

Standards Process

The "standards process" is the set of steps involved in modifying the *PDS Standards Reference* (PDSSR) and, by implication, the tools, other software, and the data system which it governs. The scope of the "standards process" includes modifications to the *Planetary Science Data Dictionary Document* (PSDDD), although a separate document (the *Keyword Approval Process*) is in preparation and will address those issues specifically.

The "standards process" involves the Standards Coordinator, a member of the Engineering Node (EN) staff assigned to maintain the integrity of the Standards and oversee the change process; the PDS Technical Group (TG), comprising representatives from each Discipline Node and the Radio Science Advisor; and *ad hoc* working groups established to flesh out, debug, and evaluate Standards Change Requests (SCR's). The status of any SCR is specified by the value of its STANDARDS_STATUS keyword (Appendix A).

Step 1. The SCR is the vehicle by which standards changes are requested, refined, approved (or rejected), and implemented (if approved). An SCR may be submitted by anyone having access to <http://pds-engineering.jpl.nasa.gov/index.cfm?pid=2&cid=55>. The originator completes at least the required fields in the form (Appendix B) and receives an acknowledgement, including the SCR tracking number. The system providing the acknowledgement simultaneously posts the SCR, opens a blog for public comment, and notifies the Standards Coordinator of its submission. At this point, the value of the SCR's STANDARDS_STATUS keyword is initialized to SUBMITTED.

Step 2. The Standards Coordinator assigns the SCR an initial priority, then recruits a Working Group (WG) to refine the SCR and appoints one of its members as chair. The ideal Working Group includes proponents, skeptics, representatives from disciplines which would be most affected, and technical experts who can identify impacts within PDS, impacts on external interfaces, and inconsistencies with other standards (ODL, ISO, *etc.*). When the ideal Working Group cannot be recruited, the Standards Coordinator appoints volunteers who are simply interested or willing to serve. The size and composition of the Working Group should be matched to the difficulty of the expected task. Once the Working Group has been established, the Standards Coordinator sets STANDARDS_STATUS = IN_PROGRESS. If a Working Group cannot be recruited, the Standards Coordinator sets STANDARDS_STATUS = PARKED and attempts to recruit a Working Group at some later time.

Step 3. The task of the Working Group is to refine the SCR so that it meets the goals of the originator while being consistent with the constraints of PDS. The SCR form (Appendix B) should be fleshed out to include a brief history of the Working Group deliberations, the need being addressed, any relevant background information including urgency in making the change, one or more proposed solutions (including verbatim text changes, if any, which can be inserted into PDS documents), and an impact assessment. The impact assessment must include what work will be needed and an estimate of the resources required. The impact assessment must include indirect impacts — for example, changes at Discipline Nodes required to accommodate an SCR which is written entirely in terms of "central" operations. If the Working Group determines that the impact is low, it may recommend that the SCR be implemented after

approval by only the Technical Group. Once a draft suitable for review by the TG has been completed, it is delivered to the Standards Coordinator who will schedule discussion and set STANDARDS_STATUS = DRAFT. If the Working Group is unable to reach agreement or concludes that the SCR is not in the best interests of PDS or the planetary community, the chair notifies the Standards Coordinator who, if there are no ideas for resolving the impasse, restarts the process at Step 2. The WG (including the Standards Coordinator, acting as a "Working Group of one") may also forward the SCR to the TG with a negative recommendation.

Step 4. After discussion — which can include blog, e-mail, telecon, and face-to-face components — the Technical Group takes one of three possible actions:

- (a) approves the SCR and forwards it to the Management Council for final approval (STANDARDS_STATUS = ENDORSED)
- (b) rejects the SCR and refers it back to the Working Group (STANDARDS_STATUS reset to IN_PROGRESS) (return to Step 3)
- (c) rejects the SCR outright (STANDARDS_STATUS = REJECTED)

TG approval requires a two-thirds favorable vote by those participating in the TG and at least a majority of those eligible to vote. Outright rejection requires a majority vote of those participating. If one or more votes is conducted and neither of these results obtains, the default action is referral back to the Working Group.

Step 5. If the SCR is ENDORSED, the Standards Coordinator reports the action to the Management Council. By default, the status is upgraded to STANDARDS_STATUS = APPROVED if the Management Council takes no action within 10 working days. Any single voting member of MC can request a formal vote on the SCR, at which point the 10-day count is suspended. Any SCR voted favorably by the Management Council (at least six "yes" votes are required, of which at least four must be from "science" nodes) has STANDARDS_STATUS = APPROVED. An SCR that is not approved by the Management Council is returned to the TG for disposition (returns to Step 4); at its discretion, the Management Council may offer suggestions or recommendations on how the TG should proceed.

Step 6. SCR's with STANDARDS_STATUS = APPROVED are assigned to the Engineering Node for implementation, which does so using its normal procedures for change in a configuration controlled environment. When the SCR is fully implemented and operational, the Standards Coordinator sets STANDARDS_STATUS = IMPLEMENTED.

The Standards Coordinator advises the originator, the Working Group, and the Tech Session of changes in STANDARDS_STATUS.

Appendix A. STANDARDS_STATUS Keyword Values and Their Meanings

SUBMITTED	An SCR has been submitted, the required minimum fields have been completed, and the system has issued an SCR tracking number. The Standards Coordinator is (or soon will be) in the process of appointing a Working Group to refine the SCR.
PARKED	The Standards Coordinator was unable to recruit a Working Group, or an earlier Working Group could not reach consensus on a proposal. The Standards Coordinator will periodically seek to set up a new Working Group. A possible <i>end state</i> . NB: The Standards Coordinator has the option of appointing him/herself as a Working Group of one and forwarding the SCR to the Tech Session with a negative recommendation, in hopes of getting a REJECTED vote and clearing a bad proposal from the system.
IN_PROGRESS	The Working Group is fleshing out the SCR, resolving conflicts, identifying impacts, and estimating resources needed to address the impacts.
DRAFT	A draft SCR, suitable for review by the Technical Group, has been completed and forwarded to the Technical Group for review.
ENDORSED	The Technical Group has approved the SCR and forwarded it to the Management Council.
APPROVED	The Technical Group has approved the SCR, and Management Council has not chosen explicitly within 10 working days to conduct its own vote; or the Management Council has voted favorably on the SCR. In either case, the SCR is in the hands of EN for implementation, which may be in progress.
REJECTED	The SCR was rejected by the Technical Group and will not be the subject of further discussion or action. A possible <i>end state</i> . NB: Rejection does not preclude resubmission.
IMPLEMENTED	The SCR has been fully implemented. A possible <i>end state</i> .

Appendix B. Integrated Web-Based Submission Form and SCR Template

The following information is needed for each Standards Change Request. Some of it should be entered at the time the SCR is submitted. The original information will be revised and supplemented as the SCR evolves. In the following, REQUIRED indicates those fields which must be completed during initial submission through the web interface.

Title (REQUIRED): a terse (less than 64 character) identifier that summarizes the proposal/issue and distinguishes it from other titles in the SCR queue.

Submission Date (NOT VISIBLE ON WEB FORM): Filled in by the web-based system.

Submitter (REQUIRED): Name of the person filling out the web form.

E-Mail (REQUIRED): E-mail address of the Submitter.

History (NOT VISIBLE ON THE WEB FORM; to be maintained by the Standards Coordinator as the SCR moves through the system): What happened at each step, when, and by whom? Include terse summaries of issues raised, including reasons for "no" votes, if those occur.

Problem (REQUIRED): A statement of the problem and its immediate consequences. Is there an error in the PDSSR? Is something ambiguous? Is something needed to address a situation which was not previously anticipated? Is this a request for a new PDS feature or service? Should the change be implemented now, or would it be appropriate to wait (until PDS4, for example)? Who needs this, when, and why? Do the consequences become more severe if there is delay?

Proposed Solution (REQUIRED): Outline your proposed solution, including changes to PDS standards, the Data Dictionary, and/or other documents.

Impact Assessment (OPTIONAL): What will need to be changed if this request is approved, and what will be the resources needed to implement it? Include impacts on the core system; discipline, data, and sub-nodes; and any implications for other systems. If not sure, list *possible* impacts that should be investigated by the Working Group. As a minimum, every SCR presented to the Technical Group must have each item in the following list addressed. If a particular item is not affected, state "no impact." Identify the assessor in each case.

PDS Standards Reference

Planetary Science Data Dictionary Document

PDS Tools

intra-Node, PDS-wide

legacy, in development, proposed

PDS web site, product servers, profile servers

other PDS documents (*e.g.*, PAG, APG)

external agencies (*e.g.*, NSSDC, ESA, IPDA)

external interfaces (*e.g.*, NSSDC, ADS)

compliance/compatibility with ODL and ISO standards

Priority (NOT VISIBLE ON THE WEB FORM; set by the Standards Coordinator based on urgency, past experience, and competing proposals): Should this be (1) worked immediately, (2) accelerated, (3) allowed to flow through at "normal" speed, or (4) placed on the back burner?

Recommended Approval Authority (NOT VISIBLE ON WEB FORM): The Working Group and/or the Technical Group can recommend for or against a formal vote by the Management Council; or they can say nothing.

Working Group (OPTIONAL): Recommend people or DN's that would likely be interested in serving on the Working Group. The actual Working Group will be appointed by the Standards Coordinator.

Additional Information (OPTIONAL): List any external references with relevant information.

Dependencies/Contingencies (OPTIONAL): List in detail any dependencies or contingencies that might need to be addressed either in parallel or in advance of implementation (for example, does this SCR depend on another SCR?).

Requested Changes (OPTIONAL): List specific changes requested in detail, such as exact wording to be replaced in documents, full definitions of new elements, etc.

