# ESAVO DAL Toolkit

Arviset/Salgado/Osuna

IVOA Interop Victoria, Canada

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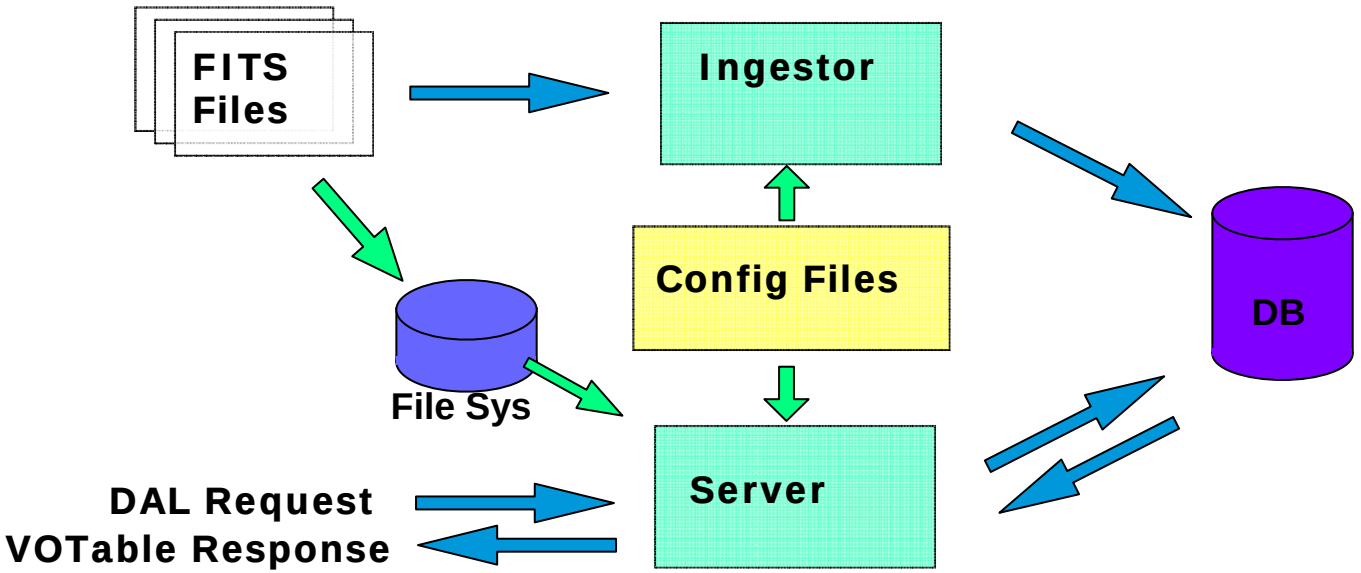
# DAL Toolkit generalities

- A configurable toolkit that allows creation of IVOA Simple Protocol services (for Images, Spectra and Spectral Lines currently)
- Contains an **Ingestor** and a **Server** (configurable for already ingested files)
- Requires minimum knowledge of software engineering → easy to run by anyone

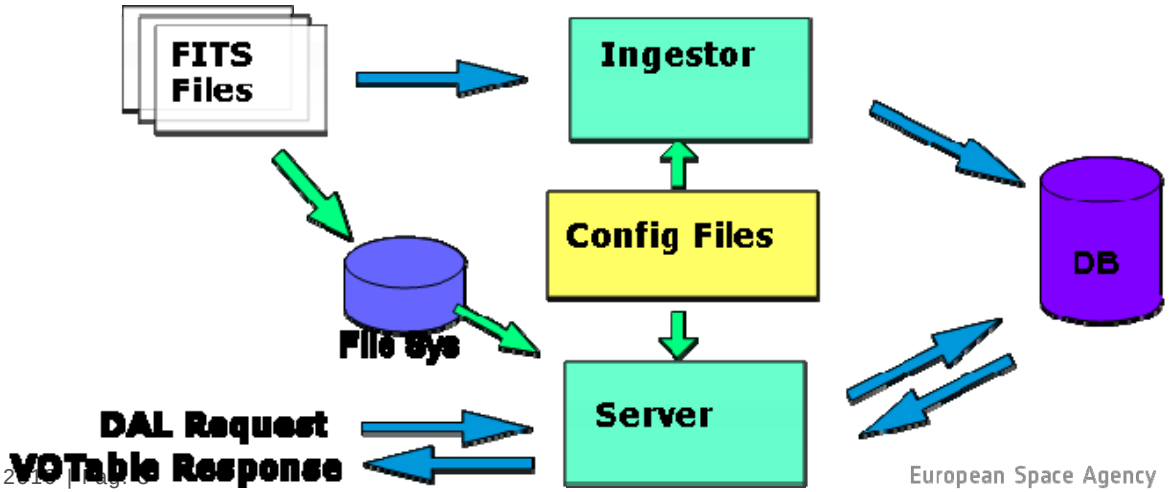


# DAL Toolkit Ingestor

- Java client applet
  - Simple extraction of FITS metadata

- Takes as input :
  - FITS Files of images, spectrum, lines to create associated SIAP/SSAP/SLAP services
  - Config Files mapping FITS Keyword and DB Columns

- Gives as output :
  - RDBMS filled with extracted FITS Files metadata

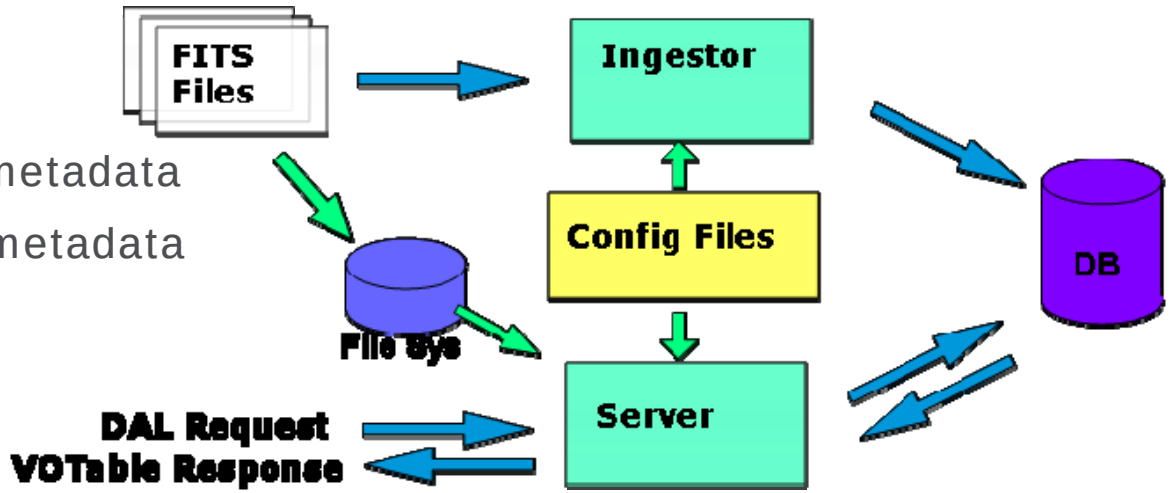


# DAL Toolkit Server

- Java server application
  - Serving FITS metadata
  - Serving FITS file

- Takes as input :
  - Standard “S*AP” data query string (SIAP, SSAP, SLAP, etc ...)
  - Standard “S*AP” metadata query string (FORMAT=METADATA)
  - Config Files & FITS Files & Metadata Table

- Gives as output :
  - VOTable v1.1 filled with FITS metadata
  - FIELDS info from Config Files metadata



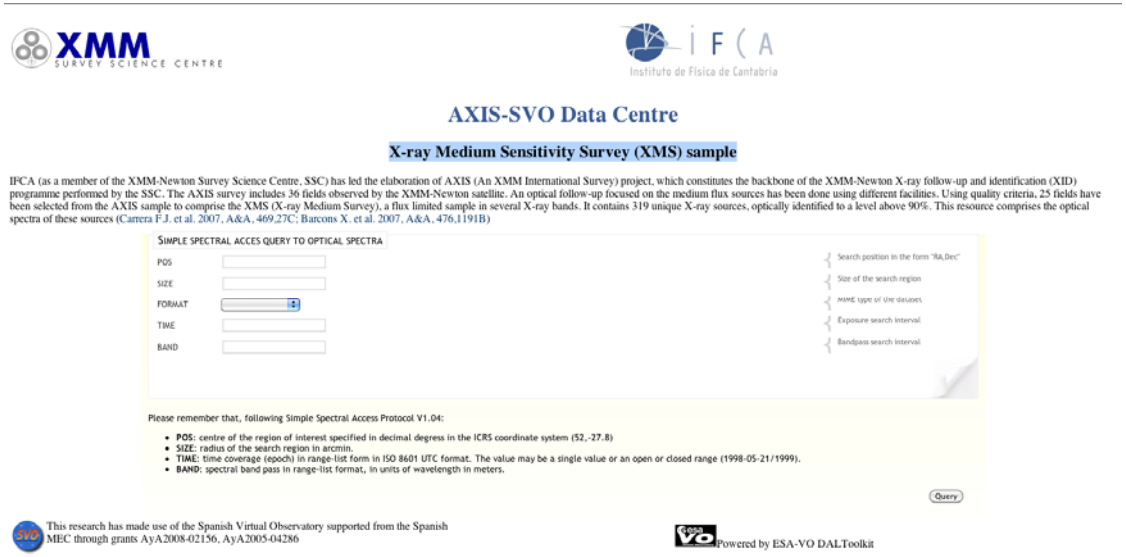
# DAL Toolkit roadmap summary

- Available since fall 2006
- Developed and evolved in the context of Euro-VO DCA and Euro-VO AIDA projects
- Used within EuroVO Workshops on "How to publish data in the VO"
  - June 2005 @ ESO, June 2007 @ ESAC, June 2008 @ ESO, June 2009 @ ESAC
- Example of SSAP service built with DAL Toolkit:

**X-ray Medium Sensitivity Survey (XMS) sample**

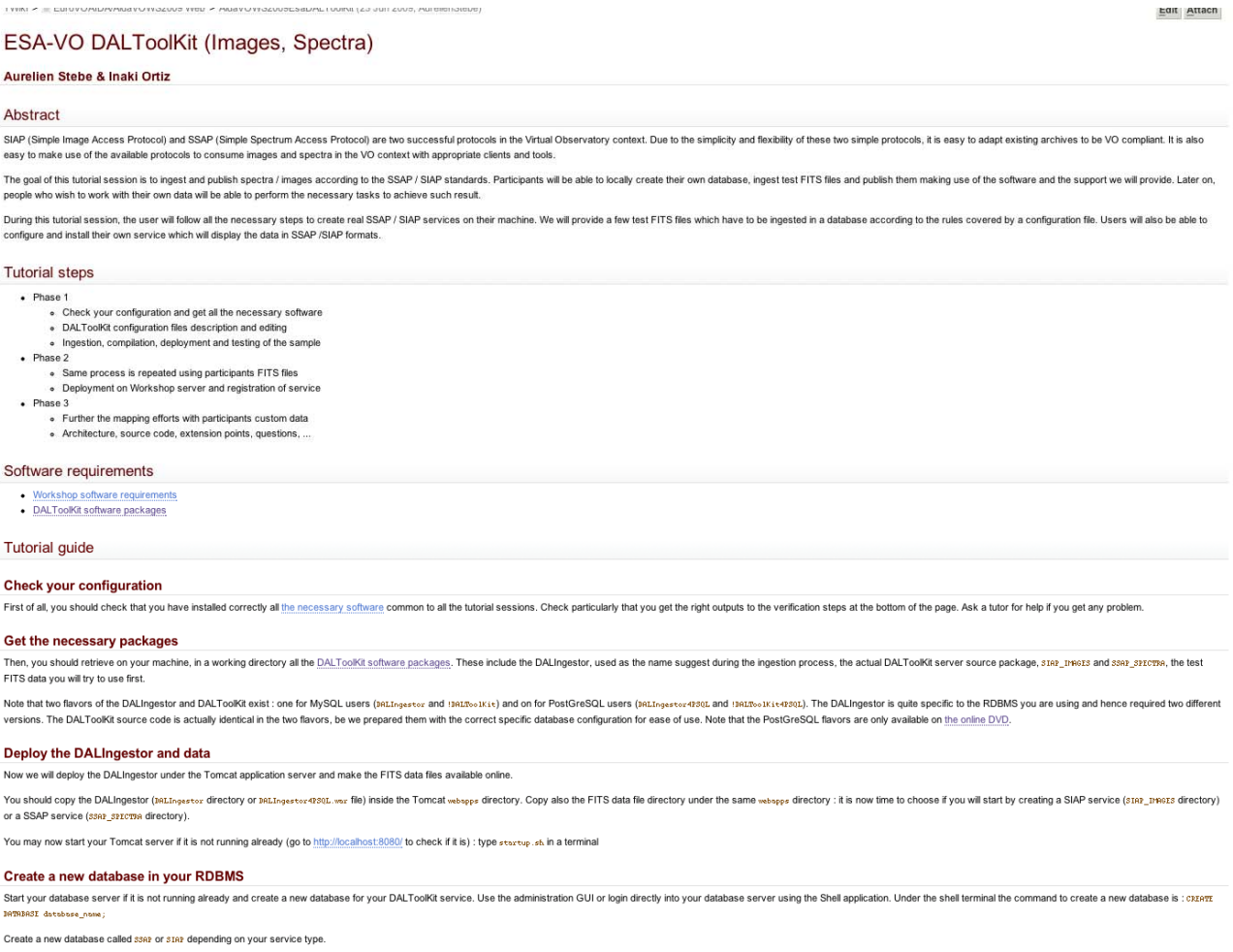
http://venus.ifca.unican.es:8080/SSAPXMS/

(available from VOSpec as well)



# Latest DALToolkit Tutorial

- http://cds.u-strasbg.fr/twikiAIDA/bin/view/EuroVOAIDA/AidaVOWS2009/AidaVOWS2009EsaDALToolKit



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## ESA-VO DALToolKit (Images, Spectra)

**Aurelien Stebe & Inaki Ortiz**

### Abstract

SIAP (Simple Image Access Protocol) and SSAP (Simple Spectrum Access Protocol) are two successful protocols in the Virtual Observatory context. Due to the simplicity and flexibility of these two simple protocols, it is easy to adapt existing archives to be VO compliant. It is also easy to make use of the available protocols to consume images and spectra in the VO context with appropriate clients and tools.

The goal of this tutorial session is to ingest and publish spectra / images according to the SSAP / SIAP standards. Participants will be able to locally create their own database, ingest test FITS files and publish them making use of the software and the support we will provide. Later on, people who wish to work with their own data will be able to perform the necessary tasks to achieve such result.

During this tutorial session, the user will follow all the necessary steps to create real SSAP / SIAP services on their machine. We will provide a few test FITS files which have to be ingested in a database according to the rules covered by a configuration file. Users will also be able to configure and install their own service which will display the data in SSAP /SIAP formats.

### Tutorial steps

- Phase 1
  - Check your configuration and get all the necessary software
  - DALToolKit configuration files description and editing
  - Ingestion, compilation, deployment and testing of the sample
- Phase 2
  - Same process is repeated using participants FITS files
  - Deployment on Workshop server and registration of service
- Phase 3
  - Further the mapping efforts with participants custom data
  - Architecture, source code, extension points, questions, ...

### Software requirements

- Workshop software requirements
- DALToolKit software packages

### Tutorial guide

#### Check your configuration

First of all, you should check that you have installed correctly all the necessary software common to all the tutorial sessions. Check particularly that you get the right outputs to the verification steps at the bottom of the page. Ask a tutor for help if you get any problem.

#### Get the necessary packages

Then, you should retrieve on your machine, in a working directory all the DALToolKit software packages. These include the DALIngestor, used as the name suggest during the ingestion process, the actual DALToolKit server source package, `SIAP_IMAGES` and `SSAP_SPECTRA`, the test FITS data you will try to use first.

Note that two flavors of the DALIngestor and DALToolKit exist : one for MySQL users (`DALIngestor` and `DALToolKit`) and on for PostGreSQL users (`DALIngestor4SQL` and `DALToolKit4SQL`). The DALIngestor is quite specific to the RDBMS you are using and hence required two different versions. The DALToolKit source code is actually identical in the two flavors, be we prepared them with the correct specific database configuration for ease of use. Note that the PostGreSQL flavors are only available on the online DVD.

#### Deploy the DALIngestor and data

Now we will deploy the DALIngestor under the Tomcat application server and make the FITS data files available online.

You should copy the DALIngestor (`DALIngestor` directory or `DALIngestor4SQL.war` file) inside the Tomcat `webapps` directory. Copy also the FITS data file directory under the same `webapps` directory : it is now time to choose if you will start by creating a SIAP service (`SIAP_IMAGES` directory) or a SSAP service (`SSAP_SPECTRA` directory).

You may now start your Tomcat server if it is not running already (go to http://localhost:8080/ to check if it is) : type `startup.sh` in a terminal

#### Create a new database in your RDBMS

Start your database server if it is not running already and create a new database for your DALToolKit service. Use the administration GUI or login directly into your database server using the Shell application. Under the shell terminal the command to create a new database is : `CREATE DATABASE database_name;`

Create a new database called `SSAP` or `SIAP` depending on your service type.

# ESAVO DAL Toolkit - conclusions

- Fast DAL services (SIAP, SSAP, SLAP) deployment
  - Time to build the configuration files for DALToolkit Ingestor and Server
  - Ease astronomers / data centres publishing data in VO
  - Fast, simple, lightweight deployment and service

- Future roadmap
  - Adapt it to new standards (VOTable 1.2, TAP, Registry Extension, ...)
  - More elaborated Ingestor for metadata extraction
  - Link to DM
  - Link it to DAL Services Validaters
- But ...
  - DALToolkit developed in context of EC funded projects (finishing)
  - Open for external collaboration
  - More evolution when/if more EC funded projects are coming