

## CERES Systems Engineering Committee

Members: Tammy Ayers, SAIC  
Vertley Hopson, DAAC  
Sandy Nolan, SAIC  
Sue Sorlie, DAAC

Charter: Serve as a forum for resolving issues which affect more than one working group. Report to CERES Data Management Team.

**March 5, 2001 10:00 am**

Erika Geier, Chris Harris, Walt Miller, Bob Auberg, and Tom Regan joined the SE committee for this meeting.

Walt distributed notes from an October 1999 meeting with Maria and DAAC personnel. It was decided then that the Sampling Strategy required for processing Terra data through the Cloud Subsystem would consist of environment variables: \$Satellite, \$Instrument, and \$Imager. For Terra, \$Instrument could have the value of FM1, FM2, or FM1+FM2. If \$Instrument is set to FM1+FM2, then the Cloud code would parse it into FM1 and FM2 and two IES file names would be placed in the PCF. Two sets of output files would be created, one with \$Instrument set to FM1 and the other with \$Instrument set to FM2. Logfile and PCF names would have \$Instrument set to FM1+FM2.

The current version of the epilogue and associated database had a problem with a single PGE having FM1+FM2 as \$Instrument in the PCF and Logfile names and \$Instrument set to FM1 or FM2 in the output data file names. Bob Auberg said that he thinks that he has a solution. Two new Sampling Strategies will be created and named SS4\_8 and SS4\_9. When SS4\_8 is set to Terra-FM1+FM2-MODIS, then SS4\_9 will be set to Terra-FM1-MODIS, SS4\_9 will be set to Terra-FM2-MODIS, and the epilogue will expect 2 sets of output files. Bob is looking into how the epilogue and database will handle a case where only FM1 or FM2 output files are created.

Vertley reported that Cloud PGE 4.4.1P1 listed no mandatory output files in the Operator's Manual. Walt said that this was because it was possible to run in a mode where no output files are produced. It was decided that in production runs files EQCHB and EQCHG are always produced. The Cloud's Operator's Manual and CERES File Management Policy will be updated to list these files as mandatory.

Walt reported that CloudVis will be produced for all TRMM cloud processing, but will probably not be produced during Terra processing. Walt noted that it was currently not possible to produce CloudVis at the SCF because of memory limitations, but wasn't sure if the same memory problem would exist during production runs. Sue suggested that a run time parameter be added to the command line for running the Cloud PGE if CloudVis is to be created. The default mode would be not to create CloudVis and no parameter would be required on the command line. There was also an issue when there is no available IES and the Cloud PGE runs to produce CloudVis only and exits with a non-zero exit code. It was suggested that a runtime parameter be added to the command line for running the cloud PGE when no SSFI will be produced. When this parameter is present, convolution would not be executed and successful jobs would exit with a zero exit code. Walt will investigate using these two run time parameters.

Erika brought up the issue of having more than one version (different Sampling and/or Production Strategies) of a product being produced at the DAAC at the same time. She questioned whether it is better to have different PGEs (i.e executables) to create the different versions or try to maintain one code that will work for multiple versions. The problem is that if we are in the middle of producing one data set

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and we have to deliver code changes to produce a second data set, how do we assure that the changes for the second will not affect the rest of the first data set. (Jim Kibler had suggested that a full day of data be run with the old and new versions of the code and a bit by bit comparison be made before a single code could be used for both data sets.) Sandy mentioned that if a single executable has been used to produce an entire data set, then it would be easier to restore that version of the code if it was required in the future. Vertley said that we might also want to archive the wrapper used for a particular data set.

Sue reported that although there was a requirement to get the Operator's Manuals to the DAAC personnel 1-2 weeks before CM delivery, the DAAC is not receiving the Operator's Manuals early and in some cases they have arrived much later than the CM delivery date. There was a discussion on why the DAAC needs the information earlier and how it makes the DAAC testing go more smoothly. Sandy, Tammy and Walt pointed out some of the difficulties in providing the Operator's Manual early which include the fact that algorithm changes often come in just before the CM delivery.

Vertley reported that the requirement for all files to be opened and closed using the PCF and Toolkit calls was not being followed by some CERES subsystems. It was agreed that this is a major violation of CERES processing rules and must be corrected. The DAAC relies on the information in the PCF for properly handling and archiving of all files. A list of processing requirements violations will be created and will be sent out to the Subsystem Leads as a reminder.

Sue asked if the Test Plans of various PGEs could be coordinated to use the same data set. Sue also asked if more extensive testing could be done by the subsystems. She said that test cases were at times much smaller than production runs and problems were not caught until after PGEs were promoted to production. Walt said that the size of the test data was often a problem and asked if an area could be set aside on samantha where test data would be made available for testing by the developer and SSI&T. This would eliminate having to provide test input data with a delivery and larger volumes of data could be used in testing. Chris and Sue said that this would be possible, but any disk space permanently used for testing would reduce the disk space available for production runs. Walt said that 150 gigabytes would be needed to store one month of SSF files.

Tammy reported that TISA Gridding will be delivering PGE 9.1 to CERES CM on April 13. She expects more requests by subsystems to deliver only a single PGE. If a PGE does not already have a unique CCode, then one will need to be assigned. She also reported that when a single PGE is delivered, she will not remove the old directory, but will just replace the delivered files before SSI&T testing begins.

Tammy asked if the listings provided with the CM delivery package tar files were used at the DAAC. It was decided that they are probably not necessary, because they do not always include a list of all the files contained in the final archived tar files. Tammy and Nicole are going to meet and further discuss the tar file listings and what they used for.

Walt asked if there was an option to deliver new files to CERES CM without SSI&T testing. Tammy said that the only time that this happens is when a problem is found in operational testing

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and the problem could not be tested with the current SSI&T data set. There was a discussion about when PGEs are recompiled after a new Toolkit or CERESlib delivery. Tammy only recompiles when a specific request is received. The Toolkit and CERESlib version on the output data files is assigned at runtime and may be different than the version that was used in compiling the PGE executables.

Chris asked about the February 10th Instrument job which APGS ran because new Orbital Attitude data was received. Sue said that this was a mistake and the created files have been removed. Tom will modify APGS so that the Instrument PGEs will not run with January 2000 through February 2001 data until the entire data set is reprocessed.

Meeting adjourned at 11:30 am. skn