

Solar System Interest Group

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Charter

The **Solar System Interest Group** (SSIG) will aim at reviewing IVOA standards in the scope of Solar System sciences. The SSIG will work with all IVOA working groups to review, assess and propose IVOA standard adjustments for Solar System sciences. The standard assessments, reviews and potential evolutions will be proposed to relevant working groups keeping in mind two main ideas:

- *re-use of IVOA standards with as little changes as possible*
- *modifications with a topical scope as wide as possible*

Objectives (1/2)

The preliminary IPDA-IVOA interaction study conducted in 2015 highlighted the following focus topics for the SSIG:

- Standard **List Coordinate Systems and Reference Frames**. Link with NASA/NAIF SPICE system for possible implementation in STC.
- Standardization of **planetary observation geometry** (linked with the OGC/GIS community), covers semantics, data model and implementation
- Consolidation of **EPN-TAP** (Solar System flavor of ObsTAP, developed by Europlanet/VESPA). Adjustments of TAP and ADQL. Currently tested by ESA/PSA and NASA/JPL teams.
NB: EPN-TAP = More than 35 data services (Europe, US, Japan) covering planetary observations, solar observations, space physics, simulation runs, laboratory data, exoplanets...
Future IVOA standard?
- Standard **List of Ground Observatories and Space Missions**.

Objectives (2/2)

- Work with **Astronomy Data Centers** to enhance the distribution of their **planetary products** (ESO, CADC, HST...)
- **Cross-matching of registries** (IVOA, SPASE, NASA/PDS...), at least on Dublin Core.
- Promoting and extending **SAMP** (Simple Application Messaging Protocol), adding new message types (e.g., NASA/PDS, netCDF, HDF5...)
- Reviewing and extending **IVOA Data Models and Semantics** to Solar and Planetary Sciences. E.g.: Solar and Planetary observations are all time tagged, Planetary photometry and spectroscopy expressed in reflectance (input = solar spectrum)...
- Proposing **new serialization examples for IVOA standards** with file formats used in solar and planetary sciences (HDF5, netCDF...)
- **FITS keyword standardization for Planetary targets** (ongoing work within VESPA and USGS)
- **VOEvent** for “Space Situational Awareness” (SSA) for Earth and planetary events.
- **Exoplanetary** sciences (using planetary standards for exoplanetary data to enhance comparative analyses)

Planned activity

The SSIG will this specifically (but not restrictively) work on the following topics:

- Semantics (facility nomenclature, thesaurus and unified content descriptors)
- Space Time Coordinates (solar and planetary reference frames and targets)
- Data Access Layer (TAP, ADQL, Datalink, SODA)
- Applications (new message types for SAMP)
- Data Models and serializations
- VOEvent & Time Domain