ASPIC : Public Spectroscopic Archives @ CeSAM

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ABSTRACT

Archive of Spectra Publicly available In Cesam (ASPIC) uses recognized LAM scientific and CeSAM (Centre de donnéeS Astrophysiques de Marseille) technical expertise to make available to the scientific community data and tools for spectroscopic massive programs.

Many deep galaxy surveys led at LAM or in which LAM is involved, such as VVDS, zCOSMOS, VIPERS, VUDS, EUCLID, PFS, Athena, demonstrate the level of expertise and international acknowledgement of LAM in this area. In each of these projects ASPIC has a major role : responsible for the development of the redshifts measurement and validation pipeline, 1D spectra production, spectra archiving.
ASPIC proposes to any similar program, originating from any country/institute, even of smaller extent, to produce and make available the final spectroscopic data by providing tools for increasing their value and / or after the period of operation of the mission or of the observer program through a web application (ANIS) with high level services.
ASPIC hostable programs are not limited in wavelength.

AstroNomical Information System (ANIS)

ASPIC makes use of ANIS (AstroNomical Information System), a web generic tool developped at CeSAM by the Information Systems team, aiming at facilitating and homogenizing the implementation of astronomical datasets.
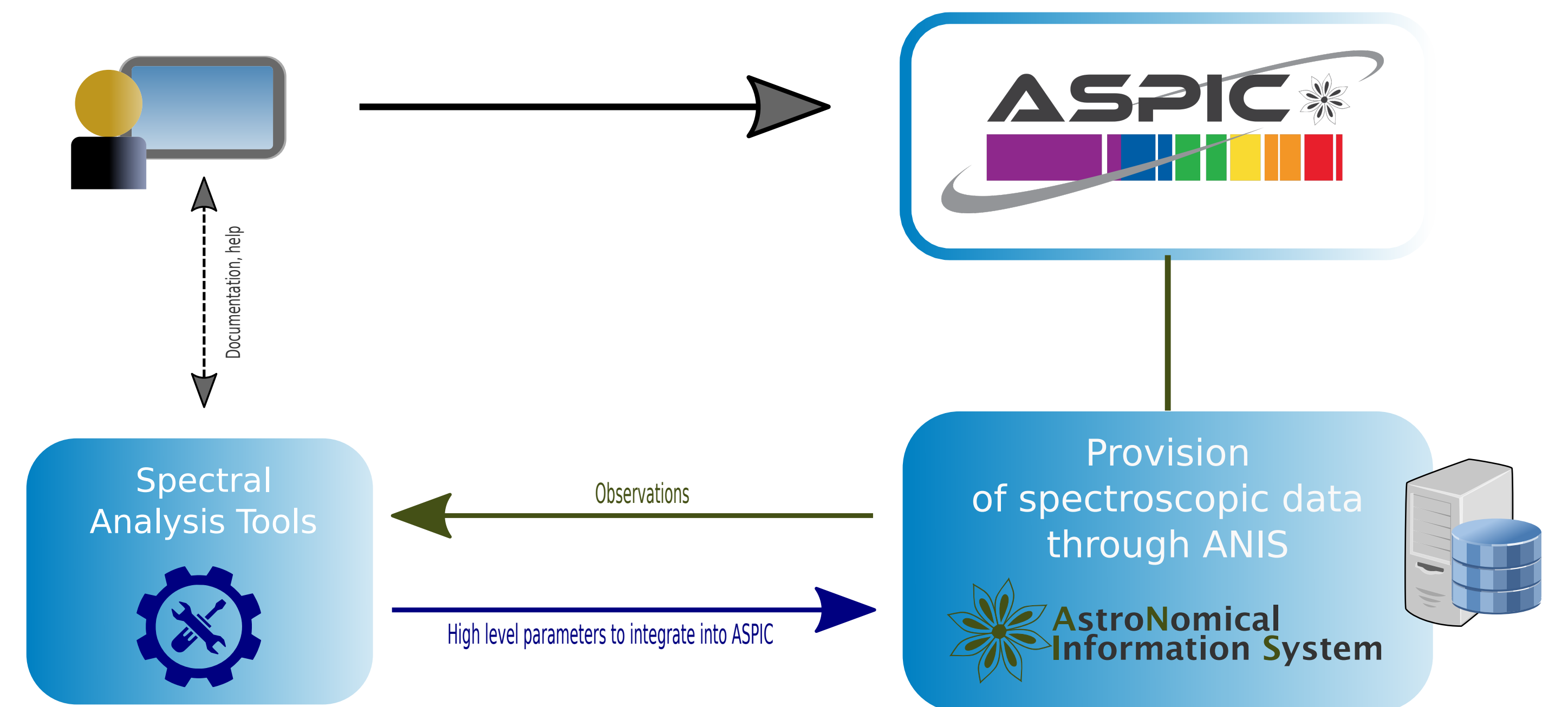
## Functionalities provided by ASPIC through the application ANIS

DATA SEARCH
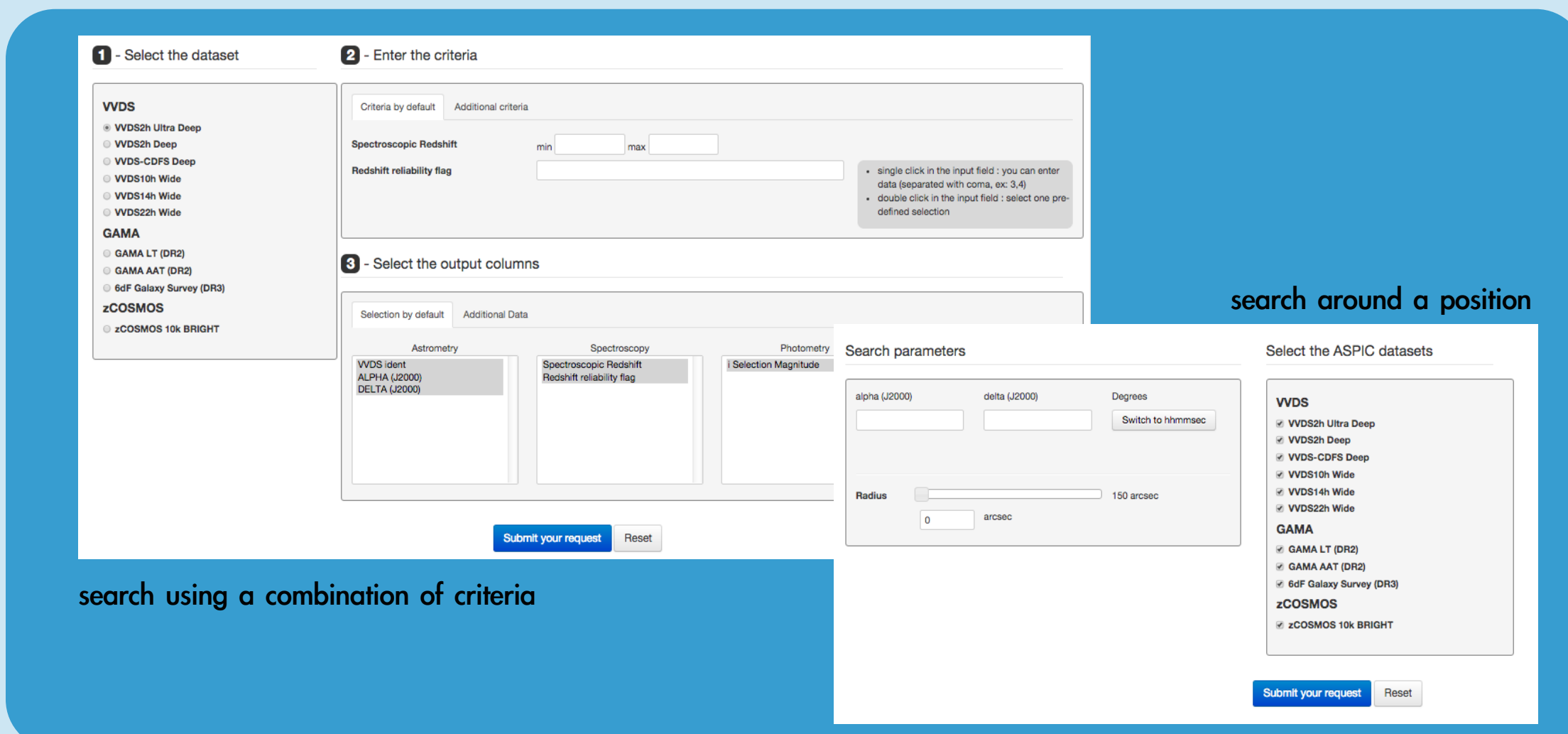
DATA DISPLAY

DATA SEARCH :
ANIS provides high level services like search for, extract and display imaging and spectroscopic data using different search criteria :
- search around a position in all ASPIC data
- search using a combination of criteria

DATA DISPLAY :
The extracted data are available as a table that can be sorted or filtered and from which the user can view the detail of an object (photometry and spectroscopy).
The user can display the sky area with the extracted data, in which the display options can be modified and the object informations are available through with the mouseover.
ANIS provides the direct download of the extracted data or complete catalogues in VO- Table, FITS, CSV and ASCII formats and a SAMP broadcasting (Taylor et al. 2012) with which users can send informations to Topcat (Taylor 2005), Aladin (Bonnarel et al. 2000) or others VO compliant softwares directly from the information systems. It may also, when data is available, download an archive of spectra and corresponding fits-cut looking.
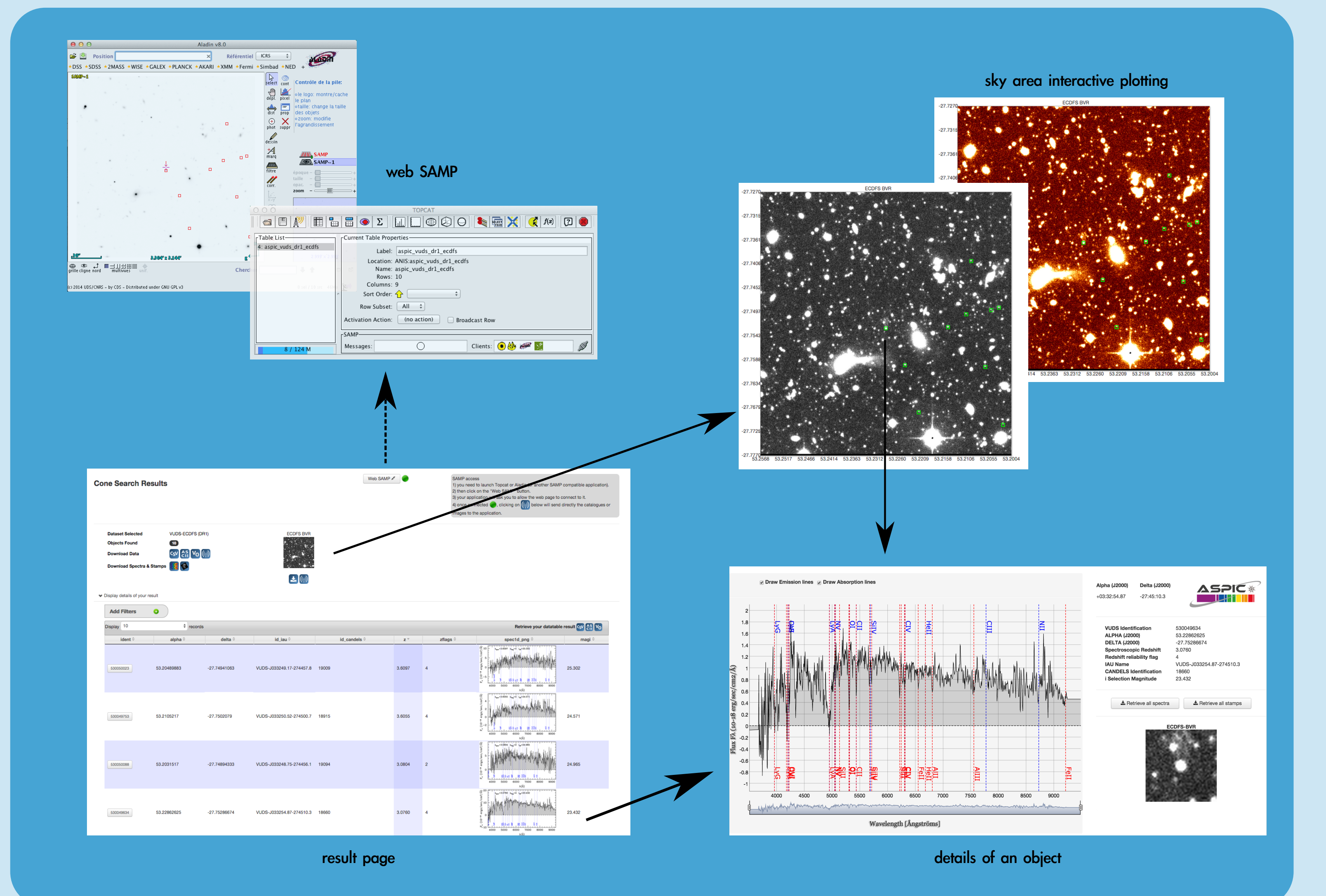
ASPIC infrastructure
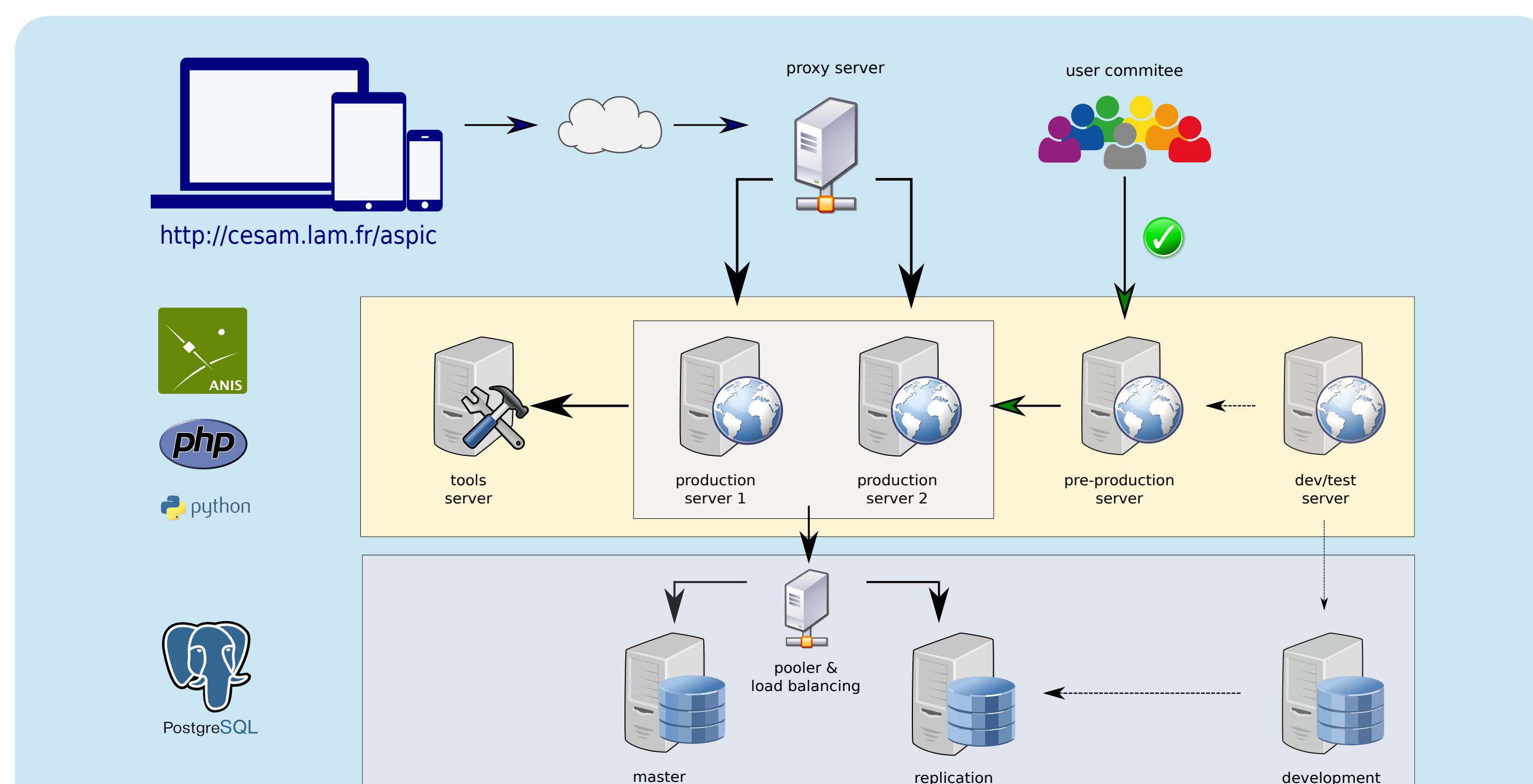
The CeSAM Information Systems team manages specific activities : the database design, the data ingestion, the data handling and the validation of interface design.
The databases have been developed with the PostgreSQL 9.4 technology and optimized for astronomical request.
The architecture of the database system is based on a pooler with a load balancing system which distributes the requests on the master or replication server. Backup systems and development servers are configured to allow automatic recoveries.
The architecture of the application system is based on a set of servers: production, pre-production and development servers. A proxy server distributes the HTTP requests to the production servers or to the pre-production servers if we need a rescue channel.

Spectroscopic Data Available in ASPIC

VVDS
- VVDS Final release : VIMOS VLT Deep Survey (VVDS) (Le Fevre+, 2013)

VUDS
- VUDS : The VIMOS Ultra Deep Survey Data Release 1 (DR1) (Tasca+, in prep.)

zCOSMOS
- zCOSMOS : The zCOSMOS 10k-bright spectroscopic sample (Lilly+, 2009)

GAMA
- GAMA : Galaxy and Mass Assembly data release 2 (DR2) (Liske+, 2015)

6dFGS
- 6dFGS : final redshift release (DR3) (Jones+, 2009)

References & Contacts