Mobile Multi-System Overview

NASA’s Jet Propulsion Laboratory, Pasadena, California

At the time of this reporting, there are 2,589 rich mobile devices used at JPL, including 1,550 iPhones and 968 Blackberrys. Considering a total JPL population of 5,961 employees, mobile applications have a total addressable market of 43 percent of the employees at JPL, and that number is rising.

While it was found that no existing desktop tools can realistically be replaced by a mobile application, there is certainly a need to improve access to these desktop tools. When an alarm occurs and an engineer is away from his desk, a convenient means of accessing relevant data can save an engineer a great deal of time and improve his job efficiency. To identify which data is relevant, an engineer benefits from a succinct overview of the data housed in 13+ tools. This need can be well met by a single, rich, mobile application that provides access to desired data across tools in the ops infrastructure.

This software is an iPhone app that allows a single configurable screen that presents an overview of many disparate Web applications. This tool can be applied to bring data from any public Web site into a native iPhone app. This concept (see figure) is similar to what the “Mint” financial aggregation site does to gather and format data from other Web sites, without APIs, onto its own site.

The benefits of this app are as follows:

- Developed as a native iPhone application, it thereby inherits iPhone usability and mobile device accessibility.
- Integration with seven distinct sources of data for the Cassini mission.
- Compatibility with existing html-based infrastructure, and requires no infrastructure upgrade.
- Configurable interface to show only relevant information to the user.
- Easily extendable to add information from any existing Web site.
- Does not intend to replace existing tools, only complement and increase user efficiency.

This work was done by Robert J. Witoff and David F. Doody of Caltech for NASA’s Jet Propulsion Laboratory. Further information is contained in a TSP (see page 1).

This software is available for commercial licensing. Please contact Daniel Broderick of the California Institute of Technology at danielb@caltech.edu. Refer to NPO-47634.

User Interface Progression from concept to implementation.

Leveraging Cloud Computing to Improve Storage Durability, Availability, and Cost for MER Maestro

NASA’s Jet Propulsion Laboratory, Pasadena, California

The Maestro for MER (Mars Exploration Rover) software is the premiere operation and activity planning software for the Mars rovers, and it is required to deliver all of the processed image products to scientists on demand. These data span multiple storage arrays sized at 2 TB, and a backup scheme ensures data is not lost. In a catastrophe, these data would currently recover at 20 GB/hour, taking several days for a restoration.

A seamless solution provides access to highly durable, highly available, scalable, and cost-effective storage capabilities.