CERES Requirements Log - Instrument

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
1-1	REMOVED		Kory Priestley	Instrument	Team	Team Mtgs	2001	2001	On-going activity, removed 08/03/2006	Updates for Terra and Aqua approximately every 6 mos. 08/03/2006: Entered under earlier guidance, but not longer relevant under the new Reqts Management Plan -- per Action Item #3 of Reqt. Management QA Audit (dated July 27, 2006).
1-2	REMOVED		Kory Priestley	Instrument	Phil/Dianne	Team Mtgs	2002	2002	On-going activity, removed 08/03/2006	Web Pages updated on a periodic basis depending on data type/availability. 08/03/2006: Entered under earlier guidance, but no longer relevant under the new Reqts. Management Plan -- per Action Item #3 of Reqt. Management QA Audit (dated July 27, 2006).
1-3	REMOVED		Jim Kibler	Instrument	Team	Team Mtgs	1999	1999	On-going activity, removed 08/03/2006	Monitor QC reports and data products on a periodic basis based on data type/availability. 08/03/2006: Entered under earlier guidance, but no longer relevant under new Reqts. Management Plan -- per Action Item #3 of Reqt. Management QA Audit (dated July 27, 2006).
1-4	REMOVED		Kory Priestley	Instrument	Team	Team Mtgs	1992	1992	On-going activity, removed 08/03/2006	Update Instrument Subsystem code as necessary when problems are discovered with the code or changes in the instruments are discovered. 08/03/2006: Entered under earlier guidance, but not longer relevant under new Reqts. Management Plan -- per Action Item #3 of Reqt. Management QA Audit (dated July 27, 2006).

CERES Requirements Log - Instrument

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
1-5	Add Solar and Lunar angles to the BDS	599 & 607	Kory Priestley	Instrument	Denise	Team Mtgs	9/1/2005	9/1/2005	11/18/2005 - 599, 12/21/2005 - 607	Updates for CER1.1P1-6 have been completed and are being tested. Updates for CER1.3P3 have begun and are in process. Updates for CER1.3P1 have not yet begun. 11/18/05: Code delivered to CERES CM. 12/20/2005: An error found during ValR7/8 testing showed that CER1.2P1 had an error introduced with the updates done for SCCR #599. Since the code had been promoted a new SCCR #607 had to be opened to fix the error. SCCR #607 was delivered to CERES CM on 12/21/2005. ValR7 and ValR8 Testing validated and accepted 1/10/2006.
1-6	Update Instrument code to account for heating of the sensors during sunrise/sunset events	599	Kory Priestley	Instrument	Denise	Team Mtgs	9/1/2005	9/1/2005	11/18/2005	Algorithm and limits are being determined. The algorithm will be added to CER1.1P1-6 and CER1.3P3 if necessary. 11/18/05: Code delivered to CERES CM. ValR7 and ValR8 Testing validated and accepted 1/10/2006.
1-7	Update Instrument QC reports to include input parameters and radiance count conversion values	599	Kory Priestley	Instrument	Denise	Team Mtgs	2005	2005	11/18/2005	Updates are being added to CER1.1P1-6 and CER1.3P3 QC reports. Updates to CER1.1P1-6 have been completed and are being tested. Updates are still being made to CER1.3P3. 11/18/05: Code delivered to CERES CM. ValR7 and ValR8 Testing validated and accepted 1/10/2006.
1-8	Update Standard Deviation Threshold test for the spaceclamp region of the scan to catch bit flips that occur in the spaceclamp.	599	Kory Priestley	Instrument	Denise	Team Mtgs	10/4/2005	10/4/2005	11/18/2005	Phil did extensive analysis and came up with the new thresholds that should be used for each channel on each instrument. These values will be updated in the Count Conversion data ancillary data files. 11/18/05: Code delivered to CERES CM. ValR7 and ValR8 Testing validated 1/10/2006.
1-9	Update BDS Read Package to match updates done for SCCR# 599, Reqt. 1-5 addition of Solar and Lunar Angles in the BDS data products.	605	Erika Geier	Instrument	Denise	Product Release Checklist	11/18/2005	11/18/2005	11/22/2005	Update BDS Read Package to reflect the addition of new Solar and Lunar Angles from SCCR# 599, Reqt. 1-5. ValR7 and ValR8 Testing validated 1/10/2006.

CERES Requirements Log - Instrument

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
1-10	Hour 23 for 12/31/2005 cannot be processed due to an error creating the IES Header, due to the addition of a Leap Second on this date. This affects the Terra and Aqua instruments.	610	DMT	Instrument	Denise	Problem in Production Processing	1/3/2006	1/5/2006	8/6/2008	01/13/2006: This problem only affects the last hour of the year 2005, therefore, it was decided that the fix will be incorporated into the Instrument Software Baseline, but it will not be delivered to CERES CM at this time. It will however be delivered with any delivery that is scheduled in the future. 08/03/2006: Provider changed from ASDC to DMT, per Action Item #1 from Reqt. Management QA Audit.
1-11	CER1.2P1 ASCII file generator had a problem when looking for existing ephemeris files for Terra for 3/31/2000. The search key showed up as part of the filename of a file with the newest filenaming convention. This occurred while looking for the previous day's ephemeris file.	613	DMT	Instrument	Denise	Problem in Production Processing	1/26/2006	1/26/2006	1/27/2006	01/26/2006: A delta delivery will be made to correct this problem, which may occur again while processing Edition1-CV. The update will also be made to CER1.1P3 ASCII file generators to avoid any related problems with this PGE. 01/27/06: Delta delivery made to CERES CM. 08/03/2006: Provider changed from ASDC to DMT, per Action Item #1 from Reqt. Management QA Audit.
1-12	Port all PGEs to the Mac G5 and JS20 clusters at the SCF and ASDC respectively.	610	Mike Little	Instrument	Denise, Jim Donaldson	E-mail	3/1/2006	3/1/2006	8/6/2008	All CERES subsystem code is being ported to the G5 and JS20 clusters in an effort to save money on processing hardware cost and maintenance. 4/12/2006: Jim has successfully converted CER1.1Px, CER1.2P1 to the cluster environment. He is still working on CER1.3P3 where TRMM has some differences that need to be investigated before this PGE can be considered complete. Jim will also be converting the ASCII file and PCF generator and run scripts from tcsh to PERL as time permits. 05/25/2006: During port to the Linux cluster at ASDC a problem with the To_Ada built in function was discovered. In the Linux environment the TERMINATOR_ERROR exception is raised causing the program to abort.

CERES Requirements Log - Instrument

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
1-12 (Cont'd)										A fix to capture this exception and properly handle it to allow program to continue processing is being worked. 08/03/2006: Adding these updates to SCCR# 610, as the update needed for this SCCR will be included when this software is delivered. As directed by Action Item #2 of Reqts. Management QA Audit.
1-13	Fix Error noted at ASDC during ValR testing of CER1.3P3 the PCF file did not allow user to set Start and Stop times. Needed to process 12/31/2005, this is due to the addition of the leap second on this date for Aqua and Terra spacecrafts.	621	ASDC SIT Staff	Instrument	Denise	E-mail	4/12/2006	4/12/2006	4/28/2006	CER1.3P3 fails for 12/31/2005, this is due to the problem with the IES routines for this date. The workaround is to set the stop time to 22:59:59.999999, however the ASCII file and PCF generator do not accept stop time as a parameter. Also, the satellite is not getting set properly, as it was hardcoded to Terra. 04/28/2006: CER1.3P3 promoted to production -- requirement now closed.
1-14	Scripts for CER1.3P3 need to be updated to be able to handle two versions of the Count Conversion Data ancillary data file. The existing Edition2 data version and the upcoming Edition3 data version.	610/627	Erika Geier	Instrument	Denise	Phone	5/24/2006		8/6/2008	5/25/2006: Edition2 processing may be required in the future to allow continued Edition2 production. This will also allow us to recreate any corrupted or missing Edition2 data files. This requires the creation of a new Edition3 Count Conversion Data ancillary data file along with an update to the script to select the proper data file based on the Edition being processed. This update will be delivered at the same time the new Edition3 Count Conversion Data ancillary data files are delivered. 08/06/2008: Delivered under SCCR 610, SCCR 627 was disapproved.

CERES Requirements Log - Instrument

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
1-15	Create a new PGE for the Simulated IES software.	641	Erika Geier	Instrument	Denise	E-mail/Phone	11/20/2006	11/20/2006		12/06/2006: The original code has been copied from warlock to thunder to be updated. Since the original delivery was done in a "one-time only" fashion, many of the pieces needed for a full delivery are missing and must be created. Also, all existing scripts must be updated to work with the new Toolkit, as many things have changed since the original delivery of this code.
1-16	Fix problem with processing Terra FM2 for 02/08/2007. A DAC update is flagged for the SW channel at 12:05:06 UT, but the sample number has been corrupted in the Level-0 data packet. The data is showing sample number 657 instead of the expected 644. Since the software needs 3 samples after sample 657 to determine the update, this causes an exception, because 3 samples are not available, they are outside the array boundary. Currently, 02/08/2007 cannot be processed due to this error.	610	ASDC Operations	Instrument	Denise	E-mail	2/12/2007	2/12/2007	04/11/08: Delivered to CERES CM	02/20/2007: The code has been updated to ignore the DAC update flag if the given sample number is >= 657. The routine that calculates the update, instead sends back a CERES fill-value, which then tells the calling routine to ignore the update. This update will be delivered with the other existing Edition3/cluster/production errors in July 2007.
1-17	Move all Instrument PGEs to the new directory structure defined by the SEC.	610	SEC	Instrument	Denise	DMT Meeting	2/1/2008	2/1/2008	4/11/08: Delivered to CERES CM	04/22/2008: The decision to deliver the last update of the Ada code in the new directory structure was made to make the transition of the new C++ version of code easier to implement one PGE at a time.
1-18	Create a Level-0/ephemeris/attitude data preprocessor for the NPP FM5 RDR data.	698	Kory Priestley	Instrument	Ashley/Kam-Pui	Instrument Meeting	3/27/2008	3/27/2008	4/10/2009	04/22/2008: Code to read, sort and write out Level-0 data has been started, however the exact format of the HDF5 wrapper for the data and the ephemeris and attitude data formats have not yet been defined.
1-19	Convert PGE CER1.1P1-6 to C++ and add all necessary updates to support CERES FM5 on NPP. Create C-versions of the CERESlib metadata routines to support this effort.	755	Kory Priestley	Instrument	Thomas/Mark	Instrument Meeting	3/27/2008	3/27/2008	3/1/2011	04/22/2008: The first step in the process is to create a C-version of the CERESlib metadata routines to improve access to these routines from C++ and Ada. Mohammad is currently working on these new routines. Ashley is beginning work on some of the common classes for all the PGEs.

CERES Requirements Log - Instrument

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
1-20	Convert PGE CER1.3P1 to C++.	756	Kory Priestley	Instrument	Brian	Instrument Meeting	3/27/2008	3/27/2008	5/24/2011	04/22/2008: This PGE will be converted after all work on PGE CER1.1P1-6 has been completed for NPP launch, since the output from CER1.1P1-6 will be readable by the Ada version of this PGE.
1-21	Convert PGE CER1.3P2 to C++. (CLOSED moved to Reqt. 1-28)	770	Kory Priestley	Instrument	Brian	Instrument Meeting	3/27/2008	3/27/2008	3/26/2010	04/22/2008: This PGE will be converted after all work on PGE CER1.1P1-6 has been completed for NPP launch, since the output from CER1.1P1-6 will be readable by the Ada version of this PGE. 03/26/2010: SCCR 770 opened under Requirement 1-28, this requirement was closed as the work was done under requirement 1-28.
1-22	Convert PGE CER1.3P3 to C++.	877	Kory Priestley	Instrument	TBD	Instrument Meeting	3/27/2008	3/27/2008		04/22/2008: This PGE will be converted after all work on PGE CER1.1P1-6 has been completed for NPP launch, since the output from CER1.1P1-6 will be readable by the Ada version of this PGE. 01/29/2012: Promoted to run ValRs.
1-23	Fix problem with run script for CER1.1P1-6	678	Kory Priestley	Instrument	Denise	E-mail	8/6/2008	8/6/2008	8/6/2008	08/06/2008: The run script had an issue where it could not find the PCF file when looking for BDS filenames when the script was run in Codine. The script was updated to add the directory path to the PCF filename, which fixed the problem and a delta delivery was made on 8/6/08.
1-24	Fix problem with Perl module selecting ephemeris and attitude data files	679	Kory Priestley	Instrument	Denise	E-mail	8/8/2008	8/8/2008	8/8/2008	08/08/2008: The Perl routine within the Instrument Perl modules that selects ephemeris and attitude data files for mysterious reasons was selecting the .met file for hr 10 of Terra ephemeris data for 08/02/2008. A change in how the script skips .met files was implemented and sent to CERES CM as a delta delivery.

CERES Requirements Log - Instrument

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
1-25	Fix problem with Perl module not having the directory for the BDSF environment variable defined	681	Kory Priestley	Instrument	Denise	E-mail	8/13/2008	8/13/2008	8/13/2008	08/13/2008: The Perl routine that sets up the environment in the production runtime environment was found to be missing the directory environment variable for the BDSF, which was causing error messages to be displayed although since we do not create BDSFs on any regular basis it did not cause a failure of the production run. Since this was caught during the last phase of SIT operational testing, the fix is being implemented now before ValR10 production begins.
1-26	Deliver new PGE CER1.0P1, CERES NPP RDR preprocessor	698	Kory Priestley	Instrument	Ashley	NPP DMT Meeting	Spring '08	Spring '08	4/10/2009	02/03/2009: CERES RDR preprocessor initial delivery in testing.
1-27	CER1.1.P8, Build 1	703	Kory Priestley	Instrument	Thomas	NPP DMT Meeting	Spring '08	Spring '08	8/11/2010	02/03/2009: CERES NPP Build1 initial delivery in testing.
1-28	CER1.4P1, C++ version of CER1.3P1 CER1.4P2, C++ version of CER1.3P2	754 (770)	Kory Priestley	Instrument	Brian/Mark	E-mail	1/30/2009	1/30/2009	9/21/2011	02/03/2009: C++ version of CER1.3P1 BDS subsetter. 01/28/2010: C++ version of CER1.3P1 and CER1.3P2, to be delivered in February 2010. 02/24/2011: PGEs were split into two separate SCCRs 756 & 770. SCCR 754 was disapproved on 2/12/2010. 03/26/2010: PGE CER1.3P1 dropped from this requirement. SCCR 770 was opened to update CER1.3P2 to the new CER1.4P2 version of the PGE.
1-29	CER1.1P7, new PGE to support NPP-FM5 processing using updated Ada code. CER1.2P1 update to accept FM5 as a valid instrument.	702	Kory Priestley	Instrument	Denise	Meeting	1/30/2009	1/30/2009	8/20/2010	02/18/2009: Add requirement for Ada version of the NPP-FM5 production code for delivery to warlock and possibly the x86. Update CER1.2P1 as necessary to support FM5, this PGE may not need to be updated unless this is delayed to support the PGEs on the x86 platform. 2/24/2011: Close Reqt. PGE promoted to production 8/20/2010.

CERES Requirements Log - Instrument

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
1-30	CER1.1P7 -- update instrument health and status conversion code	715	Kory Priestley	Instrument	Phil/Denise	Meeting	5/26/2009	5/26/2009	11/16/2011	07/02/2009: Updates needed to convert the instrument health and status parameters for FM5. Without these updates the calculated radiances are incorrect. 11/16/2011: SCCR disapproved, because this PGE has been replaced by CER1.1P8 on AMI-P, this delivery was for warlock.
1-31	CER1.1P1-6, CER1.2P1, CER1.3P1, CER1.3P2, CER1.3P3	716/723	Erika Geier	Instrument	Denise	Meeting	6/26/2009	6/26/2009	11/27/2009	07/02/2009: Update to run on the new x86 and P6 platforms, as appropriate, once the system is available for delivery. 11/27/09: Delivered to CERES CM.
1-32	CER1.1P7	717	Erika Geier	Instrument	Denise	Meeting	6/26/2009	6/26/2009	12/4/2009	07/02/2009: To be delivered after the other Ada PGEs have been delivered to the x86. 12/04/09: PGE delivered to CERES CM.
1-33	CER1.1.P8, Build 2	731	Kory Priestley	Instrument	Thomas	DMT Meeting	11/6/2009	11/6/2009	11/20/2009	10/14/2009: CERES Aqua/Terra Build2 initial delivery in testing. 11/20/09: Delivered to CERES CM with an update to run the BDS compression on an x86 platform. Problems with the BDS compression on a P6 still exist.
1-34	CER1.0P2, to AMI	747	Kory Priestley	Instrument	Rich	Meeting	Early 2009	Early 2009	2/18/2011	12/04/09: To be delivered Jan. 2010 to the new AMI P6 platform. Fixes to handle zero length data sets will also be included. 02/24/11: PGE has been promoted and run in production.
1-35	CER1.1P8, Build 2.1	755	Kory Priestley	Instrument	Thomas/Mark T.	Meeting	Jan. 2010	Jan. 2010	3/1/2011	01/28/2010: Updates to Build2 for CER1.1P8 to fix errors and add NPP FM5 capability. Scheduled delivery for March 2010.
1-36	Update CER1.1P8 to include new SGE scripts	755	Jonathan Gleason	Instrument	Thomas	CPOB Meeting	7/6/2010	7/6/2010	1-Mar	02/24/2011: SGE scripts added to the existing delivery in Sep. 2010. SCCR 755 promoted 2/18/2011. 02/18/2011: PGE promoted to production, waiting for ValRx testing.
1-37	Fix Error found in CER1.1P8 PCF generator. The file lists PCF and QC tar files that are no longer created by the PGE.	836	ASDC	Instrument	Denise	Phone Call/Problem Report	3/9/2011	3/9/2011	1-Mar	03/09/2011: PCF generator still includes PCF and QC tar file which are no longer created. These need to be removed. 03/16/2011: SCCR 836 closed, these updates will be included in SCCR 838.

CERES Requirements Log - Instrument

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
1-38	Fix problem discovered in ValR22 data runs with incorrect radiance and double drift corrected values for PGE CER1.1P8.	838	Kory Priestley	Instrument	Thomas/Mark	ValR22 run validation	3/16/2011	3/16/2011	7/5/2011	03/16/11: A problem with data comparisons of CER1.1P8 output with existing BDSs showed that the radiance and double drift corrected values in the BDS/IES were incorrect. Investigation showed that debug statements that were not properly commented out caused the issue.
1-39	Update the Ada PGEs and CER1.2P1 to create their SGE logs in PGE specific subdirectories and to call the generic submission script.	839	ASDC Ops	Instrument	Denise	Phone call/email	3/18/2011	3/18/2011	4/12/2011	03/18/2011: ASDC SIT/Ops has asked that the SGE log files be placed in PGE specific subdirectories under the sge_logs directory. Also at this time, update the scripts to use the generic submission script which was created after the initial delivery of this code.
1-40	Update CER1.0P2 to fix problems found during NCT 3 Part II.	842	ASDC Ops	Instrument	Rich	Problem report	3/23/2011	3/23/2011	7/5/2011	03/23/2011: ASDC has discovered two issues with the existing CER1.0P2 documented in problem report #146. The eph/att filenames do not contain the correct DOY. Also the PCF contains RCERT data files not used by this PGE. The software has also been reworked to make it more maintainable.
1-41	Update CER1.1P1, 3 & 5 to fix problems found during NPP TVAC testing.	843	Instrument TVAC team	Instrument	Denise	e-mail	3/28/2011	3/28/2011	7/18/2011	03/28/2011: Issues were discovered with the special diagnostic mode data files during NPP TVAC analysis. The non-science data formats had issues related to the code running on the x86 platform, which is little-endian. Since these data formats do not show up on a daily basis, testing was incomplete and did not catch the problem earlier.
1-42	Recompile CER1.2P1 to use the newest CERESlib metadata to properly report NPP-FM5 in the output metadata file.	848	Instrument Team	Instrument	Denise	CPOB Meeting	5/25/2011	5/25/2011	7/18/2011	5/25/2011: The code must be recompiled with the new CERESlib to take advantage of the new CERESlib metadata routines, which have been modified to support NPP-FM5.

CERES Requirements Log - Instrument

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
1-43	Put in a bit-swap to change the order of the Radiance and mode flags from high-bit-order to low-bit-order to maintain the proper evaluation of the flags. SGI Ada uses high-bit-order, x86 Ada on AMI uses low-bit-order.	852	Instrument Team	Instrument	Denise	Problem discovered in code	6/13/2011	6/13/2011	7/19/2011	6/13/2011: Brian discovered that Churgnwei was swapping the bit order of the Radiance and mode flags in the x86 Ada code, this swap was causing issues with the follow-on PGEs that as it turns out are reading the flag as low-bit-ordering. Updates to CER1.3P2 are being made to allow the PGE to read BDSIs created on either an SGI, P6 or x86 platform. Flag ordering must be high-order to not change how downstream subsystems get this flag. 07/19/2011: SCCR 852 was disapproved, because CER1.3P2 is being replaced by CER1.4P2, which is being delivered under SCCR 770.
1-44	Add NPP as a valid option in the PCF file generator for CER1.3P1 & CER1.4P1. This was not originally included, because we did not have data to test until recently.	854	ASDC SIT	Instrument	Denise	Problem report	7/8/2011	7/8/2011	7/18/2011	07/08/2011: NPP ValR24 testing of CER1.3P1 discovered that NPP was not included in the PCF generator as an option. When checked the PCF generator for CER1.4P1 was also missing the option.
1-45	Update CER1.0P2 to use the Toolkit provided time conversion routines	855	Instrument Team	Instrument	Rich	F2F	7/8/2011	7/8/2011	9/2/2011	07/08/2011: The current CER1.0P2 uses time routines that do not handle future leap second and utcpole updates.
1-46	Fix issue with checking for eph/att data files for Terra 2003. The filenaming convention for these files changed during this data year and the current File utilities Perl module is not properly handling the date on which the convention changed. Also, fix the issue with the incorrect data directories being put in the PCF for the Level-0, eph/att for TRMM 1/1/2000.	856/865/866	Instrument Team	Instrument	Denise	Problem discovered during SCF testing	7/15/2011	7/17/2011	11/21/2011	07/17/2011: While testing data for Terra-FM1 for 7/11/2003 the SGE_Driver script failed because the eph/att was determined to be missing. This was found to be due to an error in an if statement, that determined when the filenames changed. 11/21/2011: SCCR 856 was disapproved and these updates are scheduled to be delivered with SCCRs 865 & 866. SCCR 866 updates were delivered and promoted on 11/21/2011, SCCR 865 is on hold, because the Ada code may not be needed, because the newer C++ code works for all spacecraft/instruments.

CERES Requirements Log - Instrument

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
1-47	Fix issue with ED environment variable not being sent to the follow-on scripts during SGE submission of jobs.	857	Instrument Team	Instrument	Denise	SIT ValR Testing	7/22/2011	7/22/2011	8/1/2011	07227/2011: The ED variable, which tells the script which edition of the data product is being created was not included in the PGE hash and so it is not passed down thru the scripts correctly.
1-48	Update CER1.2P1 to properly write the Pre-ES8 header end date/time when running on the x86 platform. Also need to add the creation of a summary file to bring the SGE scripts up to current standards.	863	ASDC Operations	Instrument	Nelson	E-mail	8/8/2011	8/8/2011	9/20/2011	08/08/2011: ASDC was unable to archive the ES8 data products due to an error in the .met file for end date/time. This value is being read from the Pre-ES8 header. The being date/time was being written correctly, however, the end date/time was written incorrectly when the PGE was processed on an x86 platform, since the data needed to be byte-swapped to write the Pre-ES8 in the big-endian format.
1-49	Update the FM5 ancillary data files with at launch versions.	864	Instrument Team	Instrument	Denise	Instrument Meeting	8/17/2011	8/17/2011	9/2/2011	08/17/2011: Update the FM5 ancillary data files with the at launch version of the gains, and instrument health and status coefficients.
1-50	Update CER1.1P1, 3, 5 & 7 to properly report QA flags on the IES data products.	865	Instrument Team	Instrument	Denise	E-mail	8/17/2011	8/17/2011	2/6/2012	08/17/2011: Update the CER1.1P1, 3, 5 & 7 code to properly report the QA flags on the IES. The existing flags are written in reverse order, which will cause issues with Clouds attempting to decode the flags. 02/06/2012: SCCR disapproved. The C++ version of this PGE will be used in production on the new AMI-P system. And these PGEs are considered disabled.
1-51	Update CER1.1P8 to fix issues discovered in the NCT 4 testing and during Terra/Aqua validation efforts.	866	Instrument Team	Instrument	Denise	F2F	8/29/2011	8/29/2011	11/21/2011	08/29/2011: Update CER1.1P8 to fix the issues with incorrect information showing up in the QC reports and also to fix the issue with fatal errors exiting with an exit code of 0, which is incorrect.

CERES Requirements Log - Instrument

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
1-52	Update CER1.0P2 to fix the issue with failure due to the warning message "Predicted UT1".	873	Instrument Team	Instrument	Rich	Problem found during SCF testing	11/9/2011	11/9/2011	11/23/2011	11/09/2011: Update CER1.0P2 to not fail when a warning message of "Predicted UT1" is sent from the TK routines. This is an expected warning message, which occurs on a regular basis. This was not caught before launch, because data sent from NPP was not timestamped in real time, but was months to years earlier than the present.
1-53	Update CER1.1P8 to fix all the issues discovered after NPP launch. Also include any fixes for issues discovered running this PGE on AMI-P for TRMM/Terra/Aqua. Also, fix memory leaks so that the PGE can be run on the x86 without bringing down the x86 blade.	878	Instrument Team	Instrument	Mark/Thomas	F2F	10/25/2011	10/25/2011	7/11/2012	10/25/2011: A delivery is expected approximately 6 mos. After NPP launch to deliver updated in-flight count conversion data for NPP and to fix any software bugs discovered after launch for NPP. Also include fixes for any issues discovered when running for TRMM/Terra/Aqua.
1-54	Update the PCF generator for CER1.0P2 to look for the last file from the previous day in the proper directory for 1-1-2012.	879	ASDC Ops	Instrument	Thomas/Nelson /Rich	Problem found during Production Processing	1/3/2012	1/3/2012	1/4/2011	01/03/2012: PCF generator is looking for the last file of the previous day in the wrong subdirectory when processing 1-1-2012. The script is looking in the 2012 directory instead of in the 2011 directory.
1-55	A problem with geolocation was discovered after covers opening and traced back to the eph/att conversion of CER1.0P2. Update CER1.0P2 to fix the issue. Also include updates to use the new standard CERES exit codes.	882	Instrument Team	Instrument	Rich	Problem found during analysis of covers open data	1/30/2012	1/30/2012	3/16/2012	01/31/2012: Problem traced back to eph/att conversion in CER1.0P2. Incorrect time conversion of eph/att record times that did not include leap secs.
1-56	Update PGE CER1.4P2 scripts to handle NPP-FM5.	900	ASDC Ops	Instrument	Thomas	Problem found during Production Processing	5/17/2012	5/17/2012	6/5/2012	05/17/2012: Production processing for CER1.4P2 NPP-FM5 AtLaunch failed. Investigation showed that this PGE had been delivered before NPP launch and since there was no test data available to test this PGE for FM5, the scripts were not written to handle FM5 data. Now that we are processing FM5 data, the scripts require updating to handle FM5. No code updates are necessary, the error encountered in production was due to script errors.
1-57	Update ancillary data file IC_Gnd_Ref_Data file for CER1.4P2 for NPP-FM5.	904	Instrument Team	Instrument	Denise	E-mail	7/2/2012	7/2/2012	7/11/2012	07/02/2012: IC_Gnd_Ref_Data updates for CER1.1P8 also need to be used for PGE CER1.4P2. Will be delivered along with updates for NPP-FM5 Edition1-CV ancillary data files for CER1.1P8.

CERES Requirements Log - Instrument

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
1-58	Update CER1.0P2 to check the packet header info to determine duplicate packets	911	Instrument Team/ERBE-like	Instrument	Thomas/Mark	E-mail failure report for ERBE-like #2083	7/10/2012	7/10/2012	8/20/2012	07/10/2012: Duplicate packets for 7/3 were discovered in production when running the ERBE-like software, which failed due to duplicate data. Updates to do more robust checking of packets to find the duplicates will be added.
1-59	Update PCF script for CER1.1P8 to fix the issue found during testing of CER1.0P2 updates	926	Instrument Team	Instrument	Thomas/Mark	Instrument Working Group meeting	8/21/2012	8/21/2012	9/3/2012	08/21/2012: Missing "my" before local variable name. 09/03/2012: Promoted to production.
1-60	Update PGE CER1.1P8 to fix spikes seen in NPP-FM5 drift corrected counts. These appear to be due to the faster drift rate, because of the spacecraft being at a higher altitude.	956 ~~954~~	Instrument Team	Instrument	Thomas/Mark	Instrument Working Group meeting	12/1/2012	12/1/2012	8/26/2013	12/2012: Spikes in the CER1.4P2 gain files for NPP-FM5, need to look at the CER1.1P8 software to remove the data from the scans when the spikes are occurring. It appears that the higher drift rate due to the higher altitude are causing the drift. 03/08/2013: SCCR number updated this requirement and #1-61 are being combined into one SCCR 956.
1-61	Update PGE CER1.4P3 for Edition4. Take out daily gain interpolation for Edition4 only. Update scripts to handle Edition4	956 ~~955~~	Norman Loeb	Instrument	Thomas/Mark	Instrument Working Group meeting	2/19/2013	2/19/2013	8/26/2013	02/05/2012: Norman has asked that we process an Edition4 BDS and take out the daily gain interpolation using one gain for the entire month. This will be done only when processing Edition4, as we do not want to change how Edition2/3 are being processed. 03/08/2013: SCCR number updated this requirement and #1-60 are being combined into one SCCR 956.
1-62	Update IC_Gnd_Ref file to add correct launch date for NPP-FM5.	956	Instrument Team	Instrument	Thomas/Mark	Error found during testing of CER1.1P8 updates	3/11/2013	3/11/2013	8/26/2013	03/11/13: Found an error in the IC_Gnd_Ref file that had an incorrect launch date for NPP-FM5, which affects the Elapsed days value in the GAIN file.
1-63	Update the CER1.4P3 scripts to handle Edition1 for NPP-FM5. The scripts will also be updated to meet the latest scripting standards.	979	Instrument Team	Instrument	Thomas	Norman has asked that NPP-FM5 varying gains be labelled as Edition1.	8/28/2013	8/28/2013	4/11/2014	8/28/2013: Norman has asked that the first set of NPP with gain updates be processed as Edition1. CER1.4P3 currently only handles Edition2/3/4, so the scripts need to be updated to allow for Edition1.

CERES Requirements Log - Instrument

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
1-64	Update to fix CER1.4P3 to read the last gain record, when running Edition1/4, which do not interpolate gains on a daily basis.	979	Instrument Team	Instrument	Denise/ Thomas	Bug found while testing for NPP Edition1 gain update delivery	10/24/2013	10/24/2013	4/11/2014	10/24/2013: A bug was found in the existing CER1.4P3 when running validation for Edition1 NPP gain updates. The code was not reading the last record in the gain file, due to checks use to ensure that interpolation could be done on the given data date. Since Edition1/4 do not do interpolation, the checks needed to be updated for these cases to allow the last record to be used for all data dates in the last month.
1-65	Create new Instrument libraries to handle common C++ classes, C++ metadata and HDF input/output classes.	1012	Instrument Team	Instrument	Denise/ Thomas	This will make it easier to maintain the Instrument software.	12/1/2013	4/11/2014	7/2/2014	04/11/14: Instrument libraries will allow the team to have only one copy of many classes used by mulitiple PGEs.
1-66	Update CER1.1P8 to use the new Instrument libraries.	1012	Instrument Team	Instrument	Denise/ Thomas	This will make it easier to maintain the Instrument software.	12/1/2013	4/11/2014	7/2/2014	04/11/14: These updates will make the Instrument software easier to maintain as all common classes will be in one of two libraries.
1-67	Update the scripts to the newest Instrument standards eliminating the need for the -- to call out special parameters.	1012	Instrument Team	Instrument	Denise/ Thomas	This will make it easier to maintain the Instrument scripts.	12/1/2013	4/11/2014	7/2/2014	04/11/14: This effort is to make all of the Instrument scripts consistent for easier maintenance..
1-68	Eliminate the need to compress the BDS output product after it is created, by writing the file in compressed format directly from CER1.1P8.	1012	Instrument Team	Instrument	Denise/ Thomas	This will make it easier to maintain the Instrument software.	12/1/2013	4/11/2014	7/2/2014	04/11/14: These updates will eliminate the need to call the BDS_compression program after the PGE has completed. The data is kept in memory until the BDS file(s) are written. The PGE will also utilitzie the new Instrument libraries for general purpose classes along with HDF I/O.
1-69	Read in the new NPP Level-0 APID 11 data format and create the TK formatted ephemeris and attitude data files for NPP.	1038	S-NPP	Instrument	Denise/ Thomas	New format for the incoming data for NPP.	8/21/2014	8/21/2014	5/12/2015	8/27/14: A test set of files has been received from EDOS and we can now begin creating the program to process this data. 5/12/2015: Closed, new PGE promoted to production.
1-70	Read the 12 2-hr Level-0 Science, Calibration and Diagnostic APID files received from EDOS for NPP and create 24-hr Level-0 files for each data date. This will ensure that no changes have to be made to the CER1.1P8 scripts or software due to the change in format of the input data stream.	1038	S-NPP	Instrument	Denise/ Thomas	New format for the incoming data for NPP.	8/21/2014	8/21/2014	1/8/2015	8/27/14: A test set of files has been received from EDOS and we can now begin creating the program to process this data. 1/8/2015: EDOS has agreed to send CERES 24-hr Level-0 data files, so this requirement can be eliminated for this effort.

CERES Requirements Log - Instrument

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
1-71	Update CER1.4P3 IES creation to put the correct satellite type in the IES header. Currently being written as a 4 = Aqua, needs to be a 6 for NPP.	1040	Clouds	Instrument	Denise/ Thomas	Problem with IES Satellite Type for NPP Edition1	9/23/2014	9/23/2014	9/30/2014	9/23/14: Issue discovered with NPP Edition1 IES having an incorrect Satellite Type being set to Aqua instead of NPP
1-72	Update CER1.1P8, which is writing out an incorrect satellite type for NPP IESs of 0, should be 6. Not certain when this occurred, 2012 data is OK, however, 2014 data is incorrect. Also fix the issue found with the loop variable not being reset.	1041	Instrument Team	Instrument	Denise/ Thomas	Problem with IES Satellite Type for NPP Edition1-CV	9/23/2014	9/23/2014	11/3/2014	9/23/14: Issue discovered with NPP Edition1-CV IESs having a satellite type of 0, not sure when this occurred, but it needs to be fixed.
1-73	Update CER1.1P8 PCF script to only read input data for NPP-FM5 from CER1.0P2. This is so that CER1.0P2 and CER1.0P3 can run in production together, but CER1.1P8 will continue to only run using data from CER1.0P2 until the switchover to CER1.0P3.	1051	Instrument Team	Instrument	Denise/ Thomas	Jonathan wants to be able to run CER1.0P2 and CER1.0P3 in production.	1/8/2015	1/8/2015	3/16/2015	**1/8/15**: CER1.1P8 scripts currently will prefer the input data files from CER1.0P3 once it is running over those from CER1.0P2. Since Jonathan wants to run both PGEs in production and we want to continue using input from CER1.0P2 until CER1.0P3 is fully tested and data begins flowing from EDOS on a regular basis, we want to change the scipts for CER1.1P8 to always use data from CER1.0P2. **3/16/2015**: The script was moved to production and the SCCR was closed.
1-74	Update CER1.1P8 PCF script to prefer input data for NPP-FM5 from CER1.0P3. The scripts will still be able to read input from CER1.0P2, if no input from CER1.0P3 is available. However, they will prefer to use input from CER1.0P3 when it is available.	1052	Instrument Team	Instrument	Denise/ Thomas	Switchover to CER1.0P3 from CER1.0P2 as data from EDOS becomes the primary source of input.	1/8/2015	1/8/2015		**1/8/15**: Update the CER1.1P8 scripts to prefer input from CER1.0P3, but to allow input from CER1.0P2 should data from CER1.0P3 not be available. This will occur after CER1.0P3 is put into full production once EDOS becomes the primary source of NPP-FM5 data. **6/24/2015**: The EDOS system will be deployed as a Beta version beginning July 6th, the official version will be deployed on Sept. 1st. This SCCR will be delivered in early August, so that it can be promoted to production on or shortly after September 1st.
1-75	Update CER1.4P3 to fix a bug with the calculation of Crosstrack and AlongTrack angles for NPP-FM5. The existing software has hardcoded values, which will be replaced with reading the values from the appropriate data file.	1058	Clouds Team	Instrument	Denise/ Thomas	AlongTrack and Crosstrack angles at the limb are incorrect for NPP-FM5.	12/10/2014	2/2/2015	6/30/2015	**2/2/15**: Angle calculation values were hardcoded into CER1.4P3 and not updated when they were changed, which is causing the AlongTrack and Crosstrack angles to be incorrectly calculated at the limb. **6/30/2015**: ValRs were approved and the SCCR has been closed. The updates have been promoted to production.

CERES Requirements Log - Instrument

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
1-76	Update the ancillary data file area to contain a new directory called common to hold files used by multiple PGEs. This is to support Reqt. 1-75, so CER1.4P3 will read the same files as CER1.1P8 without making a separate copy for each PGE.	1058	Instrument Team	Instrument	Denise/ Thomas	Hardcoded values for parameters used to calculate angles are being replaced by the values in the supplied data files for each instrument.	2/2/2015	2/2/2015	6/30/2015	**2/2/15**: Angle calculation values were hardcoded into CER1.4P3 and not updated when they were changed. Moving the files to a common area will ensure that all PGEs that need this information will have the same information. **6/30/2015**: ValRs were approved and the SCCR has been closed. The updates have been promoted to production.
1-77	Update CER1.1P8 to ignore PB5 times in the Level-0 file construction record.	1052	EDOS	Instrument	Denise/ Thomas	The EDOS SIPS telecom	3/13/2015	3/23/2015	10/6/2015	**3/24/15**: The EDOS NPP Level-0 file construction record PB5 times will be changing to CCSDS format. Since these times convey when the data was processed and not actuall data times, these fields are not necessary for CERES data processing and can be ignored. **6/24/2015**: The EDOS system will be deployed as a Beta version beginning July 6th, the official version will be deployed on Sept. 1st. This SCCR will be delivered in early August, so that it can be promoted to production on or shortly after September 1st.
1-78	Update CER1.1P8 to use the new Instrument libraries for processing. These libraries have been updated to include the new APID 11 for NPP eph/att data that will be received from EDOS.	1052	Instrument Team	Instrument	Denise/ Thomas	Instrument development team	3/24/2015	3/24/2015	10/6/2015	**3/24/15**: Since a delivery is required to make the fix to ignore PB5 times, that will be changing to CCSDS times at some point for NPP, and the Instrument libraries have been updated for the new CER1.0P3, this software must be updated to use the new libraries to make any updates for the EDOS NPP data. **6/24/2015**: The EDOS system will be deployed as a Beta version beginning July 6th, the official version will be deployed on Sept. 1st. This SCCR will be delivered in early August, so that it can be promoted to production on or shortly after September 1st.

CERES Requirements Log - Instrument

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
1-79	Update CER1.0P3 scripts to select the largest APID 11 files. Update the software to remove the reporting of the Predicted UT1 error message from the SGE log.	1074	Jonathan Gleason	Instrument	Denise/ Thomas	Issue discovered during the EDOS WITL test	5/21/2015	5/21/2015	7/21/2015	**5/21/2015**: An issue with short files for APID 11 during the WITL test, showed that we might receive files with a time other than HH-00-00 when renamed. If a new complete file was later ingested, it would not be selected, because the file that had the different time would show up at the end of a sort and it would be selected instead, which would be incorrect. During tests for error reporting an or statement was missing to ignore the predicted UT1 error, so it is being reported, but it really is not an error. **6/22/15:** PGE delivered to CERES CM. **7/21/2015:** Updates promoted to production.
1-80	Update the PCF generator for CER1.4P1 to remove the BDSD from the PCF file.	1082	Instrument Team	Instrument	Denise/ Thomas/Mark	Issue with special testing for sun glint being done on NPP. Internal cal sources are on, but these are not internal cals. All data run as No-Archive Science, so all data is in the BDSDs.	8/4/2015	8/4/2015	8/10/2015	**08/04/2015:** An issue with BDSIs being created for NPP during special operations sun glint testing. BDSIs are being created when we are not really doing internal calibration. Update the PCF script to not stage the BDSDs, so that this data is not being used, so that we do not get false internal calibration data for NPP. No instruments are running internal cals. in No-Archive mode at this time.
1-81	Update CER1.4P1 to use the new Instrument libraries and update the scripts to the newest Instrument standards. Fix the issue with creating metadata for a BDSI that is created from a BDSD created during a special ops for NPP.	1104	Instrument Team	Instrument	Mark/Thomas	Issue with special testing for sun glint being done on NPP. Internal cal sources are on, but these are not internal cals. All data run as No-Archive Science, so all data is in the BDSDs. This update fixes the issues that were seen for these days.	8/4/2015	8/4/2015		**12/04/2015:** Update the PGE to once again read BDSDs to get any internal calibrations that may be run in No-Arch Science mode. Incorporate the new Instrument library routines, so that maintenance of the software is easier when changes are made to common routines, which currently exist in multiple areas. Update the scripts to the latest Instrument standards. This will allow the software to be compiled in the AMI-P enviroment with the latest operating system upgrades. Make the PGE run on X-86 only.

CERES Requirements Log - Instrument

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
1-82	Update CER1.4P2 to skip BDSI files that do not contain true internal calibration data. Update the software to use the new Instrument libraries. And update the scripts to the lastest Instrument standards.	1105	Instrument Team	Instrument	Mark/Thomas	Issue with special testing for sun glint being done on NPP. Internal cal sources are on, but these are not internal cals. All data run as No-Archive Science, so all data is in the BDSDs.	12/4/2015	12/4/2015		**12/04/2015:** Update the PGE to ignore BDSI files that do not contain actual internal calibration data. These files are created during special operations, the internal cal sources are turned on, however, no actual internal calibration is being performed. Incorporate the new Instrument library routines, so that maintenance of the software is easier when changes are made to common routines, which currently exist in multiple areas. Update the scripts to the latest Instrument standards. This will allow the software to be compiled in the AMI-P enviroment with the latest operating system upgrades. Make the PGE run on X-86 only.
1-83	Update PGE CER1.0P3 to process APID 11 data for J01-FM6.	1124	Instrument Team	Instrument	Thomas	PGE CER1.0P3 needs to be updated to handle J01-FM6.	12/4/2015	12/4/2015		**12/04/2015:** Update PGE CER1.0P3 to handle J01-FM6 APID 11 data. This update should only involve changes to the scripts, as the algorithms for converting the data from APID 11 to Toolkit format do not change.
1-84	Create new PGE CER1.1P9 to support J01-FM6.	1125	Instrument Team	Instrument	Thomas	New PGE CER1.1P9 will be an update to CER1.1P8 and will support J01-FM6.	12/4/2015	12/4/2015		**12/04/2015:** New PGE CER1.1P9 will be an update to CER1.1P8 to add support for J01-FM6, which will be launched in late-2016/early-2017. This will allow for updates to the software without effecting the existing production processing for Terra/Aqua/NPP, while post-launch issues are addressed in the software. The FM6 instrument will contain a longwave channel instead of the window channel in the previous CERES instruments, so updates to the HDF routines and other channel validations will be necessary to allow for the longwave channel. The goal is to be able to eventually make this updated version of the software support all of the existing CERES instruments, once any issues have been resolved.

CERES Requirements Log - Instrument

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
1-85	Update CER1.2P1 to handle the new J01-FM6 data. Also, update the CER1.2P1 scripts to the latest Instrument standards.	1126	Instrument Team	Instrument	Mark	CER1.2P1 needs to be able to suppport testing for J01-FM6 in 2016.	12/4/2015	12/4/2015		**12/04/2015:** Update the PGE to handle the new J01-FM6 data. Also, update the scripts to the latest Instrument standards. If time permits, update the software from C to C++, so it can use the new Instrument libraries and be easier to maintain.
1-86	Update CER1.2P1 from C to C++, so it can use the new Instrument libraries.	1126	Instrument Team	Instrument	Mark	CER1.2P1 is currently the only PGE in C and not C++.	12/4/2015	12/4/2015		**12/04/2015:** Update the PGE from C to C++, so it can use the new Instrument libraries and be easier to maintain.
1-87	Update the CER1.4P3 ancillary data directory to have gain and offset directories with subdirectories for editions and instruments. Update the scripts to read the gain and offset files from the new directory structure.	1110	Instrument Team	Instrument	Denise	Make it easier to clean up old gain and offset files for each edition and instrument.	2/3/2016	2/3/2016	3/21/2016	**02/03/2016:** Update the CER1.4P3 ancillary directory to have gain and offset subdirectories, which are then broken down further by edition and instrument. This will make it easier to maintain the different gains and offsets for each edition and allow easier clean-up of old gain and offset files.
1-88	Update CER1.4P1 to read input BDS & BDSD from the same logical ID used in CER1.1P8 to create them.	1127	Instrument Team	Instrument	Denise	Update will allow CER1.4P1 to run as part of CER1.1P9 & CER1.1P10	4/13/2016	4/13/2016		**04/13/16:** Update CER1.4P1 to read the BDS & BDSD using the logical IDs that created them in CER1.1P8. This allows CER1.4P1 to run as part of the new CER1.1P9 & CER1.1P10.