January 14, 2004 - System Issues and Status

Table 1: Process Strategy/Geier as of 01/14/04
Active Requests in order of priority (1 of 6)

Production Request (PR)	Satellite	Production Strategy	Data Product (SS#)	PGEs	Data Dates	Special Status
PR 12-04	Terra	ValR3	SSF (SS4.5-6)	4.5-6.1P2 4.5-6.2P2	1 day	Waiting on delivery to promote.
PR 129-03, 130-03	Aqua	ValR3/ValR4	BDS (SS1)	1.1P5 1.2P1 1.3P3 1.2P1	6/03	Waiting on delivery.
PR 124-03 to 128-03	Aqua Aqua/ Terra	ValR4	ERBElike (SS2&3)	2.4P1 2.2P1 2.3P1 2.3P2 3.1P1 3.2P1 3.2P2	6/03	Waiting on delivery to promote.
PR 96-03, 97-03	Terra	Edition2-QC	SSF (SS4)	4.1-4.1P2 4.1-4.2P1 4.1-4.2P2 4.1-4.3P1 4.5-6.1P2 4.5-62P2	3/00 - 12/01	Clouds and Inversion running.
PR 113-03	Terra	Edition2A (Inversion only)	SSF (SS4.5)	4.5-6.3P2 4.5-6.2P2	1/01 - 12/01	
PR 113-03A	Terra	Edition2A (monthly validation regions)	SSF (SS4.5)	4.5-6.4P1	1/01 - 12/01	
PR 112-03	Terra	Edition2A	SFC (SS9)	9.2P1 9.3P1 9.4P1	1/01 - 12/01	
PR 6-04		Edition2	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	1/01 - 12/01	

Table 1: Process Strategy/Geier as of 01/14/04
Active Requests in order of priority (2 of 6)

Production Request (PR)	Satellite	Production Strategy	Data Product (SS#)	PGEs	Data Dates	Special Status
PR 7-04		ValR10	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	3/00	
PR 113-03	Terra	Edition2A (Inversion only)	SSF (SS4.5)	4.5-6.3P2 4.5-6.2P2	3/00 - 12/00	
PR 113-03A	Terra	Edition2A (monthly validation regions)	SSF (SS4.5)	4.5-6.4P1	3/00 - 12/00	
PR 112-03	Terra	Edition2A	SFC (SS9)	9.2P1 9.3P1 9.4P1	3/00 - 12/00	
PR 8-04		Edition2	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	3/00 - 12/00	
PR 96-03, 97-03	Terra	Edition2-QC	SSF (SS4)	4.1-4.1P2 4.1-4.2P1 4.1-4.2P2 4.1-4.3P1	1/02 - 2/02	Clouds running.
PR 10-04, 11-04	Terra	Edition2A	SSF (SS4.5-6)	4.5-6.1P2 4.5-6.2P2 4.5-6.4P1	1/02 - 2/02	ValR3 must be approved before this runs.
PR 9-04	Terra	Edition2A	SFC (SS9)	9.2P1 9.3P1 9.4P1	1/02 - 2/02	
PR 8-04		Edition2	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	1/02 - 2/02	
PR 122-03, 123-03	Aqua	Edition2	BDS (SS1)	1.3P3 1.2P1	6/18/02 - 10/03	ValR3 must be approved before starting this.

Table 1: Process Strategy/Geier as of 01/14/04
Active Requests in order of priority (3 of 6)

Production Request (PR)	Satellite	Production Strategy	Data Product (SS#)	PGEs	Data Dates	Special Status
PR 117-03 to 121-03	Aqua Aqua/ Terra	Edition2	ERBElike (SS2&3)	2.4P1 2.2P1 2.3P1 2.3P2 3.1P1 3.2P1 3.2P2	6/18/02 - 10/03	ValR3 must be approved before starting this.
PR 99-03		GEOS4	MOA (SS12)	12.1P1	2/25/00 - 12/31/03	
PR 109-03		GEOS4	PMOA (SS9.1)	9.1P1	3/1/00 - 12/31/03	
PR 97-03	Terra	Edition2-QC	SSF (SS4)	4.1-4.1P2 4.1-4.2P1 4.1-4.2P2 4.1-4.3P1	3/02 - 2/03	Clouds running.
PR 10-04, 11-04	Terra	Edition2A	SSF (SS4.5-6)	4.5-6.1P2 4.5-6.2P2 4.5-6.4P1	3/02 - 2/03	
PR 9-04	Terra	Edition2A	SFC (SS9)	9.2P1 9.3P1 9.4P1	3/02 - 2/03	
PR 8-04		Edition2	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	3/02 - 2/02	
Standing requests AM-PR 1-00 to 7-00	Terra	Edition1	BDS/ ERBElike (SS1-3)	1.1P3 1.2P1 1.3P1 1.3P2 2.1P1 2.2P1 2.3P1 2.3P2 3.1P1	For 1/00 - present	

Table 1: Process Strategy/Geier as of 01/14/04
Active Requests in order of priority (4 of 6)

Production Request (PR)	Satellite	Production Strategy	Data Product (SS#)	PGEs	Data Dates	Special Status
Standing requests AM-PR 8A-02 to 11-02	Terra	Edition2	BDS/ ERBElike (SS1-3)	1.2P1 1.3P3 2.2P1 2.3P1 2.3P2 2.4P1 3.1P1 3.2P2	For 7/03 - present	Need Gains and SCR before processing any further (ValRX approved).
Standing requests PM-PR 7-03A to 10-03	Aqua	Edition1	BDS/ ERBElike (SS1-3)	1.1P5 1.2P1 1.3P1 1.3P2 2.2P1 2.3P1 2.3P2 3.1P1 3.2P2	For 1/04 - present	Do not start until all January'04 data received.
Standing requests PM-PR 11-03, 13-03 to 17-03	Aqua	Edition2	BDS/ ERBElike (SS1-3)	1.3P3 1.2P1 2.2P1 2.3P1 2.3P2 2.4P1 3.1P1 3.2P2	For 11/03 - present	Need Gains and SCR before processing any further (ValRX approved).
Standing request PM-PR 12-03	Aqua/ Terra	Edition2	ES4/ES9 (SS3)	3.2P1	For 11/03 - present	Need Gains and SCR before processing any further (ValRX approved).
M-PR 3-02		NSIDC-NESDIS	EICE ESNOW (SS4.1)	4.1-4.0P1	Standing request	
PR 116-03	TRMM	Beta3	TSI (SS7.1)	7.1.1P1	4/98, 7/98, 8/98	Waiting on delivery to promote.
PR 97-03	Terra	Edition2-QC	SSF (SS4)	4.1-4.1P2 4.1-4.2P1 4.1-4.2P2 4.1-4.3P1	3/03 - 6/03	Run at LOW priority after 2/03 finishes.
PR 10-04, 11-04	Terra	Edition2A	SSF (SS4.5-6)	4.5-6.1P2 4.5-6.2P2 4.5-6.4P1	3/03 - 6/03	

Table 1: Process Strategy/Geier as of 01/14/04
Active Requests in order of priority (5 of 6)

Production Request (PR)	Satellite	Production Strategy	Data Product (SS#)	PGEs	Data Dates	Special Status
PR 9-04	Terra	Edition2A	SFC (SS9)	9.2P1 9.3P1 9.4P1	3/03 - 6/03	
PR 61-03	Terra	Beta1	Synoptic SARB (SS7.2)	7.2.1P1	1/01, 4/01, 7/01	Cancelled 1/13/04.
Standing requests PM-PR 23-02 to 30-02 and PM-PRs 1-03, 3-03 to 6-03	Aqua	Baseline1 Edition1	BDS/ ERBElike (SS1-3) BDS/ ERBElike (SS1-3)	1.1P5 1.2P1 1.3P1 1.3P2 1.3P3 2.2P1 2.3P1 2.3P2 2.4P1 3.1P1 3.2P2	For 6/03 - 12/03	Done.
Standing request PM-PR 2-03	Aqua/ Terra	Edition1	ES4/ES9 (SS3)	3.2P1	For 6/03 - 12/03	Done.
PR 95-03	Terra	Beta2	SFC (SS9)	9.2P1 9.3P1 9.4P1	3/00 - 3/01 every 3rd month	Done 12/30/03.
PR 4-04, 5-04		ValR9, ValR9E	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	6/00, 6/01, 6/02, 3/00, 12/00	Done.
PR 1-04 to 3-04	Terra	Beta3, Beta3B, Beta3E	SRBAVG (SS10)	10.1P1	6/00, 6/01, 6/02, 3/00, 12/00	Done.
PR 106-03, 107-03		ValR9, ValR9E	GGEO (SS11)	11.1P5 11.1P6 11.1P7 11.1P8 11.2P2 11.4P1	3/00 - 2/03; every 3rd month	Done 12/26/03 but all June months hit infinite loop and a redelivery was required before rerunning them as a ValR9/ ValR9E.

Table 1: Process Strategy/Geier as of 01/14/04
Active Requests in order of priority (6 of 6)

Production Request (PR)	Satellite	Production Strategy	Data Product (SS#)	PGEs	Data Dates	Special Status
PR 103-03 to 105-03	Terra	Beta3, Beta3B, Beta3E	SRBAVG (SS10)	10.1P1	3/00 - 2/03; every 3rd month	Done 12/29/03 with exception of June months for which no GGEO available.
PR 115-03A	Terra	ValR2 monthly validation regions	SSF (SS4.5)	4.5-6.4P1	6/00	Done 1/13/04.
PR 115-03	Terra	ValR2 (Inversion only)	SSF (SS4.5)	4.5-6.3P2 4.5-6.2P2	6/00	Done 12/23/03 and verified 1/6/04.
PR 114-03	Terra	ValR2 (Inversion only)	SFC (SS9)	9.2P1 9.3P1 9.4P1	6/00	Done 12/25/03 and verified 1/6/04.
PR 131-03	Terra	Beta6	FSW (SS6)	6.1P1 6.2P1 6.3P1	3/01	Done 12/21/03.

Table 2: Process Strategy/Geier as of 01/14/04
Coming Soon (1 of 2)

Active Month	Satellite	Processing Strategy	Data Product (SS#)	Data Dates	Comments
2/04	Terra	ValR1	SRBAVG (SS10)	12 months (most likely 1/01 - 12/01)	Waiting on delivery; will become highest priority when code promotes.
	Terra	Edition2A	SRBAVG (SS10)	3/00 - 2/03	ValR1 must be approved first.
	Terra	ValR1	CRS (SS5)	Several days	Waiting on delivery; Crosstrack only; will become highest priority when code promotes (unless ValR1 SRBAVG not yet complete).
	Terra	Edition2A	CRS (SS5)	2/25/00 - 6/03	ValR1 must be approved first Crosstrack only.
	Terra	ValR1	FSW (SS6)	One month	Delivery needed for hdf conversion PGE.
	Terra	Edition2A	FSW (SS6)	3/00 - 6/03	ValR1 must be approved first.
	Aqua	Beta2	SSF (SS4)	12/02	1/9/04 Cloud delivery. Include renamed MODIS aerosol parameter; 4x2 MODIS; every other SSF FOV when vzen < 63 deg; Run with ECMWF MOA. if DAO-GEOS4 not available.
	Aqua	Beta2	SFC (SS9)	1 month	
	Aqua	Beta1	CRS (SS5)	1 month	May or may not need redelivery to support Aqua.
	Aqua	Beta1	FSW (SS6)	1 month	Test at SCF to verify no redelivery needed.
	TRMM	Beta2	Synoptic SARB (SS7.2)	4/98, 7/98, 8/98	Rerun 3 months of SYNI to use as input for SYN/AVG/ZAVG.
	TRMM	Beta1	SYN/AVG/ ZAVG (SS8)	4/98, 7/98, 8/98	Need Synoptic SARB input.
	Terra	Beta2	TSI (SS7.1)	??	
	Terra	Beta1	Synoptic SARB (SS7.2)		

Table 2: Process Strategy/Geier as of 01/14/04
Coming Soon (2 of 2)

Active Month	Satellite	Processing Strategy	Data Product (SS#)	Data Dates	Comments
	Terra	Beta1	SYN/AVG/ ZAVG (SS8)	??	Need Synoptic SARB input.
	Aqua	Beta1	TSI (SS7.1)		Not on Bruce's schedule.
	Aqua	Beta1	Synoptic SARB (SS7.2)		Not on Bruce's schedule.
	Aqua	Beta1	SYN/AVG/ ZAVG (SS8)		Not on Bruce's schedule.

Table 3: January 14, 2004 - System Issues and Status

Activity	Lead	Status
CM	Ayers	• See Table 4 for SCCR activity since the last DMT meeting. SCCRs that need to be reviewed follow Table 4. (Ayers) • Tested the following deliveries and released them to the ASDC: ERBE-like (SCCR 484), Inversion (SCCRs 491 & 493), TISA Averaging (SCCRs 462 & 481), CERESlib (SCCR 494), and Clouds (SCCR 496). (Ayers, Saunders) • Delivered updated GGEO (SCCR 486) files to the ASDC. (Ayers) • Currently testing Clouds (SCCR 490). (Ayers) • Delivered the Clouds S'COOL data file for November 2003 to the ASDC. (Ayers)

Table 4: SCCR Activity December 15 at 3:00 p.m. - January 12 at 4:15 p.m.

SCCR	S	U	A	C	D	SS	Page No.	Comments
475				X		6 & 9		
477				X		4.5-4.6		
478				X		12		
479				X		12		
480				X		CERESlib		
486				X		11		
487				X		6		
488				X		4.5-4.6		
490		X	X			4.1-4.4	11	
491			X			4.5-4.6		
492	X		X			4.4	15	CERESlib modifications
493	X		X	X		4.1-4.4	16	
494	X		X			CERESlib	16	
495	X	X				4.5-4.6	17	
496	X		X			4.1-4.4	18	
497	X					1	19	
498	X					5	21	

S=Submitted; **U**=Updated; **A**=Approved; **C**=Closed; **D**=Disapproved; **SS**=Subsystem

CERES Software Configuration Change Request Submittal

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Subsystem: Clouds SCCR Date: 12/16/2003 SCCR Number: 490

Description of Change (Science):
CER4.1-4.1P3:
Clouds Retrieval:
(1) Modified to only process every 2nd scanline and every 4th pixel (2x4).
(2) Passed microwave sea-ice fraction into the cookie dough with each imager pixel.
(3) Over snow-ice non-elevated land, where an inversion cloud height was calculated from the lapse rate, the MOA skin temperature used in calculation was replaced by the daily averaged MOA air surface temperature.
(4) Added more validation sites for the Clouds pixel level validation regions.
(5) Over the polar region, Overhead-sun albedo from CRH 0.6um map updated from the previous day is used to compare with the threshold for the IGBP type and the season. The threshold over ocean is equal to the average IGBP type overhead sun albedo plus 3-sigma. The threshold over one of the land IGBP types is its average overhead sun albedo plus 2-sigma. Exceeding this threshold for an imager pixel over ocean sets sea-ice, and exceeding it over land sets snow. This information is passed to CookieDough.
(6) Added 30% adjustment on IR threshold when running DAO MOA.
(7) Modified cloud thickness and clouds top emissivity calculations so that it uses cloud phase, instead of cloud temperature.
(8) Modified the interface routine so that satellite 2.1 μm reflectance is being passed into clear sky aerosol retrieval algorithm for Aqua MODIS processing.
(9) Improved CERES mask algorithm.
a. Added skin T restriction for Tlim test: (T > 270K)
b. Daytime Polar:
Added restriction to Cold Cloud Test, avoid calling Super Cold Plateau clouds.
Added thin cirrus clouds detection.
Tuned various thresholds to improve the results.
Added mini-mask for TBD pixels, no more TBD in CERES daytime mask.
c. Nighttime Polar:
All the improvements in the Terra Edition 2 (SCCR467).
Filter out the bad T3.7 data (T3.7 > 300K)
d. Daytime non-polar
Added sun-glint probability dependent T3-T4 thresholds in SunGlintTest.
Improved smoke detection over ocean.
Added a snow test region flag to avoid “tropic snow”.

Reason for Change (Science):
CER4.1-4.1P3:

Clouds Retrieval:
(1) To speed up the Clouds processing.
(2) The Science Team has determined that the SSF is overstating the ice fraction over ocean. By passing the ice fraction to cookie dough, a more representative surface description is obtained.
(3) To obtain a better cloud height for inversion clouds.
(4) To add more validation possibilities.
(5) After multiple tests and comparisons, the Science Team has made such decision.
(6) Same as above.
(7) To improve cloud top properties.
(8) Due to the fact that about half of the 1.6 μm detectors in Aqua-MODIS are not functioning.
(9) To improve CERES mask globally.

Description of Change (non-Science):
CER4.1-4.1P3:

Clouds Retrieval:
(1) Modify the MOD04 read software to open SDSs: Optical Depth Ratio Small or Dust Weighting Factor, instead of only Dust Weighting Factor.

Reason for Change (non-Science):
CER4.1-4.1P3:

Clouds Retrieval:
(1) After data date 20020401, the MOD04 product changed SDS name from Dust Weighting Factor to Optical Depth Ratio.

Affected PGEs : CER4.1-4.1P3

Est. Time to Complete Changes : less than one week
Planned Delivery Date : Dec 19, 2003
Impact : Clouds

Date: 12/22/2003 Status: APPROVED

Originator: SUN-MACK, SUNNY (SAIC)

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ADDITIONAL CHANGES TO SCCR NO. 490:
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Description of Change (Science):
CER4.1-4.1P3:
Convolution:
(1) The radiance channel for clear air optical depth using the Stowe algorithm was made selectable based on satellite. For Aqua, it will be 0.6 and 2.13. Satellite specific solar constants will be used as provided by Dr. Ignatov.
(2) For Aqua, only every other CERES footprint will be processed with viewing zenith angle less than 63 degrees. Even samples will be processed on even packet and odd samples on odd packets.
(3) Modified the search length to be automatically calculated based in the number of pixels in the scan line.
(4) The sea ice areal coverage is reduced based on the fraction reported on the microwave ice map. The reduced area is added to the ocean areal coverage.
(5) The admgeo parameter will be used to report the source for snow and ice data. It will be a 100 if only microwave is used. It will be 200 if only clear sky reflectance is used. A number between those two will represent the PSF-weighted contribution.
(6) New point spread functions are delivered that match the reduced imager (2x4) data size.
(7) The MOD04 land and ocean aerosol was not multiplied by a 100 a second time and then capped at a 100.
(8) CERES footprints under a solar eclipse will not be included on the SSF
(9) Only footprints that have Stowe aerosol calculated on them are flagged as using the second generation algorithm.
(10) The daytime radiance is 2.13 micrometer

Reason for Change (Science):
CER4.1-4.1P3:
Convolution:
(1) Due to problems with the 1.6 channel on Aqua a different channel will be used. New solar constants were obtained from Dr.Ignatov. It was discovered that the satellite specific solar constants were not being used in the Stowe algorithm, but hard coded TRMM values.

(2) The Science Team has decided that the number of footprints needed to be reduced to match computer resources. Dr. Loeb provided the algorithm to select footprints.
(3) The Science Team has decided that only every fourth pixel in a scan line will be used. To allow the code to operate correctly regardless of the number of pixels in a scan line for Aqua, an algorithm is used to determine the number of steps required in the search pattern. If the size is too small, the search can fail due to the bow-tie pattern of the data.
(4) The Science Team has determined that the SSF is overstating the ice fraction over ocean. By using the ice fraction, a more representative surface description is obtained.
(5) The Science Team has directed the use of the clear sky reflectance map when microwave snow and ice data is not available. To allow users to determine how snow and ice was determined, a variable was added.
(6) Without a new PSF, the imager coverage over the footprint would be underestimated.
(7) The MOD04 land and ocean aerosol coverage parameter will contain the correct values.
(8) The algorithms do not properly handle the low SW radiance values during an eclipse when the solar zenith angle implies larger SW radiances.
(9) This corrected an error where all footprints sent to the second generation algorithm were flagged.
(10) Due to problems with the MODIS 1.6 micrometer radiance the science team directed the change.

Description of Change (non-Science):
CER 4.1-4.0P1
The script was modified to search on the parameter north.YYYYMMDD and south.YYYYMMDD if the current searches failed to return NESDIS snow and ice files.

CER4.1-4.1P3
(1) The number of cloud retrieval input files that can be read from meta data was increased to 120.
(2) The algorithm for determining GRings was corrected. Additional checks were implemented to prevent bad values from being used.
(3) The script was modified to allow selection of MODIS radiance and geolocation, and aerosol version number.

Reason for Change (non-Science):
CER4.1-4.0P1
No NESDIS files were being selected when the naming convention changed.

CER4.1-4.1P3
(1) The number of cloud retrieval input files now exceed the previous limit of 80.
(2) The new ASDC database determined that previous GRings were incorrect.
(3) With two versions of MODIS data available, a method is needed to determine which one to use.

Affected PGEs : CER4.1-4.0P1 and CER4.1-4.1P3

Est. Time to Complete Changes : One week
Planned Delivery Date : January 9, 2004
Impact : Allow testing of Aqua clouds algorithms.

Date & Time: 2004-01-06 09:50:46

Originator: MILLER, WALTER F. (SAIC)

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Description of Change (Science):
N/A

Reason for Change (Science):
N/A

Description of Change (non-Science):
CER4.1-4.3P1:
The number of stowe-study categories was changed from 2 to 6.

CER4.1-4.0P1:
This PGE will not be delivered with this SCCR.

Reason for Change (non-Science):
CER4.1-4.3P1:
To correct the mistake.

CER4.1-4.0P1:
CM's request.

Affected PGEs : CER4.1-4.3P1

Est. Time to Complete Changes : Done
Planned Delivery Date : Jan. 09, 2004
Impact : Clouds

Date & Time: 2004-01-09 16:15:56

Originator: SUN-MACK, SUNNY (SAIC)

CERES Software Configuration Change Request Submittal
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*** All changes described in this SCCR were made in CERESlib. ***

Subsystem: Clouds4.4 SCCR Date & TIME: 2004-01-06 12:36:33 SCCR No.: 492

Description of Change (Science):
None

Reason for Change (Science):
N/A

Description of Change (non-Science):
quality_ies module
Two parameters for radiance quality will be changed. SUSPCT will be changed from 01 to 11. ECLIPSE will be added as 01. BAD11 will be dropped.

GRing module
The algorithm for calculating GRing was modified to better handle cases when missing MODIS granules are encountered. Several previously untested branches have been corrected. Additional testing of the produced GRing has been added.

Reason for Change (non-Science):
quality_ies module
CERES radiances will be given a quality flag of 01 when they are under a solar eclipse.

GRing module
ASDC identified problems with the GRing as they transitioned to the Sybase system.

Affected PGEs : CER4.1-4.1P3

Est. Time to Complete Changes: Three weeks
Planned Delivery Date : January 9, 2003
Impact : ASDC will have problems updating their data base.

Originator: MILLER, WALTER F. (SAIC)

CERES Software Configuration Change Request Submittal
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Subsystem: Inversion SCCR Date & TIME: 2004-01-06 14:39:30 SCCR No.: 493

Description of Change (Science):
N/A

Reason for Change (Science):
N/A

Description of Change (non-Science):
The PCF generator of PGE CER4.5-6.4P1 was corrected to use the appropriate environmental variables.

Reason for Change (non-Science):
The incorrect usage of environmental variables in the PCF generator was causing PGE CER4.5-6.4P1 to incorrectly name the PCF file.

Affected PGEs : CER4.5-6.4P1

Est. Time to Complete Changes : N/A
Planned Delivery Date : Tuesday, January 6, 2004
Impact : no change to test case - only effects production runs.

Originator: HOPPE, AARON T. (SAIC)

CERES Software Configuration Change Request Submittal
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*** All changes described in this SCCR were made in CERESlib. ***

Subsystem: CERESlib SCCR Date & TIME: 2004-01-07 15:30:14 SCCR No.: 494

Description of Change (Science):
see SCCR #492

Reason for Change (Science):
see SCCR #492

Description of Change (non-Science):
see SCCR #492 (changes to quality_ies and GRing modules)

Reason for Change (non-Science):
see SCCR #492

Affected PGEs : see SCCR #492

Est. Time to Complete Changes : see SCCR #492
Planned Delivery Date : Friday January 9, 2004
Impact : see SCCR #492

Originator: STASSI, JOE C. (SAIC)

CERES Software Configuration Change Request Submittal
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Subsystem: Inversion SCCR Date: 01/09/2004 SCCR Number: 495

Description of Change (Science):
N/A

Reason for Change (Science):
N/A

Description of Change (non-Science):
A New version of the Terra 5-record sample SSF HDF file and related read software has been created. This version includes the SDS “ADM geo”

Reason for Change (non-Science):
A new version of the SSF read software for Terra is required due to a parameter name change.

Affected PGEs : N/A

Est. Time to Complete Changes : 1 day
Planned Delivery Date : 01-12-2004
Impact : N/A

Date: 01/09/2004 Status: SUBMITTED

Originator: NOLAN, SANDY K. (SAIC)

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ADDITIONAL CHANGES TO SCCR NO. 495:
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Description of Change (Science):
N/A

Reason for Change (Science):
N/A

Description of Change (non-Science):
N/A

Reason for Change (non-Science):
SCCR 465 describes the parameter ADM geo name change in the SSF product.

Affected PGEs : N/A

Est. Time to Complete Changes : 1 day
Planned Delivery Date : 01-12-04
Impact : n/a

Date & Time: 2004-01-09 13:41:09

Originator: NOLAN, SANDY K. (SAIC)

CERES Software Configuration Change Request Submittal
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Subsystem: Clouds SCCR Date & TIME: 2004-01-09 16:22:07 SCCR No.: 496

Description of Change (Science):
N/A

Reason for Change (Science):
N/A

Description of Change (non-Science):
ER 4.1-4.0P1:
(1) The script was modified to search on the parameter north.YYYYMMDD and south.YYYYMMDD if the current searches failed to return NESDIS snow and ice files.

Reason for Change (non-Science):
CER4.1-4.0P1:
(1) No NESDIS files were being selected when the naming convention changed.

Affected PGEs : CER4.1-4.0P1

Est. Time to Complete Changes: Done
Planned Delivery Date : January 09, 2004
Impact : Clouds

Originator: BROWN, RICKY R. (SAIC)

CERES Software Configuration Change Request Submittal
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Subsystem: Instrument SCCR Date & TIME: 2004-01-10 14:37:17 SCCR No.: 497

Description of Change (Science):
1) Update to allow for Double Drift Correction in PGEs CER1.1Px and CER1.3P3
2) Correct calculation to determine Spaceclamp Pin value
3) Update Aqua gain coefficient files with new gains for Edition2 processing and to add the coefficients for the correction of the Window Radiance
4) Update PGE CER1.3P1 to include new SDSs in BDSIs
5) Update PGE CER1.1Px to add new SDSs containing double drift corrected counts
6) Update PGEs CER1.1Px and CER1.3P3 to flag radiance data when a Solar Eclipse is detected during day
7) Update PGE CER1.2P1 to properly flag radiance data during a Solar Eclipse event
8) CER1.1Px and CER1.3P3 to correct the Window Channel Radiance based on the Shortwave Radiance value.

Reason for Change (Science):
1) The Second Time Constant correction introduces a drift into the already drift corrected radiances, the double drift correction corrects this introduced error
2) The algorithm to determine the Spaceclamp Pin value contained and error and always selected the first value as the pin, instead of the middle value
3) Baseline gains were updated to reflect in-flight gains. Edition2 gain corrections to fix a drift found in the radiances were also added. Values to implement the update of the Window Channel Radiance based on the Shortwave radiance value were added.
4) For analysis purposes, SDSs showing the double drift corrected counts were added to the BDS, these SDSs were added to the BDSI files as well
5) For analysis purposes, SDSs showing the double drift corrected counts were added to the BDS
6) During a Solar Eclipse, radiance values are different than expected during day. These radiances are flagged to allow downstream subsystems to recognize the Solar Eclipse event and handle the radiances in a different manner
7) Update to properly report records with Solar Eclipse flags set
8) A possible leak of the SW channel into the WN channel is being seen in data analysis, the update corrects the WN channel when this occurs

Description of Change (non-Science):
1) Update gain coefficient files to include flags to turn on/off double drift correction per radiance channel
2) Update CER1.1Px to print out packet time along with packet number in the “heartbeat” standard output
3) Update the BDS compression program to order the SDSs within the BDS files in the selected order
4) Update make files to get Metadata.o from the utilities.a library during link
5) Update test environment files for the current delivery
6) Reorganize how CER1.3P3 writes out the Edition2 BDS SDSs to minimize internal memory usage
7) Update CER1.3P2 run script to send a message to analysts when processing is complete
8) Update CER1.1Px to correct a format error in the BQCRP QC report

Reason for Change (non-Science):
1) Flags to turn double drift correction on were added to the gain coefficient files to support the code updates
2) Printing out the time with the record number makes it easier to track down problems when they occur during production processing
3) Due to a change in the order that SDSs are written during Edition2 processing the compression program was updated to always write out the SDSs in the same order, whether the BDS is created from the Edition1 processor or the Edition2 processor
4) Since the Metadata.o is part of the utilities.a library, the make script was updated to use the version in the library instead of using a separate version of the object
5) The test environment files were updated for the delivery with new CC-codes, SCCR #, etc.

6) CER1.3P3 previously read in an entire BDS file, then did all the necessary calculations and then wrote out the Edition2 BDS file. This process was using a lot of internal memory that was not necessary for processing. The code was reorganized to read and write all SDSs that are not used in the Edition2 radiance calculations, only keeping the SDSs in memory that are needed in the calculations
8) A format error in the created HTML QC file was fixed

Affected PGEs	: CER1.1P1 thru 6, CER1.2P1, CER1.3P1 thru 3
Est. Time to Complete Changes	: 4 mos
Planned Delivery Date	: Jan. 16, 2004
Impact	: Aqua Edition2 processing will be run from Edition1 BDS files, Aqua Baseline1 files can be removed from the archive

Originator: COOPER, DENISE L. (SAIC)

CERES Software Configuration Change Request Submittal
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Subsystem: InstSARB SCCR Date & TIME: 2004-01-12 11:15:12 SCCR No.: 498

Description of change (science):
** CER5.0P1
1. Incorporated use of the Gridded Daily MODIS land angstrom exponent with the 0.55um AOT to produce a spectral AOT for desert scene types.
** CER5.1P1
2. Incorporated new version of Fu-Liou radiative transfer model that includes S. Kato's Gamma Weighted Two-Stream Algorithm (GWTSA) SW code that deals with inhomogeneous clouds.
3. Revise the SW downward spectral weights for pre-untuned adjustment of spectral albedo to match the retrieved TOA-based broadband surface albedo by including tables for desert and snow surfaces where spectral insolation weights are different than those for low albedo surfaces.
4. Update logic to handle out of range cloudy sky TOA-based retrieval of surface albedo over sea ice to default to the broadband surface albedo and spectral shape of the sea ice.
5. Update surface properties algorithm to treat sea ice coverage over the range of 0 to 100 percent.
6. Revise spectral emissivity for desert and open shrub scene types for the 10-11um and 11-12um Fu-Liou bands based on the yearly scene type mean of the Cloud WG ISCCP-based emissivity maps.
7. Modify code to process FOVs through the radiative transfer model for which the CERES Observed SW TOA is bad, but the CERES Observed LW TOA is good.
8. Include the use of the SSF ADMgeo parameter in the logic that adjusts the IGBP scene vector when the cloud coverage is greater than 95 percent to be consistent with the Cloud WG retrieval assumption of cloud properties over a snow or ice surface.
9. Modified look-up look up table values for fresh snow and permanent snow surface albedo used in the computation of surface albedo for different snow grain sizes (50um for fresh snow and 1000um for permanent snow).
10. Changed the diffuse angle for cloudy scenes from 60 degrees to 53 degrees.
11. Updated the ocean surface albedo lookup table (zjin.ocean.1103.bin).
12. Replacing CRS slot for sigma table version number with the error code returned from the radiative transfer algorithm.
13. Replacing the possible use of the GFDL aerosol climatology with a new MATCH-based climatology that varies with month. This will only be used if there is no daily MATCH data.

Reason for change (science):
1. The angstrom exponent derived from the fit to the three wavelengths for land given by the MOD08_d3 product produced large negative (physically unrealistic) angstrom exponents in many locations.
2. The new model configuration is a more efficient, one time computation of cloud and aerosol optical properties, necessary for the more complex GWTSA solver.
3. Correcting for significant differences at low sun angles.
4. Previous default of ocean broadband surface albedo and spectral shape was incorrect.
5. Previously Z. Jin ocean albedo algorithm was only called when the ocean area coverage was greater than 50 percent.
6. Results will be more consistent between Clouds and SARB.
7. This will allow more FOVs to be processed and provide more LW results for analysis.
8. The Instantaneous SARB logic uses the IGBP scene vector to decide the surface spectral albedo and emissivity as well as the mode of obtaining the broadband surface albedo.
9. Different snow grain sizes have different reflective properties.
10. Previously incorrect.
11. New, better version.

12. The sigma table version number does not change on a FOV basis, and has been a useless flag since the developer fortuitously misunderstood the science team's request. Since there is now a request to save information of the exact same type, the definition of this parameter is changing. There is no impact on the binary, and only an SDS name change in the HDF code.
13. The proportion of absorbing aerosol over the Northern Polar regions was too large in the GFDL climatology.

Description of Change (non-Science):
** CER5.0P1
1. Modified CER5.0P1 ASCII file name generator to only access version 4 MOD08 files.
** CER5.1P1
2. Modified use of default values in the aerosol hierarchy access code.
3. Including more daily MATCH files (now have from 2000-2002, and some of 2003), and replacing existing daily MATCH files with newer versions.

Reason for Change (non-Science):
1. We now have version 4 files for all dates that we had version 3 files.
2. Contributed code was programmed around the use of a negative default value, which CERES does not use.
3. More MATCH data are available.

Affected PGEs : N/A

Est. Time to Complete Changes : 3 months
Planned Delivery Date : 1/16/04
Impact : Will have software to process Terra Edition2 CRS granules

Originator: COLEMAN, LISA H. (SAIC)

Table 5: January 14, 2004 - Subsystem Issues and Status (1 of 6)

SS No.	SS Lead	Status	Problems
1.0	Cooper	• Continued tracking receipt of Aqua and Terra data. (Cooper, Snyder) • Working on adjusting gains/SRF for Aqua Edition2 processing. (Cooper, Kizer, Spence) • Presented a paper, "Automated Programmable Scanning Plane Orientation of CERES Instruments" to AIAA Annual Meeting in Reno, NV. (Szewczyk) • Verified coefficients for WN sensor correction (reduce SW leak) with Excel. Impacts to the Instrument Subsystem are being investigated. (Cooper, Kizer, Spence) • CERES/GERB was concluded on 01/05/2004 with a few days added at the end due to a Terra problem. (Szewczyk) • PPS was concluded on 01/01/2004 with unprecedented amount of data collected due to the use of SCS (Stored Command Sequence) macro; up to 14 orbits per day of 39.5 min a day for 20 days. (Szewczyk) • The BDS Compression program was updated to handle different ordering of SDSs in the Edition2 processor (CER1.3P3). (Szewczyk) • Preparing for delivery of all the Instrument PGEs on Friday Jan. 16. (Cooper, Snyder)	
2.0	Kizer	• Providing support in calculating new instrument gain coefficients and spectral correction coefficients for Aqua Edition2 production processing. (Walikainen, Kizer) • Providing support in studying and calculating new WN channel algorithm. (Walikainen, Kizer) • Continuing to examine the production email generated by the QC checker software. (Walikainen) • Continuing to inspect ERBE-like Aqua and Terra output plots and QC reports on the Web. (Walikainen, Kizer)	

Table 5: January 14, 2004 - Subsystem Issues and Status (2 of 6)

SS No.	SS Lead	Status	Problems
3.0	Kizer	Combined with above.	
4.1	Sun-Mack	• Completed processing Terra MODIS Edition2 QC results from January 2001 through August 2001 and posted results on the Web. (R. Brown) • Continued processing CloudVis images for Terra MODIS Edition1A for the Greenland region from February 2001 through October 2001. CloudVis images were processed for TRMM VIRS Edition2 for the Pacific ITCZ and Nauru regions through December 1999 and for the Sub Saharan Africa region from January 1998 through July 1998. (R. Brown) • Worked on making enhancements to QC Web Viewer. (R. Brown) • Prepared and completed Aqua-MODIS Beta2 Clouds delivery. (All) • Worked with Marjolaine Chiriaco on new validation cases (2003) over SIRTA. (Chen, Sun-Mack) • Working on extracting ratio (1.6μm / 0.6μm) information for various optical depth layers. (Sun-Mack)	
4.2	Sun-Mack	Combined with above.	
4.3	Sun-Mack	Combined with above.	

Table 5: January 14, 2004 - Subsystem Issues and Status (3 of 6)

SS No.	SS Lead	Status	Problems
4.4	Miller	• Terra Edition2-QC clouds production was monitored. February through September 2001 has been completed. Only two hours failed to process that had IES and MODIS available during the time. Those jobs ended in segmentation faults. Three hours were unable to process because of bad MODIS files. This period included the 16 day MODIS outage in June 15 until July 2, 2001. (Miller) • The GRing module was updated to use a modified algorithm. Additional cases were added as a result. Ten days of SSF data was processed during testing. A check for duplicate points was added. This was delivered to CERESlib. (Miller) • The error in the MODIS aerosol land and ocean area where the sum of the two exceeds 100% was located and corrected. The area was converted to percentage to set the flag variable. These areas were then summed and multiplied by a 100 for the total aerosol area. (Miller) • The convolution code was updated and tested for Aqua Beta1 delivery. (Miller) • The solar eclipse IES were processed after convolution was updated to remove footprints flagged as eclipse. The quality_flag module was updated to include correct name for the new flag (i.e., ECLIPSE vs. SUSPCT). (Miller)	

Table 5: January 14, 2004 - Subsystem Issues and Status (4 of 6)

SS No.	SS Lead	Status	Problems
4.5	Nolan	• Completed a delta delivery on Jan. 6th to correct the usage of environmental variables in the pcf generator of PGE CER4.5-6.4P1. (Hoppe) • Created Edition2-QC monthly validation data for Anne Wilbur. The completed months were February through May of 2001. (Hoppe) • Created day, night and aerosol SSF subset data for the complete months of August and September of 2002 for Norm Loeb. These included one month of Aqua data, and two months of Terra data. (Hoppe) • Created a new 5 record sample Terra SSF HDF product which included the ADM geo SDS and updated the SSF read package for Terra Edition2A products, which was delivered to CERES CM on January 9, 2004. (Nolan) • Began copying data to the temporary disk space on bobill. No problems were encountered in writing to or reading from the disks. (Nolan) • Began retrieving the Edition2A SSF subset files from the DAAC archive for the ADM working group. (Nolan)	
4.6	Nolan	Combined with above.	
5.0	Coleman	• Preparing for Terra Edition2 CRS software delivery. Processed two days at the SCF using the ValR2 SSFs, latest MATCH aerosol data, and GEOS4-based MOAs. Now working with Working Group to resolve problems indicated with the test runs. (Caldwell, Coleman) • Prepared and submitted Pre-Delivery Memo. (Coleman) • Trying to determine why the MOD08 input filenames do not appear in the CER5.0P1 .met files, even though they are used. (Caldwell)	
7.2	Coleman	• Developed software to produce and plot monthly files of interpolated daily snow, ice, and overhead sun albedo based on the Clouds CRH files. (Zentz)	

Table 5: January 14, 2004 - Subsystem Issues and Status (5 of 6)

SS No.	SS Lead	Status	Problems
12.0	Coleman	• No new updates.	
7.1	Nguyen	• No new updates.	
8.0	Nguyen	• No new updates.	
10.0	Nguyen	• Ran January and July 2001 Terra SRBAVGs with and without the sampling restriction, with the old and new narrowband to broadband albedo conversion cases for Dave Young. (Nguyen) • Errors were found in the calculation of the GGEO narrowband albedo. Corrected the errors and re-ran the above cases for Dave Young. (Nguyen) • Adding the cloud top and bottom pressures in the night time cloud retrieval code. (Nguyen) • Adding new narrowband to broadband albedo conversion code from Dave Doelling. (Nguyen)	
6.0	Raju	• Read the FSW with the new parameters from CRS. Sent the ascii output file to Dave Young for verification. (Nguyen, Raju) • Updated Tisa_grid PGE CER6.3P1 FSW HDF software to change the Julian Time SDS from 4 byte real to 8 byte real data type. (Nolan)	
9.0	Raju	• No updates. (Stassi)	

Table 5: January 14, 2004 - Subsystem Issues and Status (6 of 6)

SS No.	SS Lead	Status	Problems
11.0	Stassi	• The file directory structure for PGEs CER11.3,4,5 was modified. Specifically, those files which are not common to multiple PGEs were moved to their PGE specific directory. (Stassi) • The GGEO PGE 11.5P1 was run offline for Dave Doelling with the latitude range restricted to the range 50n to 50s and optdepth, cldamt, latitude, and longitude added to the data files. These runs were made to assist Dave to calculate the broadband to narrowband conversion algorithm. (Stassi) • The run script for the GGEO Cloud plot PGE was modified to retrieve the SS11_4, PS11_4, and CC11_4 for the PCF. This was necessary because environment variable values are lost in the codine environment. The updated script was delta delivered to CERES CM. (Stassi) • The GGEO Test Plan and Operator Manual documents were updated with corrections received from ASDC testing. (Stassi, Saunders)	
CERESlib Stassi/Ayers		• The CERESlib CVS repository was moved from blizzard to the cerlibcm account on saisun06. (Stassi) • The GRing and quality_flags modules were updated on the SCFs, and CERESlib was delivered to CM. (Stassi)	