

**GDAAC Notes for
MODIS Technical Team Meeting (5/7/98)**

- Weekly Highlights:**
- 1) Patch delivered for PGE11 upgrade (V2.2) and applied
 - 2) Integration II completed for PGE03 in Drop 3, repeatability demonstrated

- Weekly Plan:**
- 1) Promote Drop 4 to SSIT Mode (TS1)
 - 2) Get successful PDPS run with PGE01 (V2.1), complete Integration II
 - 3) Continue Integration for PGEs 4, 5 into Drop 4
 - 4) Complete Integration of PGE11 (V2.2)

AM-1 LAUNCH READINESS

Bottom Line:

- High probability of meeting launch-critical functions with ECS baseline and moderate DAAC-unique workarounds.
- Very high probability if DAAC strategies for risk mitigation work as expected, depending on:
 - ESDIS policies on DAAC-unique extensions
 - Access to ECS source code
 - Prototypes of various strategies
- Strong probability of running many (possibly all?) non-land-tiling L2/L3 science algorithms.
- Possibility of land-tiling science algorithms - depending on ECS delivery; feasibility of DAAC work-around under study.

Eight Critical Functions for MODIS Level 1 Data:

- Four Demonstrated (with caveats) - ingest/archive L0 data; produce and archive MODIS L1 data sets (L1A, Geolocation, L1B, and Cloudmask); distribute data to users
- Two pending ECS delivery (July 1998)
 - acquire and pre-process corrected attitude data from Flight Dynamics for calibration maneuver (DPREP from ECS, contingency is to develop PGE00)
 - distribute expedited data
- One Problematic (patch expected July 1998) - ingest, archive, and distribute the MODIS ancillary data sets
- One Not Yet Tested - ingest, archive, and distribute L2 & L3 products from MODIS SDST (limited capability exists now, patch for higher capacity expected July 1998)

Key Challenges (progress/plan):

- land tiling production rules
- DPREP
- repeatability
- operational readiness
 - procedures for launch-critical operational readiness exercises are written and executed at least once.
- ancillary ingest
 - accommodate ECS interface changes
- integrate more algorithms
 - L2 oceans, atmospheres, "untiled" land; L3 oceans and atmospheres; L2G and L3 land

GSFC DAAC Launch Readiness

PGE Name	Delivered	Integrated	Chained	Duty Cycle	Ops Readiness	Launch Readiness*	Notes
PGE01 (2.1)	4/15/98	in progress		100%		contingent	error list needed for launch readiness
PGE02 (2.0)	1/29/98	3/18/98		100%		contingent	error list needed for launch readiness
PGE02 (2.1)							
PGE03	2/18/98	4/27/98		100%		contingent	error list needed for launch readiness
PGE04	3/20/98	in progress				contingent	error list needed for launch readiness
PGE05	3/16/98	in progress				contingent	error list needed for launch readiness
PGE11 (2.2)	1/7/98	in progress				expected	
PGE17	4/17/98					contingent	error list needed for launch readiness
PGE19	4/17/98					contingent	error list needed for launch readiness
PGE09							
PGE12	3/4/98					contingent	Land Tiling; error list needed for launch readiness
PGE13	3/2/98					contingent	Land Tiling; error list needed for launch readiness
PGE14	2/27/98					contingent	Land Tiling; error list needed for launch readiness
PGE06						contingent	compiler upgrade
PGE20							
PGE10							
PGE49							
PGE50							
PGE53							
PGE54							
PGE69							
PGE56							
PGE16							
PGE15	2/24/98					contingent	Land Tiling; error list needed for launch readiness
PGE08	1/13/98					contingent	error list needed for launch readiness
* 1/99 Launch		<i>contingent</i>	available if known problems are addressed				
		<i>expected</i>	no known obstacles for launch readiness				
		<i>demonstrated</i>	demonstrated through Ops Readiness				

ECS-SYSTEM

STATUS: YELLOW

Problem: System installation, checkout and test procedures are maturing; documentation is being brought up to date. (Yellow).

- Drop 3.x in SSIT mode (TS1)
- Drop 4.x in Test mode (TS2)

SSIT

SSIT STATUS: YELLOW

•Problem: System monitoring capability is rudimentary as SSIT proceeds resulting in trial and error troubleshooting (Yellow).

- To minimize impact on MODIS science software developers and SDST regarding updates to PGEs, the DAAC and SDST have refined CM process/procedures for PGEs to expedite redeliveries from Science Team members and the TLCF in an attempt to make it easier to conform to CM without sacrificing stability.
- Initial list of liens established with scheduled work-off dates for completion of PGE Error List. PGEs previously with Yellow status moved to Green status until either lien is worked off or lien expires.
- All PGEs received to date have been run successfully from the command line with the SDP Toolkit at the DAAC.
- Documentation of SSIT procedures and troubleshooting tips being updated as SSIT process continues.

MAPI / SDST TK

SSIT STATUS: GREEN

- MAPI 2.3.1 upgrade received (4/6/98). Inspection, installation complete (4/13/98).
- Lien established for Error List, work-off by 7/31/98.

OCEAN_LIB

SSIT STATUS: YELLOW

Problem: DAAC cannot promote PGE to operations without error list documentation, lien pending; resolution schedule pending SDST communication with algorithm developers.(Yellow)

- Delivered 4/15/98; Inspection complete; Build complete.

PGE01

SSIT STATUS: GREEN

- > V2.1 delivered (4/23/98); Inspection and Integration I complete; Integration II in progress
- Lien established for Error List, work-off by 7/31/98.

PGE02

SSIT STATUS: GREEN

- Integration II complete (3/18/98); Initial Error Testing complete (3/30/98); Additional error testing to be performed in chain testing.
- Lien established for Error List, work-off by 7/31/98.

PGE03

SSIT STATUS: GREEN

- Integration II complete (4/27/98)
- Lien established for Error List, work-off by 7/31/98.

PGE04

SSIT STATUS: GREEN

- Delivered (3/20/98); Inspection complete (3/30/98); Integration I complete (4/6/98).
- Lien established for Error List, work-off by 8/31/98.

PGE05

SSIT STATUS: GREEN

- Delivered (3/16/98); Inspection completed (3/20/98); Integration I complete (4/7/98).
- Lien established for Error List, work-off by 8/31/98.

PGE07**SSIT STATUS: GREEN**

- Production rules information received from SDST, Integration II pending successful integration of PGE01 (4/2/98).
- Lien established for Error List, work-off by 8/31/98.

PGE08**SSIT STATUS: GREEN**

- Production rules information received from SDST, Integration II in progress (4/14/98).
- Lien established for Error List, work-off by 9/30/98.

PGE10

- > Initial DAP delivered 5/1/98; DAP can not be accepted due to inclusion of Ocean Library software with PGE software. By mutual agreement between SDST and DAAC, these are to be delivered as separate items.

PGE11**SSIT STATUS: GREEN**

- Integration II pending successful integration of higher priority PGEs. (1,2,3)
- > Patch delivered, regression testing from command line completed, integration in progress.

PGE12**SSIT STATUS: GREEN**

- Integration I completed (4/17/98). Integration II pending availability of tiling production rules.
- Lien established for Error List, work-off by 9/30/98.

PGE13**SSIT STATUS: GREEN**

- Integration I completed (3/31/98); Integration II pending availability of tiling production rules.
- Lien established for Error List, work-off by 9/30/98.

PGE14**SSIT STATUS: GREEN**

- Integration I complete (3/9/98); Integration II pending availability of tiling production rules.
- Lien established for Error List, work-off by 10/31/98.

PGE15**SSIT STATUS: GREEN**

- Integration I complete (3/10/98); Integration II pending availability of tiling production rules.
- Lien established for Error List, work-off by 10/31/98.

PGE17**SSIT STATUS: YELLOW**

Problem: DAAC cannot promote PGE to operations without error list documentation, lien pending; resolution schedule pending SDST communication with algorithm developers.(Yellow)

- Delivered 4/17/98; Inspection pending work-off of higher priority PGEs.

PGE19**SSIT STATUS: YELLOW**

Problem: Error List (see PGE17 description).(Yellow)

- Delivered 4/15/98; Inspection pending work-off of higher priority PGEs.

V2 SSIT AGREEMENT

- Document formally baselined (3/9/98)
- Modifications resulting from ongoing V2 SSIT being worked through CCR process.

GDAAC/MODIS OPERATIONS AGREEMENT

- GDAAC developed draft, circulated for internal edits; edits being made by Stuart Frye. Stuart will be the active Point of Contact for revisions to the document until it is signed. Draft to MODIS & GDAAC for comment 3/2/98.

GDAAC/MODIS SCIENCE AGREEMENT

- Need for this document was identified within the GDAAC while drafting the GDAAC/MODIS OA; this document will detail the working agreements between the GDAAC MODIS Data Support Team and the MODIS Science Team, including SDST. These interactions include QA metadata updates and interactions regarding fixes for failed PGEs, among others. Circulated for comment to MODIS & GDAAC 2/23/98.

CONCERNS:

- Degree to which MODIS science software generates messages to provide information on error handling; notion that MODIS could deliver "silent code" to DAAC (i.e., no error messages) and just return it to SDST when it fails (problematic due to increased turnaround time; divergent from TL Working Agreement).

PRODUCTION READINESS

PGEs into System Certification Tests

Best Case: 01, 02, 03, 04, 05, 07, 08, 11

Nominal Case: 01, 02, 03

Worst Case: LO data ingest

Work days for SSIT	Best Case	Nominal Case	Actual
Inspection	1	3	3 (n=11)
Integration I	2	5	6 (n=10)
Integration II	4 (est)	8-15 (est)	18 (n=3)
Patch	1-4	3-8	4 (n=12)
Error Testing	4	8	
Chain Testing	10	15	
Total	25	54	

Best Case: Little or no problems with ECS or PGE

Nominal Case: Minor problems encountered and resolved; no major blunders

Actual: Averages to date

Risk	Mitigation
Overhead associated with installation, checkout, regression testing of PGEs into incremental drops of ECS may reduce the number of PGEs available at launch.	DAAC gets early insight into future drops; fully integrate PGEs into stable, previous drop to gain experience, identify potential problems early and reduce uncertainty of at-launch system.
The schedule for accomplishing the OREs is currently being revised due to changes in the ECS Drop delivery dates as well as the probable launch slip. We will provide the schedule as soon as it is available. The GDAAC's approach to Operational Readiness is based on having the Operations staff execute Operational Readiness Exercises (OREs). OREs are procedures which the Ops staff must be able to carry out in order to accomplish basic operations.	OREs are divided into 2 classes, Launch Critical (LC) and Launch Essential (LE). The staff will concentrate on proficiency in the LC OREs first, then add the LEs as time permits. The LCs include support for production of PGEs 01, 02 & 03. Production of higher level products is covered in the LEs. The Certification Test will consist of the OREs which have been mastered at the start of testing, chained together into a 3 days-in-the-life scenario.

SSIT Status Codes:

- Complete** PGE is ready to process data at launch in validation mode or ops mode
- Green** No problems or Category 1 fixes only; either no liens on PGE or liens worked post-launch
- Yellow** Problems in test; Category 2 or 3 fix pending; liens placed on PGE with workoff schedule; liens worked off by launch
- Red** SSIT has stopped; PGE will not run in its current form; fix required before testing can continue

Categories of PGE fixes at the DAAC:

- Category 1:** GDAAC SSIT staff fix the problem in the DAAC baseline, report action to SDST and continue testing.
- Category 2:** SDST directs GDAAC SSIT staff, possibly based upon GDAAC recommendation, to fix the problem in the DAAC baseline and continue testing.
- Category 3:** GDAAC SSIT staff provides Baselined Algorithm Package to SDST to port back to TLCF for bug fixes and possible retesting. SDST then makes redelivery to DAAC.

Phases of SSI&T:

- Inspection:** Delivered Algorithm Package is inspected for contents and completeness. PGE is inspected for documentation, formats, file structures, and standards compliance.
- Integration-I:** PGE is built and run from the command line. Generated data product(s) are verified with SDST supplied comparison file(s). (DAACbuild for a library)
- Integration-II:** PGE is registered into ECS, including population of PDPS database. Test data is inserted into the Data Server for staging into production. PGE execution is planned and scheduled through ECS PDPS utilizing Autosys scheduler. Generated product(s) inserted into Data Server. Generated data product is retrieved from Data Server for verification.