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Java: The Application and Data Distribution Vector for Astronomy

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Abstract. Among the tasks of the Space Telescope European Coordinating Facility (ST-ECF) is providing to the astronomical community software for the retrieval, calibration, and analysis of HST data. This has been plagued by notorious problems of programming language incompatibility, platform incompatibility, installation problems, on-line help/documentation and user interface inconsistencies, etc.

The combination of Java with state-of-the-art network browsers has the potential to solve many of these problems. In addition, it eliminates potentially paralyzing throughput problems by pushing the processing load to the client machine. This is important for post-retrieval re-calibration of multiple data sets from science data archives.

First experiments were conducted in the area of NICMOS support tools, and for the preview of data from the HST archive. Examples are shown, and experiences are discussed.

1. Introduction

One of the tasks of the Space Telescope European Coordinating Facility (ST-ECF) is to provide to the astronomical community software for the calibration and analysis of HST data. From long experience with such attempts, we find that the following problems exist:

- Programming language compatibility (different languages/compilers, etc.).
- Installation problems.
- On-line help/documentation.
- User interface (incompatible window managers or operating systems).
- Platform incompatibility.
- Remote maintenance (the need to notify/distribute a new version).

There have been many attempts to solve the above problems, some more successful than others. A successful approach has been to use a *data analysis host system* of the MIDAS or IRAF type which, if installed properly on the