DS3 Cycle 3, CDS Report

Topics

- **IVOA Web Services Basic Profile**
  - Last version for Moscow Interop
- **Workflow**
  - Use cases, client design, etc.
- **VizieR – SkyNode**
  - Implementation, ...

IVOA WS Basic Profile

- **Reminder :**
  - **Recommendation about how to implement Web Services in the frame of IVOA**
    - Takes into account existing documents (Web Service Basic Profile, see http://www.ws-i.org/)
    - Includes IVOA existing work (Support Interfaces, …)
    - Less flexibility but more interoperability
  - **Presentations at Cambridge MA, Pune, Kyoto and Madrid Interop**
  - **IVOA WS BP depends on VO Support interfaces progress**

WS-I Basic Profile

- **WS-I provides checking tools but with very restrictive license**
  - **no derivated work, no inclusion in an on-line checking tool**
- **Not really a problem**
  - **.NET (2.0)**
    - it is possible to create SOAP WS-I BP 1.1 compatible interfaces
    - In this case you cannot use for example the following things :
      - RPC/encoded message
      - DataSet
      - xml:lang attribute in the SOAP envelope
      - No use of the Order property for sérializables types
      - Return of NULL values in a RPC/litteral service
      - ...
  - **Axis (1.4) : people involved in this project are working on the integration of the WS-I BP since the version 1.2**

IVOA WS Basic Profile (2)

- **Done for the next Interop in Moscow**
  - **Upgrade of the IVOA document (0.22 -> 0.23)**
    - to take into account Support Interfaces 0.24
    - Available at
      http://www.ivoa.net/internal/IVOA/IvoaGridAndWebServices/VO-WS-Basic-Profile-0.23.pdf
  - **Information about how to check with the WS-I tools**
  - **On-line checking tool for Support Interfaces in a first step**
    - Other things to check : tbd in a later version of the document

Workflow

- **Use cases**
  - **Workflow working group of OV France :**
    - http://www.france-ov.org/twiki/bin/view/GROUPEStravail/Workflow
    - 2 meetings 10/11/2005 and 16/06/2006
    - Next meeting before end 2006
      - Define additional use cases and use existing tools as demonstrators
      - Basic model (elements, relations, ...) for workflows, creation of templates, definition of a data model of the data used in a workflow
- **Workflow user friendly design tool**
  - **JLOW 1.0 – Java Libraries fOr Workflow was developed during Cycle 1 (Cyril Pestel)**
    - Sources and documentation available in the CDS Developer's corner
  - **Application in AÏDA (MDA project …)**

Cycle 3 : JLOW 2.0

- **Developments**
  - **Library side**
    - New data structures for the task descriptors (easier to manipulate)
    - Simplification of the libraries : less code to write for the users
    - Better control of the events
  - **Client side**
    - Better design
  - **Server side**
    - asynchronous execution of the workflow
    - ...

JLOW future

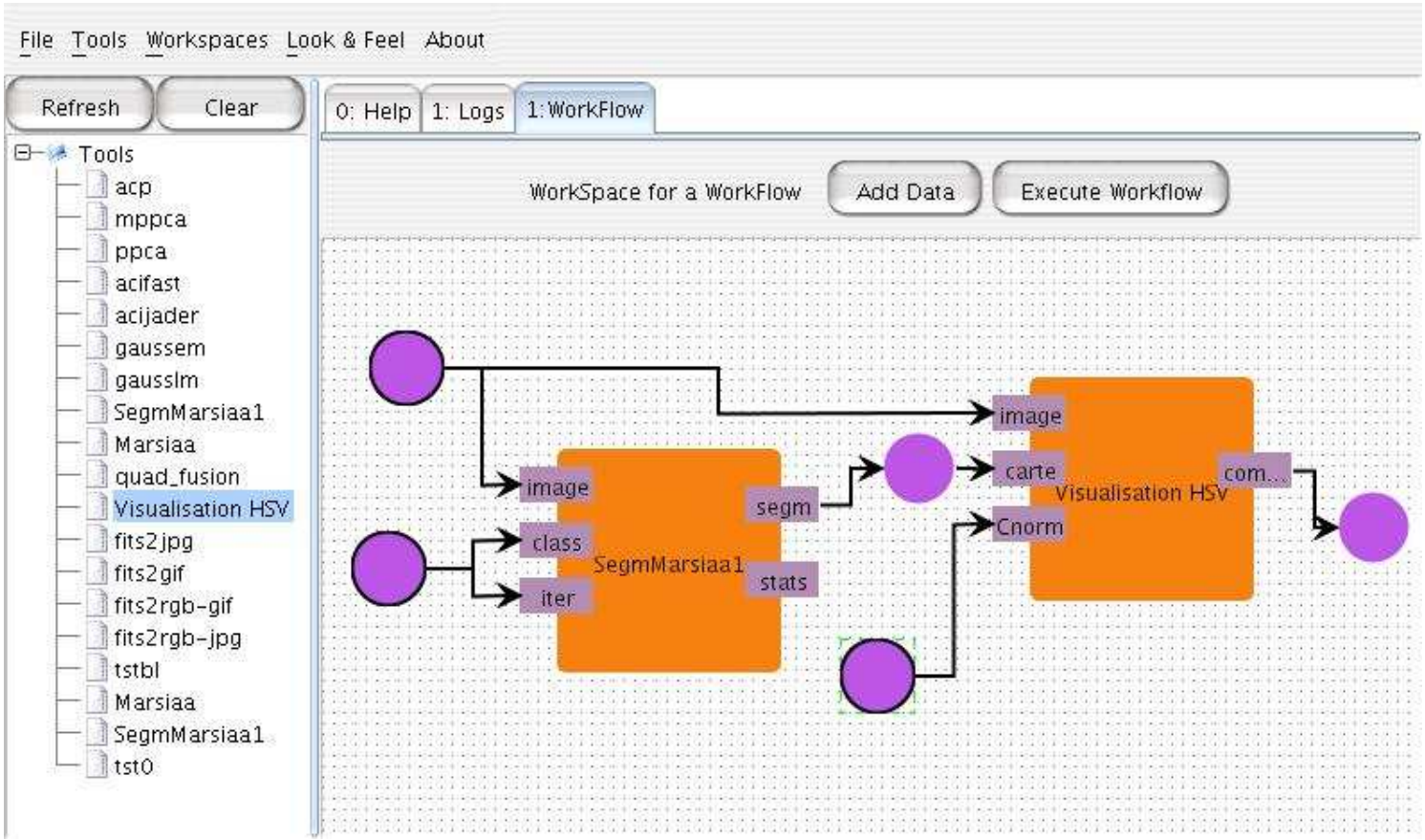
- Developments
  - Partial execution
  - Size of boxes customizable for better rendering in case of huge number of ports (inputs and outputs)
  - Discovery of new available tasks
  - ...

Grid side

- **Collaborations and new working group**
  - **Collaboration with ESSI (Sophia Antipolis, IT laboratory) people started in December 2005**
    - ESSI is developing MOTEUR, both workflow engine and middleware to access Grid5000 and EGEE (first use test in AIDA architecture done beginning of February 2006)
  - **New tests will be done in September with Grid5000 and report to the concerned consortium**
  - **A Grid working group is now created in the frame of OV France (http://www.france-ov.org/twiki/bin/view/GROUPEStravail/Grids)**
    - The aim of this working group is to share experiences between users of Grid technologies in the frame of Astronomy and to give feeback about the collaboration with the IT community

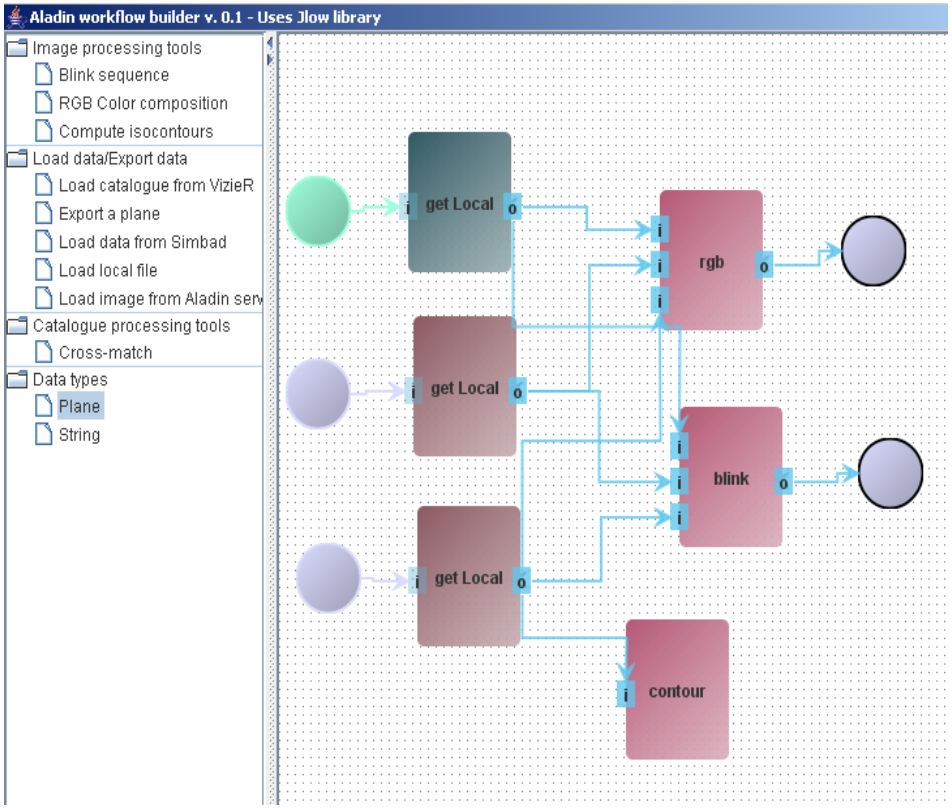
JLOW use case sample 1

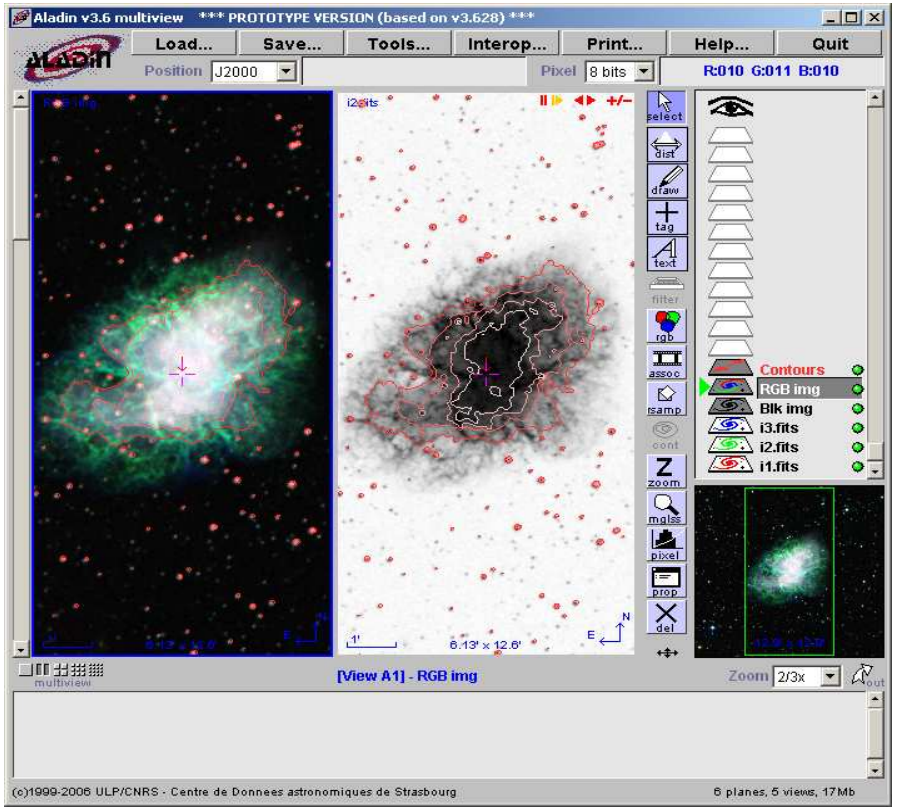
Example of use in AÏDA (Astronomical Image processIng Architecture)



* AÏDA is developed in the frame of MDA (3 years) project (French ministry funds) ending 12/2006

JLOW use case sample 2





Not available in Aladin, quick development (Thomas) as a JLOW use case

Fill SkyNodes with VizieR catalogues

- **Reminder**
  - **VizieR offers an access to a large and growing number of catalogues (> 5000)**
    - VizieR is not a relational database !
    - VizieR uses relational database for metadata and binary storage (very large catalogs) with dedicated access programs for the data
      - Binary data is distributed on a cluster
  - **4 ways to access VizieR**
    - Main access through cgi (ASU)
      - http://vizier.u-strasbg.fr
    - vizquery client
      - http://vizier.u-strasbg.fr/doc/vizquery.htx
    - Simple access through soap
      - See Developer's corner (http://cdsweb.u-strasbg.fr/devcorner.gml)
    - (very) Partial access via SkyNode (~0.2% of the catalogues)
      - See Developer's corner (http://cdsweb.u-strasbg.fr/devcorner.gml)

SkyNode side

- **How to implement it as a SkyNode ?**
  - **Use an existing kit**
    - Done with JVO (thanks to Yuji) (new version (01/08/2006) of the toolkit is under test) and ESAC (thanks to Aurélien, Inaki and Pedro) toolkits
  - **Choose a solution to access VizieR through ADQL**
    - Less intrusive solution : ADQL to ASU mapping using XSLT (thanks to Inaki and Aurélien who done it)
    - No change of VizieR architecture (cluster, binary access, ...)
  - **Implementation must be done for each catalogue**
    - Tycho2, USNO-B1, 2MASS, IRAS, UCAC2, …
  - **For each catalogue :**
    - Creation of the different parameter files
    - Deployment in Tomcat, one access point per catalogue
    - Done in a first time for 9 catalogues

Cycle 3 work

- **Prototype with just one access point**
  - **Overloading of the SkyNode interfaces to take into account the catalogue name**
  - **Adding of a few interfaces to provide information about the catalogues**
    - Relation with metadata available in the Registry ?
  - **=> a SkyNodeCluster**
- **Alternative proposal**
  - **Split the VizieR catalogues in a few SkyNodeClusters (criteria to define…)**

Other work

- Tests of the existing toolkits with also a comparison (overhead, etc.) with a common access like CGI
  - JVO
  - ESAC
  - NVO (if time)

Conclusion

- **IVOA WS Basic Profile**
  - **Report in Moscow during the GWS session**
- **Work around workflow :**
  - **Working group constituted, first use cases, next work will concern modeling side**
- **VizieR SkyNode(s) :**
  - **Report in Moscow during the VOQL session**