

New generation DAL protocol:
DataLink status
F.Bonnarel (CDS)

Data Link

- Related to the Uprise of ObsTAP
- Discussions in Napoli and mainly Pune
- Use cases listed.
- Prototypes in Urbana
 - Xmm data: laurent michel
 - Aladin/ Healpix provenance (F Bonnarel)
- Working Draft : F.Bonnarel,L.Michel,M.Louys, .
Others ? (Markus , etc ...)-→ May the 12th

Use cases

- Retrieving other data formats:
fits, jpeg, text/xml
- Access to some kind of "preview" of a dataset:
Images, spectra, SimDAL use case ..
- Internal description and access to complex or heterogeneous datasets and archives: MEFS, Xray use case

Use cases

- Linkage to IVOA standardized metadata observation, characterisation, provenance
- Link to another IVOA service :
 - ObsTAP,
 - any kind of TAP service
 - simple access protocols such as SIA,SSA, etc...
 - Query mode
 - Access data mode
 - Other UWS Web services for reprocessing

Caveats/Issues/questions

- DataLink is strongly needed for ObsTap but is not EXCLUSIVLY bound to it
 - Usefull each time a TABLE Row has a « dataset » id and must be related to other resources (data metadata, services)
- DataLink is not an « AccessData » method it is a « Related Resource Discovery » protocol
 - Attached to individaul DataSets
 - AccessData DAL resources can be some of those

Caveats/Issues/questions

- Define it as a real (« registered ») IVOA service or a generic method (to be included in DALI ?)
 - New parameter ?
 - Dal extension mechanism
 - if it is a service must be described in the registry
- What kind of Data set ID to use :
Publisher Did ? Or internal ID ?

CDS Prototype « Slide Demo » (real demo HackAThon session)

- Based on CDS description as proposed in the Working Draft
- Used in two ways: FROM Usual DAL response and FROM Healpix AllSky maps
 - DataLink attached to a SIA (sia2) Query response (shown in Napoli)
 - DataLink retrieved for accessing Healpix cell progenitor information (thanks to P.Fernique)
 - Link towards IVOA metadata for each progenitor
 - Link towards progenitor cutouts (access data)

1. DataLink attached to SIA response

The screenshot displays the Aladin v7.5 software interface, which is a prototype version based on v7.519. The main window shows a star field with a central crosshair. A "Data Info Frame" is open, displaying a table of metadata for an image cutout. The table has two columns: "Field name" and "Value".

Field name	Value
Score	1
AssocID	MultiFormat.0
AcRef	http://aladin.u-strasb...
Format	image/fits
DataModel	SIA2
DataLength	4000000
Title	CFHTLS_R.MP9601_2...
Title	CFHTLS_R.MP9601_2...
Creator	CFHTLS
ObservingProgramNa...	R.MP9601
CollectionType	atlas
CreatorDID	ivo://cds/CFHTLS/R.M...
SpaceFrameName	FK5

Below the table, the "Cutout Target" is set to "22 10 00.00 +01 24 00.0". A "Grab" button is next to it. At the bottom of the frame, there are buttons for "Stick", "FoV in stack", "LOAD", and "Close".

A "Server selector" dialog is also open, showing a tree view of servers. The selected server is "CFHTLS Aladin Server". The dialog includes fields for "Target (ICRS, name)" (22 10 00.00 +01 24 00.0) and "Radius" (0.0deg). A "Grab co..." button is next to the target field. The tree view shows the following structure:

- Creator: CFHTLS
 - Collection: null null
 - CFHTLS_R.MP9601_220930+011900-T0007
 - Data Access
 - Image Cutout 0.0" x 0.0"
 - Healpix Multiresolution 0.0" x 0.0"
 - Progenitors 0.0" x 0.0"

At the bottom of the dialog, there are "Reset", "Clear", "SUBMIT", and "Close" buttons.

The main window also shows a "Location" bar with coordinates "22:03:07.91 -00:44:52.8" and a list of survey names: "Allsky opt", "Allsky IR", "DSS", "Simbad", "NED", "PPMX", and "2MASS". The "SERC-I-DSS2.889-PLATE" is selected. The status bar at the bottom indicates "(c) 2012 UDS/CNRS - by CDS - Distributed under GNU GPL v3" and "0 sel / 0 src 25Mb".

1. Acces to Stack progenitors

The screenshot displays the Aladin v7.5 software interface, which is a prototype version based on v7.519. The main window shows a star field image with a red box highlighting a specific region. A 'Server selector' dialog box is open, allowing the user to choose a server for data access. The dialog box has a 'User data access (image/table/script/dir)' section with a 'Specify a filename or an URL and press the SUBMIT button' instruction. A list of servers is shown, with 'Low0H2' selected. The list includes the following entries:

Server Name	RA	Dec	Size
Low0H2	1409190	0.0"	0.0"
1409190	0.0"	0.0"	0.0"
1409194	0.0"	0.0"	0.0"
1414080	0.0"	0.0"	0.0"
1414079	0.0"	0.0"	0.0"
1409195	0.0"	0.0"	0.0"
1410522	0.0"	0.0"	0.0"
1414078	0.0"	0.0"	0.0"
1409199	0.0"	0.0"	0.0"
1409192	0.0"	0.0"	0.0"
1409191	0.0"	0.0"	0.0"
1410514	0.0"	0.0"	0.0"
1409193	0.0"	0.0"	0.0"
1414082	0.0"	0.0"	0.0"
1414084	0.0"	0.0"	0.0"
1409196	0.0"	0.0"	0.0"

The dialog box also features a 'Brow...' button and a 'SUBMIT' button. The main window shows the star field image with a red box highlighting a region. The status bar at the bottom indicates 'Data are being downloaded... look at the "stack"'. The interface includes various toolbars and a sidebar with 'Image servers' and 'Catalog servers'.

1. Access to Healpix multiresolution mode (AllSky)

The screenshot displays the Aladin v7.5 software interface, which is a prototype version based on v7.519. The main window shows a star field with a red grid overlay, indicating the Healpix multiresolution mode. The interface includes a menu bar (File, Edit, Image, Catalog, Overlay, Tool, View, Interop, Help) and a toolbar with various icons. A 'Server selector' dialog box is open on the right, showing the 'CFHTLS Aladin Server' configuration. The dialog box contains the following information:

- Target (ICRS, name): 22 04 04.89 +02 59 01.6
- Radius: 0.0deg
- Creator: CFHTLS
- Collection: null null
- CFHTLS_R.MP9601_220542+031100-T0007
- Data Access
 - Image Cutout 0.0" x 0.0"
 - Healpix Multiresolution 0.0" x 0.0"
 - Progenitors 0.0" x 0.0"

The dialog box also features a 'Server selector' tab, a 'Location' field, and a 'Location' dropdown menu. The main window shows a star field with a red grid overlay, and the 'Server selector' dialog box is open on the right. The interface includes a menu bar (File, Edit, Image, Catalog, Overlay, Tool, View, Interop, Help) and a toolbar with various icons. A 'Server selector' dialog box is open on the right, showing the 'CFHTLS Aladin Server' configuration. The dialog box contains the following information:

CFHTLS-WR

4.777° x 2.648°

Search

0 sel / 0 src 5fps / 58k

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1. Healpix mode: best resolution

The screenshot displays the Aladin v7.5 software interface. The main window shows a star field with a central bright star and a crosshair. The interface includes a menu bar (File, Edit, Image, Catalog, Overlay, Tool, View, Interop, Help), a toolbar, and a status bar. A "Server selector" dialog is open, showing the "CFHTLS Aladin Server" configuration. The dialog includes fields for "Target (ICRS, name)" (22 07 28.10 +04 04 07.6) and "Radius" (0.0deg). A tree view shows the data access configuration, including "Healpix Multiresolution 0.0" x 0.0".

Applications Raccourcis Système mar. 22 mai, 14:14 bonnarel

Courrier entrant - francoi Aladin v7.5 *** PROTOTYPE VERSION (based on v7.519) ***

File Edit Image Catalog Overlay Tool View Interop Help

Location 22:07:19.07 +04:00:01.2 Frame ICRS

Allsky opt Allsky IR DSS Simbad NED PPMX 2MASS

CFHTLS-WR 47.28

Server selector

Others Allsky File all VO Watch FoV... Sextractor

Image servers

- Aladin images
- SkyView
- UKIDSS
- Sloan
- SWarp
- DSS...
- VLA...
- Archives..
- New Serv
- proto...
- Others...

CFHTLS Aladin Server ?

Target (ICRS, name) 22 07 28.10 +04 04 07.6 Grab co...

Radius 0.0deg

```
Creator: CFHTLS
Collection: null null
CFHTLS_R.MP9601_220542+040700-T0007
Data Access
  Image Cutout 0.0" x 0.0"
  Healpix Multiresolution 0.0" x 0.0"
  Progenitors 0.0" x 0.0"
```

Reset Clear SUBMIT Close ?

22:07:22.64 +04:00:29.5 8.955' x 4.965'

grid wink north multiview match

No Simbad object here !

Search

(c) 2012 UDS/CNRS - by CDS - Distributed under GNU GPL v3 0 sel / 0 src 12fps / 72Mb

1. Original image Cutout on top of the Healpix display

The screenshot displays the Aladin v7.5 software interface, a prototype version based on v7.519. The main window shows a star field with a gray diamond-shaped cutout overlaid. The interface includes a menu bar (File, Edit, Image, Catalog, Overlay, Tool, View, Interop, Help), a toolbar with various tools (select, pan, zoom, dist, phot, draw, tag, filter, cross, key, rgb, assoc, crop, zoom, cont, pixel, prop, del), and a control panel on the right with layer settings (Image Cutout, SERC.I-DSS2.889, Drawing, Moc, CFHTLS-WR) and a small map. The status bar at the bottom shows "Querying Simbad..." and system information.

Applications Raccourcis Système mar. 22 mai, 14:21 bonnarel

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.519) ***

File Edit Image Catalog Overlay Tool View Interop Help

Location 22:07:15.05 +03:57:51.0 Frame ICRS

Allsky opt Allsky IR DSS Simbad NED PPMX 2MASS

CFHTLS-WR 0.9775

Image Cutout
SERC.I-DSS2.889
Drawing
Moc
CFHTLS-WR

size -
op... -
zoom -

Frame: ICRS

+180 +90 -180
-90

22:07:17.97 +03:55:17.3
35.82' x 19.86'

Querying Simbad...

Search

0 sel / 0 src 7fps / 113Mb

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2.CFHTLS ALLSKY MODE

The screenshot displays the Aladin v7.5 software interface in Allsky mode. The main window shows a 'Server selector' dialog box with 'CFHTLS-WR' selected. The background shows a star field with a red grid overlay. The interface includes a menu bar, a toolbar, and a status bar.

Server selector dialog:

- Available data in "allsky" mode: ?
- Select items and press SUBMIT
- Target (ICRS, name): 00 00 00.00 +00 00 00.0
- Radius: 14'
- Image selection:
 - Optical
 - DSS
 - SDSS colored [SLOAN Digitized Sky Survey - Healpixed by CFHTLS](#)
 - Mellinger colored [\(c\) Axel Mellinger. Permission is granted for](#)
 - CFHTLS-WIDE
 - CFHTLS-WU [\(c\) CFH - powered by Terapix - healpixed by CFHTLS](#)
 - CFHTLS-WG [\(c\) CFH - powered by Terapix - healpixed by CFHTLS](#)
 - CFHTLS-WR [\(c\) CFH - powered by Terapix - healpixed by CFHTLS](#)
 - CFHTLS-WI [\(c\) CFH - powered by Terapix - healpixed by CFHTLS](#)
 - CFHTLS-WZ [\(c\) CFH - powered by Terapix - healpixed by CFHTLS](#)
 - X
 - UV
 - Infrared
 - Radio
 - Line
 - Test
 - Progressive catalog

Stack controls:

- the icon: show/hide a plane
- size: change object size
- zoom: adjust field size.
- Opacity: adjust transparency.

The vue is drawn according to the projection of a reference plane.

For changing the reference, click on its check box.

CFHTLS-WR

size - [slider]
op... - [slider]
zoom - [slider]

Frame: ICRS

+180 +90 -180
-90

00:00:00.00 +00:00:00.0
83.65° x 43.4°

Search [input]

grid wink north multiview match

2. Acces to MOC and Progenitors driven via properties

The screenshot shows the Aladin v7.5 interface with a 'Properties' dialog box open for the plane 'CFHTLS-WR'. The dialog contains the following information:

- PlaneID:** CFHTLS-WR
- Format:** HEALPix CDS tessellation
- Origin:** (c) CFH - powered by Terapix - healpixed by CDS
<http://alasky.u-strasbg.fr/CFHTLS-T0007b/RALLSKY>
- HEALPix tessellation properties:**
 - Best pixel resolution: 201.3mas
 - Tile format: JPEG 8 bits pixels
 - Tile width: 512 pix (2^9)
 - HEALPix NSide: 1048576 (2^20)
 - Switch to (slow) true pixel mode
- HEALPix Coordsys:** ICRS
- More info:** MOC Progenitors
- Used projection:**
 - .projection center: 04 15 15.95 -40 16 41.7
 - .method: SINUS
 - .frame: Gal

The background shows a star field with a red crosshair. The right sidebar contains mouse controls, drawing tools, and a small map of the plane's footprint in the ICRS frame.

Frame: ICRS

Mouse controls:

- Left: source selection.
- Middle: quick panning.
- Right: constast adjustment.
- Wheel: quick zoom on the reticle.
- Simple-clc: move the reticle.
- Double-clc: re-center.

Let you mouse pointer on an object for discovering associated Simbad data.

Drawing

- Moc
- CFHTLS-WR

size - +

crop - +

zoom - +

Frame: ICRS

+180 +90 -180

+90

-90

22:07:33.13 +03:04:49.1

1.194° x 39.72'

0 sel / 0 src 12fps / 38Mb

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2.Original Images IDs

The screenshot displays the Aladin v7.5 software interface, which is a prototype version based on v7.519. The main window shows a star field with a red diagonal line in the bottom-left corner. A dialog box titled "Access to original images" is open, prompting the user to select a progenitor and press SUBMIT. The dialog lists two options:

- CFHTLS_W_r_220154+031100_T0007_MEDIAN
- CFHTLS_W_r_220542+031100_T0007_MEDIAN

The dialog also includes "Apply" and "Close" buttons. The background interface includes a menu bar (File, Edit, Image, Catalog, Overlay, Tool, View, Interop, Help), a toolbar, and a status bar at the bottom showing coordinates (1.119° x 37.24°) and a search bar.

DataLink for one of the original image

The screenshot displays the Aladin web interface. A 'Data Info Frame' window is open, showing a table of progenitor metadata for the observation ID 'ivo://cds/CFHTLS/R.MP9601#220154+031100-T0007'. The table has three columns: Field name, UType, and Value.

Field name	UType	Value
Obsid	dl:Dataid.ObservationID	ivo://cds/CFHTLS/R.MP9601#220154+031100-T0007
Semantics	dl:Semantics	Progenitor metadata (SIA2)
ServiceType	dl:Votype	SIA2 Query
reference	dl:Access.Reference	http://aladin.u-strasbg.fr/cgi-bin/nph-Aladin++dev.cgi?ou...
format	dl:Access.Format	text/xml
size	dl:Access.Size	4000000

Below the table are buttons for 'Stick', 'FoV in stack', 'LOAD', and 'Close'. The main interface shows a 'User data access (image/table/script/dir)' panel with a search input and a 'SUBMIT' button. A tree view shows the selected observation and its progenitor metadata. The background shows a star field with a red crosshair and a coordinate display of 1.119° x 37.24°. A 'Mouse controls' panel on the right provides instructions for navigation and zooming.

SIA2 metadata for this image

The screenshot displays a web-based astronomical software interface. The main window is titled "Server selector" and shows a "User data access (image/table/script/dir)" section. Below this, a tree view shows the following metadata:

- Creator: CFHTLS
- Collection: null null
- CFHTLS_R.MP9601_220154+031100-T0007 0.0" x 0.0"

Overlaid on this is a "Data Info Frame" window showing a table of metadata for the image CFHTLS_R.MP9601_220154+031100-T0007. The table has three columns: Field name, UType, and Value.

Field name	UType	Value
TimeFrameName	sia:CoordSys.TimeFrame.Name	TT
SpatialLocation	sia:Char.SpatialAxis.Coverage.Location.Value	22:01:52.70+03:11:00.0
SpatialExtent	sia:Char.SpatialAxis.Coverage.Bounds.Extent	5.0°
SpatialCalibration	sia:Char.SpatialAxis.Accuracy.Calibration	Calibrated
SpatialResolution	sia:Char.Spatial.Resolution	0.372"
TimeLocation	sia:Char.TimeAxis.Coverage.Location.Value	0.0d
SpectralAxisUcd	sia:Char.SpectralAxis.Ucd	em;wl
SpectralLocation	sia:Char.SpectralAxis.Coverage.Location.Value	0.634um
SpectralStart	sia:Char.SpectralAxis.Coverage.Bounds.Start	0.566um
SpectralStop	sia:Char.SpectralAxis.Coverage.Bounds.Stop	0.687um
SpectralCalibration	sia:Char.SpectralAxis.Accuracy.Calibration	UNCALIBRATEDm
MappingSpatialProjection	sia:Mapping.Spatial.Projection	TAN
MappingSpatialCrval	sia:Mapping.Spatial.crval	9677.500000 9677.500000
MappingSpatialCrxpix	sia:Mapping.Spatial.crxpix	330.469583 3.183333
MappingSpatialCdMatrix	sia:Mapping.Spatial.cdMatrix	-0.000052 0.000000 0.000000 0.000052

At the bottom of the "Data Info Frame" are buttons for "Stick", "FoV in stack", "LOAD", and "Close".

In the background, there is a "Server selector" window with various server icons (Allsky, File, all VO, Watch, FoV..., SExtractor) and a "Data Info Frame" window showing a table of metadata for the image CFHTLS_R.MP9601_220154+031100-T0007. The table lists various fields such as TimeFrameName, SpatialLocation, SpatialExtent, SpectralAxisUcd, etc., along with their corresponding UTypes and values.

On the right side, there is a "Drawing" window with a "Moc" (Multi-Object Catalog) and a "CFHTLS-WR" (Wide-Field and Deep Survey) section. It includes a "size" slider, a "zoom" slider, and a "Frame:" section showing a sky map with a red dot indicating the location of the image. The sky map shows a grid of lines representing the sky's coordinates, with a red dot at the center. The coordinates are given as 22:08:51.13 +02:59:39, with a size of 1.119' x 37.24".

2. Retrieving original image cutout

The screenshot shows a software interface for retrieving astronomical image cutouts. The main window is titled "Server selector" and displays "User data access (image/table/script/dir)". A "Data Info Frame" window is open, showing the following metadata for a "Progenitor Image cutout":

Field name	UType	Value
Obsid	dl:Dataid.Ob...	ivo://cds/CFH...
Semantics	dl:Semantics	Progenitor I...
ServiceType	dl:Votype	SIA2 Access...
reference	dl:Access.Ref...	http://aladin...
format	dl:Access.For...	image/fits
size	dl:Access.Size	4000000

The "Access to original images" dialog box is open, showing two checkboxes for image retrieval:

- CFHTLS_W_r_220154+031100_T0007_MEDIAN
- CFHTLS_W_r_220542+031100_T0007_MEDIAN

The background is a large astronomical image with a red crosshair. The interface includes various toolbars and a search bar at the bottom.

2. Cutout on top of Healpix mode display

The screenshot displays the Aladin v7.5 software interface. The main window shows a star field with a diamond-shaped cutout. The 'Server selector' panel on the right is open, showing a tree view of data sources. The 'Data Info Frame' window at the bottom displays the following table:

Field name	UType	Value
<i>Obsid</i>	dl:Dataid.ObservationID	ivo://cds/CFHTLS/R.MP9601#220154+03...
<i>Semantics</i>	dl:Semantics	Progenitor Image cutout
<i>ServiceType</i>	dl:VotType	SIA2 AccessData
<i>reference</i>	dl:Access.Reference	http://aladin.u-strasbg.fr/cgi-bin/nph-Alad...
<i>format</i>	dl:Access.Format	image/fits
<i>size</i>	dl:Access.Size	4000000

At the bottom of the interface, there is a footer: (c) 2012 UDS/CNRS - by CDS - Distributed under GNU GPL v3