

### CERES Requirements Log - TISA Gridding

| Reqm'ts No. | Requirement   | SCCR | Provider      | Responsible Subsystem | Responsible Person | How was it conveyed?   | When was it received? | When was it accepted? | When was it completed? | Current Status                    |
|-------------|---|------|---------------|-----------------------|--------------------|--|-----------------------|-----------------------|------------------------|-----------------------------------|
| 6-1         | NON-SCIENCE: Prepare delta delivery of scripts to ensure that all required SFC input files are available before processing  | 594  | Raja Raju     | TISA Gridding         | Raja Raju          | Phone calls and emails in response to problem occurring during operational processing. | 07/01/05              | 07/01/05              | 11/03/05               | Delivered to CM                   |
| 9-1         | NON-SCIENCE: Prepare delta delivery of scripts to ensure that all required SFC input files are available before processing  | 594  | Raja Raju     | TISA Gridding         | Raja Raju          | Phone calls and emails in response to problem occurring during operational processing. | 07/01/05              | 07/01/05              | 11/03/05               | Delivered to CM                   |
| 9-2         | NON-SCIENCE: Prepare Subsystem delivery to support Terra/Aqua Beta Edition3 SFC processing.   |      | Raja Raju     | TISA Gridding         | Raja Raju          | Emails and meeting   | 02/01/06              | 02/01/06              |                        |                                   |
| 6.2         | NON-SCIENCE: Prepare delta delivery of updated PGE CER6.1P1 PCF input generator script to check and ensure that all required input files are available before processing. |      | Raja Raju     | TISA Gridding         | Raja Raju          | Emails and meeting   | 04/12/06              | 04/12/06              |                        |                                   |
| 9-0.0       | SCIENCE: Prepare initial delivery of new PGE CER9.0P1 to process and generate ISCCP-D2like, crosstrack-only data product based on SSF.                                    | 672  | Raja Raju     | TISA Gridding         | Raja Raju          | Meetings, Emails and phone calls   | 11/28/07              | 11/28/07              |                        | Delivered to CM on March 28, 2008 |
| 9-0.1       | NON-SCIENCE: The delivery of the new PGE CER9.0P1 is the first delivery of Release 5 TISA Gridding subsystem.   | 672  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  |                       |                       |                        | N/A                               |
| 9-0.2       | Sample Read Package delivery for Terra and Aqua Beta1 ISCCP-D2like-Day/Nit products.  | 682  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | 09/15/08              | 09/15/08              | 10/09/08               |                                   |
| 9-1.1       | PGE CER9.1P1 delivery dealing with overlap file checking and reading G5-based MOA input.  | 684  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 9-2.1       | Support Edition2 processing on magneto.   | 685  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 9-3.1       | Support Edition2 processing on magneto.   | 685  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 9-4.1       | Support Edition2 processing on magneto.   | 685  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 6-1.1       | Support Edition2 processing on magneto.   | 685  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 6-2.1       | Support Edition2 processing on magneto.   | 685  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 6-3.1       | Support Edition2 processing on magneto.   | 685  | Raja Raju     | TISA Gridding         | Raja Raju          | N/A  | N/A                   | N/A                   |                        |                                   |
| 9-2.2       | SCIENCE: To use updated ephemeris data from solar_declination routine.  | 685  | Dave Doelling | TISA Gridding         | Raja Raju          | Email  | 02/06/09              | 02/06/09              | 02/23/09               |                                   |
| 6-1.2       | SCIENCE: To use updated ephemeris data from solar_declination routine.  | 685  | Dave Doelling | TISA Gridding         | Raja Raju          | Email  | 02/06/09              | 02/06/09              | 02/23/09               |                                   |

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| 6-2.2       | SCIENCE: Not to include overlap data records on FSW product.  | 685           | Dave Doelling | TISA Gridding         | Raja Raju          | Email                | 02/06/09              | 02/06/09              | 02/23/09               |                 |
| 9-2.3       | Gridding I/O modules in CERESLIB are modified to support both Edition2 and Edition3 process.  | 739           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                  | N/A                   | N/A                   | Completed              |                 |
| 9-2.4       | New PGE to support Edition3 processing on magneto.  | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 05/05/09              | 05/05/09              | Completed              |                 |
| 9-2.5       | Add new types in the record to write TOA flux and Angular model scene data calculated in GMT time for TSI (7.1.1) process.  | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 05/05/09              | 05/05/09              | Completed              |                 |
| 9-2.6       | Update PCF scripts to reflect the changes to the output product name.   | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 10/09/09              | 10/09/09              | Completed              |                 |
| 9-3.2       | New PGE to support Edition3 processing on magneto.  | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 05/05/09              | 05/05/09              | Completed              |                 |
| 9-3.3       | Update PCF scripts to reflect the changes to the output product name.   | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 10/09/09              | 10/09/09              | Completed              |                 |
| 9-4.2       | New PGE to support Edition2 processing on Magneto.  | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 05/05/09              | 05/05/09              | Completed              |                 |
| 9-4.3       | Update PCF scripts to reflect the changes to the output product name.   | 739           | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting   | 10/09/09              | 10/09/09              | Completed              |                 |
| 9-0.3       | Calculate total cloud for all cloud types to include in the HDF product. Change 3hourly bin from the center hours of 2,5,6,11,14,17,20,23 to 0,3,6,9,12,15,18,21 to be consistent with the other ISCCP products.  | 746           | Moguo Sun     | TISA Gridding         | Raja Raju          | Emails and meeting   | 11/19/09              | 11/19/09              | Completed              |                 |
| 9-0.4       | Two new categories were added on the ISCCP-D2likeDay/Nit products   | 746           | Moguo Sun     | TISA Gridding         | Raja Raju          | Emails and meeting   | 11/19/09              | 11/19/09              | Completed              | Delivered to CM |
| 9-2.7       | New parameters were added to SSF1deg-Hour record structure.   | 739 cancelled | Dave Doelling | TISA Gridding         | Raja Raju          | Email                | 12/08/09              | 12/08/09              | Completed              | Delivered to CM |
| 9-2.8       | Subsystem 9 Edition3 PGEs are required to process only crosstrack data. For this purpose, text files for each year, for each satellite (Terra/Aqua) are created by Brian Magill for years 2000 - 2009. Each file contains the hourly records indicating which instrument (1 or 2 for Terra; 3 or 4 for Aqua) is predominantly in crosstrack or 0 if it is undetermined. These files will be used in CER9.2P2 PCF scripts to determine the inputs for the processing hour. | 739 cancelled | SEC           | TISA Gridding         | Raja Raju          | meeting              | 03/16/10              | 03/16/10              | Completed              | Delivered to CM |

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| 9-3.4       | Define new types in the binary output record to write computed TOA fluxes and Angular Model scenes based on GMT hour for TSI process.                                | 739 cancelled | Dave Doelling | TISA Gridding         | Raja Raju          | Emails and meeting     | 05/05/09              | 05/05/09              | Completed              | Delivered to CM |
| 9-4.4       | Sample read Package to support Terra Edition2G and Aqua Edition2D SFC product.   | 772           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                    | 03/29/10              | 03/29/10              | Completed              | Delivered to CM |
| 6-3.2       | Sample read Package to support Terra Edition2G and Aqua Edition2D FSW product.   | 773           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                    | 03/29/10              | 03/29/10              | Completed              | Delivered to CM |
| 9-2.9       | Gridding I/O modules in CERESLIB are modified to support Edition3 process on P4.   | 788           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                    | 05/25/10              | 05/25/10              | Completed              | Promoted        |
| 9-2.10      | New PGE CER9.2P2 to support Edition3 processing on magneto. Code is updated to process parameters that are needed for SS7.1.1P1 process.                             | 789           | Dave Doelling | TISA Gridding         | Raja Raju          | Phone calls and emails | 05/25/10              | 05/25/10              | Completed              |                 |
| 9-3.5       | New PGE CER9.3P2 to support Edition3 post processing on magneto. Code is updated to process parameters that are needed for SS7.1.1P1 process.                        | 789           | Dave Doelling | TISA Gridding         | Raja Raju          | Phone calls and emails | 05/25/10              | 05/25/10              | Completed              |                 |
| 9-4.5       | New PGE 9.4P2 to support Edition3 SFC HDF processing on magneto.   | 789           | Raja Raju     | TISA Gridding         | Raja Raju          | Phone calls and emails | 05/25/10              | 05/25/10              | Completed              | Delivered to CM |
| 9-2.11      | PGE CER9.2P2 PCF script is updated to include X-track files in the PCF for processing.   | 789           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                    | N/A                   | N/A                   | Completed              |                 |
| 9-4.6       | Edition3 SFC HDF product format is same as Edition2 product format.  | 789           | Dave Doelling | TISA Gridding         | Raja Raju          | Phone calls            | 06/02/10              | 06/02/10              | Completed              |                 |
| 9-2.12      | Updated Aqua_xtrkHourly_2002 and Aqua_XtrkHourly_2003 ancillary files to prefer FM3 data for the processing hour when both instruments are in 100% cross-track mode. | 816           | Dave Doelling | TISA Gridding         | Raja Raju          | email                  | 11/18/10              | 11/18/10              | Completed              |                 |
| 9-2.13      | Terra-xtrkHourly and Aqua_xtrkHourly ancillary text files for year 2010.   | 813           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                    | N/A                   | N/A                   | Completed              |                 |
| 9-4.7       | Sample read Package to support Terra and Aqua Edition3A SFC product.   | 817           | Raja Raju     | TISA Gridding         | Raja Raju          | N/A                    | N/A                   | N/A                   | Completed              | Delivered to CM |
|             |  |               |               |                       |                    |                        |                       |                       |                        |                 |
| 9-5.2-1     | Initial delivery of new PGE CER9.5P1 to process and create ISCCP-D2like-FixDay/Nit, crosstrack only data product based on SSF inputs.                                | 765           | Dave Doelling | TISA Gridding         | Hazari Syed        | Emails and meeting     | 12/01/10              | 12/01/10              |                        |                 |
| 9-0.5       | Code was modified to write liquid and ice cloud fractions on the HDF products correctly. Previously total cloud fraction was written to Liquid, Ice SDSs.            | 837           | Moguo Sun     | TISA Gridding         | Raja Raju          | Phone calls            | 03/01/11              | 03/01/11              | Completed              |                 |

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| 9-2.14      | Updated Terra-xtrkHourly and Aqua_xtrkHourly ancillary text files for year 2010 to include September to December x-track instrument information.  | 847  | Raja Raju                      | TISA Gridding         | Raja Raju          | N/A                      | N/A                   | 05/17/11              | Completed              | Delivered to CM on May 17, 2011 |
| 9-0.6       | Initial delivery of new PGEs CER9.0P2 and CER9.0P3 to process and create ISCCP-D2like-Mrg, crosstrack only data product based on SSF and GGEO inputs.   | 763  | Moguo Sun                      | TISA Gridding         | Raja Raju          | Emails and meeting       | 03/16/10              | 03/16/10              | Completed              | Delivered to CM                 |
| 9-0.7       | Made corrections to cloud optical depth calculations in CER9.0P2 software.  | 763  | Moguo Sun                      | TISA Gridding         | Raja Raju          | Phone calls and meetings | 09/01/11              | 09/01/11              | Completed              |                                 |
| 9-0.8       | New module was included to perform data range checks.   | 763  | Moguo Sun                      | TISA Gridding         | Raja Raju          | Phone calls and meetings |                       |                       |                        |                                 |
| 9-0.9       | Updates to the scripts to make it consistent with the latest CERES requirements.  | 763  | Thomas Grepiotis               | TISA Gridding         | Raja Raju          | N/A                      |                       |                       | Completed              |                                 |
| 9-0.10      | Modified PGE CER9.0P2 code to include overlap footprints in the current hour process to eliminate half hour issue found when scan end, start time footprints fall within the same region.                                     | 763  | Dave Doelling/Raja Raju        | TISA Gridding         | Raja Raju          | Phone calls and meeting  | 09/14/11              | 09/17/11              | Completed              |                                 |
| 9-0.11      | Modified PGE CER9.0P3 code to limit merged value to be 10% of GGEO value when there is no CERES data available for the hour of the region. This modification is to avoid high cloud temperature values found in some regions. | 763  | Moguo Sun                      | TISA Gridding         | Raja Raju          | Emails and meeting       | 10/20/11              | 10/20/11              | Completed              |                                 |
|             | <b>Edition4 changes:</b>  |      |                                |                       |                    |                          |                       |                       |                        |                                 |
| 9-4.8       | Product name is changed from SFC to SSF1deg-Hour.   | 888  | Dave Doelling/Jonathan Gleason | TISA Gridding         | Raja Raju          | Emails and phone calls   | 03/05/12              | 03/05/2012            |                        |                                 |
| 9-4.9       | Data is processed and written in GMT.   | 888  | Dave Doelling                  | TISA Gridding         | Raja Raju          | Emails and meetings      | 03/22/12              | 03/22/12              |                        |                                 |
| 9-4.10      | HDF product is generated as daily files instead of 5 zonal data /HDF file. Three new vdata groups are added to the product.   | 888  | Dave Doelling                  | TISA Gridding         | Raja Raju          | Emails and phone calls   | 03/22/12              | 03/22/12              |                        |                                 |
| 9-3.6       | Overlap hours from the last day of the previous month and the first day of the following month are added to zonal binary files.   | 888  | Dave Doelling                  | TISA Gridding         | Raja Raju          | Emails and meeting       | 03/22/12              | 03/22/12              |                        |                                 |
| 9-2.15      | Code is modified to compute cloud IWP/LWP and particle sizes weighted by liquid and ice amounts.  | 888  | Dave Doelling                  | TISA Gridding         | Raja Raju          | Email                    | 08/16/11              | 08/16/11              |                        |                                 |
| 9-2.16      | Code is modified to set Angular model scene type area coverage to default if albedo is set to default.  | 888  | Dave Doelling                  | TISA Gridding         | Raja Raju          | Email                    | 09/20/11              | 09/20/11              |                        |                                 |

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| 9-4.11      | PCF and run script changes to meet CERES requirements for software delivery on to AMI.   | 888  | Thomas Grepiotis | TISA Gridding         | Raja Raju          | N/A                  |                       |                       |                        |                                 |
| 9-3.7       | PCF and run script changes to meet CERES requirements for software delivery on to AMI.   | 888  | Thomas Grepiotis | TISA Gridding         | Raja Raju          | N/A                  |                       |                       |                        |                                 |
| 9-2.17      | PCF and run script changes to meet CERES requirements for software delivery on to AMI.   | 888  | Thomas Grepiotis | TISA Gridding         | Raja Raju          | N/A                  |                       |                       |                        |                                 |
| 9-3.8       | New input_gen_9.3P2_exception.pl and TISAgrid9.3-env-exception.pl scripts to handle special case like <b>Edition3 June 2001 Terra</b> process on Magneto (p4)    | 896  | Raja Raju        | TISA Gridding         | Raja Raju          | N/A                  | N/A                   | N/A                   | Completed              | Delivered toCM on April 25,2012 |
| 9-2.18      | Gridding I/O modules tisa_grid_type_def_Ed4.f90, sfc_Ed4.f90,sfc_type_def_Ed4.f90, and sfc_file_Ed4_mult.f90 are modified to support Edition4 process on ami p6. | 897  | Raja Raju        | TISA Gridding         | Raja Raju          | N/A                  | N/A                   | N/A                   |                        |                                 |