Aladin : Latest developments & Interoperability with other tools

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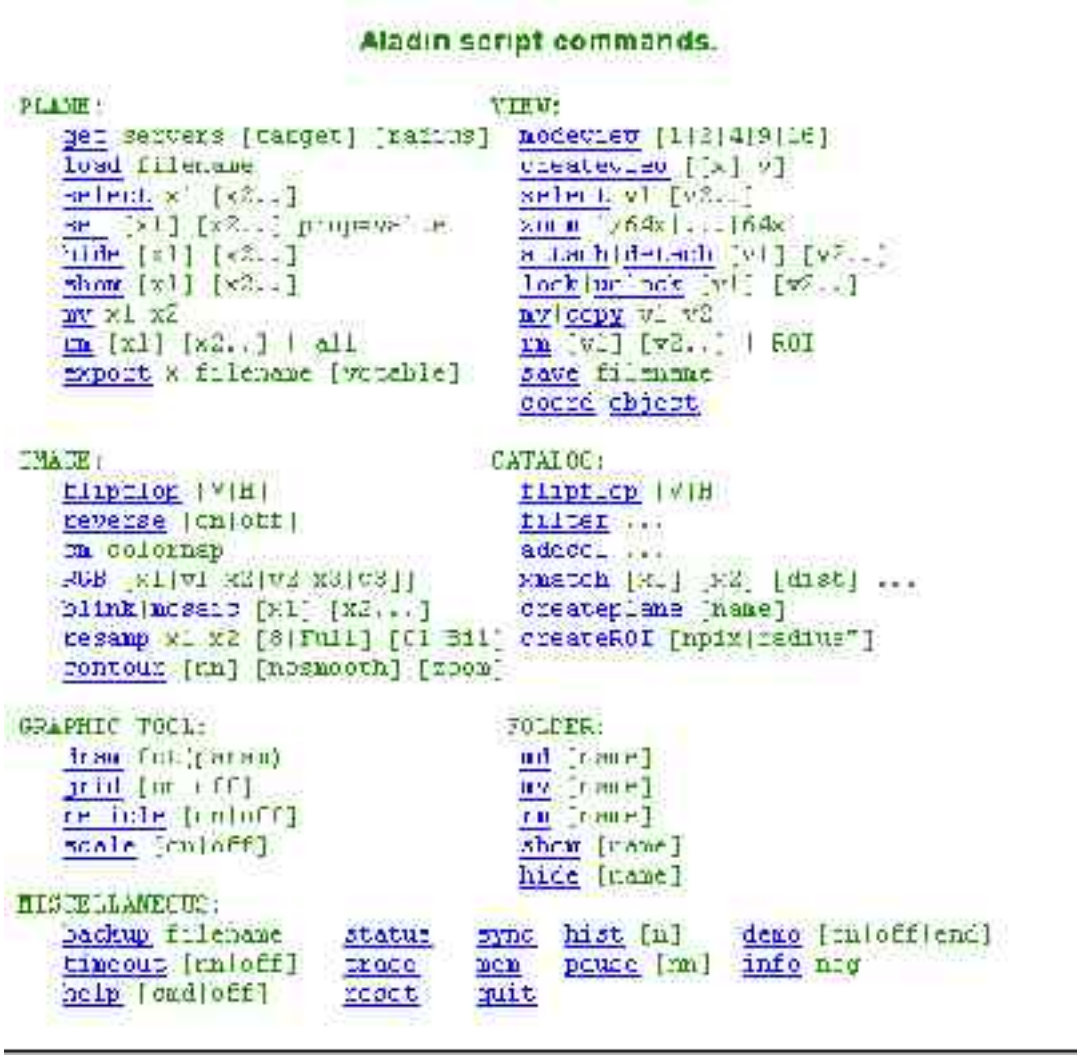
Outline

- Aladin as a black box
- Overlay of detector footprints
  - VOApp interface
  - VOObserver interface
- PLASTIC compatibility
- All VO button : querying services retrieved from a VO registry
- Visualisation of solar system data (SkyBot service)
- WCS augmented graphics in SIAP
- Link with AstroGrid infrastructure

Aladin as a black box

- Aladin script language (level 0 of interop):



Aladin as a black box (2)

- Other applications can control Aladin:

```
#!/usr/bin/perl
open(ALADIN,"| java -jar Aladin.jar");
print ALADIN "grid\n";
foreach $obj ("M1","M104","NGC2024") {
   print ALADIN "reset; get aladin,Vizier(GSC1.2),simbad $obj;\n";
   print ALADIN "sync; zoom 2/3x; reverse; save $obj.bmp\n";
}
print ALADIN "quit\n";
close ALADIN;
```

- Development of services using Aladin as a black box
  - Aladin runs on server side, no need to install a JVM
  - Demo : AladinChart

Overlay of detector footprints

- From a hard-coded to a user-defined definition of FOVs
- Firstly, collaboration with ESO
- VOTable serialization of some STC elements
  - Sample document
- Collaboration with STScI to integrate Aladin into APT (Astronomer Proposal Tool)
  - Improvements of the format
  - Definition of VOApp and VOObserver interfaces
- Supported shapes : polygons, circles, arcs, pickles
- Demo

VOApp interface

- Level 1 of interop
- Defines possible interactions between Aladin and anoter application :
  - getFITS(String dataID)
  - getVOTable(String dataID)
  - putFITS(InputStream is, String label)
  - putVOTable(InputStream is, String label)
  - selectVOTableObjects(String[] oid)
  - showVOTableObject(String[] oid)
  - addObserver(VOObserver observer)
- Extension of ExtApp interface
  - Implemented by VOPlot, Topcat
- Symmetrical interface
- Works well but ... limited to Java applications running in the same virtual machine

VOObserver interface

- Level 2 of interop ?
- • position(double raJ2000,double deJ2000)
  • pixel(double pixValue)
- Was needed for integration of Aladin within APT
- Allows an external application to listen for mouse movements in Aladin and retrieve position on the sky and pixel value

PLASTIC compatibility

- PLASTIC == PLateform for AStronomical Tools InterCommunication
- Same idea as VOApp, but beyond the JAVA border !
- A PLASTICized version of Aladin has been prototyped
- Demo
- Listen to John's talk this afternoon for more details about PLASTIC

All VO

- Records harvested from NVO registry
- Converted to GLU (CDS' registry) records
- Filtering of records to only keep
  - SIAP
  - SSAP
  - ConeSearch services
- Query in parallel the different services for a given position+search radius
- Open data:
  - In Aladin for images and catalogues
  - In VOSpec for spectra
- Demo

All VO (2)

- Lessons learnt : proper curation of the registry is REALLY important
  - Usage of ESAC curation tool could help for this task
  - Should the registry display for each service a compliance level ?
  - How to deal with duplicate records (same IVOA ID, same service URL) ?
- Improvements for the All-VO button:
  - Querying SkyNodes
  - Taking into account sky coverage
    - Makes no sense to query if we know a priori no data is available in that region

Visualisation of solar system data (SkyBot service)

- Collaboration with IMCCE (Institut de Mécanique Céleste et de Calcul des Ephérémides)
- SkyBot service searches and identifies solar system objects (asteroids, comets, minor planets) for a given field (position+radius) at a given epoch
- Integration in Aladin
  - First attempt in Aladin to approach the time dimension
  - Epoch for a given image retrieved from FITS header (or entered manually)

SkyBot <--> Aladin (2)

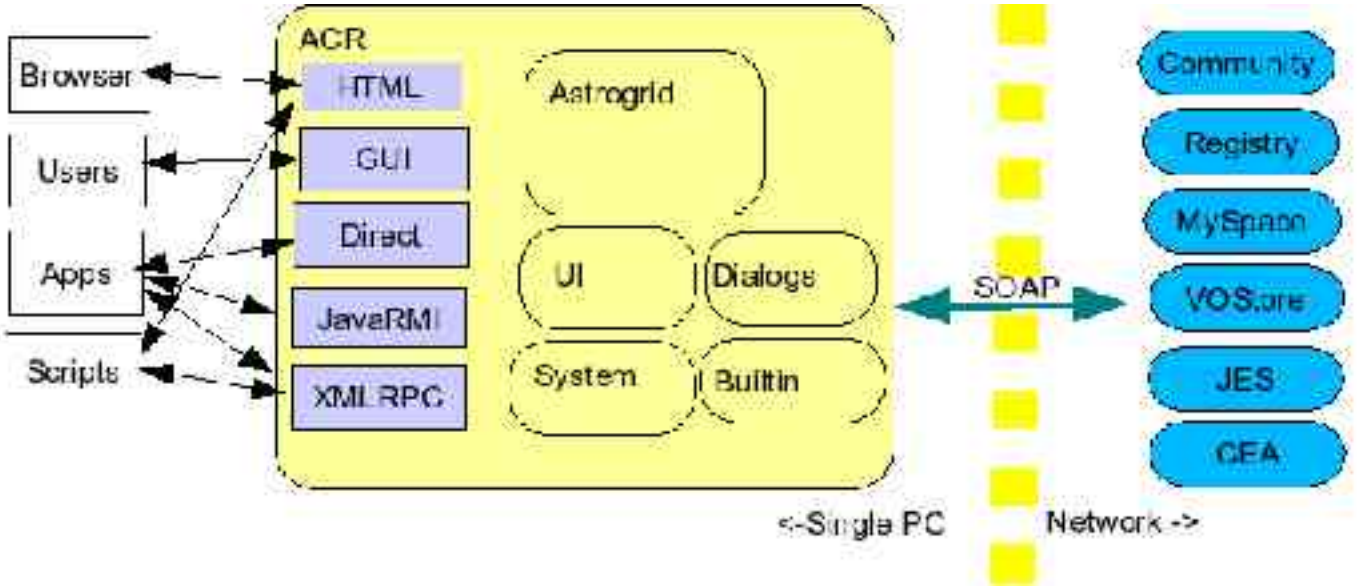
- Get back a list of solar system objects with elements of orbits
- User can select the output filter he wants to apply among the filters predefined by the data provider
- Demo
- Epoch sometimes not accurate enough

WCS augmented graphics in SIAP

- (collaboration with ESO in VO-Tech framework)
- Assign an astrometry to color images (JPEG, PNG, GIF)
  - Define WCS parameters in SIAP response
  - Part of SIAP protocol
  - Sample document
  - Allows quick browsing/visualisation through archive data
- Demo
- Drawback : metadata separated from data

Link with AstroGrid infrastructure

- Connect Aladin to AG services through ACR (Astronomy Client Runtime)



Link with AstroGrid infrastructure (2)

- Prototype development focused on 3 topics
  - Access to MySpace
  - Access and excecution of CEA applications
  - Query the registry
- (Quick) demo

Links

- Aladin main page :
  http://aladin.u-strasbg.fr/
- Aladin beta version :
  http://aladin.u-strasbg.fr/java/betaversion/Aladin.jar
- Aladin FAQ (includes description of VOApp) :
  http://aladin.u-strasbg.fr/java/FAQ.htx
- Aladin manual :
  http://aladin.u-strasbg.fr/java/aladin.pdf
- SkyBot service :
  http://www.imcce.fr/webservices/skybot/
- Simple Footprint Previewing Specification :
  http://wiki.eurovotech.org/bin/view/VOTech/SFoVReqs