

Overcoming (perceived) barriers to reuse of research data

Legal and ethical aspects

OpenREL

Data Reuse Workshop (Second Meeting)

25th of February, 11:30-13:15 CET

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Funded by
the European Union

Licence Provisions (Rules)

Obligation (Duty)	A condition requiring users to perform specific actions, such as attributing the creator or sharing derivatives under the same licence
Prohibition (Restriction)	A rule in a rights statement that explicitly forbids certain actions, such as commercial use or data redistribution
Permissions	Rights of owners optionally transferred to users of the resource (traditional) <i>Rights of other stakeholders not traditionally recognised in licences</i>
Actions	Can be linked to any of the above, defining the actions of agents ('Parties') in the ecosystem



Prior Work in ODISSEI Project

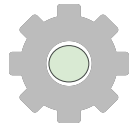


Four New Licence Provisions



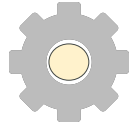
“Verified Identity”

The identity of the end user (not personal particulars) are recorded for purposes of future communication in respect of the dataset, or to determine affiliation.



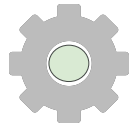
“Verified Application”

The purpose and nature of the derived dataset is verified by the depositor or curator. This may be done prior to processing, or prior to publication, or both. *This step may include additional checks on the person or institution.*



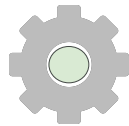
“Controlled Environment”

The data can only be accessed and processed in a controlled environment.



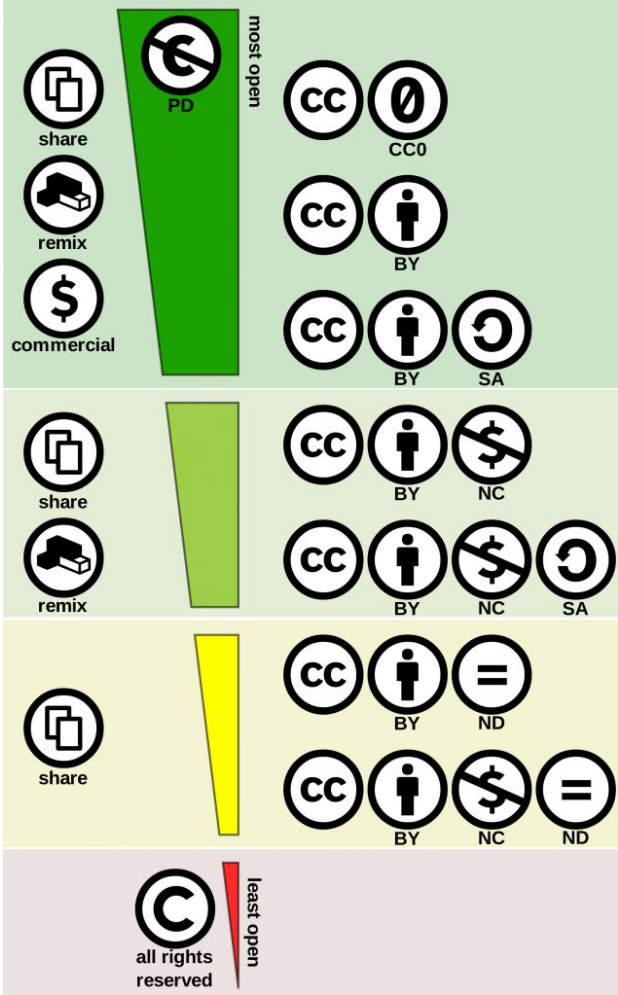
“Hidden Data”

The data itself cannot be seen by the process - only the output is visible to the end user.

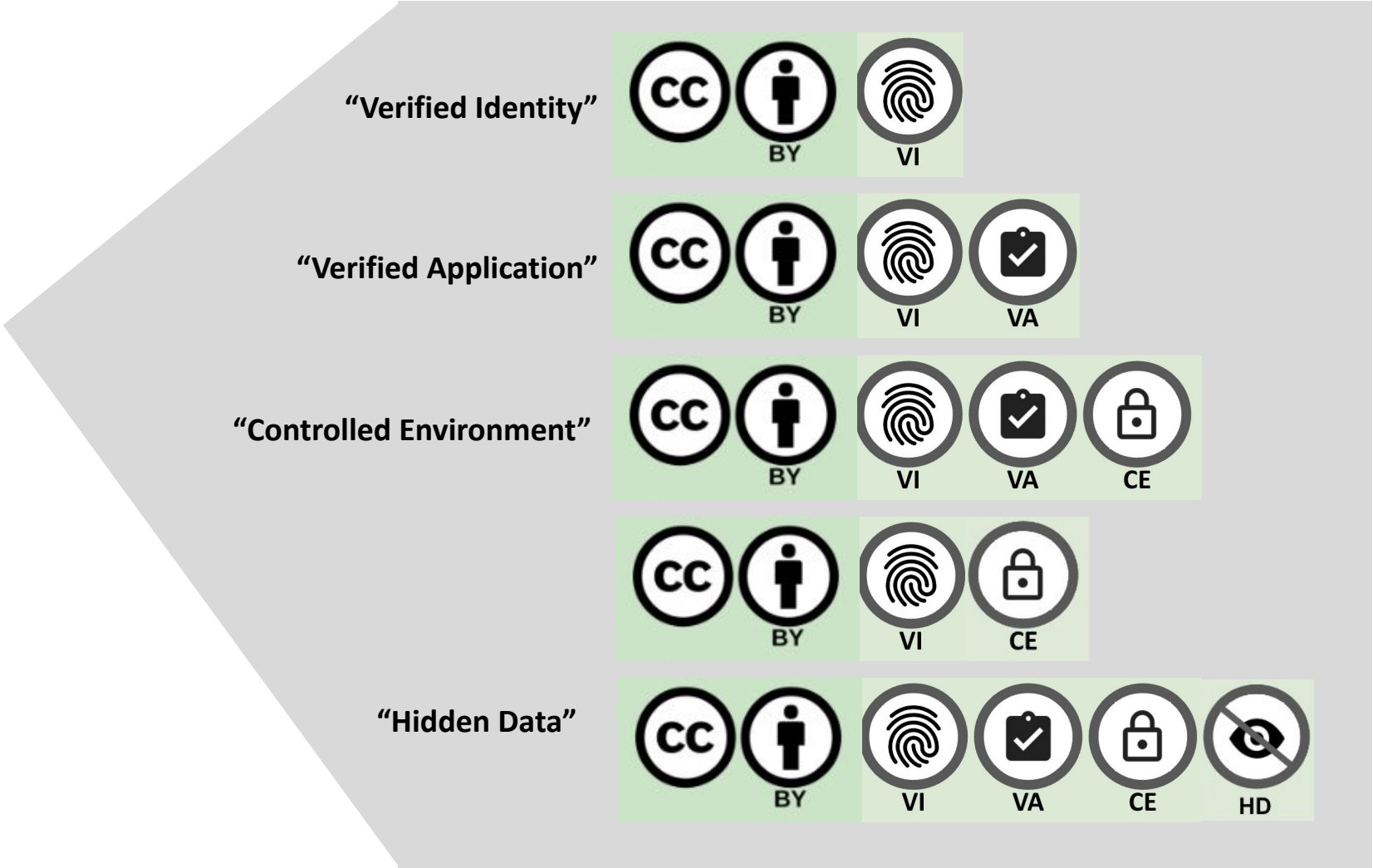


'Managed Access'

Free Culture



"Managed Access"



Prior Work in EOSC Beyond



Task 13.4 – Digital Rights Landscape Review

State-of-the-Art Review Completed

- Comparative analysis of ODRL, ccREL, MPEG-21 REL, RightsStatements.org, DataCite/schema.org
- Alignment assessment with FAIR and CARE principles
- Identification of ODRL as suitable technical foundation for EOSC

EOSC Rights Classification Framework Defined

- Intellectual Property Rights
- Ethical & Personal Data Rights, Sensitive Data Cases
- Institutional & Contractual Conditions
- Multi-dimensional modelling approach

Repository Gap Analysis

- Assessment of Zenodo, OpenAIRE, DANS
- Identified heterogeneity in rights metadata
- Limited automation & interoperability

Strategic Result

Established the analytical and technical foundation for a harmonised, machine-readable DRM layer in EOSC.

EOSC Beyond D13.3 Digital Rights Management State of the Art

Hugo, Wim; Thorpe, Deborah; Katsanakis, M.

This report offers a detailed examination of the current landscape of Rights Markup Languages (RMLs) and their significance for the European Open Science Cloud (EOSC). It reviews current practices in representative repositories and data infrastructures, and makes recommendations for the development of an EOSC Rights Vocabulary, addressing gaps that were identified in the analysis.

Files

EOSC Beyond_D13.3_V1_Public Under EC review.pdf



<https://doi.org/10.5281/zenodo.17225379>

The EOSC Beyond project, via WP 13 and WP16, is addressing a set of challenges in respect of the management of rights, ethics and legal obligations in the research data landscape. These challenges are of three main types:

- A major structural deficiency relates to the fact that licences and existing Rights Expression Languages (RELs) are focused on copyright (i.e. the rights of the owners and creators of the work) and do not address other rights (subject rights, ethical considerations, rights of the end users, curators, funders, and other stakeholders).
- A second aspect relates to the nature of access conditions that are often arbitrary and expressed in free text. This has two effects:
 - some classes of users are denied access based on a decision process that is not transparent, reproducible, or predictable, and
 - the access conditions are not machine actionable.
- Additionally, it is not helpful to separate the access conditions from other licence provisions - in practice, this may lead to contradictions, and access conditions are sometimes maintained separately from metadata in repository software, leading to its loss should the object be shared or transferred.

EOSC Beyond WP16 is addressing this in part by developing a harmonised REL, building on existing resources.



OPENREL

Overview of Technical Work

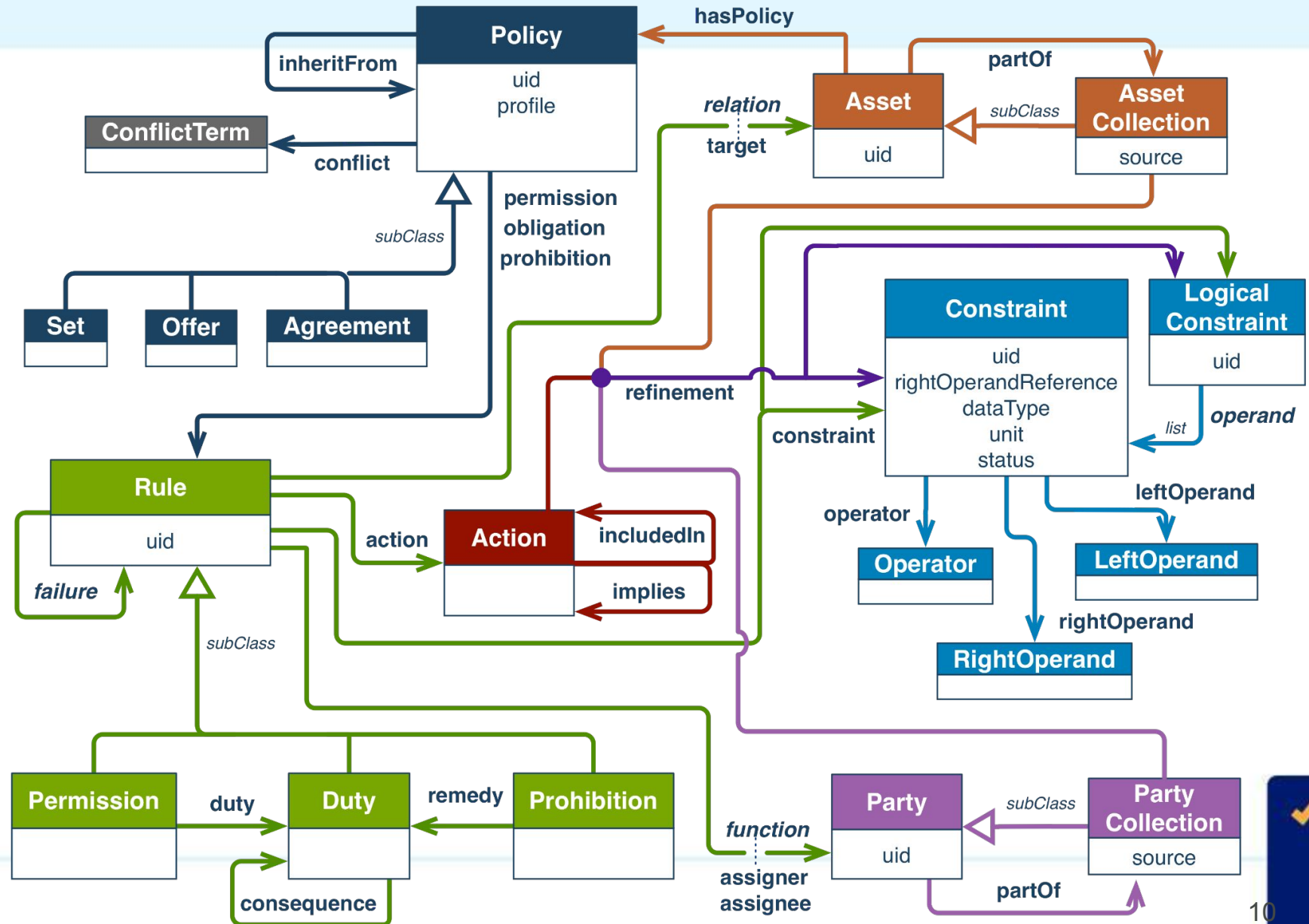
DRM Demonstrator



ODRL Model

Use as a conceptual foundation, and extend with

- Formulation of a 'Licence' as a collection of rules (equivalent to a Policy)
- An asset collection can be named and reused
- The licence (rule collection) can be applied to an asset or an asset collection
- A licence can apply to more than one asset collection, and an asset collection can have more than one licence assigned
- Additional sources of rules (subject, depositor, ... rights)



Aim: Licence Definition and Convergence

Some design considerations for registry data, API services based on it, and user interfaces

- SPDX (Linux Foundation) maintains a registry of licences in a GitHub repository - good idea, takes care of crowdsourced curation and version control
- Licences have a PID, and can be 'well-known' or 'custom' - represent nodes in a graph
- Best practices emphasise alignment with existing licence definitions wherever possible to avoid divergence
- Plan for future integration with the 'Licence Facade Service' being developed in EOSC EDEN
 - In the interim, we will work directly with SPDX - a registry of common licences
 - Will develop form-based submission of new licence definitions via GitHub pull requests to SPDX
 - Retrieve SPDX licence definitions via API
- Rules are defined as separate nodes in the graph, and can maintain a set of related identifiers - for example, if a rule is defined in both ODRL and CCREL, both of these can be referenced through external URIs.
- A licence is a 'profile' of rules, and the scenario envisaged by a use case is also expressed as a profile.
- Profiles are matched to determine overlap/ degree of alignment



Options for Rights Management in Repositories

Sensitive data is often equated with privacy, and while privacy considerations lead to some data being sensitive, it is not the only source of concern. Protection of indigenous rights, endangered species, or commercially sensitive data are additional examples of ethical and legal concerns that might require management of disclosure risk.

Publishers of research data and repository managers generally have three tools at their disposal for the management of such risks. These are (1) risk appraisal and selection of an appropriate licence, (2) optionally providing conditions of access, and (3) digital provisions such as encryption and authenticated access.

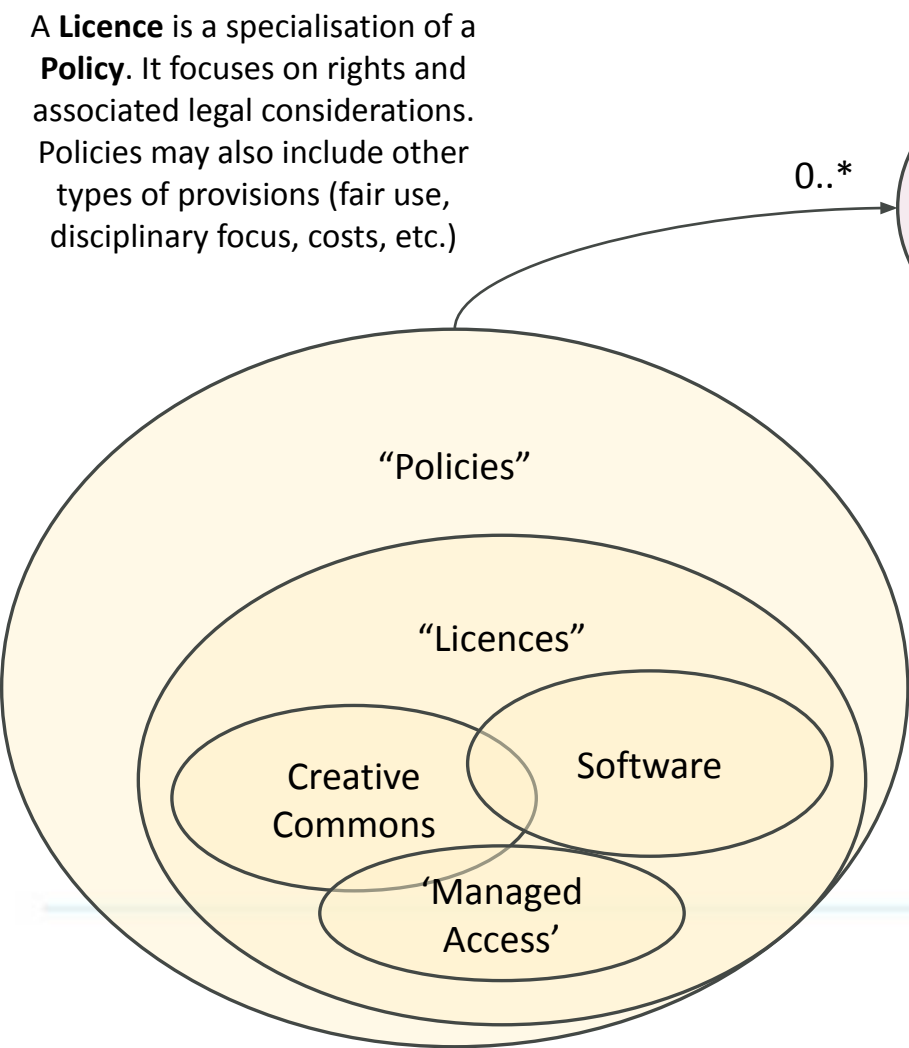
While licences are somewhat standardised and best practices emphasize their reuse, there are many instances of custom licences in practice. Moreover, conditions of access can vary significantly in granularity (applicable across a repository or collection, down to the level of individual files in a dataset), and are often arbitrary in nature. The summary of challenges and solutions are derived from a recent publication surveying the landscape of rights management in the European Union (Hugo et al., 2025).

The solution to these challenges has two parts: development and dissemination of licence provisions that deal with these additional rights considerations and access conditions, and ensuring that new licences are developed that fit the major use cases involving these extended rights (Braukmann et al., 2023). There is a supplementary element of the solution to require all provisions and licences to be machine-readable. In Europe, the [EOSC Beyond](#) project is focused on developing these solution elements as recommendations to the EOSC.

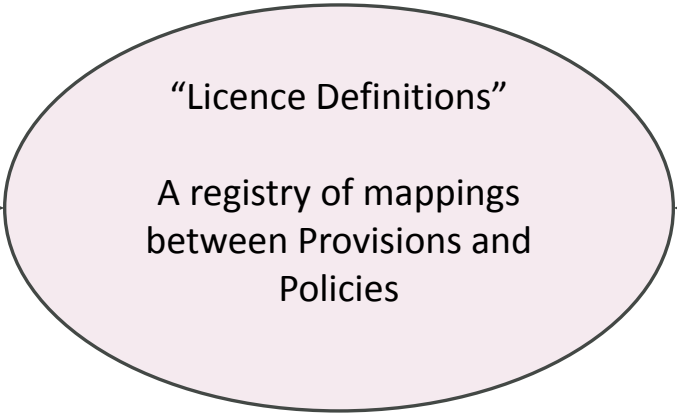


Scope and Concepts (Entities)

A **Licence** is a specialisation of a **Policy**. It focuses on rights and associated legal considerations. Policies may also include other types of provisions (fair use, disciplinary focus, costs, etc.)

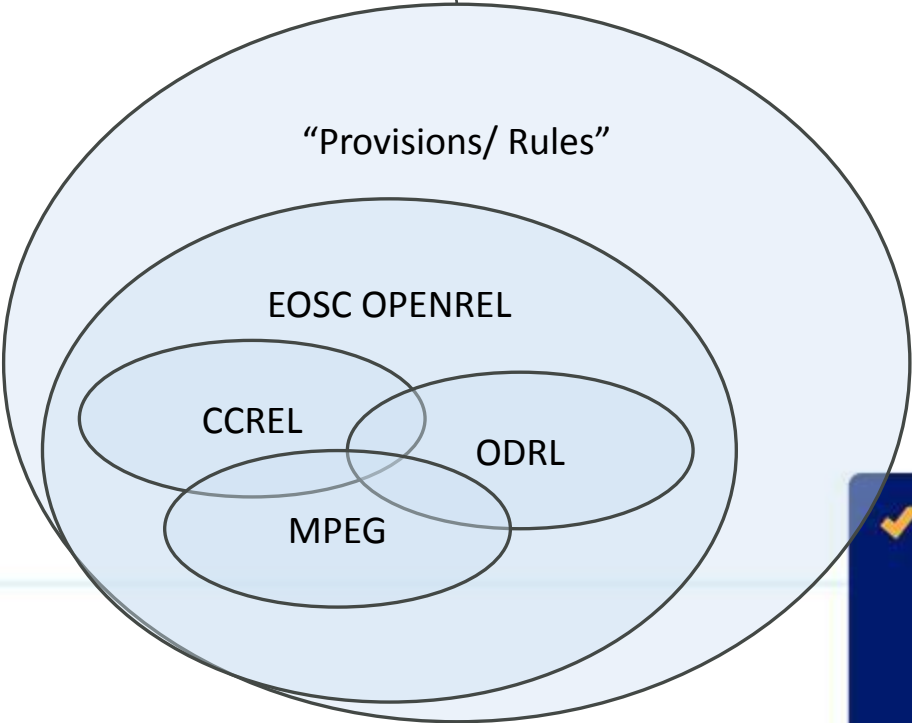


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The **Licence Definitions** are used to map **Provisions** to **Policies**, and ensures consistent reuse of both.

Provisions extend and link existing sources of REL definitions as indicated, and in itself serves as a mapping between these, as required.



Technical Assistance to Users

There is a need to assist end users of licences and access conditions with a portfolio of tools that offer the following services:

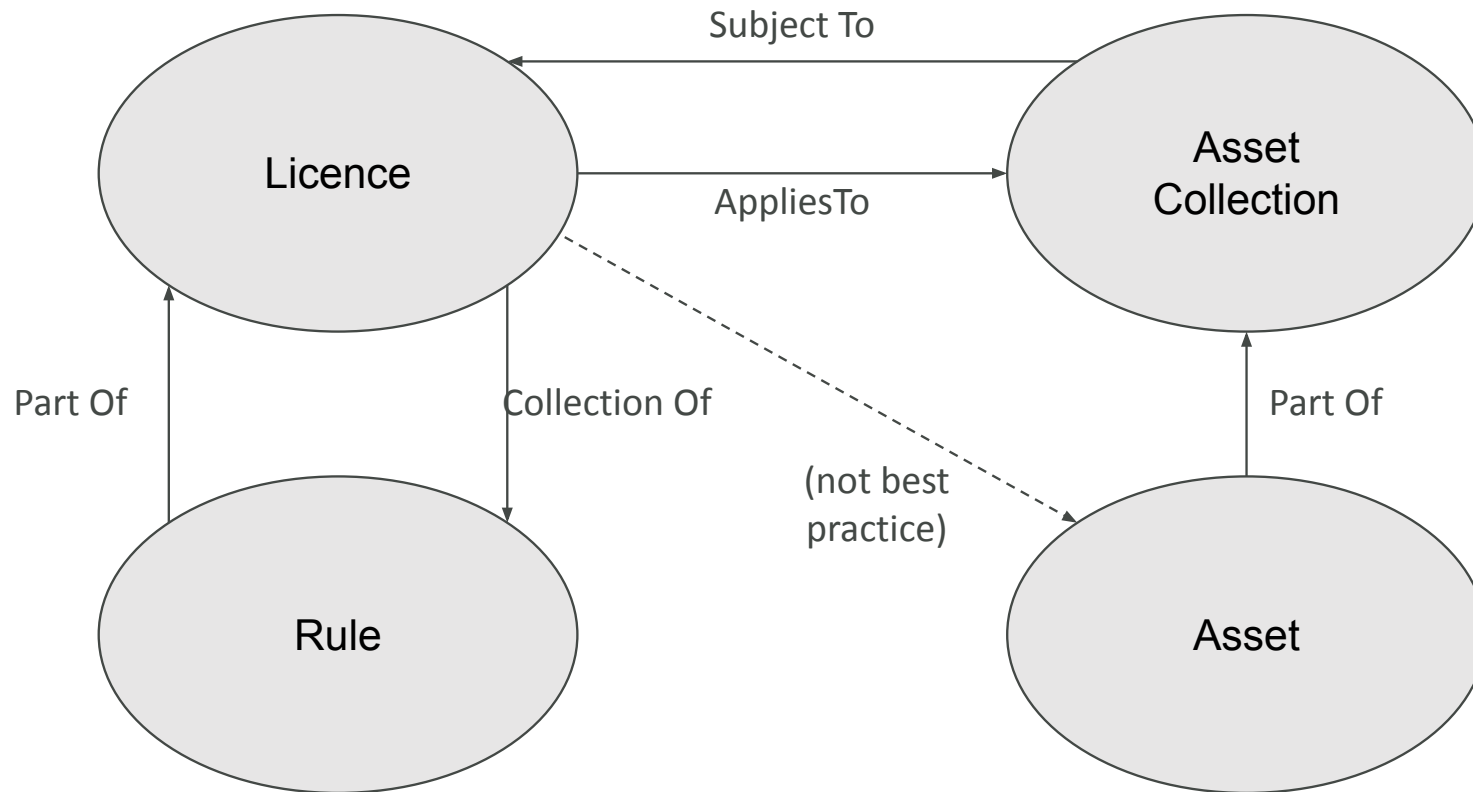
1. **REL:** A harmonised vocabulary of access conditions and licence provisions ('provisions') that covers all relevant rights, ethics concerns, and legal obligations. This extends existing RELs
2. **LIC:** A licence inventory that provides a stable IRI, metadata for each licence. There are existing services (e.g. SPDX) that can be extended to provide this capability (link to EOSC EDEN).
3. **MAP:** a registry of mappings between licences and provisions.

Additional requirements include:

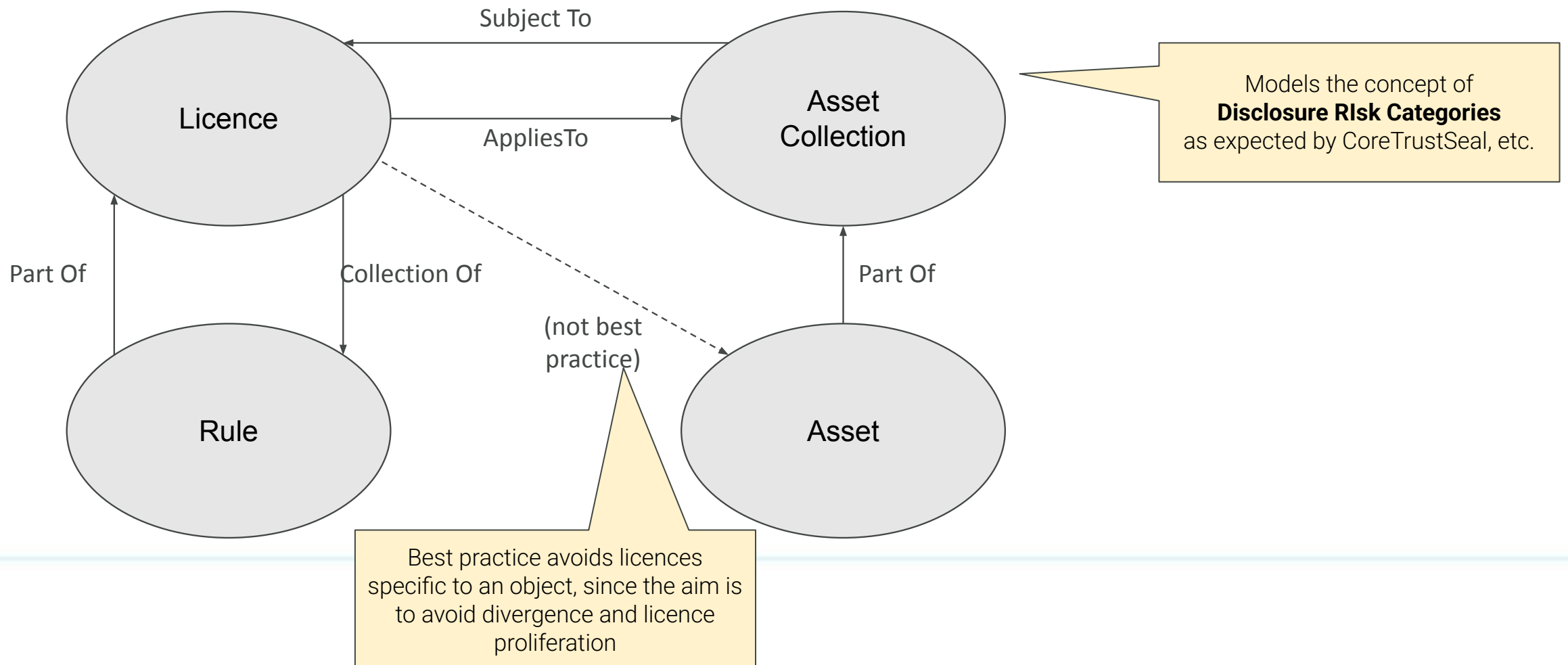
1. All three these services must provide human- and machine-readable interfaces.
2. The ability to register new provisions, new licences, and new mappings via API and human interfaces. Designated curators must be able to maintain the above. It will be vitally important to manage versioning of all the relevant entities.



Extension: Licence and Asset Collections

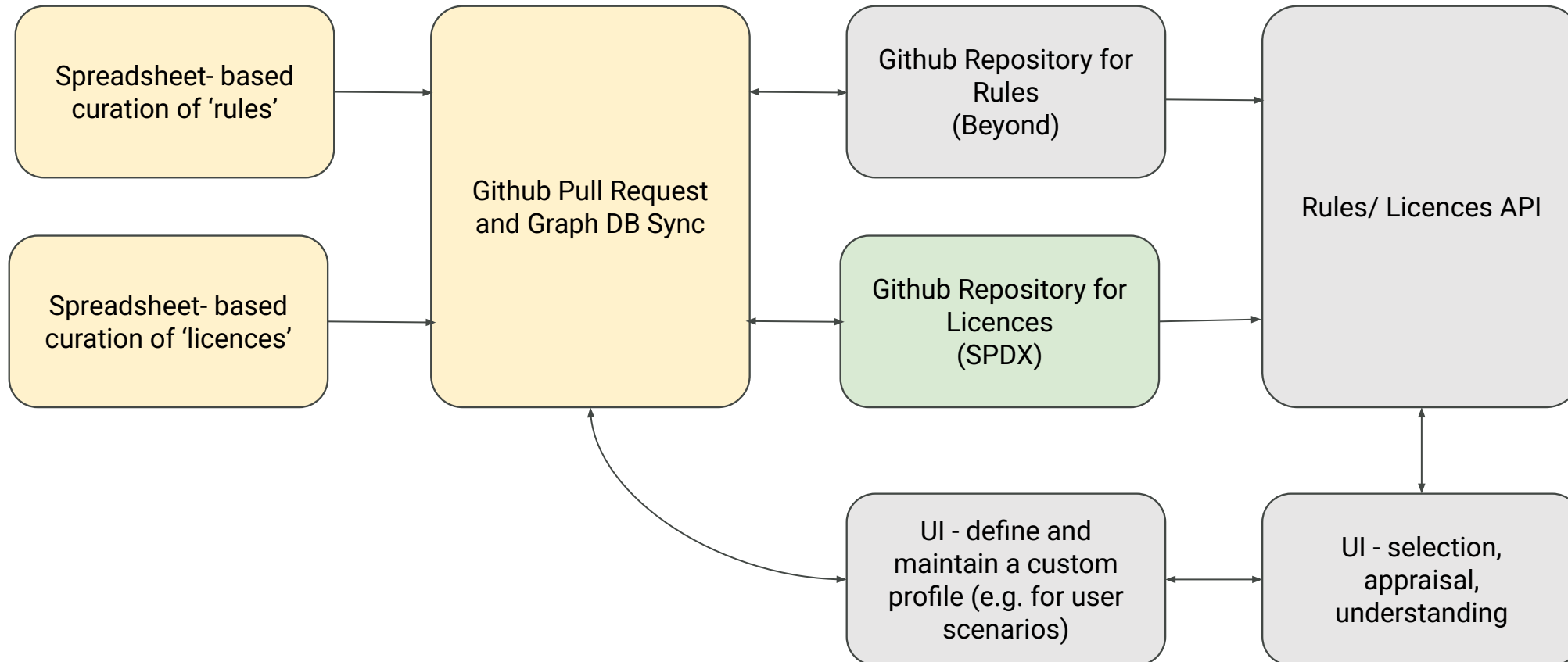


Extension: Licence and Asset Collections



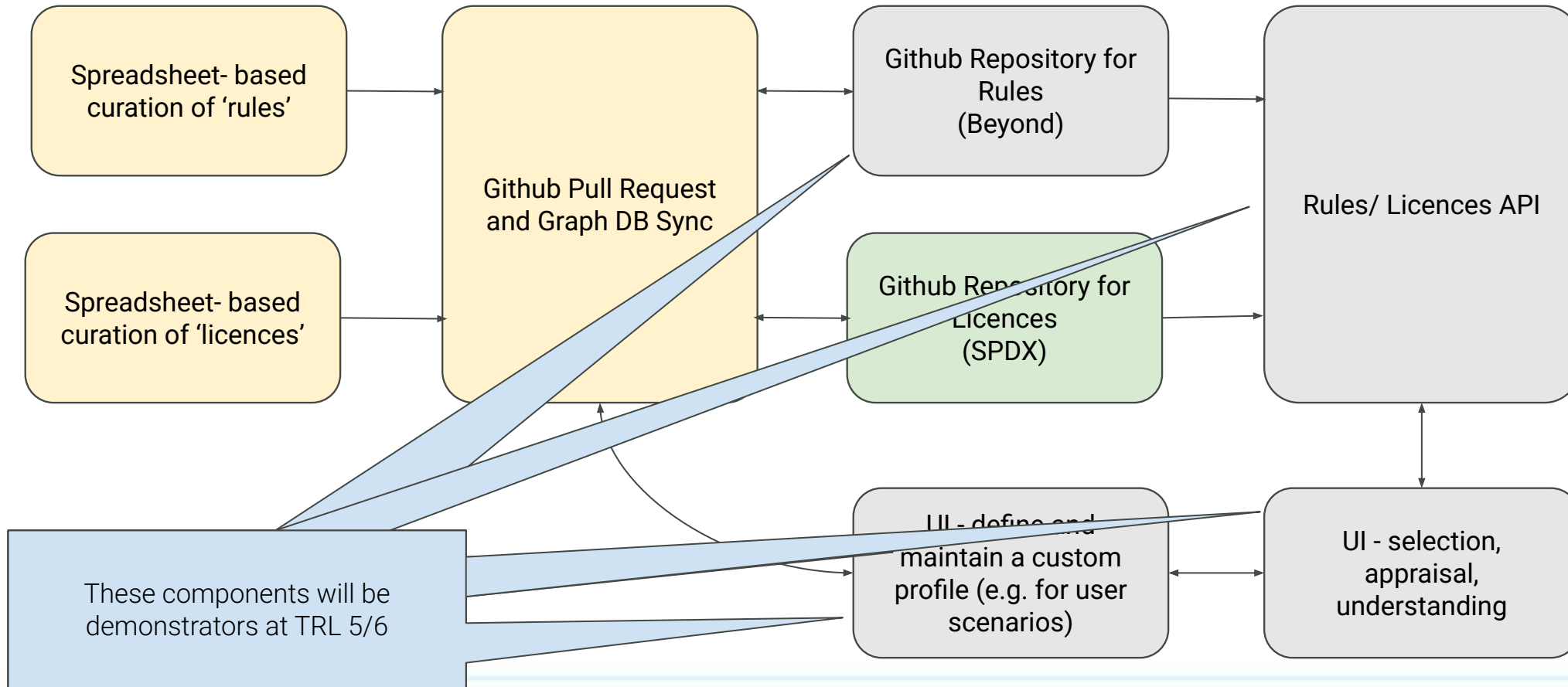
EOSC Beyond Outputs

API services, UI, and curation tools

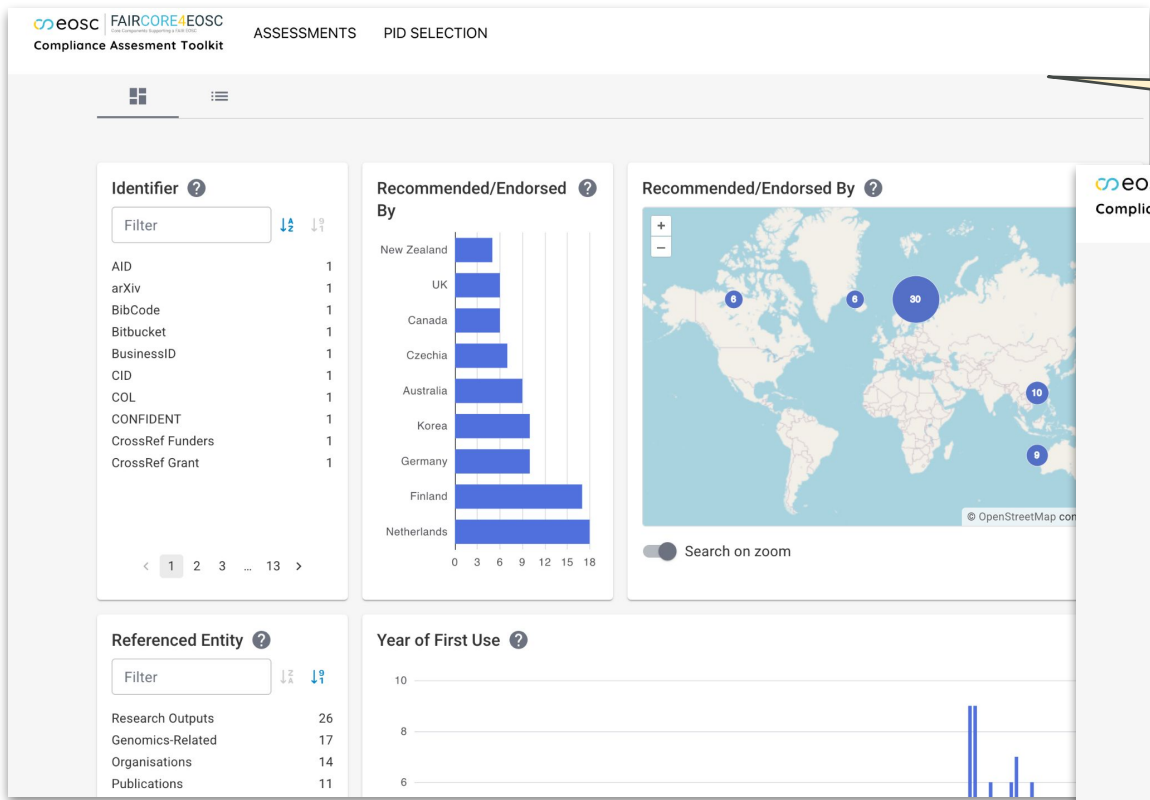


EOSC Beyond Outputs

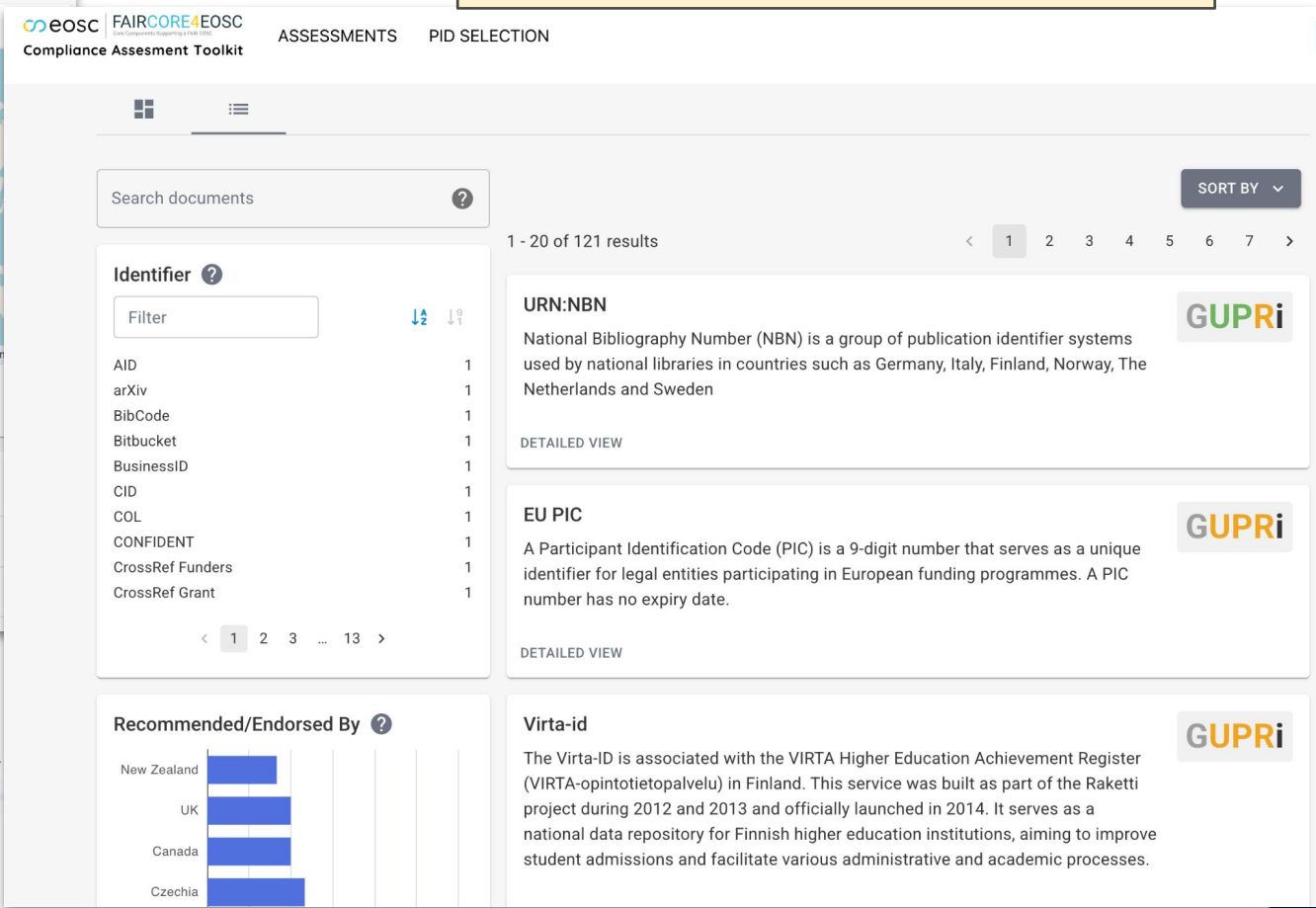
API services, UI, and curation tools



Examples: FAIRCORE4EOSC PID Knowledge Base

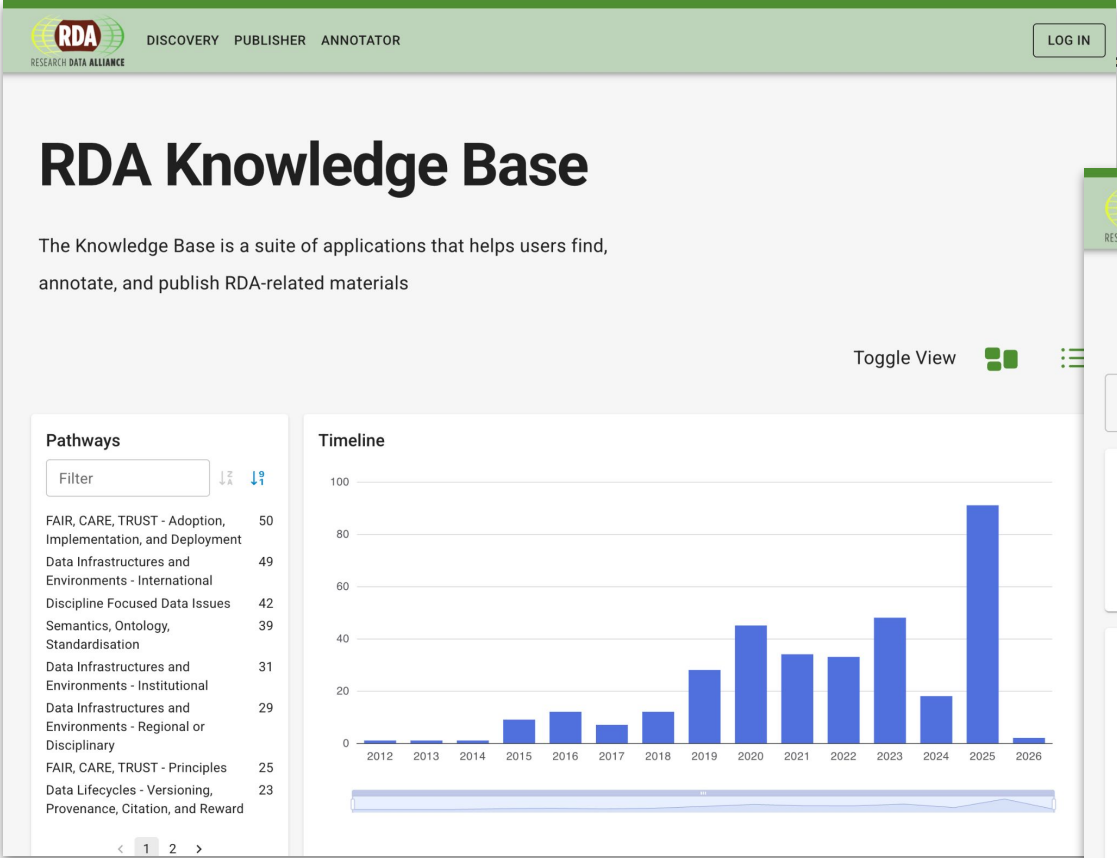


The Dashboard View allows a bird's-eye view of the content of a knowledge base, and as facet elements are selected, all other facets are updated dynamically

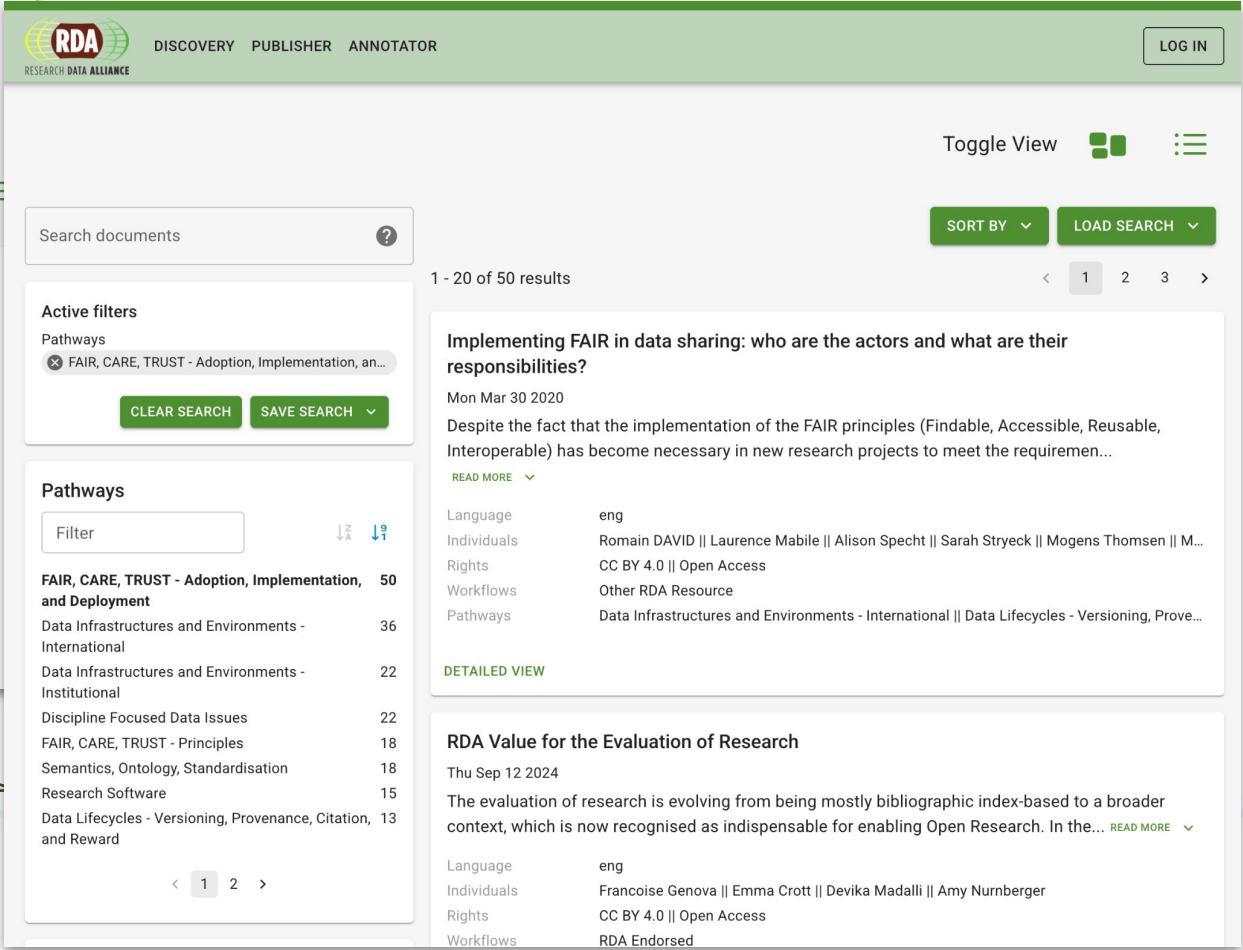


The List View allows a bird's-eye view is a more traditional Search and Discovery

Examples: RDA Knowledge Base



The Dashboard View allows a bird's-eye view of the content of a knowledge base, and as facet elements are selected, all other facets are updated dynamically



The List View allows a bird's-eye view is a more traditional Search and Discovery

- [1] Hugo, W., Thorpe, D. & Katsanakis, M. (2025). EOSC Beyond D13.3 Digital Rights Management State of the Art. <https://doi.org/10.5281/zenodo.17225379>
- [2] Braukmann, R., Hugo, W. & van Kemenade, J. (2023). Harmonising Access Procedures for Sensitive Data - Workshop at the Open Science Conference. <https://doi.org/10.5281/zenodo.8108414>



Thank you



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