

The Peer Review Process

Peer review is the final step of the PDS archiving process. The goal going into peer review is to have data that is readable and useable. Reviewers are asked to attempt some science using the data and are looking to ensure the archive is clear and understandable for future researchers.

Before the process starts, ensure you have:

- Complete data with no missing files and suitable for archiving
- Complete documentation descriptive enough to be intelligible in the distant future
- All files must follow PDS4 archiving standards

Who is involved in the review process?

- One or more representatives from the discipline node
 - The node manager usually chairs the meeting while other node personnel may be present to address questions about PDS standards, to take notes, or record liens.
- The data preparer
 - A representative for the group responsible for preparing the data for ingestion who can answer questions about the formatting and content of the data.
- The peer reviewers
 - Generally, 2-3 people knowledgeable in the type of data being reviewed, but not directly connected with the project which produced it.

How long will the process take?

- Reviewers are given about a month to look over the data
- The review results are given in meetings that can last anytime from an afternoon for small datasets to a couple of days for large datasets.

What to expect at the review:

It is possible to conduct peer reviews by phone conference, video conference, or email. Prior to the review meeting, all people involved should have received copies of the data sets and labels, as well as any documentation and context object files being included. Distributing this information is the responsibility of the discipline node.

What is considered at the review:

- Any problems or difficulties encountered by the reviewers in the mechanical process of accessing the data are noted.
- The archival quality of the data is taken into account.
- Specific problems and deficiencies are noted on a list of *liens*, which is collected by one of the discipline node representatives.

A decision is made based on the recommendations of the reviewers to either:

- Accept the data as is
- Accept the data conditional on the resolution of identified liens

- Reject the data

The results of the review, together with any liens placed on files during the process, are compiled and distributed to interested parties.

All recorded liens must be resolved before the data are incorporated into the PDS archive.

Some common liens are:

- Incomplete or unclear documentation
- Problems found in the data such as missing data files or some reduction process producing an artifact
- Label issues including metadata missing or validation errors

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In general, the procedure is as follows, although it may vary slightly among PDS nodes.

1. The data provider delivers the archive (or a representative sample) to the coordinating node. Node personnel confirm that the delivery is suitable for review.
2. The review coordinator assembles a list of potential reviewers and invites them by email.
3. The review coordinator announces the opening of the review and provides access to a password-protected web site where the review materials are posted.
4. Reviewers have about two weeks to examine the materials and email their comments to the review coordinator.
5. The review coordinator posts comments (either separately, and/or collated in one list) on the web site.
6. The data providers have about two weeks to email their response to the comments, which the review coordinator posts on the web site.
7. The review coordinator decides whether there is reason to hold a review conference, based on the data providers' response, for instance if there is an issue that cannot be resolved by email. If so, a teleconference is arranged at a time convenient for reviewers, data providers, and PDS representatives.
8. The review coordinator posts a list of the review liens (comments that require an action). At the teleconference, if there is one, the unresolved liens are discussed one by one, and decisions are made for their resolution; otherwise, the data providers simply begin working on the liens. Data providers may decline to follow a reviewer's recommendation if they can justify doing so (for example, because of insufficient resources), as long as the reviewer agrees, and the resulting archive would still be PDS-compliant. A record of the resolution of each lien is posted on the review web site and retained by the PDS node.
9. The data provider resolves the liens within a given period of time, say from two weeks to a month. (The schedule should take into consideration other mission activities going on; in particular, the liens should be resolved before delivery testing begins.)

10. The data provider delivers revised materials to the review coordinator, who posts them on the review web site.

11. The review coordinator invites the reviewers to examine the revised material to be sure their comments have been addressed. If the reviewers are satisfied, the review is complete.

Any questions or concerns can be brought to your node representative.