Simple Image Access protocol: experience from installation in Aladin server

- **We have a test Aladin server which contains a few data from the GOODS survey and other data**
- **3 kinds of output have been implemented in this server:**
  - **Classical string mode for aladin 1.4 and older**
  - **IDHA protocol metadata tree (AVO proto, Next version of aladin)**
  - **SIAP1 atlas and SIAP1 cutout services (available in beta version now and fully for IAU demos)**

Example of output

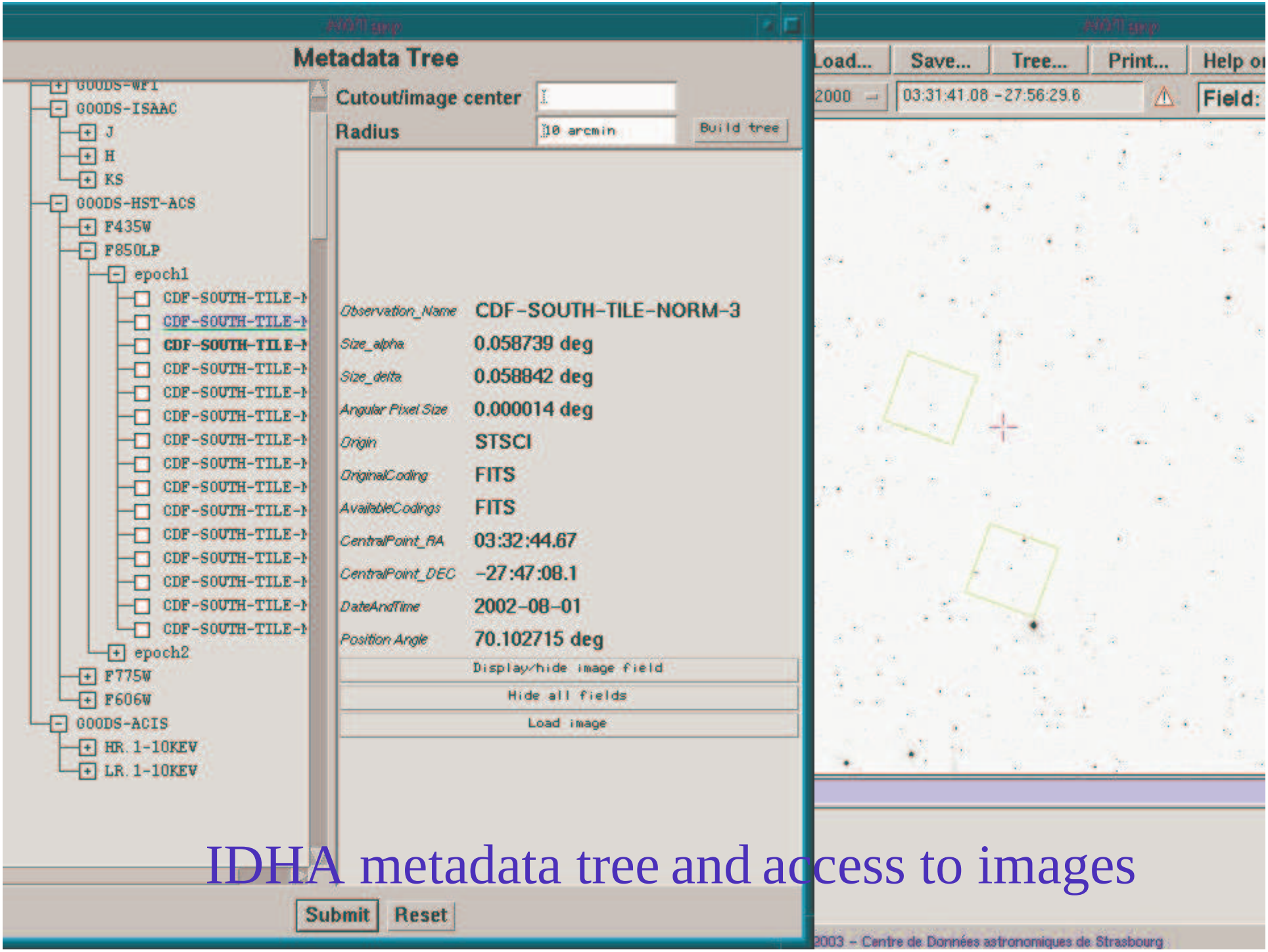
```
<?xml version="1.0"?>
<!DOCTYPE VOTABLE SYSTEM "http://us-vo.org/xml/VOTable.dtd">
<VOTABLE ID="v1.0">
  <DESCRIPTION> SIAP output for Aladin server </DESCRIPTION>
  <RESOURCE type="results">
    <INFO name="QUERY_STATUS" value="OK"/>
      <TABLE>
        <FIELD ID="Observation_Name" ucd="VOX:Image_Title" datatype="char" arraysize="*" />
        <FIELD ID="CentralPoint_RA" ucd="POS_EQ_RA_MAIN" datatype="double"  />
        <FIELD ID="CentralPoint_DEC" ucd="POS_EQ_DEC_MAIN" datatype="double"  />
        <FIELD ID="Naxes" ucd="VOX:Image_Naxes" datatype="int"  />
        <FIELD ID="Naxis" ucd="VOX:Image_Naxis" datatype="int" arraysize="*" />
        <FIELD ID="AngularPixelSize" ucd="VOX:Image_Scale" datatype="double" arraysize="*" unit="deg" />
        <FIELD ID="OriginalCoding" ucd="VOX:Image_Format" datatype="char" arraysize="*" />
        <FIELD ID="Filter_Name" ucd="VOX:BandPass_ID" datatype="char" arraysize="*" />
        <FIELD ID="Effective_wavelength"  ucd="VOX:BandPass_RefValue" datatype="double" unit="um" />
        <FIELD ID="Minimal_wavelength"  ucd="VOX:BandPass_LoLimit" datatype="double" unit="um" />
        <FIELD ID="Maxima_wavelength"  ucd="VOX:BandPass_HiLimit" datatype="double" unit="um" />
        <FIELD ID="Location"  ucd="VOX:Image_AccessReference" datatype="char" arraysize="*" />
        <DATA>
         <TABLEDATA>
           <TR>
             <TD>GOODS-WFI_DEEP2C-FI</TD>
             <TD>53.119485 </TD>
             <TD>-27.803630 </TD>
             <TD>2</TD>
             <TD></TD>
             <TD>0.000066 0.000066</TD>
             <TD>image/fits</TD>
             <TD>ICLWP</TD>
             <TD></TD>
             <TD>0.783000</TD>
             <TD>1.001000</TD>
             <TD><![CDATA[http://aladin.u-strasbg.fr/cgi-bin/nph-HTTP.cgi?out=image&position=053.11629+-27.80875&survey=GOODS-
WFI&color=ICLWP&mode=view]]></TD>
           </TR>
           <TR>
```

Lessons learnt:
propositions for Version 2

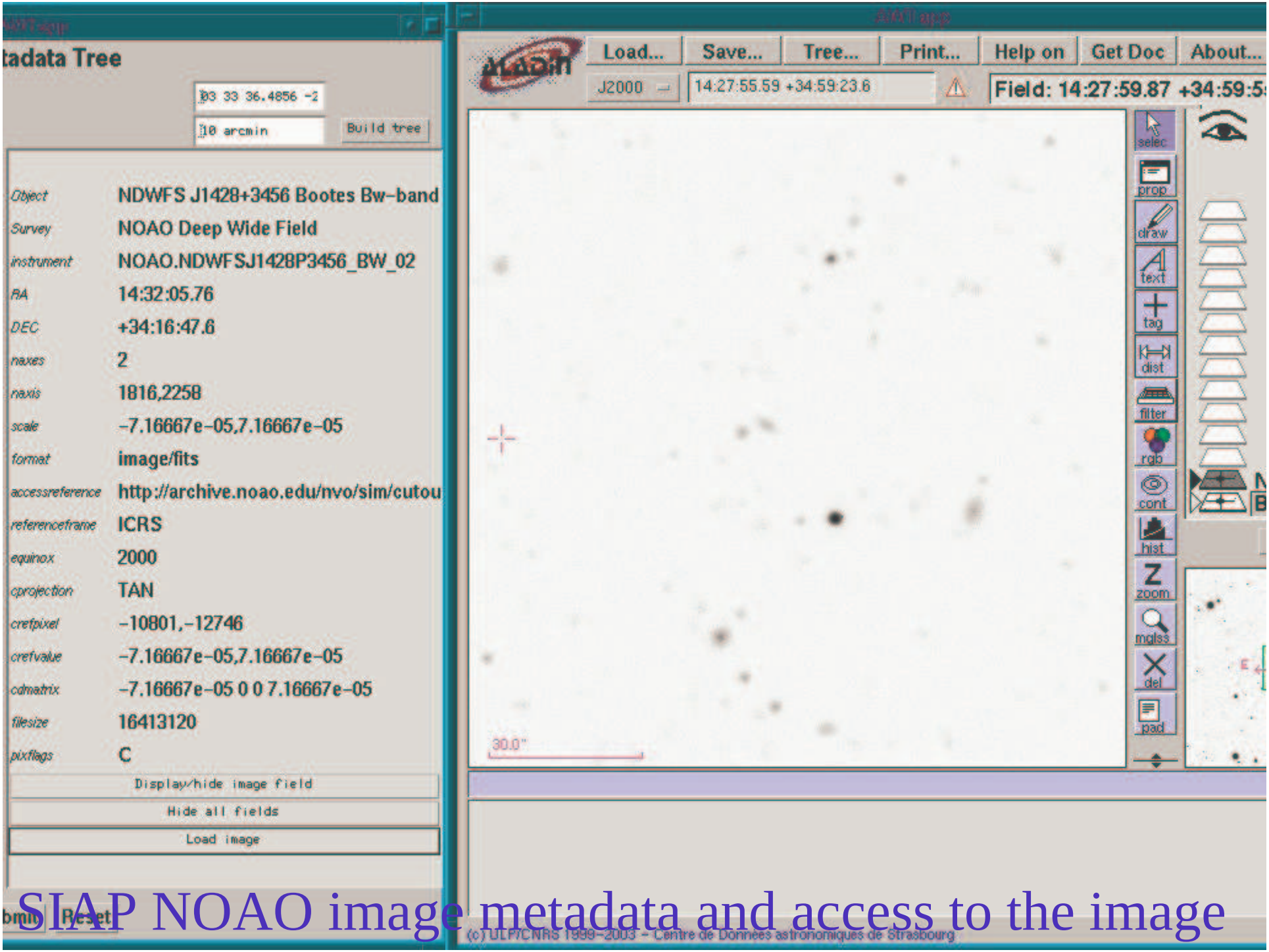
- **Additional information needed:**
  - **Observing Program or Dataset/ Datacollection field**
  - **compression flag among the Image_Pixflags**
  - **distinguish availability from image generation, either by answering by URL templates (parametrizable) or by defining a new Image/metadata format (to refine the query)**
  - **at least distinguish RADIUS of the ROI and SIZE of the Image , specially at the POLE.**
- **VOX – CDS/ESO UCDs: additional correspondances can be found with the assignator. Some still missing. UCD evolution: Cf working group on UCDs in this meeting**
- **Is it possible to put some hierarchy in SIAP?**

UCDs equivalence

- **Image_Title <> ID_IMAGE**
- **Image_Naxis <> INST_DET_SIZE**
- **Image_Scale <> INST_SCALE**
- **STC_CoordEquinox <> TIME_EQUINOX**
- **BandPass_ID <> ID_FILTER**
- **BandPass_RefValue**
- **<>INST_WAVELENGTH_EFFECTIVE**
- **BandPass_HiLimit <> INST_BANDPASS**
- **BandPass_LoLimit <> INST_BANDPASS**
- **Image_AccessReference <> DATA_LINK**



IDHA metadata tree and access to images



SIAP NOAO image metadata and access to the image

Why a hierarchical output?
And how to build it

- **Example of usage: AVO Science demo**
  - **Allow some factorisation**
  - **Allow to group similar kind of data**
- **Two possible strategies to build metadata trees:**
  - **done by client from a flat VOTABLE structure (eg, SIAP1)**
  - **done by server from a hierarchical VOTABLE structure (eg, IDHA Metadata tree)**
- **The first strategy requires more work on the client side. The latter is simpler for the client (just use a VOTABLE browser) but requires more work for the server**

The IDHA metadata tree

- **It relies on the IDHA datamodel (for objects = tables, attributes = fields, and some of the links)**
- **The tree structure is made by using the recursive definition of <RESOURCE> in VOTABLE**
- **The tree has the basic structure:**

  Request->ObservingPrograms->ObservationGroups ->Observations + additional children for details
- **Other tree structures can be derived from the model**
- **Documentation available on IVOA DM and DAL archive**
- **Thanks to: M.Allen, T.Boch, S.Derrière, P.Fernique, M.Louys, A.Schaaff (CDS or AVO funding)**