



Applications Working Group – IVOA Interop, November 2021

Tom Donaldson and Adrian Damian (chairs)

E-mail: apps@ivoa.net (subscribe at <http://mail.ivoa.net/mailman/listinfo/apps>)

Slack channel: [#applications](https://ivoa.slack.com) ([invitation link](#))

Focused on the software used to access VO services and data

- Includes standalone apps, web apps and software libraries

Standards

- MOC (Multi-Order Coverage Map)
- VOTable – Primary IVOA format for exchanging tabular data
- SAMP – Simple Application Messaging Protocol
- HiPS – Hierarchical Progressive Survey



Standards Work in Progress

MOC 2.0

- MOC 1.x supports efficient spatial coverage description and comparison
- MOC 2.0 adds support for temporal coverage
- ***Request for Comment period has begun!***
 - RFC page: <https://wiki.ivoa.net/twiki/bin/view/IVOA/MOC2ORFC>
 - Implementations exist for both Java and Python
 - Please take a look and comment as soon as possible (but up until December 17)
- MOCServer presentation by Pierre Fernique [Thursday Nov 04 15:00 UTC](#)

VOTable after v1.4

- Multiple issues have been written up on github; some discussion
 - <https://github.com/ivoa-std/VOTable>
- Don't have time for formal discussion during this meeting, but will schedule follow-up sessions
 - Continue discussion on github and/or Apps e-mail list
 - Will have follow-up session(s) to gauge priorities and make plans



Applications session 1

[Tuesday Nov 02 22:00 UTC](#)

<u>Speaker(s)</u>	<u>Title and Abstract</u>
<i>Adrian Damian</i>	PyVO Status Update Update on current PyVO work and issues, including the status of TapPlus integration.
<i>Trey Roby</i>	IPAC's work with the VO Spectral Data Model This presentation will give implementation feedback and include a brief demo about how Firefly is extracting spectrum from cubes and creating VO tables using the data model. We are also experimenting with trying to recognize older spectrum data from TAP/Obscore searches and giving the user the option save it out in the Spectral data model.
<i>Peter Williams</i>	Recent developments in AAS WorldWide Telescope Improvements include support for HiPS imagery and catalogs and WebGL-accelerated tiled FITS rendering.

See Apps schedule: <https://wiki.ivoa.net/twiki/bin/view/IVOA/InterOpNov2021Apps>



Applications Session 2

[Thursday Nov 04 06:30 UTC](#)

Speaker(s)	Title and Abstract
<i>Brent Miszalski</i>	Modernising Target List Visualisation and Classification We have developed a web application that allows users to visualise and classify targets in a large list. Large surveys often need to check targets for problems or to assign an observing priority. Users can navigate their targets after uploading a csv. Each target is shown in a small panel, allowing the classification to be made via radio buttons or keyboard shortcuts. Either a static image or Aladin Lite can be used to display target images. The latter allows catalogues to be loaded and displayed. The design builds on Data Central's Data Aggregation Service, enabling fast simultaneous retrieval of catalogue data via asynchronous Python and websocket messaging.
<i>Cyril Obrecht, L. Michel</i>	Advanced TAP Client We will present an advanced Web TAP client able to easily select and browse joined data such as CAOM-based resources, Simbad or the relational registry.
<i>Jean-Michel Glorian</i>	CASSIS Aladin plugin This presentation/demo will show work between the CASSIS Team and the Aladin Team to use Aladin and CASSIS to visualize and extract spectra from hyperspectral data cube, and interact between the 2 tools.
<i>Adrian Garcia Riber</i>	Astronomical Data Sonification Towards the development of a proposal for an Auditory Virtual Observatory based on Deep Learning, work includes prototypes based on autoencoders and Lomb-scargle periodogram analysis for the automatic exploration of lightcurves, and stellar spectra that make use of Kepler Objects of Interest lightcuves and Miles and Stelib stellar libraries.



Applications Session 3

[Thursday Nov 04 15:00 UTC](#)

<u>Speaker(s)</u>	<u>Title and Abstract</u>
<i>Pierre Fernique</i>	MocServer v2 Who, where and when in milliseconds. Benefits for VO tools. Demonstration with Aladin Desktop.
<i>Markus Demleitner</i>	Blind discovery and semantics for resource discovery with WIRR Show and tell on the Web Interface to the Relational Registry (WIRR).
<i>Nuria Álvarez Crespo</i>	What's new on ESASky 4.0? ESASky offers astronomers an easy and interactive way to access high-quality scientific data from gamma rays to radio wavelengths. It is continuously evolving with the addition of new features and the ingestion of new data. In collaboration with the ESA/Hubble team, it is now possible to see the stunning images on the ESA/Hubble website with ESASky, allowing users to overload over two hundred outreach images released by the ESA/Hubble team on top of the ESASky public astronomical data. Moreover, as a first step to turn ESASky into a multi-messenger portal, it is now possible to search for public multi-messenger events from gravitational waves, display their footprints in the sky and download data. Additionally, now the lightcurves from the ESA's Characterising ExOPlanet Satellite (CHEOPS) are available on ESASky too.