



Software Environment Working Group

With the ever increasing amount of astronomical data, it becomes a cardinal objective to improve the efficiency with which they can be reduced and analyzed. Most major observatories offer automated reduction pipelines for their data. This makes the scientific analysis the next most critical point. The OPTICON Network on Future Astronomical Software Environments will discuss how the analysis of astronomical data and the development of new algorithms can be made more efficient by the definition of a common software environment. High-level requirements and detailed interface specifications will be proposed to guide possible implementations.

The aim of the Future Astronomical Software Environment Working Group is to consider what software areas would benefit from a common environment for data analysis in astronomy. For such areas it will discuss requirements, recommend framework designs and propose interface specifications. This will be done in close collaboration with Virtual Observatory and Grid computing efforts to ensure full compatibility.

Issues

The major issues facing astronomers who want to analyze their data may be summarized as follows:

- * Many different systems exist but
 - they are largely incompatible with respect to scripting language
 - it is complicated to share data between them
 - interesting applications from other systems cannot be easily used
- * Current systems provide limited interfaces to Web services and archives.
- * It is difficult to fully exploit available computer resources.

To resolve these problems, we must achieve the following:

- increase the ability to collaborate and to share software,
- make it possible to use important legacy applications in current systems from a common environment,
- support easy access to resources such as archives, Virtual Observatories, and GRID computing
- provide an easy to use platform for the development of new tasks,
- improve the efficiency and speed with which one can analyze astronomical data.

Objectives

The success of an environment for data analysis is closely linked to the following attributes:

- **availability of new state-of-the-art applications.** This is only achievable if it's easy and attractive for users to develop new tasks in it.
- **well tested system.** Although the system must be subject to its own regression tests, only actual users will be able to find subtle issues in application procedures.
- **stability.** Users have to be sure that their 'investment' in learning and using an environment also pays back in the long run.
- **support.** Even with good documentation, high stability and excellent testing, the surrounding software world is not fixed and demands constant although limited support

Tools

The Working Group utilizes both Web based collaboration tools (e.g. www.twiki.org) and monthly phone conferences to discuss topics between the members on a frequent basis.

Working group meetings will be held regularly to finalize documents on requirements, interface specifications and architectural recommendations.

Suggestions, comments and opinions from the astronomical community at large will be obtained through Web tools and e-mail distribution lists. The results of the Working Group will be presented at relevant astronomical meetings.

Our Mission

The OPTICON Integrated Infrastructure Initiative brings together all of Western Europe's owners and operators of large observatories and data centres. Our goal is to identify opportunities where greater progress can be made by collaboration than by competition, and to take unified actions to achieve those agreed goals.

Contacts

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OPTICON - The Optical Infrared Coordination Network for Astronomy

