Engaging Content
Engaging People

GConsent

A Consent Ontology based on the GDPR

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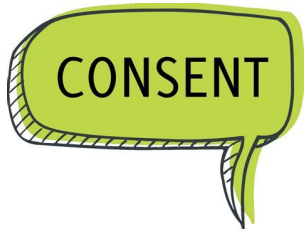
Presentation Structure

1. Background on Consent
2. Consent Requirements under GDPR
3. Aims / Scope / Objectives
4. Methodology
5. GConsent Ontology
6. Use-Cases
7. Critical Analysis
8. Related Work

Consent - a brief overview



Consent: agreement => proposition

History: Medical domain

Types: implied, verbal/oral, explicit, informed

each has different for requirements for it to be *valid*

laws focus on *legality* - is it allowed or permitted i.e. *is it legal*

e.g. sexual, privacy, waivers, t&c, research

We focus on consent in Privacy domain and one specific law - Generate Data Protection Regulation (GDPR)

Consent & GDPR

One of the six (Art.6) legal bases in GDPR

important because: data subject (you) are in control

Can be withdrawn at any time (Art.7)

Conditions for validity (Art.4, Art.7):

freely given	does not depend on anything else e.g. refusing access if consent not given for an unrelated purpose
specific	associated with specific purposes, processing, personal data, and not overtly abstract i.e. consent for all activities at once
informed	information is made clear to the data subject about purposes, processing, personal data, controllers, etc.
unambiguous	clear affirmative indication - e.g. button “I agree (to…)”

Aim / Scope / Objective

Aim: Model information regarding consent relevant for determining and demonstrating compliance with GDPR

Scope: Limit to what has been authoritatively stated about consent by GDPR, Art 29 WP, Data Protection Authorities, and Courts

Objective: Model consent information such that it can be

1) persisted 2) queried 3) validated

Naturally, we chose Semantic Web because:

a) Interoperable Standards (RDF, OWL, SPARQL, SHACL)
b) Creating Knowledge Graph i.e. embedding semantics
c) Extensible based on further use-cases as needed

Methodology

Requirements — Gather information about consent from GDPR, articles, academic papers, communications from various supervisory bodies and regulatory authorities

Use-cases — Create use-cases and competency questions based on collected information

Ontology — Create ontology to express information about use-cases

Evaluate — Evaluate suitability to express information using competency questions

Potential use-cases to test application

- Obtaining / Declaring Consent (its state)
  - The consent is given
  - Consent was given, but is now invalidated (by the controller)
  - Consent was given, but was withdrawn (by the Data Subject)
  - Consent was requested (by the controller)
  - Consent was requested, but was refused (by the Data Subject)
  - Consent state is unknown (e.g. when importing data about consent)
- Entity the consent is about
  - The consent is about a Data Subject who is not a minor
  - The consent is about a Data Subject who is a minor
- Activity for Data Subject
  - There was an age verification process associated with the consent (such as for minors)
  - There was an identity verification process associated with the consent
- Entity that provided consent
  - Consent was provided by the Data Subject it is about
  - Consent was not provided by the Data Subject it is about, but was provided by a Delegation
    - Consent in the Delegation was provided by another Data Subject
    - Consent in the Delegation was provided by a Person
    - Consent in the Delegation was provided by another Delegation
- Role within Delegation
  - Entity is the Parent/Guardian of the Data Subject
  - Entity is a third-party to the Data Subject
- Activity of Delegation
  - There was some verification process to assert the authentication of the delegation
- Medium of Consent
  - consent is given via a web-form
  - consent is given as a signed paper document
  - consent is given as a verbal confirmation
  - consent is given implicitly in some form (medium)
  - consent is given via delegation in some form (medium)
- Activity responsible for consent
  - Activity created consent as a new entity
  - Activity modified existing consent
- Previous consent and relationship
  - Consent has no previous instance
  - Consent has a previous instance, it replaces it
- Differences between consent instances
  - Something changes between two consent instances (e.g. personal data category is added)
- Time constraints
  - consent expires (has a tangible expiry such as a specific date or duration)
  - consent does not expire (is valid for "as long as required")
- Third party Association
  - Personal Data is collected from a third party
  - Personal Data is stored with a third party (processor)
  - Personal Data is shared with a third party
  - Processing involves third party
  - Purpose involves third party

Competency Questions

ID: Question

C1: **Who** is the consent about?

C2: **What** type of **Personal Data** are associated with the Consent?

C3: **What** type of **Purposes** are associated with the Consent?

C4: **What** type of **Processing** are associated with the Consent?

C5: **What** is the **Status** of Consent?

C6: Is the current status **valid for processing**?

C7: **Who** is the consent **given to**?

P1: **Who** created/**gave**/acquired/invalidated the consent?

P2: If consent was created/given/acquired/invalidated through **Delegation**, who acted as the **Delegate**?

P3: If consent was created/gave/acquired/invalidated through **Delegation**, **what** was the **role** played by **Delegate**?

P4: If consent was created/gave/acquired/invalidated through **Delegation**, how was the delegation **executed**?

T1: **What** is the **location** of associated with consent?

T2: **What** is the **medium** associated with consent?

T3: **What** is the **timestamp** associated with the consent?

T4: **What** is the **expiry** of the consent?

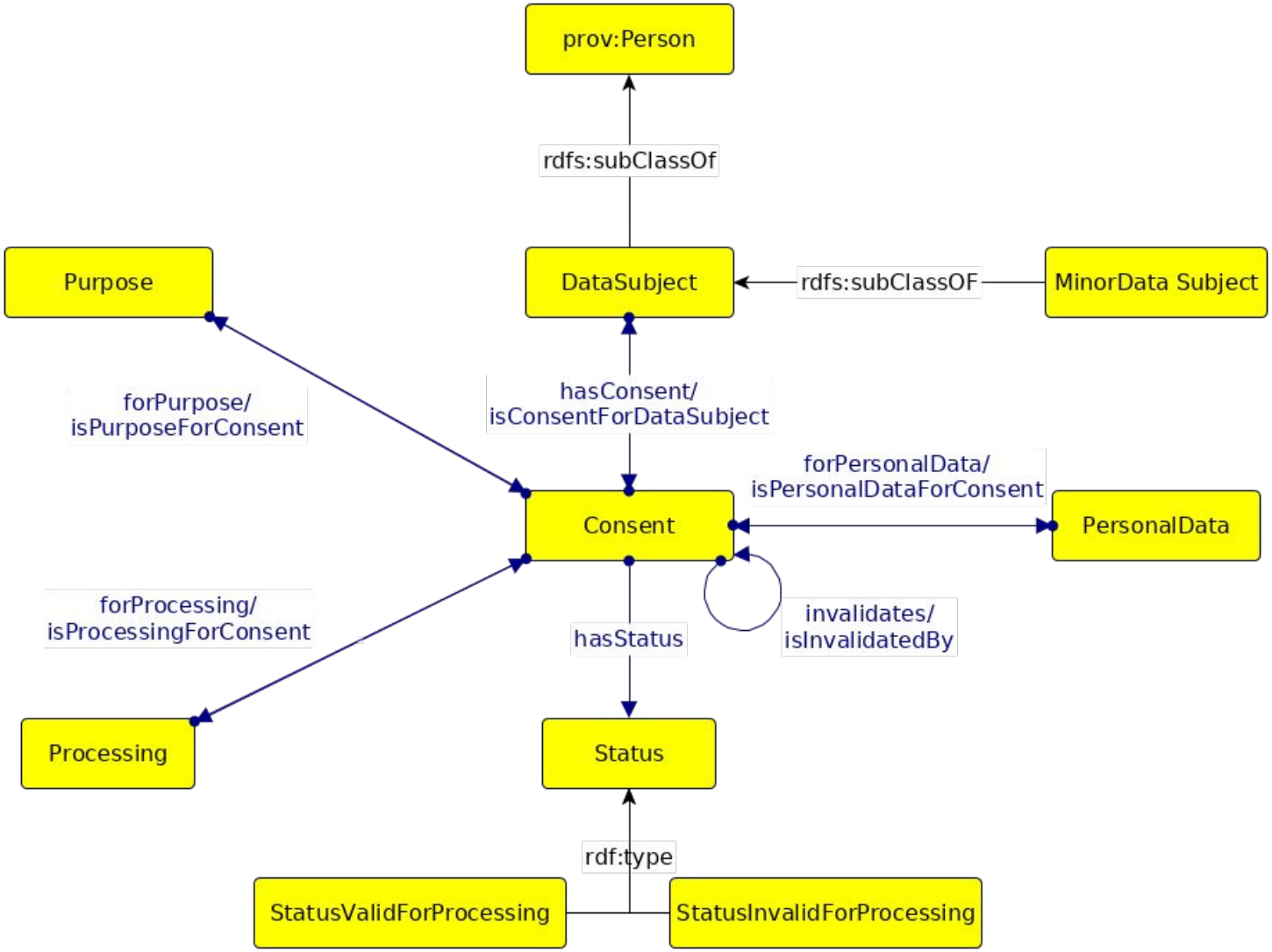
T5: **How** was the consent acquired/**changed/created**/invalidated?

T6: **What artefacts** were shown when consent was **acquired**/changed/created/invalidated?

D1: Is the purpose or processing associated with a **third party**?

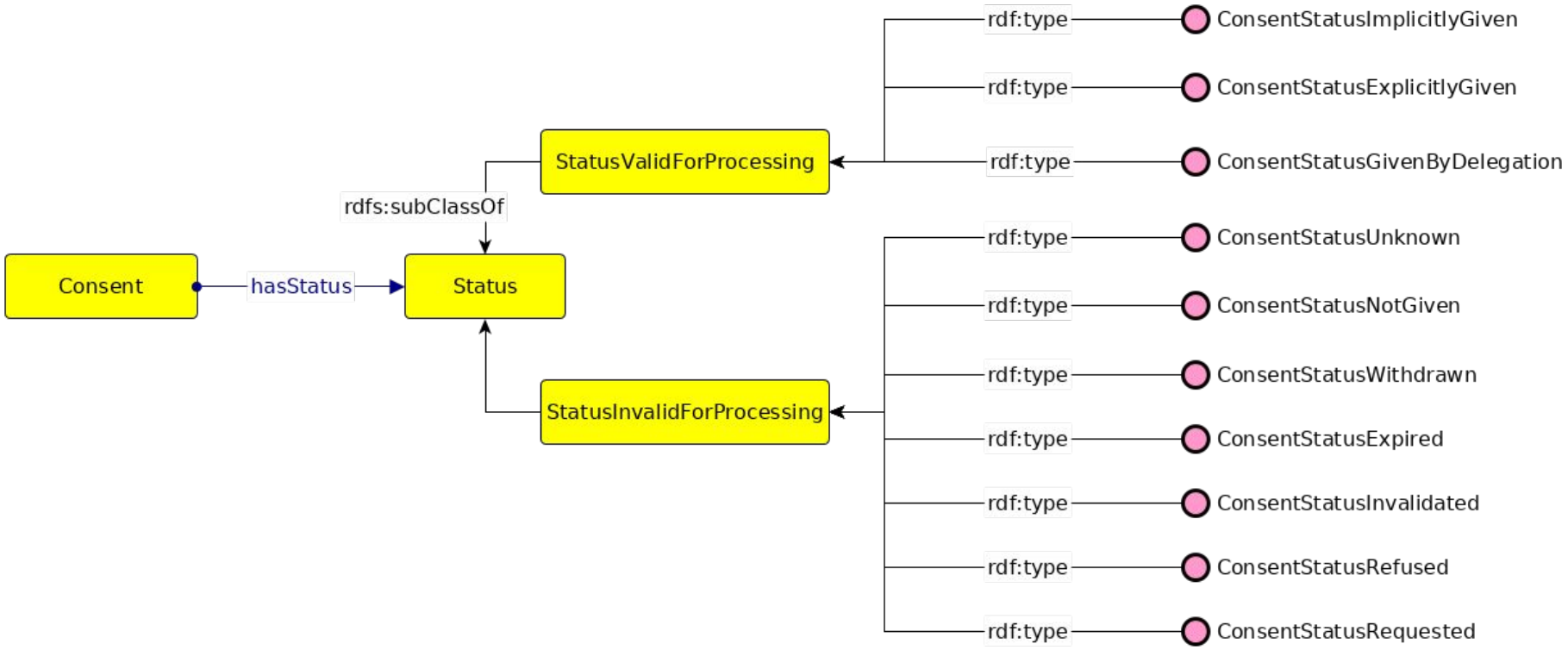
D2: What is the **role** played by the **third party** in the purpose or processing?

GConsent - Core Concepts

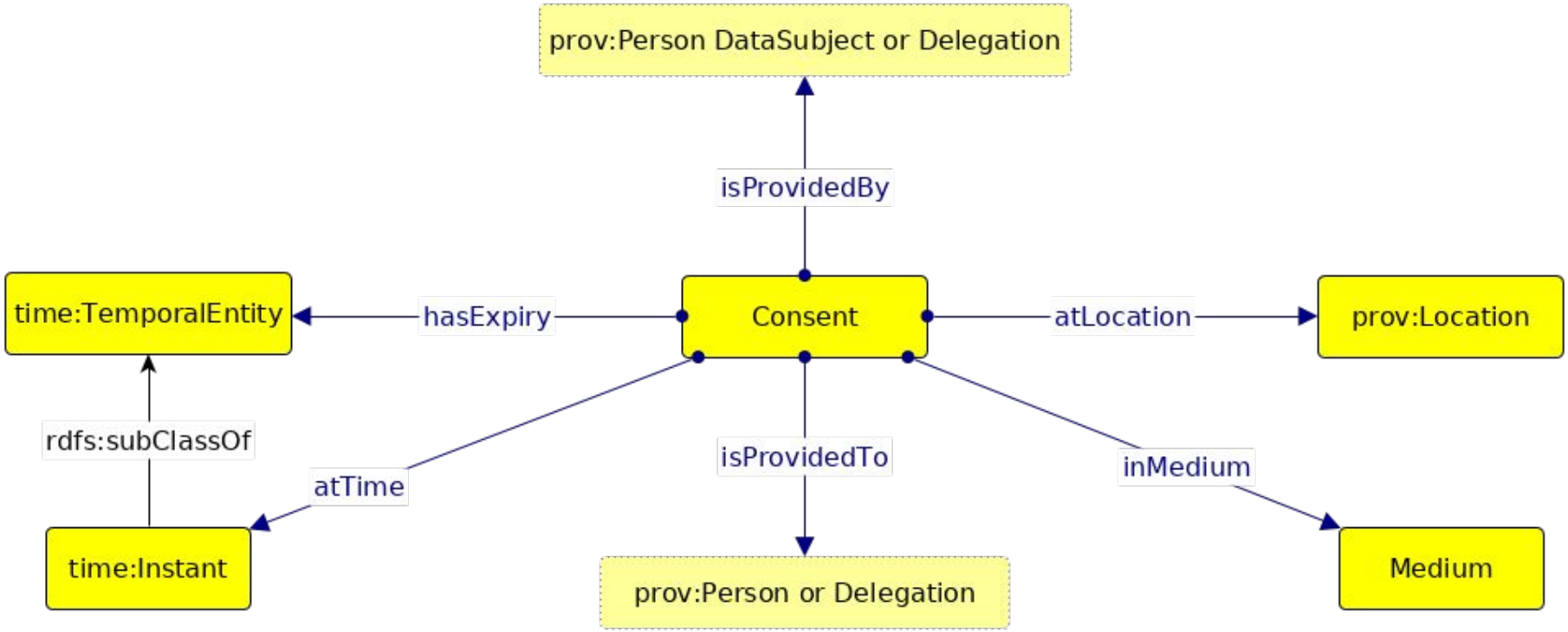


GConsent - A Consent Ontology based on the GDPR https://w3id.org/GConsent
email: {pandith|debruync}@tcd.ie twitter: @coolharsh55 @chrdebru
H J. Pandit, Christophe Debruyne, D O'Sullivan, D Lewis

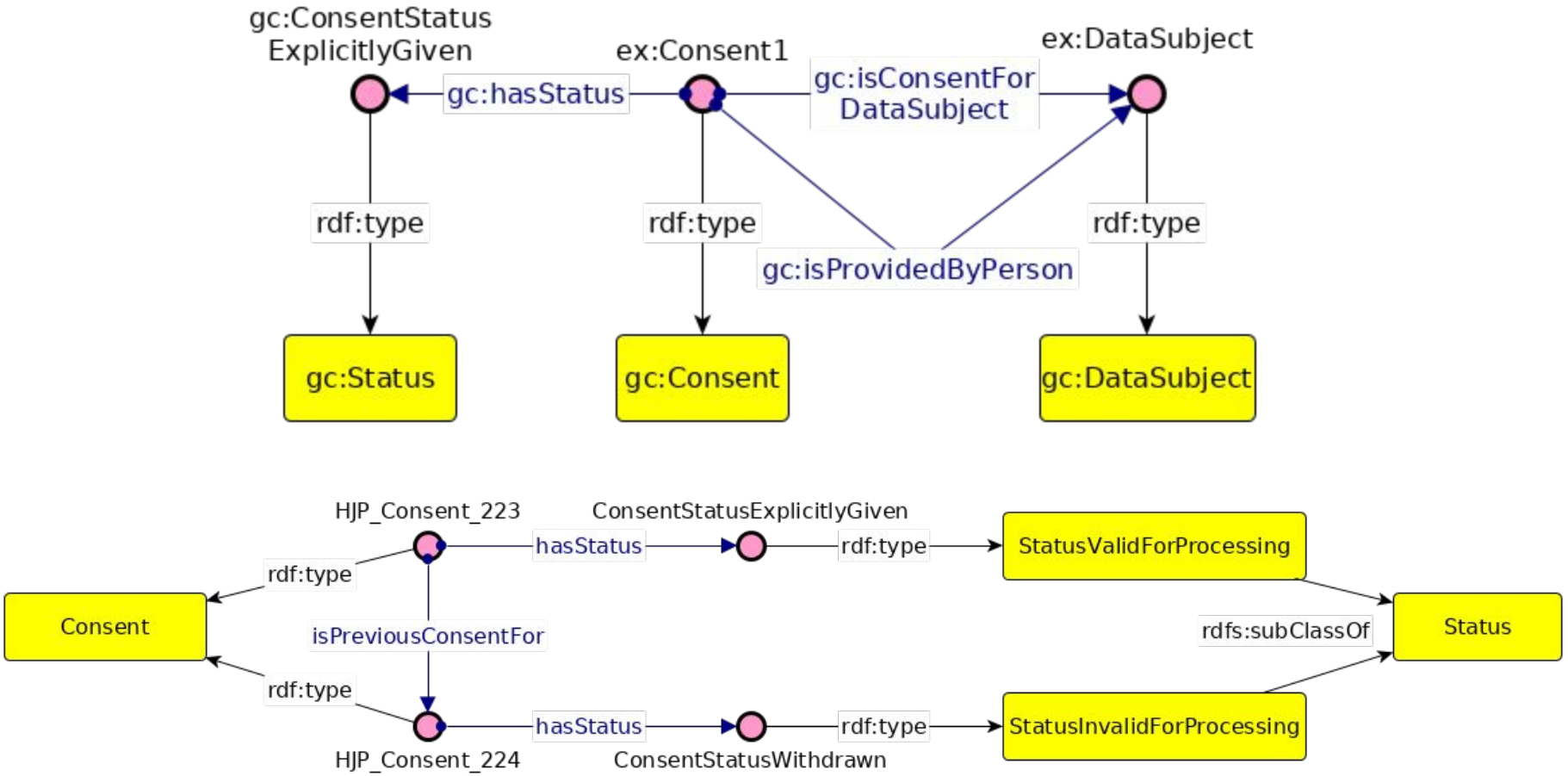
GConsent - Consent States



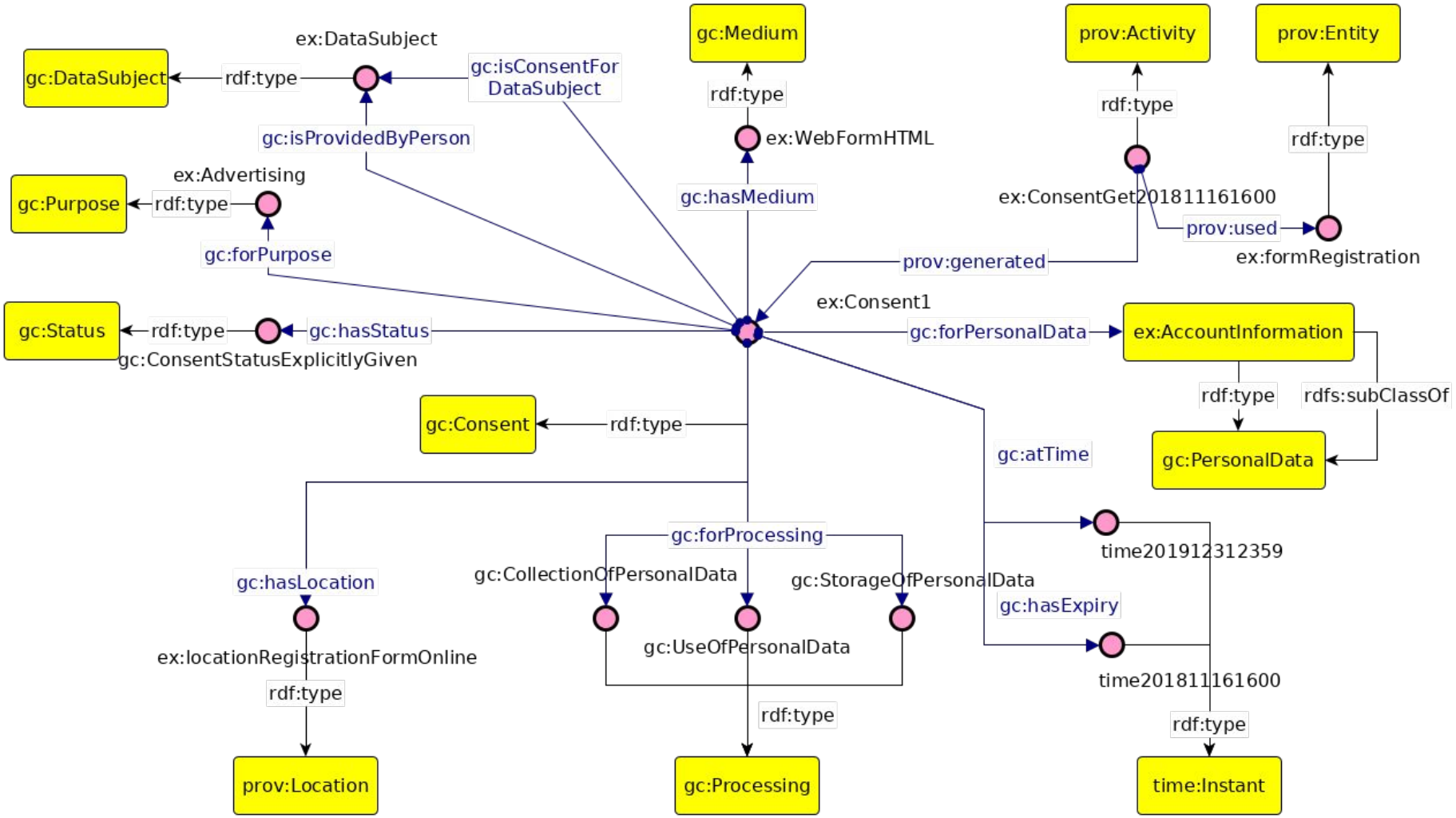
GConsent - Context



Use-Case #1 - simple



Use-Case #2 - realistic



Punning

Consent is given for specific personal data *categories*

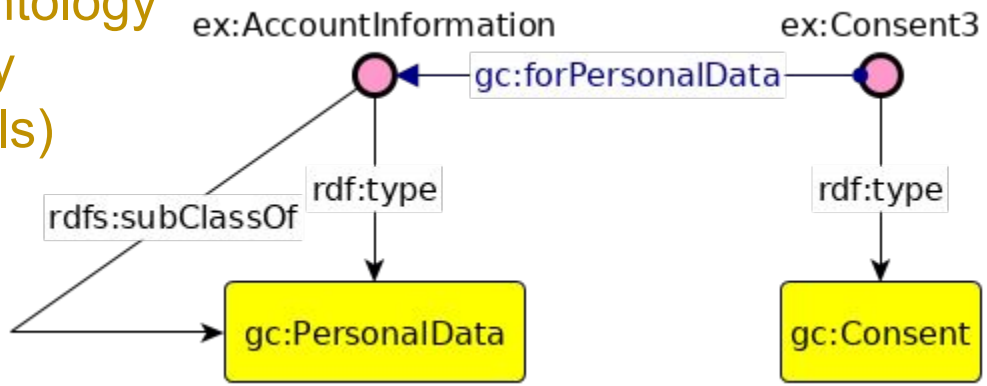
So, in this case, the instances are “categories” of personal data rather than “instances” of personal data

e.g. “name” instead of “John Doe”

How to model this? → Possibly use Punning?

We recommend this as a viable solution:

- not implemented in the ontology
- may lead to heterogeneity (granularity and individuals)
- rely on gazetteers or prescribe best practices (future work)



Critical Analysis

- Temporal and location attributes are not clearly specified
  - e.g. “as long as required”
- Could be perceived as too complex
  - Assess complexity with subject matter experts (future work)
- Does not entirely align with how consent is perceived, stored and used by other stakeholders, e.g., organizations
  - e.g. stored as boolean in a database
- Not clear how to model legally complicated use-cases
  - e.g. online consent mechanisms interacting with third parties

Related Work - align with GConsent

SPECIAL Project http://specialprivacy.eu/

Consent is defined as an intersection of personal data category, processing, purpose, storage, and recipients.

ObjectIntersectionOf (
ObjectSomeValuesFrom (spl:hasData SomeDataCategory)
ObjectSomeValuesFrom (spl:hasProcessing SomeProcessing)
ObjectSomeValuesFrom (spl:hasPurpose SomePurpose)
ObjectSomeValuesFrom (spl:hasStorage SomeStorage)
ObjectSomeValuesFrom (spl:hasRecipient SomeRecipient))

DPVCG https://www.w3.org/community/dpvcg/

Consent Ontology/Taxonomy (draft v1)

Just in Time Compliant Dataset Generation

Debruyne, Pandit, Lewis & O'Sullivan, *published in ICSC 2019*

Using stored consent information from an organization's perspective

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~end of presentation~

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