Standards Change Request

Extend Maximum File Name Length to 40 Characters   **<SCR3-1144.v1>**

Provenance:

Date: 2008-09-09
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Working Group: Susan Slavney (lead), Ron Joyner, TBD

Problem:

The MSL Project has requested that PDS increase the maximum length allowed for file names from the present limit of 27 characters plus a 3 character extension (27.3). The MSL file naming convention encodes a great deal of information in EDR file names, and there is not enough room in 27.3 characters.

Current Urgency:

MIPL is currently designing EDR product generation software for MSL. They need to make a decision soon on the file naming convention because it affects all EDR products. The next SIS draft deadline is Sept. 29, 2008.

Proposed Solution:

This SCR proposes to extend the maximum file name length to 40 characters, i.e. 36 characters plus a period plus a 3 character extension. The maximum of 40 is chosen because that is the maximum length of the keyword PRODUCT_ID. Many data providers (for MSL and others) follow the common practice of using the file name as the product ID. Limiting the file name to 40 characters will allow it to be used as a valid product ID.

Impact Assessment:

The Geosciences Node has submitted this SCR in the belief that there will be minimal impact on PDS tools and documentation. The proposal was presented at the PDS Management Council teleconference on September 8, 2008, and the Node received permission to proceed from the MC.

PDS Standards Reference – The following change would be made to the Standards Reference:

- Section 10.1.2 (p. 10-2): change description of 27.3 file names to 36.3 file names (revisions are appended below).

Archive Preparation Guide – The following change would be made to the APG:
- Section 3.2.3 (p. 20), paragraph 4:
  Change: PDS allows a maximum of 31 characters in directory and file names to ensure that all file names are unique.
        to: PDS allows a maximum of 31 characters in directory names and a maximum length of 40 characters in file names to ensure that all file names are unique.

Proposer's Archive Guide – No change is required.

Data Product SIS template on PAG web page – No change is required.

Archive Volume SIS template on PAG web page – No change is required.

Planetary Science Data Dictionary – No change is required.

PDS tools – Test labels with 40-character file names have been used successfully with these PDS tools: VTool, LTDTool, lvtool, tbtool, line, and NASAView. These seemed to be the only pertinent tools. No changes are required to these tools.

Additional Information:

The following is the background information submitted by the Geosciences Node to the PDS Management Council and discussed at the September 8, 2008, teleconference. It includes the rationale for this SCR and a further proposal to include this topic in plans for the PDS-4 standard.

Proposal To Allow File Names Longer Than 27.3 In MSL Archives

Summary

The MSL Project has requested that PDS increase the maximum length allowed for file names from the present limit of 27 characters plus a 3 character extension. The Geosciences Node believes the request should be honored as long as there is no impact on PDS tools. The Node proposes a two-step solution: first, choose an intermediate limit to meet the present needs of MSL, and second, upgrade the file name standard for PDS-4 to be compatible with the current ISO

standard. If there is general approval from the Management Council, the Geosciences Node will submit an SCR to implement the first step.

Details

Most or all of the MSL EDR products will be generated by MIPL. As was done for the MER and Phoenix missions, MIPL will use a standard file naming convention across all EDR data sets. The naming convention allows a great deal of information to be encoded in the file name for ease of programming and selection of files, such as spacecraft clock, sequence ID, rover motion counter, and various instrument-specific fields. With the increase of complexity of MSL instruments and the expected long duration of the mission, they have run out of room within the 27.3 limit. Justin Maki has sent a formal request to the Geosciences Node manager, Ray Arvidson, to allow longer names in MSL archives.

The Geosciences Node believes PDS should honor the request if it can be done without impact to PDS software tools in this time of transition to PDS-4. We believe that extending the file name maximum length to 40 characters will help the MSL Project and will not impact PDS software. The limit of 40 is chosen because that is the maximum length of the keyword PRODUCT_ID. If MIPL or other MSL producers follow common practice and choose to use the file name as the value for PRODUCT_ID, a limit of 40 characters makes sense.

For the long term, we recommend that the working group(s) developing standards for PDS-4 include a file name standard that is compatible with the latest ISO standard, ISO 9660:1999. The original reasons for adopting the 27.3 standard were (a) to be compatible with the then-current ISO standard, ISO 9660:1998, and (b) to work with certain commercial software for writing CD and DVD volumes. Since that time the ISO standard has been revised to allow longer names, and now that PDS data is seldom if ever distributed or archived on optical media, the software rationale is also obsolete.

With the go-ahead from Management Council, the Geosciences Node will submit an SCR to extend the maximum file name length to 40 characters. The SCR would include a survey of the full technical impact on the nodes, which the Engineering Node has agreed to help coordinate.

Requested Changes:

The following text is section 10.1.2 of the PDS Standards Reference in its entirety, with proposed deletions shown in strikethrough text and additions in red text.

10.1.2 ISO 9660 Level 2 Specification

The PDS use of ISO 9660 Level 2 file names adheres to all the above restrictions, with the exception that the base name may be up to ~~27~~ 36 characters long (total file name length not to exceed ~~31~~ 40 characters). Thus, this format ~~is sometimes~~ may be referred to as the ~~"27.3"~~ "36.3" format.

Note: In rare cases the following variations are allowed on the ~~"27.3"~~ "36.3" format file name:

  • The file name portion may be up to ~~29~~ 38 characters long; or
  • The extension may be up to ~~29~~ 38 characters long.

In no case, however, may the total file name length, including the ".", exceed ~~31~~ 40 characters.

Preferred format: BASENAME (1..~~27~~ 36 characters) "." EXTENSION (3 characters)

Allowable format: BASENAME (1..~~29~~ 38 characters) "." EXTENSION (1..~~29~~ 38 characters)

Actual format
on archive medium: BASENAME (1..~~29~~ 38 characters) "." EXTENSION (1..~~29~~ 38 characters) ";1"

Notes: ~~that~~
  1. *Only* the file and directory name specifications for Level 2 may be used in PDS archive volumes. All other Level 2 extensions are prohibited.
  2. The 40 character file name length is a tighter restriction than that specified by ISO 9660.
  3. Directory names are restricted to 31 characters, as specified in sections 8.2 and 8.3.