

The NSSDC Users Group (NUG) met on February 5, 2007 at NASA/Goddard Space Flight Center in Greenbelt, MD. The group members in attendance were: Drs. Fred Bruhweiler (CUA), Paulett Liewer (JPL), Ian Richardson (NASA/GSFC/UMD), and George Rossano (Aerospace Corp.). Dr. Malcolm Niedner (NASA/GSFC) was absent. Presentations by members of the NSSDC staff discussed a variety of topics including the response of NSSDC to the results of the Senior Review and previous recommendations of the NUG. The NUG recommendations, based upon the meeting, are summarized below:

Multifile Package Generator and Analyzer (MPGA) Development. Plans are underway to enlarge the capability of MPGA to handle DVD-sized volumes but this process has been slowed down because of the need to establish protocols with the Jet Propulsion Laboratory. The Space Physics Data Facility has been used as a test bed. The NUG urges the NSSDC to push forward on this development and to get other groups involved, in addition to the SPDF. The opinion of the NUG is that this effort will eventually prove very cost-effective and will strongly encourage the more rapid assimilation of AIPs into NSSDC. Although efforts are underway to develop MPGA for Windows-based PCs, the NUG suggested that a higher priority should be placed on the development of versions for Linux or Unix-based systems, especially if that represents the primary need

Status of Space Physics Archive Search & Extract (SPASE) in the NSSDC. The development of SPASE at NSSDC seems to have made a useful and helpful contribution to the overall mission of NSSDC, and the NUG believes that the NSSDC should continue to study and use SPASE. Nevertheless, the NUG agrees with the members of the NASA Senior Review panel that NSSDC needs to be mindful that other metadata models may be adopted in the community. SPASE should be still viewed as a pilot program, and the time does not seem ripe to advocate its use by the Virtual Observatories (VOs). NSSDC should work closely with the community to develop tools for using SPASE and if there is general interest from the VOs in adopting SPASE, set up a SPASE Users Group.

Earth Science Data Sets. NSSDC currently maintains management and custodianship of numerous Earth science data sets contained on approximately 25,000 original tapes and 2000 restored pairs of tapes that are stored at several locations. The NUG believes that the archiving and management of these data sets is an inappropriate burden for NSSDC and the inclusion of these tapes in the NSSDC data bases gives an unfair impression of the NSSDC tape holdings. Since the Senior Review in 2006, NSSDC has attempted to physically transfer these tapes to NASA's Earth Observation System (EOS). Thus far, no tangible progress appears to have been made in that area. Due to a lack of storage space at EOS, this situation is not likely to be resolved in the near future. Since these data sets are ultimately the responsibility of EOS, and since NSSDC has neither the time nor budget to migrate these data sets, the NUG recommends that administration of these tapes should now be transferred to EOS while the issue of physical control is being resolved. NSSDC can provide EOS a complete inventory of data sets and tapes. Once administration has been transferred to EOS, these data sets and tapes can be removed from the NSSDC books.

Safeguarding Resident Archives. The recent Senior Review found that NSSDC should take a leading role in the development of standards, best practices and development of guidelines for resident archives, including security and safeguarding of RAs. The NUG concurs with that view. NSSDC currently assists new missions in the development of data management plans in the early phases. Development of adequate data safeguarding plans should be included in this process. Before doing that, however, NSSDC should review internally what safeguarding methods are currently available, what new methods may be needed, and then develop safeguarding standards that missions should adhere to. In this process NSSDC should also create guidelines for which safeguarding methods might be handled exclusively by a mission, and which would involve NSSDC participation at minimal cost. This is a topic that would benefit from discussion at the upcoming Science Archive Workshop scheduled for April, 2007 (see below).

Science Archives Workshop. NSSDC has scheduled a two-day Science Archives Workshop to be held in April, 2007 at the University of Maryland. This workshop has the potential to develop and enhance communications between NSSDC and the science communities that it serves. The NUG is highly supportive of this activity. The workshop will include invited talks, oral presentations and poster presentations. NSSDC may wish to consider forming a “working group” of key players that will meet at the end of the workshop to ensure that concerns and ideas from the workshop are fully captured and receive proper consideration in future data archiving strategies.

NSSDC home page links. The NUG finds the inclusion of links to the various virtual observatories on the NSSDC website to be a very simple, yet effective method for helping users find space science data served electronically. The NUG suggests that the NSSDC also consider including links to other centers actively serving data electronically, including the Resident Archives (RAs).

Negotiation of MOUs for Deep Archiving. The committee found that negotiating MOUs with active centers for data archive plans continues to take an inordinate amount of time and resources. The problem of negotiating such an MOU with the Michelson Science Center was cited as just one example. NSSDC is attempting to mitigate this problem by creating template MOUs. However, much of the delay results because the active data centers have no incentive to negotiate a plan for this distant future activity. Planetary science has had a requirement for getting MOUs in place since 2003 and this has provided the needed incentive. Heliophysics is just now implementing a data plan that includes a requirement for an archiving MOU by the time of the first Senior Review proposal for an extended mission. It is hoped that this will provide the needed incentive for Heliophysics MOUs. It was not known whether astrophysics has such a requirement; the NSSDC Director will investigate this. If no data archiving MOU requirement for astrophysics is in place, the NUG encourages NASA/HQ to develop such a requirement.

Interactions with other data centers. The NUG senses that a strong interaction between NSSDC and other active data centers, in addition to long-established interactions with sister-center SPDF, might help infuse new perspectives, new ideas and new technologies into NSSDC.

Data Migration. The NUG notes that the NSSDC currently holds ~43,000 original and ~6100 restored tapes, but that this number is significantly inflated by the Earth science tapes which remain under the Center's domain. If these are eliminated, this leaves ~17,500 original tapes and ~4000 restored tapes comprising 1445 data sets. Of these, 505 data sets have been selected for migration to single file AIPs on newer media. The remaining sets need additional evaluation. Recognizing that it is unlikely to be practical to transfer all these data sets, the NUG encourages the formation of a small committee to assess further the value of, and prioritize, these data. Given the increasing risk of tape degradation over time, the NUG supports the greater importance that has been now placed on tape copying, raising it from a "background" task, even if this means that some issues that occur during copying are not immediately investigated and resolved. The NUG is encouraged that transfer rates from 3480 tape to disk of ~40 tapes/week have been achieved (using 2 tape drives and 1 person to "feed" them) , which might be increased to as much as ~100 tapes/week. This suggests that it should be possible to process the approximately 2600 tapes that comprise the data sets currently selected for migration over a realistic time scale. The NUG suggests that the acquisition of an additional tape drive might be considered to further accelerate the rate of migration, to cover for possible equipment failure, and to ensure that tape copying does not become the limiting factor in the migration rate.

CRUSO. The role of the CRUSO office has been diminished and almost all the requested products are furnished in electronic form, which diverts much of the expense entailed beyond NSSDC. The NUG applauds these efforts.

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