

Dan:

I have taken the original questions proposed by GEO and Mark Sykes, edited one and expanded several of the others. The expansions often raise new issues, which could have justified making them entirely new questions (8, 9, 10, ...). But I decided not to do that. In some cases the fit with the original isn't especially good; or they could have fit equally well under another of the originals. But I hope you'll see the points in each case.

The real question which should be answered — *and there is only one* — is whether PDS-4 improves our response to the PDS Level 1/2/3 Requirements. But I think this is a useful exercise in pinpointing where some of our top concerns lie.

My edits/expansions are highlighted in red. Let me know if you have questions.

1. How will PDS-4 enable "one-stop shopping", i.e., seamless access to data that reside at multiple nodes?
 - a. How will PDS-4 help the user to **locate** data of interest (or accurately conclude that they are not available in the system)? This is the basic **search** function as opposed to the distributed **retrieve** function.
2. How will PDS-4 help users by delivering derived data products in the format, coordinate system, and map projection the user requests?
 - a. How will PDS-4 help users to **create** derived data products from raw and/or calibrated archives? Since most data are delivered in raw form, what are we doing to improve the user's ability to perform calibration and other processing **before** reaching the display stage?
 - b. How will PDS-4 simplify and improve peer review?
3. How will PDS-4 help data providers by automating the design, production, and delivery of PDS data sets?
4. How will PDS-4 ensure that PDS standards are simple, straightforward, and consistent so that data providers and users can easily understand and **uniformly** apply them?
 - a. Should we default to machine validation of everything except science content? Then our standards can be very brief; the real test is whether data products pass the validation. What are the risks in terms of loophole discovery and exploitation?
5. How will PDS-4 ensure that data sets can be safely and efficiently archived in NSSDC and retrieved on demand?

6. How will PDS-4 improve the data transfer, data integrity, and maintenance of PDS data sets?
 - a. How will PDS-4 improve the monitoring of data ingestion which takes place over an extended time? Is "new-CATS" integral to PDS-4?
 - b. How will PDS-4 improve the automated management of the archive so that, once ingested, the data are easily relocated and retrieved without requiring human intervention? What are we doing to ensure that our computers do MORE of the routine work?
 - c. What about PDS-4 will simplify addition of future user services -- for example, the hypothetical "geometry engine"? Do we have robust building blocks at the foundation of our structure so that it is easy to grow services that we haven't yet imagined?
 - d. How will PDS-4 improve our ability to document and/or correct errors in data sets which have completed the ingestion process ... or to add to data set metadata (the dynamic master index)?
7. Should PDS4 be required to be backwards compatible?
 - a. What are the costs if it is or is not (in terms of maintaining two archives, retrofitting old data sets, IPDA issues, ...)?

Regards,
Dick