Notes from P3T meeting 22nd April 2024

Attendees: James Dempsey (JD), Marco Molinaro (MM), Janet Evans (JE), Tom Donaldson (TD), Dave Morris (DM), Russ Allbery (RA), Adrian Damian (AD), Joshua Fraustro (JF), Grégory Mantelet (GM), Gregory Dubois-Felsmann (GDF)

Actions from last Meeting

- RA: Effort toward structure error message API;
- RA: Raise thoughts on structure for new protocols; use case that G D-F raised; services for Rubin that follow a pattern but don't raise to level of IVOA - still commonality.
- JD: Exploring OPEN API further
- DM: OPEN API for execution planner proposal - ready for May
- ALL: Think about format of the 2 day meeting in Sydney and the agenda for that meeting

Structured Error Messages:

- Allow both standard and implementation specific error responses
- Could then store responses in a machine readable manner to later process and examine

Structure for new protocols

- Each protocol shou
- Could have content negotiation to determine the encoding layer
- However this would not be sufficient to support e.g. gRPC implementations
- If we support these we would have to test with a non HTTP protocol such as gRPC
- However gRPC has a whole separate set of tools for authentication which would not swork with the IVOA standards for these
- e.g. Kafka + Avro - https://avro.apache.org/
- [TD] Should we stick to http for the scope for this given its ubiquitousness
- [GDF] We're already de facto replacing past IVOA work with Avro+Kafka, in the transient-event space.
- [DM] Having one other changes the mindset when defining the standard. Pros and cons to using content negotiation vs parameters.
- [MM] http is well embedded into the IVOA so agree we should stick to it for the discovery layer at least
- [MM] Kafka + avro - dedicated to use cases which are not supported well bn http

- [DM] Pragmatic approach - stick with http but don't exclude future change
- [TD] Just focusing on being able to specify programatically what has been defined in text before would be a big win
- [RA] Confine ourselves to HTTP and REST in the profile layer, but try to avoid HTTP-specific assumptions in the application specification to keep that part transport-agnostic
- [RA] Layer protocol definition is more attractive. Feel openapi might need to be defined for each profile incuding (e..g for json or xml), so each application may need an OpenAPI spec per profile
- [DM] Aiming for the layer that researchers would use so aiming for classes in python/java that are the same between services. In experimentation, had annotations in java from which produced both json and xml responses
- [JE] Good to see the consensus - check in with those who have been quiet so far
- [JF] Yes happy with the direction so far and the move towards formal definition
- [DM] Are we also covering the security concerns?
- [JF] Yes we seem to be covering these
- [RA] Security in http has some history - form encoding has very different security to anything else. Other encoding such as json have more modern security and thus a lot of problems go away. However if someone defines a forms based protocol then they would have to deal with those then

OPEN API for execution planner proposal

- Working in java only implementation to generate open API
- Progressing but not complete

Meeting Targets
* An IVOA Note on the proposed changes
* Example for UWS and Cone search
* Would be good to extend UWS to TAP - provides particularly good options for error handling

- [JE] How would the format work?
- [JD] Mixture of hackathon and discussion

Session needs to be partially sales pitch

[DM] Requests for facilities - need smaller room with big whiteboard for workshop. For IVOA session would still be good to have a more single level room
[JE] Would be in bigger room for interop session as it is the only session at this time
[TD] A note is the expected format fo IVOA but we need to be careful and aim for a fairly lean result. Should aim for examples/protocols first, content for the talks next and note forms if we have a conclusion
[MM] Initial target might be something simpler like a drafting in markdown and later move to ivoa tex

[DM] seconded - don't need note for interop, need slides. So make slides during workshop and say it will be a note later.

[GM] Quite ok with the conversation so far. SUpport sticking to http for now and keeping the door open for others. Like the way things are turning out, Careful with the idea of experimenting with TAP - as this has three standards. Suggest starting with UWS

[JF] Do note that could do TAP and UWS separately. Defining sync service in openapi would be valuable

[AD] In the meeting prior - summarise progress that has been made and the point we have reached. SO everyone starts at the same place and doesn't restart from an earlier point. Both for the interop session and for the workshop. Would like an agenda and the technologiues in advance so we can do homework beforehand

[GM] A lot of interest in the P3T but also potential fear so need to explain what we are doing and why

[DM] Should reassure researchers that tools such as astropy won't change greatly, we are working on the underlying layer

[TD] While implementers of tools will need to make changes, the astropy/atroquery/pyvo layer can insulate regular users

[TD] A note is important to show we are following IVOA processes

[GDF] The IVOA on its own cannot make this change, have to have community buy in

[JF] The ideal outcome is that these changes make the developers' lives much easier

[JE] Reminder about ADASS discussion

[GDF] Larger projects that have more resources might be where we have to make these changes - takes each group updating tools such as firefly, topcat, pyvo etc

[GDF] Not telling poeple running old services that they need to update those old service - the client community will still need to support these for a long time. But the path forward will be easier to implement and more secure if they do change. And don't expect service providers run old and new protocols side by side. People who have curl requests are the ones who won't be insulated from the change.

[JE] Session

- intro to get everyone on same page,
- technical changes,
- examples,
- and then talk on how to implement

[TD] agree - that discussion on transition is important.

[GDF] Fine to tell the story of how we want it to work - plausible roadmap

[AD] Need to incentivise implementers, but major aim of this work is to mae their work easier.

[JF] Agree - sell is that it is much easier to implement

[DM] Need to write that list of client developers

- Topcat - MT
- CDS
- ESASky
- firefly

[TD] Agree - may also be other developers working on things we are not aware of
[JE] Yes talk to some of these people between workshop and the session (9am Wed)
[DM] Yes have these one on one talks beforehand

[JD] Will draft an agenda, check with Janet and send to list
[JE] Add an agenda for the session to the wiki - add topics only
[JD] Draft up meeting page
[JE] Have had feedback that interop program was too internal focussed so avoiding acronyms etc is important