

The AVO Prototype

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Abstract. The Astrophysical Virtual Observatory (AVO) prototype is a suite of tools that serves as a testbed for scientific and technical use cases. For instance, it supports the Simple Image Access (SIA) protocol, hierarchical browsing based on the IDHA data model and fully exploits the potential of Unified Content Descriptors (UCD).

Each of the software components of the AVO prototype is developed and maintained by a different team in a different country. All modules work stand-alone, but can be integrated. The AVO prototype consists of a browser backed by image and catalogue servers, a web service for the identification of sources in FITS images and a utility for analyzing the spectral energy distribution.

1. Introduction

The AVO¹ is a research and demonstration programme jointly funded by the European Commission and six European organizations. The partner organizations are the European Southern Observatory (ESO), the European Space Agency (ESA), AstroGrid (funded by PPARC as part of the UK's E-Science programme), the CNRS-supported Centre de Données Astronomiques de Strasbourg (CDS), the University Louis Pasteur, the CNRS-supported TERAPIX astronomical data centre and the Jodrell Bank Observatory. The AVO project is working in conjunction with other international VO efforts as part of the International Virtual Observatory Alliance² (IVOA).

2. Overview

The AVO prototype is a set of tools that initially consisted of three components (fig. 1, fig. 2):

- The Aladin type of interface for metadata discovery and visualization
- The Astronomy Catalogue Extractor (ACE)
- The Spectral Energy Distribution (SED) utility

¹<http://www.euro-vo.org/>

²<http://www.ivoa.net/>

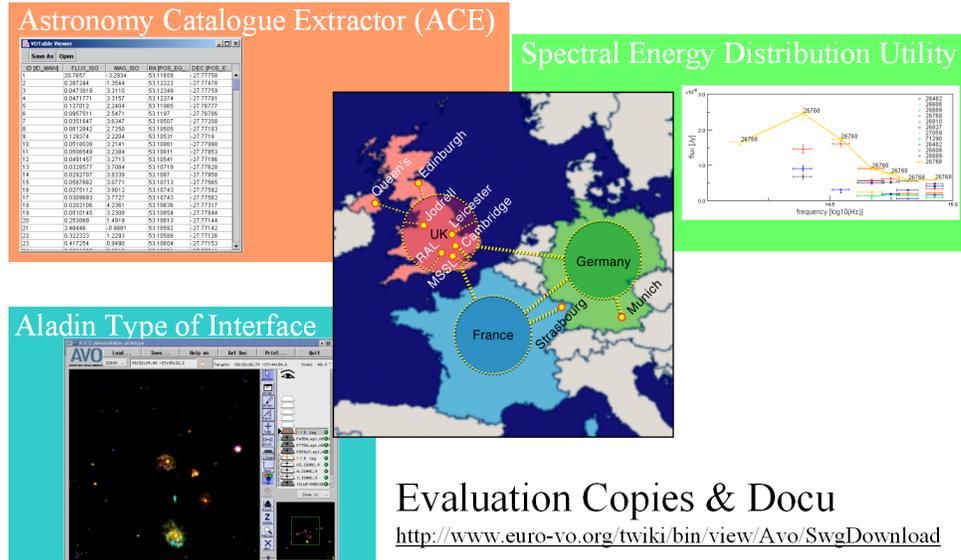


Figure 1. AVO software components.

Recently VO-India contributed the VOTable plotter VOPlot and further work continues, for instance, into a cross matching facility.

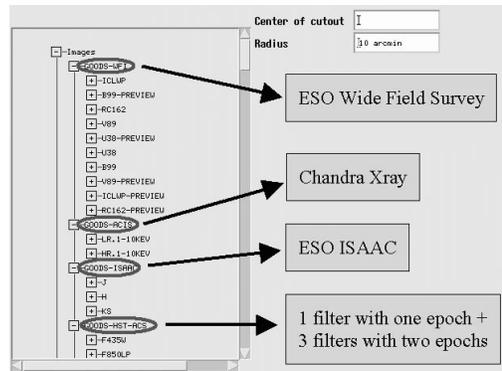


Figure 2. Hierarchical tree of available data for given patch of sky.

3. VOTable & UCD

The various modules exchange information in UCD tagged VOTable format (fig. 3). Although often compared to the FITS format its scope is much wider and the format far more versatile. Uniform Content Descriptors (UCDs) are meta data to describe astronomical parameters. UCDs are arranged in a hierarchical tree. UCDs and extensions thereof will soon form the basis of a meta data standard for expressing meaning in astronomical terms in a system independent way.

