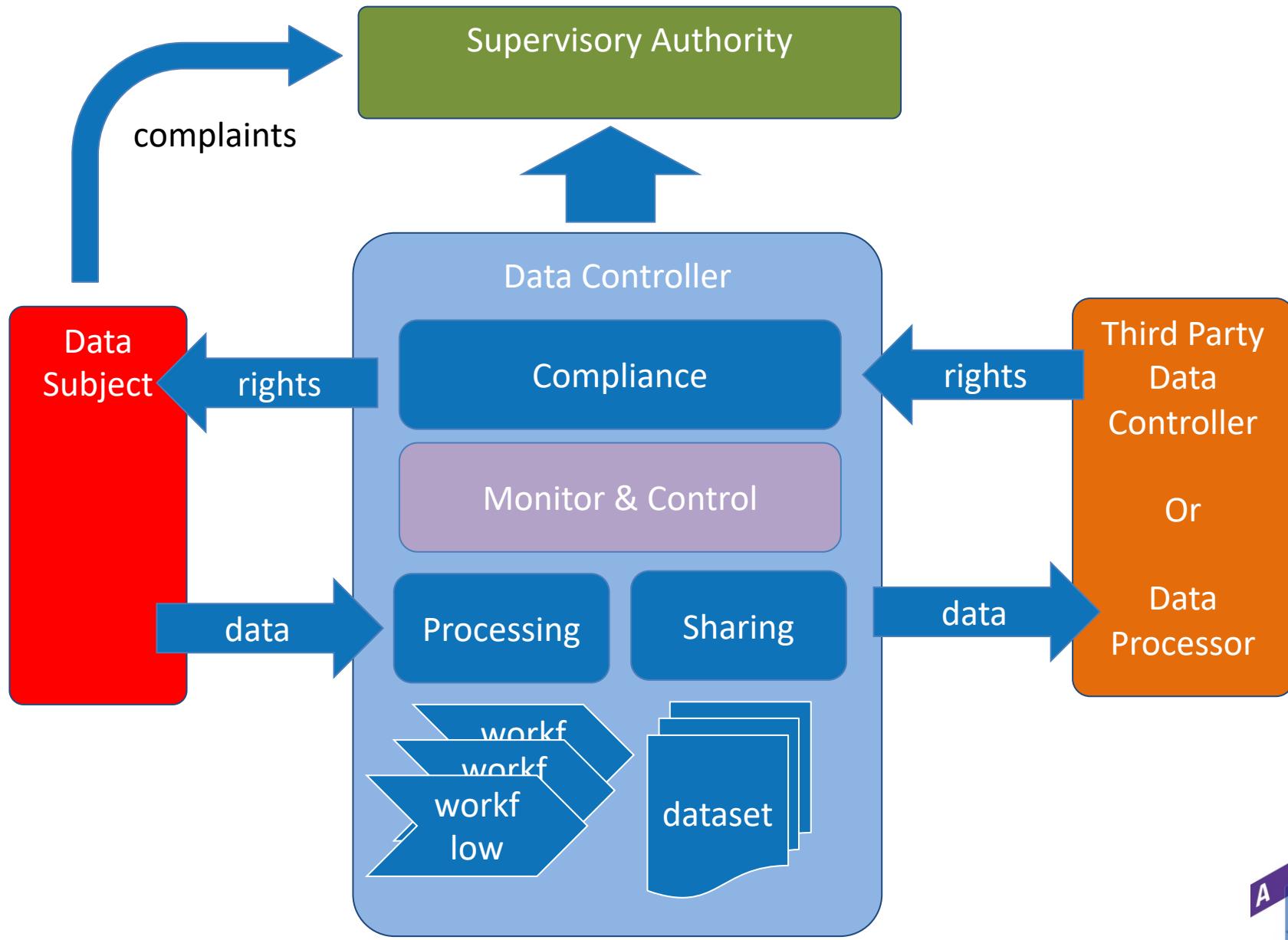
Major data categories

Map into Open Data models



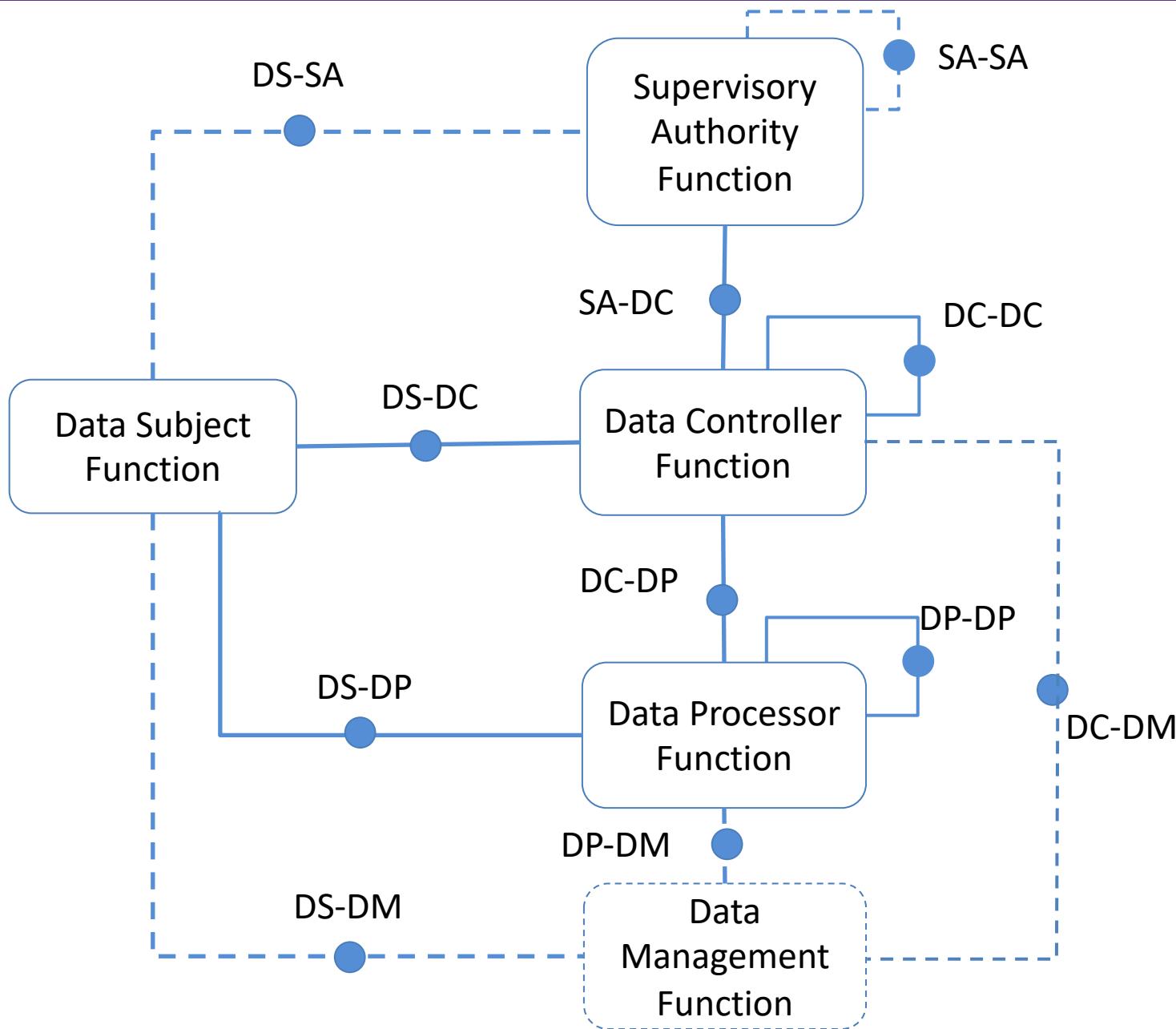
# GDPR Roles and Processes

www.adaptcentre.ie



# GDPR Data Interoperability Reference Model

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## Entities

DS - Data Subject

DC - Data Controller

DP – Data Processor

SA – Supervisory  
Authority

## Interaction Type

REQ(irement)

PROC(ess)

DATA

FORMAT



# Major Interoperability Data Categories

[www.adaptcentre.ie](http://www.adaptcentre.ie)

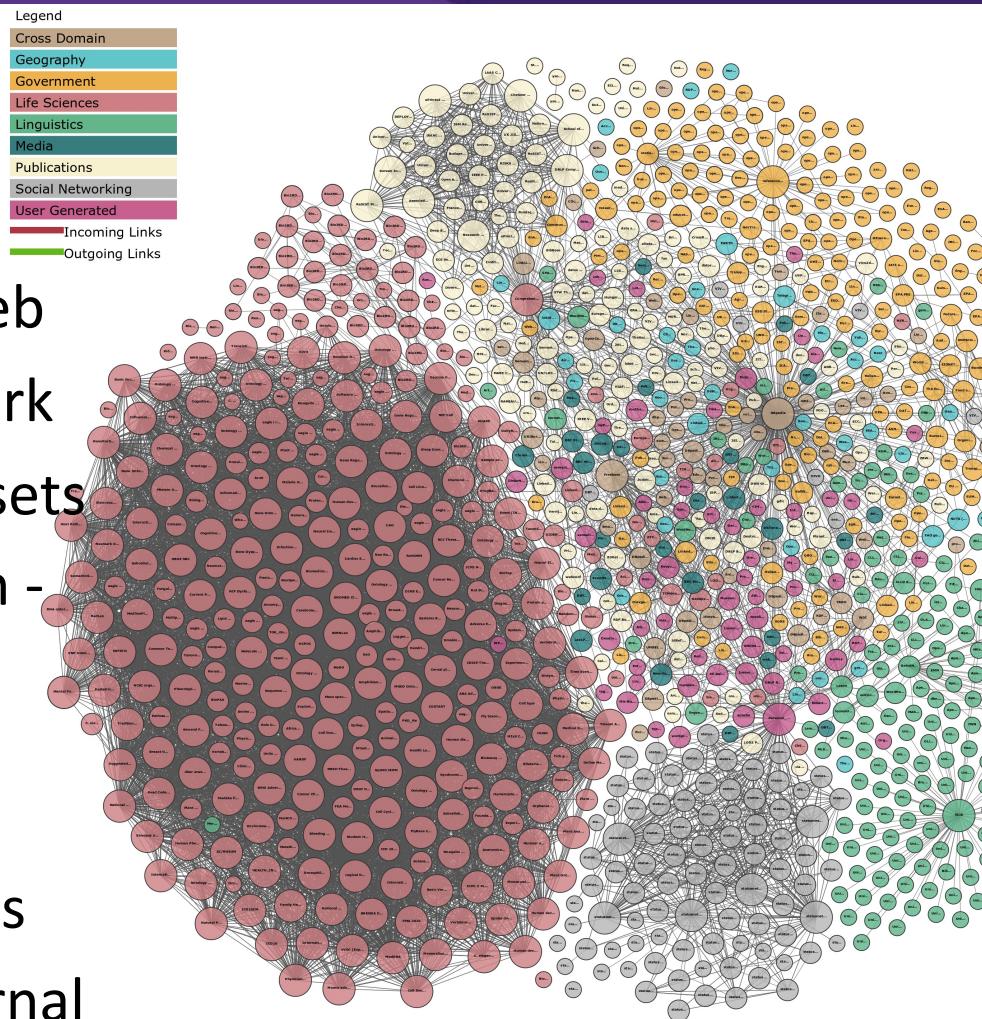
Category	DS	DC	DP	SA
Provenance	--	Maintain	Maintain	Inspect
Agreements	--	With DC and DP	With DC and DP	Inspect
Consent	Provide	Ask for consent	--	Inspect
Certification	--	Audit	Audit	Provision
Compliance	--	Ongoing, Demonstrate, Check (DP)	Ongoing, Demonstrate (SA and DC)	Check

**Table 2.** Describing the relation between information categories and entities



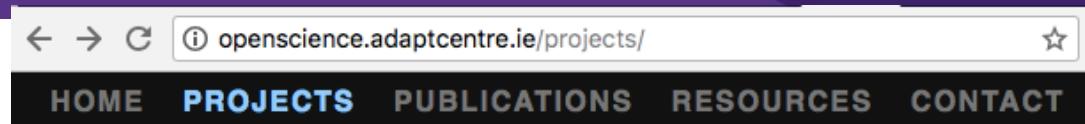
# W3C Open Data

- Open Data Standard for the Web
- Resource Description Framework
- Wide Adoption for Public Datasets
- Conservative in standardisation - horizontal vocabularies
- Liberal in community-driven development, extension and interlinking of data vocabularies
- Enterprise Linked Data for internal knowledge graphs



<https://lod-cloud.net/>





- Linkable RDF version of GDPR Text
- Consent Lifecycle Model
- Provenance Ontology Profile for GDPR compliance logging
- Data Protection Profile of Open Digital Rights Language
- Traceability extendable to: decisions, policies, guidance, Privacy Seal requirements
- RDF as a common format process and data models – R2RML for uplift
- SPARQL Queries and SHACL Constraints for compliance checks

<https://openscience.adaptcentre.ie/projects>

## projects

### Consent & Data Management Framework for GDPR Compliance

[project page](#)

This project contains:

[GDPRtEXT resource and ontology](#)

[GDPRov ontology](#)

[Data Protection Rights Language](#)

[Consent ontology](#)

[GDPR Interoperability Model](#)

Applications:

[GDPR readiness checklist](#)



- Sufficient motivation for concerted efforts on GDPR interoperability
- Initial Framework for Interoperability Reference Points for GDPR compliance processes
- Focus on meta-data rather than the actual personal data
- Propose an open data approach – leverages existing open standards for provenance, cataloguing, queries, constraints, deontic rules
- Initiated an open science approach to fine-grained tracking of proposals against GDPR provisions and other regulatory/policy sources
- Future Work:
  - Alignment with emerging open data research on data quality and data value
  - Standardisation avenues: W3C community group, ISO/IEC JTC1 SC42 “Trustworthy AI” study group

