SIAP2-next and Simple Dataset Access

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ackowledgement : DAL working group, ESCAPE partners, CDS colleagues

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IVOA

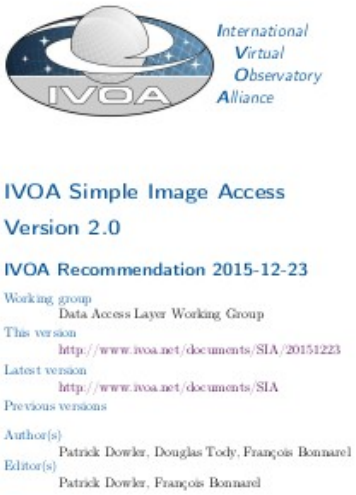
SIAP2 feedback
A bit of history

- Feedback on mailing list + presentations in Victoria, College Park , Paris + IVOAO note « recent DAL protocol feedback in 2018 »+ May 2020 virtual interop + DAL running meetings and github
- SIAP2.0 adopted 2015/12/23 (5.5 years!!!)
- Services :
  - SIAP2 services at CADC, GAVO, NED, INAF, CASDA, ALMA,ASTRON etc. (generally Parameter server-side interface to ObsTAP)
  - Others ?
- Clients :
  - SIAP2/SODA client functionality in Aladin Desktop since Aladin 10
  - PyVO interface last year
  - TOPCAT has SIA1 and SIA2
  - FireFly
  - ….

SIAP2 feedback
Where it can be discussed ?

- SIA on GitHuB : https://github.com/ivoa-std/SIA/
- SIA source was in OpenOffice
- → SIA1.0 ported to ivaotex
- → PR pushed to github (yesterday .. Ooof!!)
- → soon available for new issues and PR
- Discussion possible on the IVOA wiki too

  https://wiki.ivoa.net/twiki/bin/view/IVOA/SIAP-2_0-Next



SIA github issues

10 Open ✓ 0 Closed — Author ▾ Label ▾ Projects ▾ Milestones ▾ Assignee ▾ Sort ▾

- **extension of SIA-style protocol usage outside the image/cube "camp"**
  #10 opened on 13 May by Bonnarel
- **It is not possible to query SIA services by MOC**
  #9 opened on 11 May by Bonnarel
- **SIA2 cannot discover rebinned data like SIA1 was able to do**
  #8 opened on 8 May by Bonnarel
- **Possible confusion between FORMAT and RESPONSEFORMAT parameter**
  #7 opened on 8 May by Bonnarel
- **1 shot discovery (and then access) to cutouts was possible in SIA1 but no more in SIA2**
  #6 opened on 8 May by Bonnarel
- **POS=RANGE examples inconsistent with spec**
  #5 opened on 7 May by pdowler
- **input PARAMETERS values are case sensitive**
  #4 opened on 7 May by Bonnarel
- **NO Wild-carding of the input PARAMETERS values exists**
  #3 opened on 7 May by Bonnarel
- **No input PARAMETER exists to select the RELEASE DATE**
  #2 opened on 7 May by Bonnarel
- **input PARAMETERS with limited list of values : better description**
  #1 opened on 7 May by Bonnarel

SIA2 errata

- POS=RANGE examples inconsistent with spec (Pat Dowler)

The spec clearly states that RA is in [0,360] and DEC is in [-90,90] but some POS=RANGE … examples use -Inf and +Inf (probably copied the idea from use of open ended intervals in other params).

- Possible confusion between FORMAT and RESPONSEFORMAT parameter to be clarified (Alberto Micol)
  - Clarify that the RESPONSEFORMAT is the format of the service response, FORMAT is the one of the described datasets
- Typo in 1.3

«COLLECTION and FACILITY currently provide query parameters provide selection on service defined set of strings. »

SIAP2 parameters: availaibility of list of possible values

Several SIAP2.0 parameters have a limited list of possible values

- Some have lists limited by protocol (and obscore)
  - POL (Stokes, LINEAR, etc..)
  - DPTYPE (image, cube, visibility, timeseries ;..)
  - CALIB : levels
  - FORMAT : fits, jpeg , png, etc..
- Some have free string values
  - COLLECTION (HST, WISE, etc...), FACILITY (VLT, Keck, Chandra), INSTRUMENT (ACS, MEGACAM, etc.)
- PARAMETERs less useful if we have no prior idea of their possible values. T**his information is often missing in services**

Proposal to change MAY in SHOULD or MUST in the sentence below :

Question : how do we retrieve that ? Query without parameter ? MAXREC=0 ? Other ?

2.1.20 Service PARAMETER self description

Any service may include a DataLink [8] service descriptor in the VOTable output to describe itself. This descriptor would describe the supported query parameters (standard and custom), including list of values for those with a fixed list (e.g. COLLECTION, INSTRUMENT, FACILITY, DPTYPE, CALIB, and FORMAT).

Lack of release_date parameter (PyVO / CADC)

- ObsCore has an optional release date parameter.
- SIAP2 doesn't provide corresponding QUERY PARAMETER
- If we add it how do we manage PARAMETERS for querying on optional content ?

Lack of flexibility on parameter value « style » (PyVO /CADC)

STRING QUERY PARAMETER don't allow wild carding or incompletion.

--> things like COLLECTION = HST_* not allowed

- Is there a price to pay to add it ?
- How to do it ? Wild cards ?

STRING QUERY PARAMETER are case sensitive only

- Is there a price to pay to allow it?
- How to do it ? Case sentive queries should remain also.

SIAP 2 Discovery and access :

SIAP1 versus SIAP2 : virtual data versus axis completion

- SIAP1 had « cutout » and « mosaic » modes beside « archive » mode

  → 1 shot before access but only spatial

- We now have :
  - SIAP2.0 or ObsTAP
  - + SODA : for cutouts only (all axes)
  - +DataLink (Service descriptor and/or {links} table)
  - → 2 shots before access (instead of 1)

SIAP 2 Discovery and access :

SIAP1 versus SIAP2 : virtual data versus axis completion

- perfectly possible to provide functionality by replacing the full retrieval or datalink url in « access_url » by a SODA url.
  - SODA URL parameters are similar to SIA ones.
    - When SIA Parameters values constrain the discovery, SODA parameters force the cutout dimensions.
    - Could be extended to rebinning/reprojection (SODA evolution in parallel)
    - See Hips2FITS SIA2 service in Aladin Desktop
    -
- How do we distinguish « archive mode » from « virtual data » mode ?

Other features planned in the 2.0 spec introduction

- Full metadata (cube-DM-oriented) endpoint
  →depends on cube-DM achievment. When ?
- FACILITY and INSTRUMENT match with a standardized vocabulary
  → some work has been done, but ….
- Extension of Query interface to other Datatypes
  → next slides

Extending allowed dataproduct_type (1) relaxing

- Currently limited to « image » and « cube »
- Why not relaxing this ?
  - No real issue for timeseries, spectra
  - Visibilities and event lists ? Definition of datasets and raws may be difficult (see JIVE/CDS discussion)
  - Measurement/catalog:its' not SCS or source-TAP. It's discovering catalogs as a whole

Extending allowed dataproduct_type (2) using extensions

- More detailed specific extensions :
  - TimeDomain (see previous talk : DAL TimeSeries Discovery and access)
  - Radio/Interferometry (see DAL/DM)
  - Spectra ????
    - → spectral resolution bounds ?
    - → sed versus standard spectra
    - → spectropolarimetry ?
    - ????
- If we have query parameters for these extensions what would be the behavior when we query that on a simple SIA service?
- Like for « null » mandatory parameters or just ignore it ?

Extending allowed dataproduct_type (3) how do we call it and register it

- Just call it SIA 2 and see what happen in case we lack extension parameters ?
- Different capabilities for the same service/standard ?
- Different names ? SVA ? STA ? SSA 2 ?

  (different standard-id too)
- Change the name (and the standard root) to SD(ataset)A ?