**TCG Meeting, 10 November 2023**

**(**Thank you to Anne Raugh for taking notes)

Janet E.:

Reminder to post slide for opening WG/IG charge. Slides are optional. This is a promotion for the upcoming sessions.

Any questions about the Interop Agenda? None.

Marco M.:

4 Open RECs for discussion/vote. DataLink and ADQL are the more critical. Marco notes it is not necessary to complete comments and votes in the next 10 minutes, but by the end of Saturday would be appreciated so results can be announced at the close.

- **DataLin**k **1.1** - No additional comments/arguments in meeting. Saturday deadline is OK, some comments (even "No problem") pending and should be supplied.

- **ADQL 2.1** - Some late-arriving comments this morning from Semantics, but these are minor and should be easy to address. Saturday deadline for final comments/votes OK. Apps and Semantics are pending.

- **VOUnit 1.1** - Page is nearly empty. Markus D. presents a pitch for doing a quick review, and highlighted the significant (but "harmless") changes. He notes that '1' is now recognized as a flag for "This datum is unitless". A blank unit string is used to indicate a field where the concept of "unit" is not applicable (a text string, for example).

- Spectru**mDM 1.2** - This modification is in response to specific requests. Baptiste has added some comments, including one about a statement that "We don't use VOUnits", which is odd, but is not relevant to the specific reason for the current revision. It will be held

over for the anticipated revision to generally update the standard. Question raised (Jesus S.) about whether the changes for this version have been checked for compatibility with libraries currently in use. Markus D. notes some of this is in DaCHs in VOTable format, but there is still concern about the FITS library. This is not a show-stopper, but should be chased down.

**\*\*Action: Marco recommends that tomorrow (Saturday) evening be the deadline for final comments/votes, since no major problems have been identified.**

- 2 Approval Votes in meeting:
    - ObsCore Erratum 1.4 - This is very straight forward. Call for vote; Approved.
    - UDF Endorsed Note - No objections in the room or online. Approved.

Janet

- Hackathon Update: Anne R. gave quick description of the upcoming Hackathon aimed at getting fresh eyes on the ivoa.net web pages to track down broken links, stale information, layout that should be updated, etc., and collect information on what needs to be fixed, so that the actual updating can be carried out over the coming weeks.

- An opportunity to review how communication is working, or not. Perhaps it is time for a TCG retreat to focus on the input we're getting from new users and projects about aspects of communicating with the IVOA and working with documentation and standards.

## Roadmap Review

**Time Domain** - (Rafael G.) Focusing on upcoming time-domain surveys and relevant standards like VOEvent. Also interested in High Energy data sets. Baptiste asks about changes that might be needed to VOEvent

protocol, but the question is to make sure that none are for upcoming surveys. Baptiste notes the newest version represents a relaxation of some constraints. Ada asks why three years have passed; Baptiste notes it's a matter of lack of time and urgency. Pierre S. notes it might be time to consider changes to the protocol specifically motivated by the needs of big projects. High Energy and Heliophysics both use the current protocol.

Marco notes he has received comments about IVOA standards being too technology-dependent, and thus requiring more maintenance (updates, extensions, etc.).

**Theory** - (Giuliano)Looking to restart checking SimDM and SimDAL for comparison with a cosmological use-case to identify updates needed in standards and SKOS vocabularies for these data. The general plan is to start with use cases, implement, and then propose updates.

**Solar System** - Brief rundown of current roadmap. Emphasis in vocabulary development, particularly reference frames. Baptiste note Heliophysics has a group developing relevant reference frames and they are happy to coordinate with IVOA. They are also trying to understand how to apply the Coordinate System standard and ended up going to SPICE. OGC (Open Geospatial Consortium) has also collected a list of planetary reference frames and has standardized on terms. CNES is also working on the topic.

**Radio** (Francois) - Primary concern is pushing the ObsCOre extension for radio astronomy. Modifications have been proposed and discussed. An implementation is underway. A new implementation of VO services for radio archives are being developed - some will be demoed at this meeting.

**Operations** (Steve G.) - Focusing on validators and some of the "rough edges" in the standards where validators are flagging issues related to implementations related to standards in development.

**KD** (Raffaele) - Still focusing on adapting/adopting standard to make ML applications compatible with large data sets, as well as building libraries of

trained models and development of science platforms. Understanding how ML fits into the science platforms is something that KD wants to understand before settling standards. Another topic of interest is LLMs, and what role they will pay in the technology used by to find and process data. Proposed to assemble a team of IVOA WG/IG members to consider and attempt to begin to quantify the problem. Raffaele is planning to send email in the next two days to solicit participants for this group. Notes he is already using LLM-based tools to interrogate Gaia. Janet suggests identifying a couple of specific activities to serve as a focus of activity. Raffaele would like to see these emerge organically from the participants. Suggestion (Rafael) that development of multimodels might be a good LLM focus point, as these involve merging models for, eg, language and astronomical spectra. Also notes that data access vs. computational resources is an active discussion re: science platforms.

**DCP** (Gilles) - Citation and best practices are the current focus. The last Interop produced a lot of feedback re: DOIs - use, associated metadata, etc. There is a session to discuss the note in preparation. Data origin is also becoming increasingly important, and addresses reproducibility and provenance. Some implementations already exist.

**Applications** (Pierre) - VOTable is primary concern, esp. surrounding proper motions and coordinate systems. With MOCs, the question of spectral coverage is also high-priority. As python becomes increasingly common, including the Python community in development is increasingly important. Because VOTable is so important to the entire community, development is not being hurried.

**DAL** (Gregory M.) - Much review activity for standards updates, including DALI, TAP in future. Current focus on ObjVisSAP, now know as ObjObsSAP, development. Janet notes she's heard from NASA folks interested in time-ordered observations and may benefit from and contribute to related IVOA standards.

**Data Model** (Mark C-D) - Notes that biggest stumbling block is maintaining momentum to get initiatives to and through RFC so that users get DM-defined data (as opposed to native format). This is an interoperability goal with the DM as the *lingua franca* for service and for application I/O. CSP need to define the workflows, Apps needs to implement the workflows, etc. So it's a TCG-wide effort, and that is hard to mobilize. The question needs to be asked - should this be pursued?

**GWS** (Jesus) - Need to revisit name of group as tech evolves to science platforms. Developing a formal recommendation to address issues like data proximity, authorization/authentication, workflows, software access, and related issues.

**Registry** (Renaud S.) - 1. Addressing science user needs - will be discussing use cases and PyVO modules. 2. Onboarding data providers - including NOIRLab and 16 other new users in last month zoom call. Investigating possibility of future registry publication workshop. 3. Support neede for querying by data type. This was presented in Bologna and is being requested by CSP. This is not easy to implement, but it is necessary to support findability. 4. Validation and curation tasks continue in cooperation with Operations. Expecting RFCs for registering standards, documentation, tutorials; VOResource 1.2, RegTAP 1.2 (needs implementations).

**Semantics** (Baptiste C.) - There has been progress on the observing facility list development. The next UCD revision will be discussed, and there will be a presentation on the European Open Science Cloud and related issues. Current IVOA vocabularies are (minimally) compliant with interoperability standards, but there are many points for cooperation with external agencies, and also enhancements for interoperability that can be implemented. Gilles notes he will also be introducing DCAT in the Semantics session.

**CSP** (Ada) - Deferred to opening session…

Marco notes there is a wiki page where discussion topics can be recorded ("TCG Running List/Primer" on TCG page).

Brief discussion about promoting allied activities. Janet notes we can create a High Energy mailing list for conversations that cross WG/IG boundaries. Marco notes there might be complications in mailing list identifiers if GWS changes its name.

Adjourned.