All-VO registry in Aladin v10
The good, the bad...

IVOA Interop – May 2017 - Shanghai

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On behalf of the Aladin CDS team,

What's the plan ?

1) Aladin and the VO registry

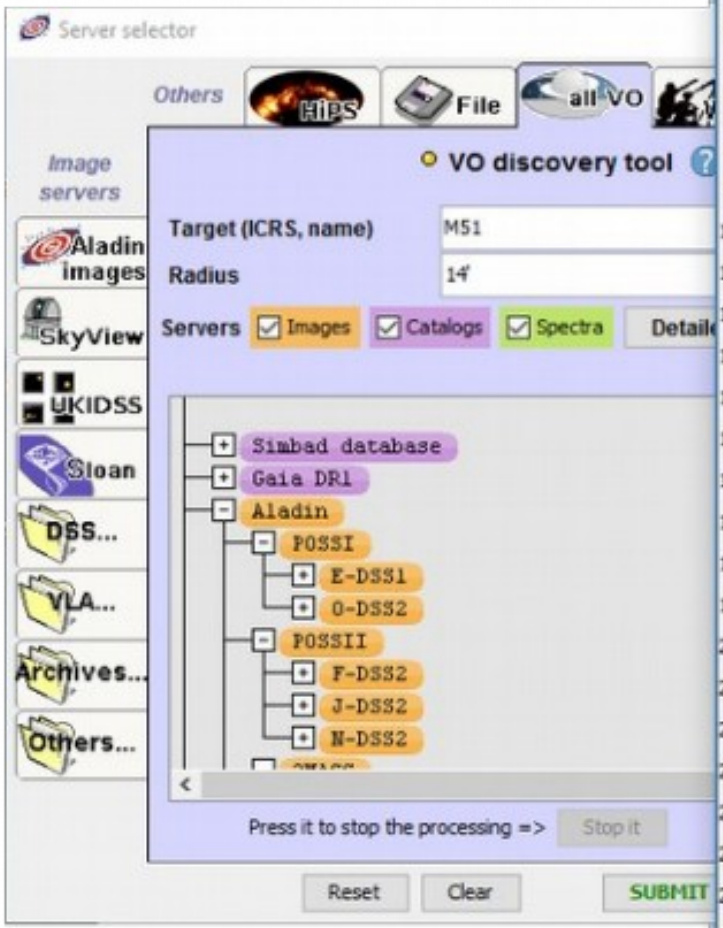
2) Evolution from v9 to v10

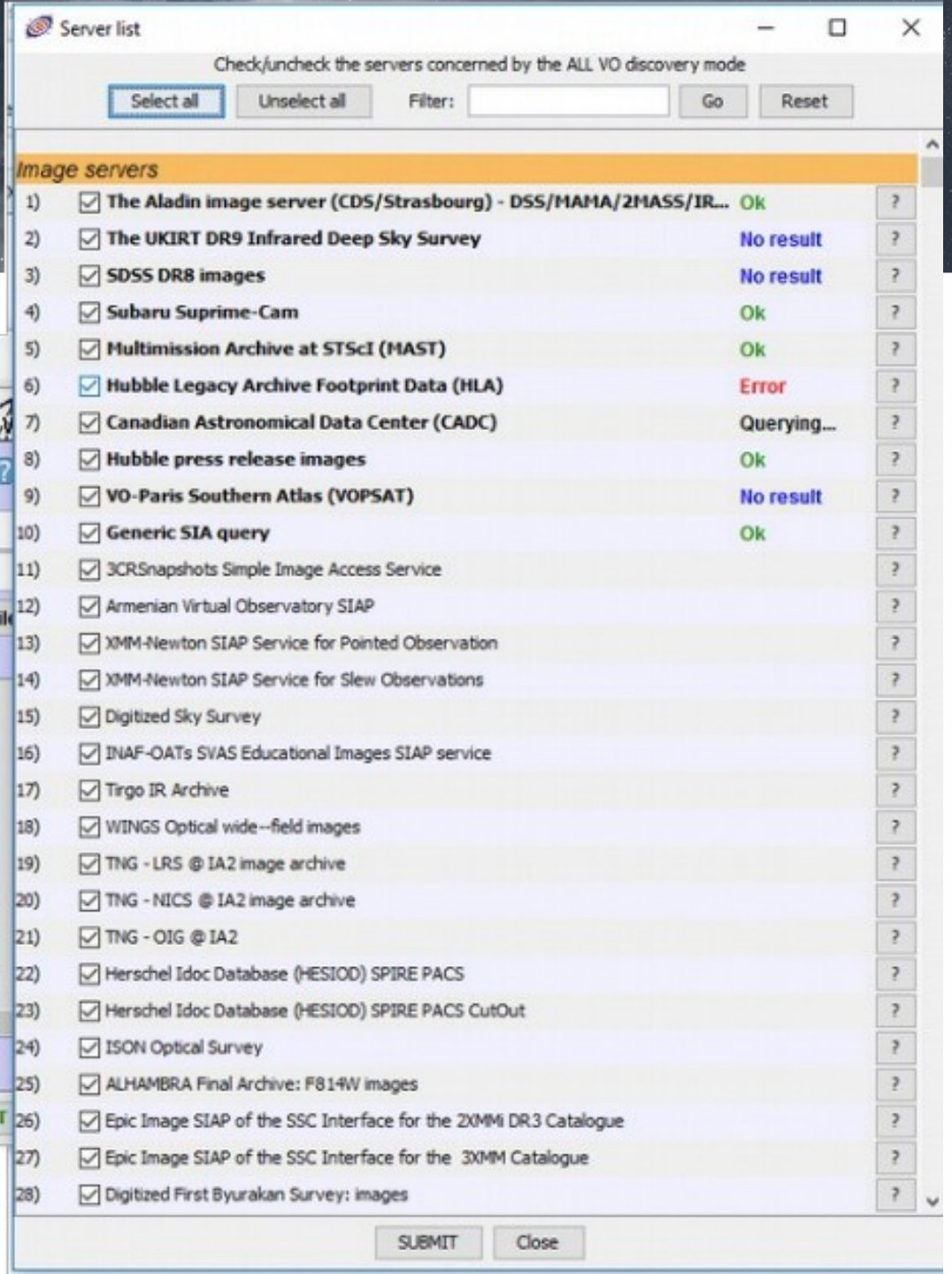
3) News possible use cases (demo)

4) Technical choices

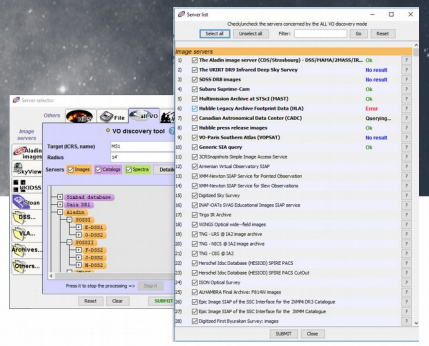
5) The good, the bad, ...

Version 9


Server selector
Others
HiPS
File
all VO
Image servers
VO discovery tool
Target (ICRS, name)
M51
Radius
14'
Servers
Images
Catalogs
Spectra
Aladin images
SkyView
UKIDSS
Sloan
DSS...
VLA...
Archives...
Others...
Simbad database
Gaia DR1
Aladin
POSSI
E-DSS1
O-DSS2
POSSII
F-DSS2
J-DSS2
N-DSS2
Press it to stop the processing =>
Stop it
Reset
Clear
SUBMIT


Server list
Check/uncheck the servers concerned by the ALL VO discovery mode
Select all
Unselect all
Filter:
Go
Reset
Image servers
1) The Aladin image server (CDS/Strasbourg) - DSS/MAMA/2MASS/IR... Ok
2) The UKIRT DR9 Infrared Deep Sky Survey No result
3) SDSS DR8 images No result
4) Subaru Suprime-Cam Ok
5) Multimission Archive at STScI (MAST) Ok
6) Hubble Legacy Archive Footprint Data (HLA) Error
7) Canadian Astronomical Data Center (CADC) Querying...
8) Hubble press release images Ok
9) VO-Paris Southern Atlas (VOPSAT) No result
10) Generic SIA query Ok
11) 3CRSnapshots Simple Image Access Service
12) Armenian Virtual Observatory SIAP
13) XMM-Newton SIAP Service for Pointed Observation
14) XMM-Newton SIAP Service for Slew Observations
15) Digitized Sky Survey
16) INAF-OATs SVAS Educational Images SIAP service
17) Tirgo IR Archive
18) WINGS Optical wide--field images
19) TNG - LRS @ IA2 image archive
20) TNG - NICS @ IA2 image archive
21) TNG - OIG @ IA2
22) Herschel Idoc Database (HESIOD) SPIRE PACS
23) Herschel Idoc Database (HESIOD) SPIRE PACS CutOut
24) ISON Optical Survey
25) ALHAMBRA Final Archive: F814W images
26) Epic Image SIAP of the SSC Interface for the 2XMMi DR3 Catalogue
27) Epic Image SIAP of the SSC Interface for the 3XMM Catalogue
28) Digitized First Byurakan Survey: images
SUBMIT
Close

Version 9

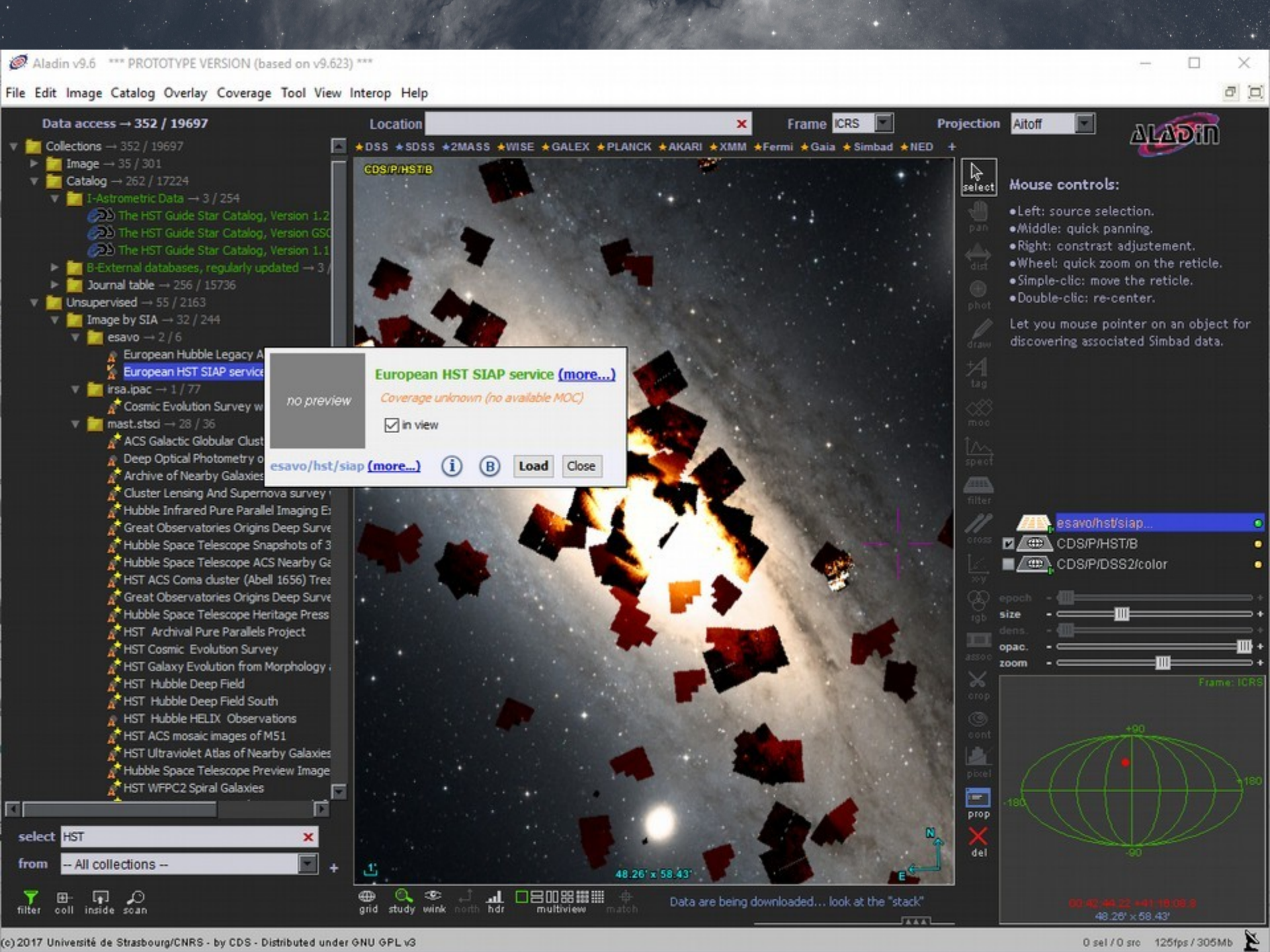


1) Vo accessible only via “All VO” dedicated TAB

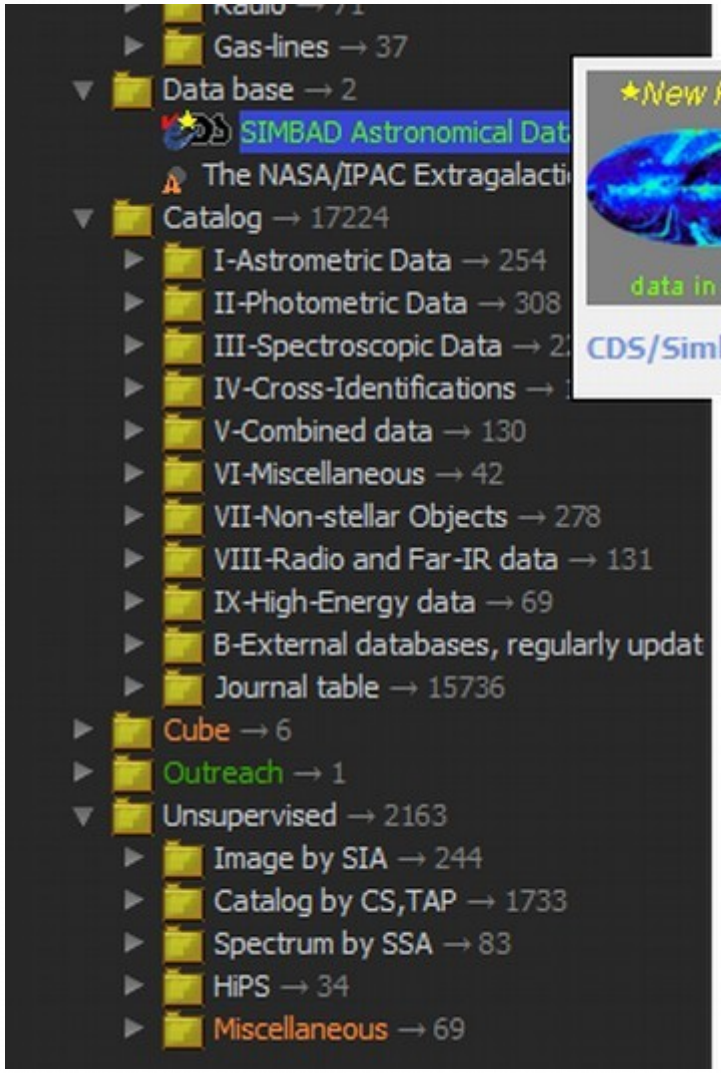
2) Only CS and SIAv1 + internal predefined Aladin collections (GLU dictionnary)

3) Poor metadata information *=> only filtering on title and description*

4) No space index *=> real queries on all selected servers to build the list of available collections in the user field*


Aladin v9.6 *** PROTOTYPE VERSION (based on v9.623) ***
File Edit Image Catalog Overlay Coverage Tool View Interop Help
Data access → 352 / 19697
Location
Frame ICRS
Projection Aitoff
Collections → 352 / 19697
Image → 35 / 301
Catalog → 262 / 17224
I-Astrometric Data → 3 / 254
The HST Guide Star Catalog, Version 1.2
The HST Guide Star Catalog, Version GSC
The HST Guide Star Catalog, Version 1.1
B-External databases, regularly updated → 3
Journal table → 256 / 15736
Unsupervised → 55 / 2163
Image by SIA → 32 / 244
esavo → 2 / 6
European Hubble Legacy A
European HST SIAP service
irsa.ipac → 1 / 77
Cosmic Evolution Survey w
mast.stsci → 28 / 36
ACS Galactic Globular Clust
Deep Optical Photometry o
Archive of Nearby Galaxies
Cluster Lensing And Supernova survey
Hubble Infrared Pure Parallel Imaging E
Great Observatories Origins Deep Surve
Hubble Space Telescope Snapshots of 3
Hubble Space Telescope ACS Nearby Ga
HST ACS Coma cluster (Abell 1656) Trea
Great Observatories Origins Deep Surve
Hubble Space Telescope Heritage Press
HST Archival Pure Parallels Project
HST Cosmic Evolution Survey
HST Galaxy Evolution from Morphology
HST Hubble Deep Field
HST Hubble Deep Field South
HST Hubble HELIX Observations
HST ACS mosaic images of M51
HST Ultraviolet Atlas of Nearby Galaxies
Hubble Space Telescope Preview Image
HST WFPC2 Spiral Galaxies
select HST
from -- All collections --
filter coll inside scan
★DSS ★SDSS ★2MASS ★WISE ★GALEX ★PLANCK ★AKARI ★XMM ★Fermi ★Gaia ★Simbad ★NED
CDS/P/HST/B
no preview
European HST SIAP service (more...)
Coverage unknown (no available MOC)
in view
esavo/hst/siap (more...)
Load
Close
48.26' x 58.43'
grid study wink north hdr multiview match
Data are being downloaded... look at the "stack"
select pan dist phot draw tag moc spect filter cross xy rgb assoc crop cont pixel prop del
Mouse controls:
•Left: source selection.
•Middle: quick panning.
•Right: constrast adjustement.
•Wheel: quick zoom on the reticle.
•Simple-clic: move the reticle.
•Double-clic: re-center.
Let you mouse pointer on an object for discovering associated Simbad data.
esavo/hst/siap...
CDS/P/HST/B
CDS/P/DSS2/color
epoch
size
dens.
opac.
zoom
Frame: ICRS
+90
-180
+180
-90
48.26' x 58.43'
(c) 2017 Université de Strasbourg/CNRS - by CDS - Distributed under GNU GPL v3
0 sel / 0 src
125fps / 305Mb

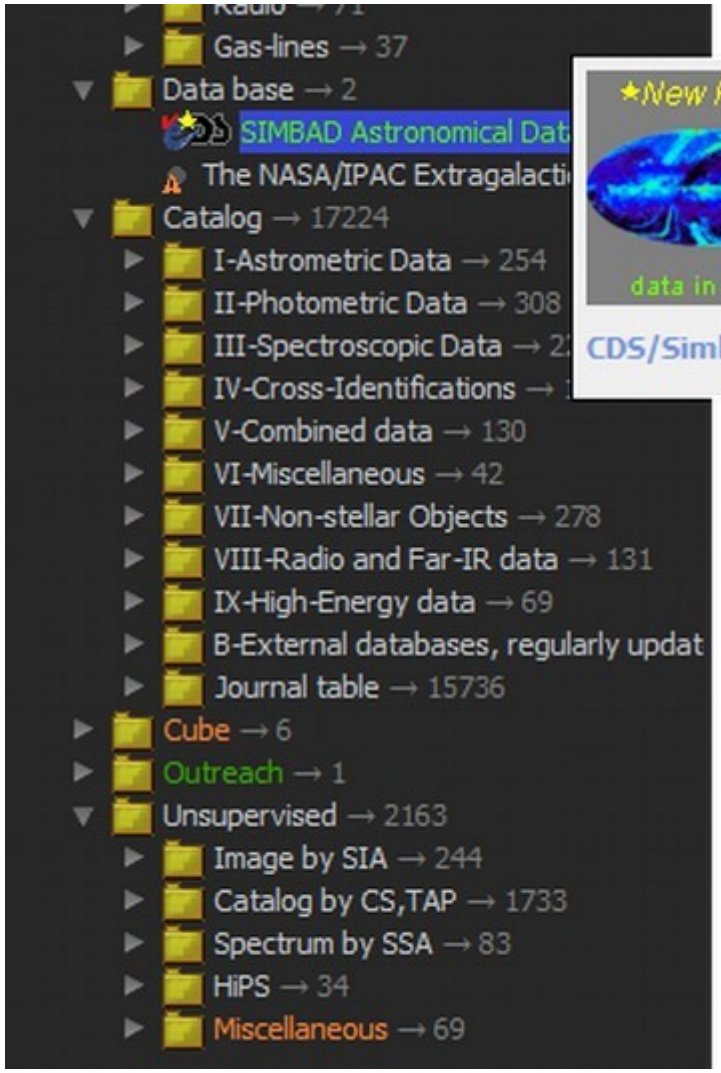
Version 10



Access selector

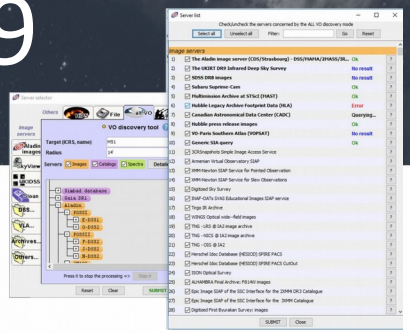
Data Access Tree

Version 10

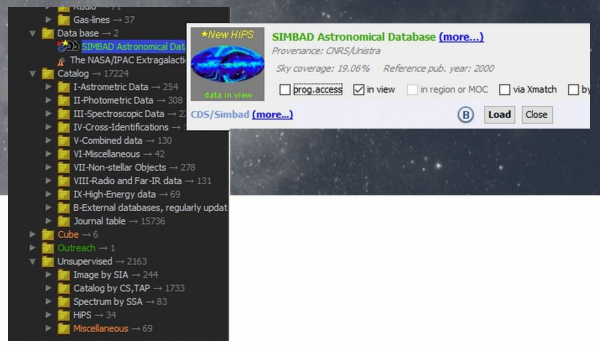


Demo

V9



V10



1) "**Data collection**" oriented (not only "providers oriented")
   => more intuitive

2) In the **main panel** *=> high visibility*

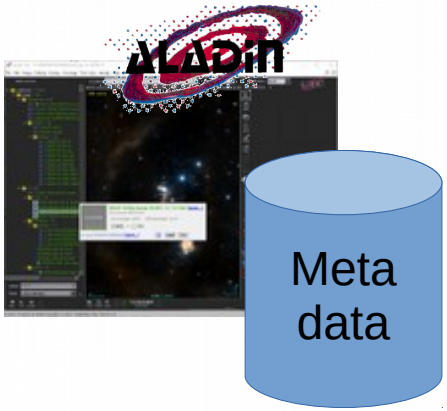
3) **All** data: CS/SIAv1/SIAv2/SSA/TAP/HiPS VO data collections
   = 19 000 collections) *=> exhaustivity*

4) One **integrated data access tree** *=> useful*

5) Extremely **fast** (ms) *=> dynamicity*

The key idea

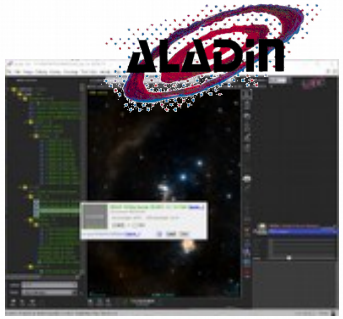
"Bring metadata next to the client"



VO reg & & Aladin v10

VO registry

Your laptop



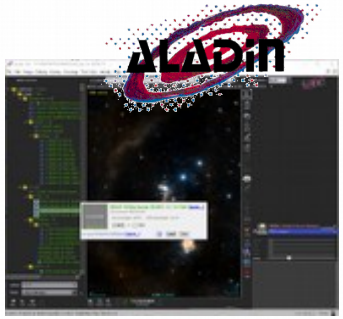
VO reg & MocServer & Aladin v10

alasky@cds

Your laptop

VO registry

MocServer



One key element

MocServer

=

Tomcat servlet containing
a list of (MOCs+properties)

=

metadata dictionary,
queryable via URL,
by criteria (key words and/or regions)

Aladin v10 & MocServer

- Aladin v10 **inovation**: copy the registry content on the client
- Implementation of **a "local" MocServer** (same java classes)
- **Synchronized** each time Aladin starts with the "remote" MocServer localized at alasky@csd
- Contains **only 20 000 "properties" records** and not MOCs (5MB gzipped)

  + possible MOCs and properties record added locally

VO reg & MocServer & Aladin v10

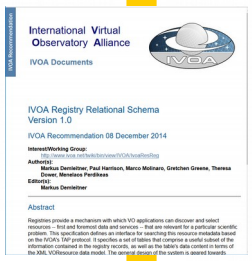
Regtap server

alasky@cds

Your laptop

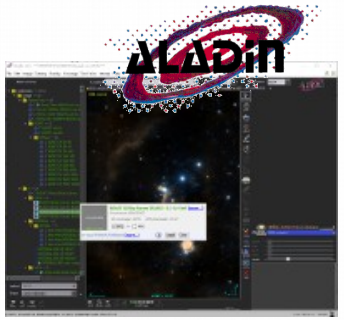
VO registry

XML 25MB



MocServer

Props 25MB



VO reg & MocServer & Aladin v10

Regtap server

alasky@cds

Your laptop

MocServer

Other servers

VizieR

SIMBAD

MOCs
1GB

Props
25MB

Aladin v10 internal architecture

alasky@cds

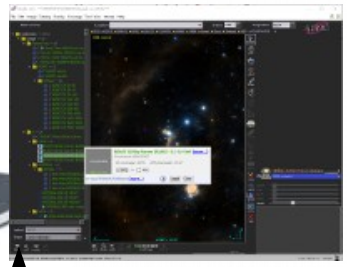
MocServer

MOCs
1GB

Props
25MB

http://… ? update props
at startup

Your laptop



scan(which
collections
by criteria)

MocServer

Props
25MB

Aladin v10 internal architecture

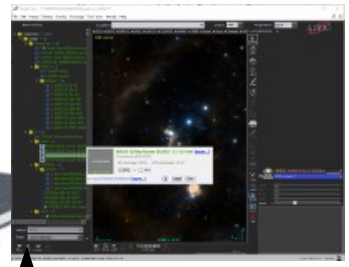
alasky@cds

MocServer

MOCs
1GB

Props
25MB

Your laptop



MocServer

Props
25MB

scan(which collections by criteria)

http://… ? which collections in current view

Aladin v10 internal architecture

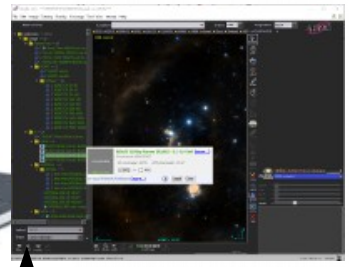
alasky@cds

MocServer

MOCs
1GB

Props
25MB

Your laptop



MocServer

Props
25MB

MOCs

props

*scan(*which collections by criteria*)*

*scan(*which collections in current view*)*

+

http://… ? which collections in current view

The good for Aladin 10...

1) **It works !**
   => probably used a lot compare to “All-VO” v9 tab
   => Thanks to RegTAP and MOCserver
   => see full demo in Apps2.

2) Thanks to **RegTAP** and **MOCserver**

3) It provides a high level of publicity for any VO collections
   => should encourage the declarations in the VO

The bad for Aladin 10...

1) **Inapropriate description level** in VO registry:

ex: Aladin manipulates tables (homogeneous set), and not catalogs (pb on capabilities, IDs, descriptions, coverages, …)

2) **Lack of meta data** information:

ex1: Time, energy, space coverage fields rarely filled up

ex2: No direct relation between table VO registry descriptions and the associated TAP schemas

Open questions …

Exhaustivity also means:

1) Do we have to **filter the "bad" collections**
(prototypes, not really maintained, bad data…)

2) Which classification should be used ?
(by quality ? by data type ? by protocol ?
by origin…)

=> Part of the response is probably political

Thanks !
Questions ?

For testing the prototype
http://aladin.u-strasbg.fr/java/AladinProto.jar