

PDS Home Page Rework Usability Test Plan

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Change Log

Revision	Date	Description	Author
0.10061013	2006-10-13	First Draft	M. Rose
0.10061110	2006-11-10	Incorporated feedback from UCT group at Ames	M. Rose
0.10061228	2006-12-28	Added test scenarios for additional roles; incorporated additional feedback from E. Law	M. Rose
0.10070529	2007-05-29	Removed "PDS Management" tests, since they were removed from use cases and requirements.	M. Rose

1 Overview

This document describes the plan for usability testing of changes to the PDS home page web site.

2 Objectives

- To determine whether users can quickly find data given a mission, instrument, and target.
- To determine whether users who see data referenced in a talk or paper can easily find that data within the PDS.
- To understand how users utilize the available navigation and search facilities when trying to accomplish the tasks tested.
- To verify that users are more satisfied with the new home page web site than with the old site for key tasks.

3 Methodology

3.1 Roles to be Tested

Testing will be limited to these roles. See *PDS Web Use Cases* for role details.

- *Researcher* – A scientist who needs to use the PDS to retrieve data for scientific analysis.

- *Proposer* – A scientist who is familiar with the PDS and wants to create a proposal for a mission instrument or data analysis.
- *Data Provider* – A member of an instrument team or a node who is creating data to be archived within the PDS.
- *Educator* – A teacher or adviser who either uses the PDS to create educational materials or advises students in the use of the PDS for research.
- *Student* – A student, at any level, who uses the PDS and data within the PDS to gain knowledge or aid in research. Usually, students will be undergraduate level or higher.

3.2 Selecting Test Users

Representative users for each role will be selected as *Test Users*, using the following criteria:

- Both new and experienced users will be tested, when possible.
- Experienced users will be selected from current PDS users. They may be associated with a node, provided that the majority of their job is scientific research rather than node activities. They will be experienced with the scientific areas used in the test scenarios.
- When possible, new users will be graduate students or scientists familiar with the scientific areas used in the test scenarios, but may or may not be planetary scientists. Otherwise, nonscientists with a reasonable level of scientific understanding may be used.

3.3 Test Phases

Two phases of testing will be used:

- *Design Phase* – This testing will be performed as the new user interface is being designed. The testing will be used to verify that the users have success using the new interface. Problems found will result in modifications to the design.
- *Validation Phase* – This testing will be performed after the design is complete. This phase will be a validation that the users can successfully complete all the planned use cases using the new interface.

3.4 Performing the Tests

During both phases, the tests will be performed using the *thinking aloud* method. Test users will be given tasks to perform as indicated in section 4.

During the *validation phase*, the tests will include both the old and the new interface, in order to validate whether users are more successful with the new interface. In addition, a post-test questionnaire (Lewis-style) will record subjective satisfaction with the new interface.

3.4.1 Remote Testing

Because of the wide distribution of potential test users, a significant fraction of the user testing will be remote. To better perform these tests, the following procedure will be used:

- Open-source remote desktop access software will allow the user to operate a browser on the test researcher's desktop.
- Screen- and audio-capture software will be used to record the test session. The recording will be retained temporarily for review to ensure that all defects identified by the testing are recorded for correction.

3.5 Test Results

Test results will be captured in a separate document, and each defect found will be listed with a severity according to the following scale:

1. Usability disaster
2. High severity defect
3. Low severity defect
4. Minor defect or cosmetic problem

In addition, a problem resolution will be noted as problems are fixed. The resolution may include "won't fix."

During the *validation phase*, time-on-task will also be measured in the old and new interfaces.

3.6 Limitations

- Only the roles and scenarios listed in this document will be tested.
- During the *design phase*, testing may be limited to high-frequency use cases.

4 Test Scenarios

This section lists the scenarios and tasks for *Test Users*, by role being tested.

4.1 Researcher

4.1.1 Find data about Mars topography

You are a member of a team selecting landing sites for future Mars landers. You need to find altitude data for Mars in order to calculate slopes and select potential landing sites that are suitably flat. Use the PDS to find altimetric data for Mars.

4.1.2 Find tools for viewing images from the PDS

You need to view images that you download from the PDS, but you don't yet have the right software. Using the PDS, either find and download the software you need, or find out what software you need and where to get it.

4.1.3 Find spectral data for Eros

You are studying the composition of asteroids. You need to find spectrographic data for Eros in order to determine the main elements making up Eros. Use the PDS to find spectrographic data for Eros that would enable you to determine its composition.

4.1.4 Determine whether topographic data for Enceladus exists in the PDS

You are a member of a team planning a potential landing mission to Enceladus, a moon of Saturn. You need to determine whether or not the PDS contains altimetric information for Enceladus (from radar or laser measurements, e.g.). Using the PDS, determine whether or not the PDS contains altimetric data for Enceladus.

4.1.5 Find out how data sets in the PDS are structured

You are starting to use data sets from the PDS but are confused about their organization. Use the PDS to find information about how PDS data sets are organized. In particular, find out what kind of information would normally be found in the “extras” directory on a data volume.

4.1.6 Request to receive notifications about Saturn data

You are a researcher studying the gaseous planets. You want to be notified whenever new data is available about Saturn. Using the PDS, request to be notified whenever new data about Saturn becomes available.

4.2 Proposer

4.2.1 Find out how to add an archiving plan to a proposal

You are creating a proposal for a new instrument and need to include an archiving plan as part of your proposal. Use the PDS to find out what needs to go into this plan.

4.2.2 Find out how to create a cost/effort estimate for an archiving plan

You are creating a proposal for a new instrument and need to estimate how to staff for the archiving of your data. Use the PDS to find out how to estimate the staff you need for different phases of your mission.

4.2.3 Obtain tools for creating labels for the data to be archived

As part of your archiving plan, you need to create sample labels to show how your data will be organized. Use the PDS to find tools and information sufficient for creating the labels you need for your data.

4.2.4 Determine whom to contact for further information

You have additional questions about how to create an archiving plan. Use the PDS to find out whom to contact to get your questions answered.

4.3 Data Provider

4.3.1 Find out what formats should be used when creating data to be archived

You are part of an instrument team preparing data to be archived within the PDS. Use the PDS to find out how to structure your data for archiving.

4.3.2 Find tools for creating labeled data for an archive

You need to create data volumes for submission to the PDS. You have been given label templates by the Proposer. Use the PDS to find the appropriate tools for creating labeled data using those templates.

4.3.3 Find tools to use in validating the format of data to be archived

Prior to submitting your data volumes to the PDS, you need to validate their structure. Use the PDS to find the tools you should use for validating your volumes.

4.3.4 Determine whom to contact for further information

You have further questions about creating data volumes for submission. Use the PDS to find out whom to contact to get your questions answered.

4.4 Educator or Student

4.4.1 Find an image of Saturn to include in coursework or course materials

You need to include an image of Saturn for your coursework or course materials. Use the PDS to find an image of Saturn showing the entire disk of Saturn, plus a good view of its rings.

4.4.2 Determine Neptune's average distance from the Sun

You need to include basic information about Neptune in your course materials or coursework. Use the PDS to determine Neptune's average distance from the Sun, in AUs or miles.