

Telescope and Instrument index for space science and astronomy

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□ Goals for an instrumental index

- Various needs to track names and properties of the instruments and telescopes
- For **publication** and **curation**
 - Tag articles in astronomical journals
 - Check tool for documentalists ingesting data and tables (e.g Vizier)
- For **data discovery** and **data analysis**
 - data provider/user Obscore metadata , Instrument configuration as part of Provenance, etc .
- For **evaluating the usage** of instrument/telescope
 - Agencies , e.g. ESO



□ What is the lanscape around us

- Many systems exist per project (cf Baptiste C. slides)
- Compilations of a telescope/instrument list (Marion Schmitz@NED)
- Telescopes/instruments lists for practical ingestion at Vizier (Emmanuelle Perret)

See repo at <https://github.com/loumir/InstrumentsTelecopes>

- European Open Science Initiatives, international programs :
 - RDA, Codata: PID for Instruments
 - Example paper :

<https://datascience.codata.org/articles/10.5334/dsj-2020-018/>

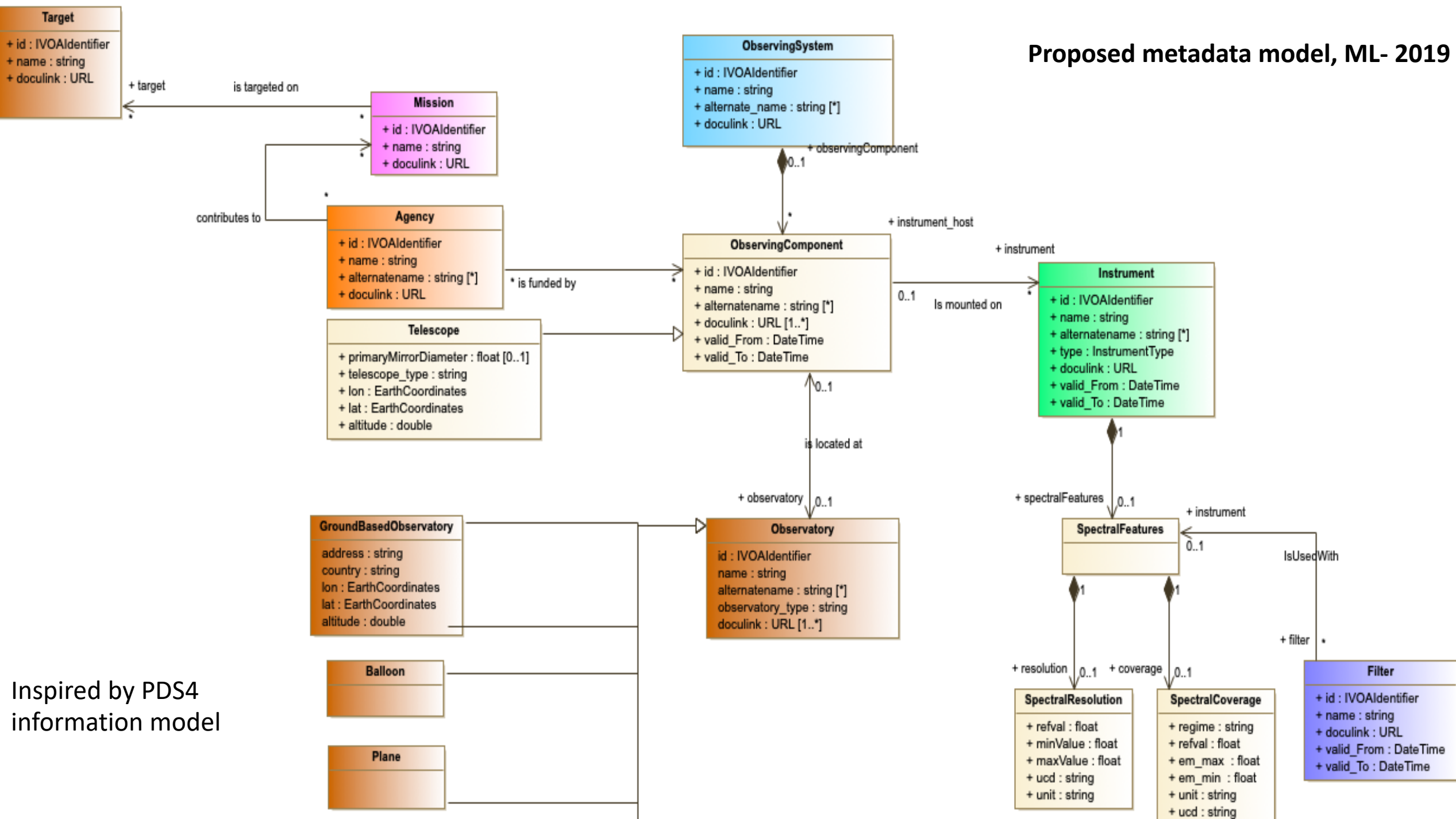


□ Metadata framework

- Inspired by practical examples in documentalist work
- [PDS4 Information Model Specification v 1.11](#)
 - Instrument and their types
 - Instrument Host Telescope $\leftarrow \rightarrow$ Instrument
 - Observatory $\leftarrow \rightarrow$ Telescope
 - System of telescopes
 - Agency
 - Target
- Provide the classes, properties and links



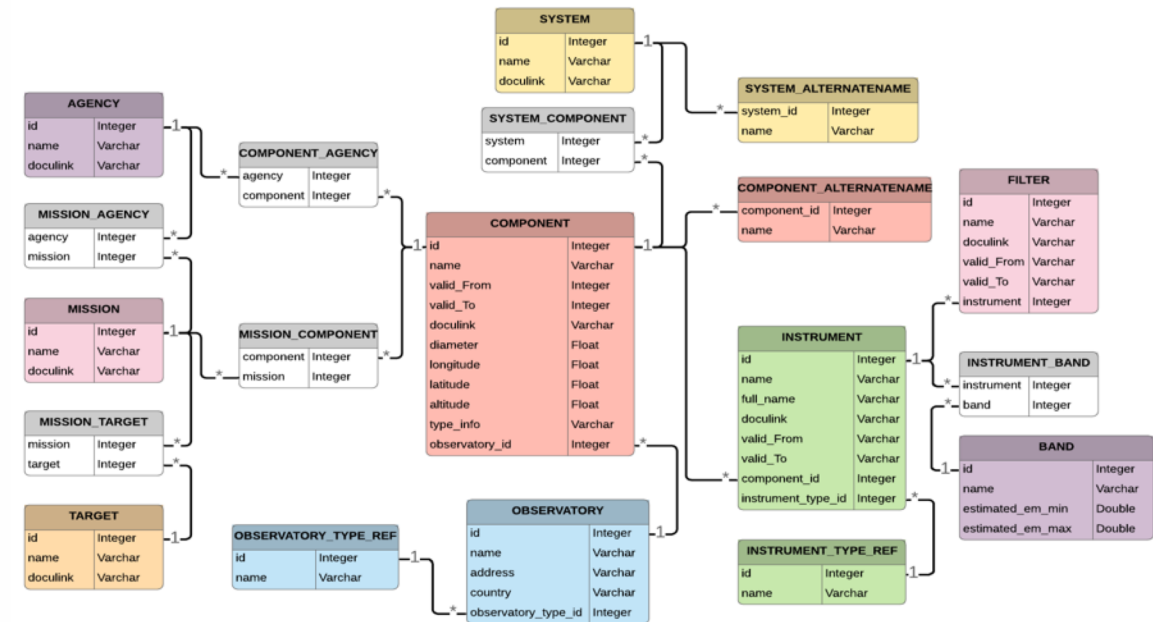
Proposed metadata model, ML- 2019



Inspired by PDS4 information model

Experience with a TAP Prototype for a Telescope-Instrument repository

- Datamodel implementation in PostGRES
- TAP service developed in spring 2019
- Test of the DB via TAP interface : TOPCAT, TapHandle
- Development of an update Interface for multiple contributors
- Question of design :
 - Need much man power ingestion/maintenance
 - Is the model adequate and how many revision cycles will we have to sustain?



DB Prototype 2019



□ What are the needs

- Agreed it is useful to have a global information system
- Define a Unique ID for each component
- Represent hierarchical relations
Instrument/Telescope/Observatory
- Bind the ID to some description record
- Gather content from the expertise from various partners :
agencies, publishers, data centers, librarians and
documentalists



□ How to share the effort

- Data ingestion is not straightforward
 - Curation of the lists needed, missing items, ambiguous names, smearing of names from Telescope to Observatory and vice versa, old names reused , etc.
- Information is used and spread among various participants
 - Agencies ESA, NASA, etc.
 - Datacenters and archives :NED, CDS, ESO, HEASARC, VESPA, ...
 - Bibliographic services ADS
 - Journals and Publishers : Elsevier, Astronomy and Astrophysics, AAS, ...



□ Future steps

- How far do we want to be complete?
 - Different needs imply different metadata profiles
- Should we define a distributed system among various partners
 - With a minimal core of metadata
 - Identifiers , minimal properties and landing page
 - Design crosswalks if needed

Comments , suggestions?

Thanks