





# OPAL

### Ontology Portal for Astronomy Linked-data

Baptiste Cecconi — Southern Spring 2024 Interop IVOA — Semantics session









### OPAL proposal

#### Main ideas

- Astronomy = several sub-communities with siloed semantic ecosystems => build brides
- Typical use cases:
  - **Exoplanets**: more and more resolution in IVOA community, comparison with planetary observations (remote and in-situ) are essential. But: IVOA object-type "planet" means "exoplanet" => careful mapping needed
  - Space Weather: agencies developing Space Weather services are classical weather agencies. Gap between weather service providers (Earth science world) and data providers (heliophysics).
  - Need for coordinated implementation of **provenance** schemas and **variable descriptions** for model and observation, as well as cross sub-domains, interoperability
  - Harmonization of generic terms and concepts common to the sub-communities (reference frames, observatory names, instrument types, etc).
- In addition, the development and evolution of the semantic artefacts will be the occasion to make them more FAIR. So that they can be reused in generic repository metadata.

### OPAL proposal

### Funded by an OSCARS cascading grant.

- Goal: operate an ontology portal for the astronomy community (celestial astronomy, heliophysics, planetary sciences, and particle physics)
- Based on <u>ontoportal.org</u>
- Upgrading a prototype developed within FAIR-IMPACT: http://voparis-ontoportal-dev.obspm.fr
- Collaboration between INRAE, ObsParis and the Ontoportal Alliance
- Starting: January 1st 2025, for 2 years
- OSCARS portal page: <a href="https://oscars-project.eu/projects/opal-ontology-portal-astronomy-linked-data">https://oscars-project.eu/projects/opal-ontology-portal-astronomy-linked-data</a>

## OPAL project

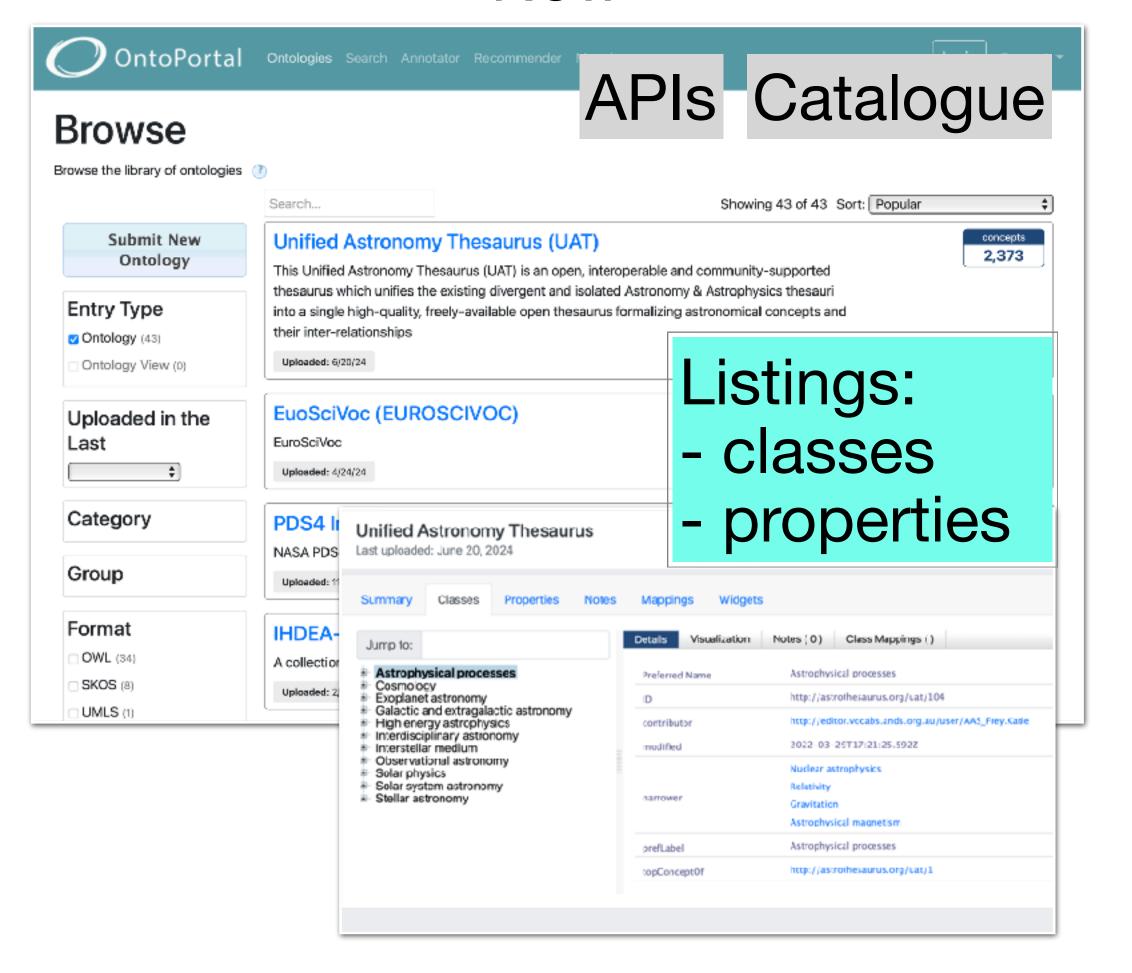
### Upgrade of ontoportal instance

- Ontoportal Features:
  - semantic artefact catalogue
  - cross-matching of ontology
  - exploration (web and API)
- Current version is the basic appliance version.
  Limited capabilities, and a few bugs
- Upgrade to version developed at INRAE in France.
  Includes many features, implements FAIR assessment, APIs, metrics...
- Linking with other ontoportal instances (especially Earth sciences), or other semantic artefacts (PANOSC ontology)

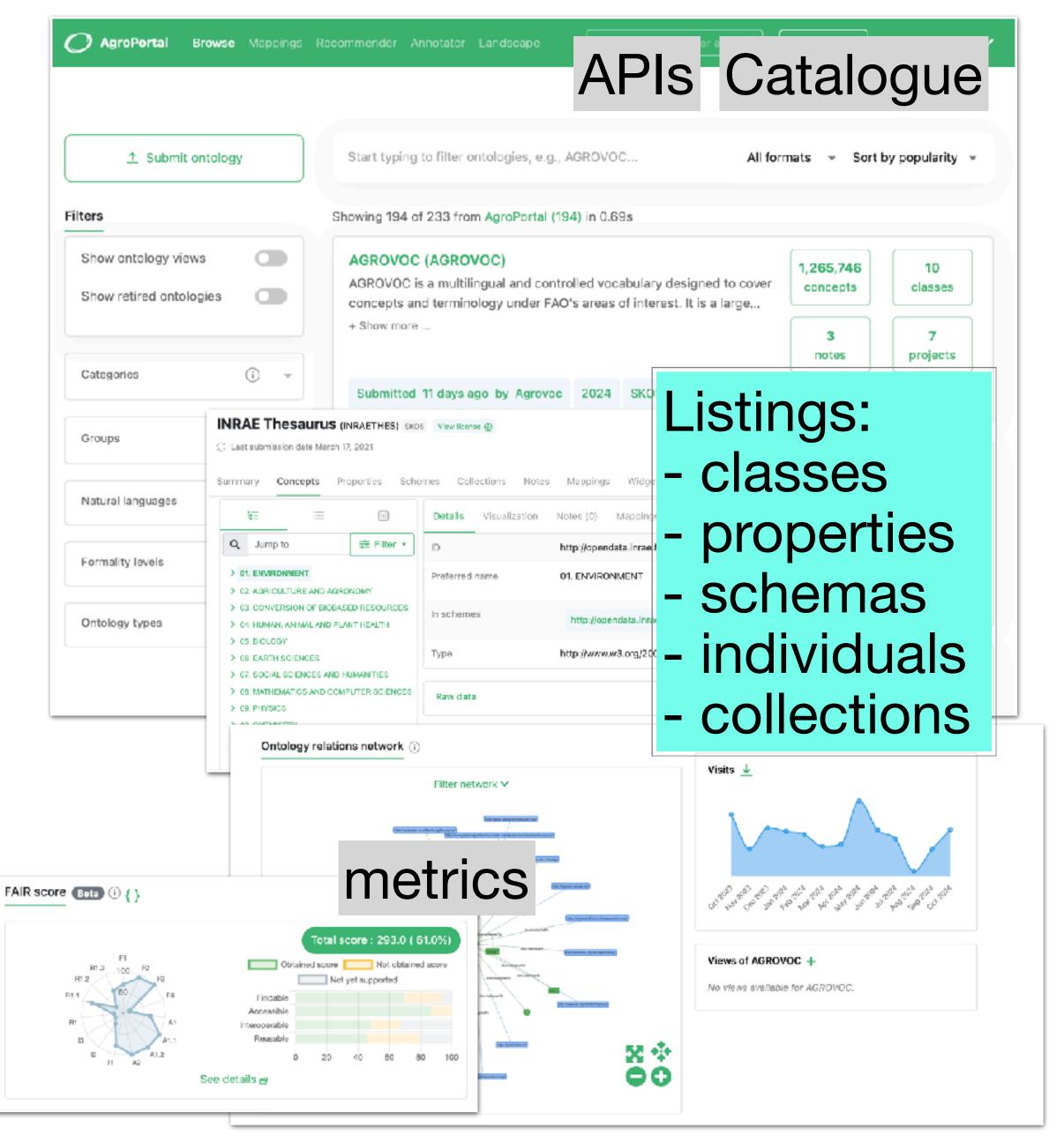
## OPAL project

### Upgrade of ontoportal instance

#### Now



#### Upcoming



### **OPAL** content

### First vocabularies/ontologies to be included

- IVOA vocabularies (many)
- Heliophysics:
  - SPASE data model (ontology version available, thanks Ryan McGranaghan)
  - SolarNet metadata keywords
- Planetary:
  - PDS4 information model (Steve Hughes inputs)
  - OGC planetary vocabularies
- Particle Physics:
  - CERN open data terms
- VAMDC metadata schema

### OPAL Advisory and User Group

#### Volunteers needed

- The Advisory and User Group (AUG) will support the OPAL team by:
  - helping identifying vocabularies and semantic artefacts
  - bridging between communities
  - providing support for decisions
- The AUG will be composed of key stakeholders and knowledgeable personalities from the various astronomy sub-communities, in order to assess the priorities and developments of the portal.
- The AUG will be composed of 6 to 10 persons covering the astronomy, planetary sciences and heliophysics science communities, as well as other stakeholders like archive data managers, space weather industry, etc.
- If you want to be part of the OPAL AUG, please contact us!
  Contact: <u>opal.contact@sympa.obspm.fr</u>