

Table 1. PGS Attribute Changes (RTM 04/18/97)

CCR-97-0695 A

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verification_method	s_verification_status	a_verification_method	a_verification_status	CCR	text	interpretation	clarification
PGS-0140#B	8746	B0B1	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall provide tools to help the PGS staff create and modify SDPS plans, schedules, and lists.		<u>Automatic Replan and On-Demand Processing Requests are done in B1</u>
PGS-0150#B	8179	B1	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall receive from the collocated DADS data availability schedules for remote DADS, SDPF, the IPs, the ADCs and ODCs.	ASTER GDS interfaces to EDC DAAC only. ONLY THE GSFC AND LARC DAACS WILL INTERFACE WITH EDOS. For ASTER the "data availability schedule" is called "Data Shipping Notice" (DSN). ODC's do not apply for B0 FOS Schedules come directly to PGS from FOS; not through DADS.	
PGS-0160#B	8747	B0B1	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall receive standing orders, changes to standing orders, and product requests from the IMS.	Rel B: Additional capability of user requests. These requests come to PGS indirectly from IMS through DADS.	<u>Automatic Replan, On-Demand Processing Requests</u>

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													<u>sts and Reprocessing are done in B1</u>
PGS-0165#B	8749	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall accept priority processing requests from the IMS.		<u>Production Request generation of Data Products is done in B0. On-Demand Processing Requests is done in B1</u>
PGS-0170#B	8751	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall receive priority assignments, schedule conflict resolutions, and other operational directives from the SMC.		
PGS-0180#B	8752	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall receive a notice	<u>Data Availability Schedule is a B1</u>	

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							ed		ed		from DADS when data that it has received is available.	functionality.	
PGS-0190#B	9064	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0182A	The PGS shall coordinate with the DADS on the staging of data for product generation.	B: AM-1 and applicable DAACs	<u>Remote staging and predictive staging are done in B1.</u>
PGS-0210#B	8756	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall maintain an algorithm processing control language capable of constructs (e.g., if-then-else) based on the complexities of the PGS. This control language shall be utilized in conjunction with a database of product specifications that contains the recipe for the generation of all Standard Products allocated to that PGS including, at a minimum: a. The algorithm(s) to be used b. The order in which algorithms are to be executed c. The input data sets required d. Time and other processing resources required	PGE activation rules = scripting language that is managed with the Planning Database.	<u>Data Staging is done in B1.</u>
PGS-0220#B	8758	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall create a reprocessing plan containing at a minimum:	B: AM-1	<u>Data Reprocessing</u>

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											a. A list of processing tasks needed to carry out each product's reprocessing b. Estimated schedule for each task c. The order in which tasks will be executed		<u>g and On-Demand Data Products Request are done in B1.</u>
PGS-0230#B	8760	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall base the PGS reprocessing plan on, at a minimum: a. Requests received from the IMS b. SMC directives c. The Standard Product specifications	Production plans contain both standard and reprocessing requests - no separate reprocessing plan. It is listed here because requirements required to generically "build a plan" would otherwise be untraceable.	<u>Data Reprocessing and On-Demand Data Products Request are done in B1</u>
PGS-0240#B	9068	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall perform reprocessing according to the PGS reprocessing plan and the availability of resources.	Production plans contain both standard and reprocessing requests - no separate reprocessing plan. Reprocessing capabilities are implemented in Rel B.	<u>Data Products Reprocessing is done in B1.</u>
PGS-0250#B	8766	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall schedule		<u>Data Repro</u>

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							ed		ed		product generation when all inputs required to generate a Standard Product for which there is a current order (from IMS) are available. Entries in the schedule shall contain, at a minimum: a. The product to be generated b. The specific algorithm(s) and calibration coefficients to be used c. The specific data sets needed and their sizes d. Priorities and deadlines that apply to the order for the product		<u>cessing, On-Demand Data Products Request and Creation of Data Availability Schedules for remote ECS sites are done in B1.</u>
PGS-0260#B	8768	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall schedule other functions, including, at a minimum: a. File backups b. File maintenance c. Calibration data handling	Calibration data handling can be accomplished through a simple PGE or AI&T. File backup & maintenance handled procedurally using UNIX tools.	
PGS-0270#B	9065	B0B1	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall provide the capability to perform the following functions, at a minimum: a. Allocate tasks among	A Task = PGE; "Allocation of tasks among processors" is supported through resource availability. B: Suspend/Resume	<u>Suspend/Resume execution of Data</u>

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											processors b. Suspend execution of tasks c. Resume execution of a suspended task d. Cancel execution of tasks e. Request and verify the staging and/or destaging of data stored in the DADS	exexution of task.	<u>Processing Request and Predictive Staging are done in B1.</u>
PGS-0285#B	8770	<u>B0B1</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0419A	The PGS shall transmit to the IMS a status message to confirm or reject a processing order. The reason for rejection shall be included.	Functionally, IMS is a part of OPS. This IMS function is handled by the operator staff.	<u>On-Demand Processing request is done in B1.</u>
PGS-0290#B	8771	<u>B0B1</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0419A	The PGS shall make electronic copies of its plans and schedules available to the IMS, the SMC, and the collocated DADS.		<u>Data Availability Schedule (DAS) is available until B1.</u>
PGS-0295#B	8773	<u>B0</u>	mission fulfillment	SDPS	functional	test	un-verified	test	un-verified	97-0419A	The PGS shall transmit a status message notifying the IMS of a revised completion time if processing will not complete per original schedule.	This IMS function is handled by the operator staff.	

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PGS-0300#B	8775	<u>B0B1</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall have the capability for an operator to interactively review and update the current data processing schedule.	"Current data processing schedule" = Active Plan.	<u>Suspend/Resume execution of Data Processing Request is done in B1.</u>
PGS-0310#B	9066	<u>B0B1</u>	mission essential	SDPS CSMS	functional	test	un-verified	test	un-verified	97-0419A	The PGS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management.		<u>Accounting Management is done in B1.</u>
PGS-0320#B	8780	<u>B0B1</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall display detected faults to the system operators.	Faults = errors such as: data staging/destaging, PGE execution queue processing, etc.	<u>Automatic Start Time Checking and Advanced Exit Handl</u>

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													<u>ing of PGEs are done in B1.</u>
PGS-0325#B	7401	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall provide the SMC with scheduling and status information.	Schedule and status information is passed through DADS.	
PGS-0330#B	7423	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall report detected processing system faults to the SMC.	Processing system faults = errors such as data staging/destaging, PGE execution, queue processing, etc.	
PGS-0340#B	7402	B0	mission essential	SDPS	functional	test	unverified	test	unverified	96-0968A	The PGS shall utilize fault isolation tools provided by the LSM for the PGS and its subsystems.	"PGS and its subsystems" = PDPS, LSM = MSS (MSS provides the tools used for fault detections).	
PGS-0350#B	8781	B0	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall utilize tools provided by the LSM to support fault isolation between the PGS and external interfaces.	Fault isolation events are logged to the IMS event log and IMS performs the reporting and analysis to support this requirement.	
PGS-0360#B	8784	B0B1	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall generate a PGS processing log that accounts for all data processing activities.	Data processing activities = PLANG and PRONG status logs.	Data Processing log is not fully available until B1. QA Monit

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													<u>or Enhancements are done in B1.</u>
PGS-0370#B	8788	<u>B0</u>	mission fulfillment	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall utilize the LSM to generate a PGS resource utilization report.		
PGS-0380#B	7427	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall monitor its internal operations and generate a status report periodically and on request.	This requirement implies automatic periodic production of status reports.	
PGS-0400#B	8789	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to monitor the status of all algorithm and calibration coefficient testing and generate algorithm and calibration test reports.		
PGS-0410#B	7429	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0968A	The PGS shall have the capability to track the processing status of all products scheduled to be generated.		<u>On-Demand Processing Request and Automatic Start Time checking</u>

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													<u>are done in B1.</u>
PGS-0420#B	8792	B1	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0379A	The PGS shall provide tools to analyze system performance.	PGS logs events to the IMS event log. IMS performs the reporting and analysis to support this requirement. PGE related performance data is reported to SCFs as well via reports.	<u>Planning workload and Processing Turn-around Report Generation Services are provided in B1.</u>
PGS-0430#B	8796	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall utilize the LSM to monitor and account for data and information transfer between it and other EOSDIS elements.	Rel B includes AM-1 and EDOS monitoring/accounting of data.	
PGS-0440#B	8799	B0B1	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall accept from the DADS L0-L4 data products. Received information shall contain at a minimum: a. Product identification b. L0-L4 data set	B: AM-1 PGS provides product identification in the form of a UR to DADS to retrieve products.	<u>B0: Full capacity for Level 1 processing.</u>

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											c. Metadata required for processing d. Current date and time e. DADS identification		<u>limited capacity (not functionality) for Levels 2 to 4 processing. B1: Full capacity processing for Levels 1 to 4. Inter-DAAC Processing.</u>
PGS-0450#B	8802	<u>B0B1</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall accept from the DADS ancillary data sets. Received information shall contain at a minimum: a. Product identification b. Ancillary data set c. Metadata required for processing d. Current date and time e. DADS identification	B: AM-1 PGS accesses data products from DADS by providing a UR that defines the product. Metadata is included in the product headers. No other information is required	<u>B1: Inter-DAAC Processing.</u>
PGS-	8804	<u>B0</u>	mission	SDPS	functional	test	un-	test	un-	96-			

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0455#B			essential		onal		verifi ed		verifi ed	1466A	The PGS shall have the capability to assess the quality of spacecraft orbit and attitude (O/A) data contained in the ancillary data. QA shall be in the form of limits checking.		
PGS-0456#B	6502	<u>B0</u>	mission essential	SDPS	function al	test	un- verifi ed	test	un- verifi ed		The PGS shall notify the FDF, via the DADS, of orbit quality checks and request updated orbit data from the FDF when necessary.	B: APPLIES TO AM-1 ONLY	A: Early interfa ce testing only
PGS-0457#B	6500	<u>B0</u>	mission essential	SDPS	function al	test	un- verifi ed	test	un- verifi ed		The PGS shall use subroutines provided by the Flight Dynamics Facility to repair orbit and attitude data when necessary		
PGS-0458#B	8806	<u>B0</u>	mission essential	SDPS	function al	test	un- verifi ed	test	un- verifi ed	97-0419A	The PGS shall use configuration-controlled calibration coefficients and selected engineering data to generate calibrated ancillary data products necessary as input to the generation of Level 1 Standard Products in a timeframe that assures that production schedules for all products can be met.		
PGS-0458#TK5b	7764	<u>NA</u>	mission essential	SDPS	function al	test	un- verifi ed	test	un- verifi ed	96-0303D	The PGS shall use configuration-controlled calibration coefficients and selected engineering data to generate calibrated ancillary data products necessary as input to the generation of Level 1 Standard Products in a timeframe that assures that		

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											production schedules for all products can be met.		
PGS-0470#B	8807	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to produce each Standard Product as specified in that product's Standard Product specification.		
PGS-0470#TK5b	7801	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall have the capability to produce each Standard Product as specified in that product's Standard Product specification.	B: AM-1, COLOR	
PGS-0480#B	8809	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall have the capability to perform all its processing based on priority.		
PGS-0490#B	8811	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to access and use, for the generation of Standard Products, information such as: a. Digital terrain map databases b. Land/sea databases c. Climatology databases d. Digital political map databases		<u>Mostly a B1 function. Data Sets will not be generated until B1</u>
PGS-0490#TK5b	7765	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall have the capability to access and use, for the generation of Standard Products, information such as: a. Digital terrain map databases b. Land/sea databases c. Climatology databases		

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											d. Digital political map databases		
PGS-0500#B	8408	<u>B0B1</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0419A	The PGS shall have the capability to generate Level 1 through 4 Standard Products using validated algorithms and calibration coefficients provided by the scientists.		<u>B0:</u> <u>Full capacity for Level 1 processing, limited capacity (not functionality) for Levels 2 to 4 processing.</u> <u>B1:</u> <u>Full capacity processing for Levels 1 to 4.</u>
PGS-0510#B	8813	<u>B0</u>	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall have the capability to generate metadata (see Appendix C) according to the algorithms provided by the scientists and		

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											associate this metadata with each Standard Product generated.		
PGS-0510#TK5b	7766	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall have the capability to generate metadata (see Appendix C) according to the algorithms provided by the scientists and associate this metadata with each Standard Product generated.		
PGS-0512#B	8815	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall generate unique granule IDs for all products generated at the PGS.		
PGS-0520#B	8816	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to generate data products from any single data input or combination of data inputs according to the algorithms provided by the scientists.	B: EDOS generated L0 data is processed to produce L1 through L4a data.	<u>B0:</u> <u>Full capacity for Level 1 processing, limited capacity (not functionality) for Levels 2 to 4 processing.</u> <u>B1:</u> <u>Full</u>

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													<u>capacity processing for Levels 1 to 4.</u>
GS-0520#TK5b	7767	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall have the capability to generate data products from any single data input or combination of data inputs according to the algorithms provided by the scientists.		
PGS-0540#B	8819	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall reprocess specified science data using original or updated algorithms provided by the scientists.	All missions cumulative through Release B include CERES, LIS, AM-1.	
PGS-0550#B	8821	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall reprocess science data using the original or updated (provided by the scientists) calibration coefficients.	All missions cumulative through Release B include CERES, LIS, AM-1.	
PGS-0560#B	8822	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall maintain copies of generated products to be used as inputs to other scheduled products for processing efficiency.		
PGS-0590#B	8823	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to indicate the temporary status of data stored in the DADS that is awaiting QA or human interaction in	All data products that are produced are stored. Rel B, subsequent processing may be delayed for some period waiting for QA before continuing with	

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											product production.	processing.	
PGS-0595#B	6523	B0	mission essential	SDPS	functional	inspection	unverified	inspection	unverified	96-0754A	The PGS shall provide, to the ASTER science software, access to a relational database management system.	Full relevance, i.e., operational	ASTER for EOS flight AM-1 thus full relevance in B
PGS-0600#B	8824	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall provide an algorithm and calibration test and validation environment that is fully compatible with but isolated from the operational production environment.		
PGS-0602#B	8862	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall have the capability to accept POSIX-compliant science algorithms and compile algorithm source code written in a standard programming language (e.g., Fortran, C, Ada).		
PGS-0602#TK5b	7768	NA	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall have the capability to accept POSIX-compliant science algorithms and compile algorithm source code written in a standard programming language (e.g., Fortran, C, Ada).		
PGS-0605#B	8826	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall process pre-launch test data and provide	The science software I&T process defined for ECS will allow for testing &	

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											test data product samples for user verification.	integration of science software provided by the instrument team (IT), using test data sets also provided by the IT.	
PGS-0610#B	8827	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0379A	The PGS shall accept from the SCFs new or modified calibration coefficients to be validated in the test environment. Calibration coefficients shall contain the following information at a minimum: a. Identification of coefficient data set b. Calibration coefficients values c. Author and version number d. Identification of related processing algorithm e. Start and stop date/time of applicability f. Date and time g. SCF identification h. Reasons for update	Concepts for SSI&T and associated interfaces are described in "Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS" Document No. 205-CD-002-002.	
PGS-0620#B	8829	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall have the capability to validate received calibration coefficients for completeness and correct format.	Updated calibration files are validated through the science software I&T process, i.e., by running the science software and confirming that the results are consistent with SCF produced results. No specific file completeness and format correctness checks are done.	
PGS-	8831	B0	mission	SDPS	functional	test	un-	test	un-	97-		PGS accesses data	

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RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
0630#B			essential		onal		verifi ed		verifi ed	0379A	The PGS shall send the DADS new or modified calibration coefficients which shall contain the following information at a minimum: a. Identification of coefficient data set b. Calibration coefficients values c. Author and version number d. Identification of related processing algorithm e. Start and stop date/time of applicability f. Documentation	products from DADS by providing a UR that defines the product. Metadata is included in the product headers. No other information is required	
PGS-0640#B	8833	B0	mission essential	SDPS	function al	test	un- verifi ed	test	un- verifi ed	97-0419A	The PGS shall accept from the SCF new or modified Standard Product algorithms to be tested at the processing facility. This software shall be received into the test environment and shall contain the following information at a minimum : a. Algorithm identification b. Algorithm source code c. List of required inputs d. Processing dependencies e. Test data and procedures f. Algorithm documentation	Science software may include these items and much more, or be only one of the items in an update package. Concepts for SSI&T and associated interfaces are described in "Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS" Document No. 205-CD-002-002. B: Adding IMS interface and the capability to execute chains.	
PGS-0650#B	8835	B1	mission essential	SDPS	function al	test	un- verifi ed	test	un- verifi ed	96-1466A	The PGS shall have the capability to validate required operational algorithm characteristics prior to scheduling algorithm test time. These characteristics shall		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
											be include at a minimum: a. Language b. Operational impacts (e.g., algorithm software size, required resources) c. Algorithm documentation d. Data handling standards as appropriate e. Units and models used f. Operational compatibility g. Required metadata outputs		
PGS-0860#B	8839	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall have the capability to schedule and coordinate algorithm and calibration coefficient test time in the test environment with the appropriate SCF.	B: Automatic scheduling.	
PGS-0870#B	7407	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-0968A	The PGS shall have the capability to schedule algorithm test resources that do not interfere with the operational production environment.		
PGS-0900#B	8844	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results	Concepts for SSI&T and associated interfaces are described in "Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS" Document No. 205-CD-002-002.	

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
PGS-0910#B	8852	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0379A	The PGS shall have the capability to support analysis of algorithm test results.		
PGS-0915#B	6415	B0	mission fulfillment	SDPS	functional	demo	un-verified	test	un-verified	97-0359	The PGS shall support remote science software integration and test activities at the DAACs including: a. executing code checkers, compiling, linking, debugging code, file comparison and science software resource profiling from the SCF. b. Interactive remote access to a job scheduling tool for defining and executing jobs.		
PGS-0920#B	8858	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0379A	The PGS shall have the capability to validate, through testing, that SCF processing algorithms will execute properly in the operational environment. Validation shall include final compilation and linkage of the source code and testing to verify proper software execution in the operational environment based on indicated data and test results provided by the SCF and the investigator, but shall not include scientific validation of products.	Transfer of algorithm implies verifying proper resource utilization resources.	
PGS-0925#B	8870	B0	mission essential	SDPS	functional operational	test	un-verified	test	un-verified	97-0419A	The PGS shall validate algorithms used for conversions, calibrations and	Algorithms used for converting EOS engineering data into HDF-EOS format will	

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
					procedural						transformations of EOS engineering data.	undergo normal I&T procedures for validation. Providing an operations staff makes this reqmt operational. Providing the tools for the staff to use is functional.	
PGS-0930#B	9067	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0182A	The PGS shall have the capability to transfer validated algorithm software and calibration coefficients from the test environment to the operational environment to be used in the production of Standard Products.	Transfer of algorithm implies verifying proper resource utilization resources.	
PGS-0940#B	8877	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall provide storage for all candidate algorithms' software executables and calibration coefficients.	The science processing systems including storage used for ordinary science processing will also be used for science software I&T. These resources will be allocated from the science processor pool for this purpose.	
PGS-0950#B	8410	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0019	The PGS shall interface to the SMC to maintain configuration control of all algorithms and calibration coefficients used in operational Standard Product production. Controlled information shall contain at a minimum: a. Source code including version number and author b. Benchmark test procedures, test data, and results		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_status	a_verif_method	a_verif_status	CCR	text	interpretation	clarification
											c. Date and time of operational installation d. Compiler identification and version e. Final algorithm documentation		
PGS-0960#B	8881	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0379A	The PGS shall send the DADS new or modified algorithms. This delivery shall contain the following information at a minimum: a. Source code including version number and author b. Benchmark test procedures, test data and results c. Date and time of operational installation d. Final algorithm documentation e. Calibration coefficient values	Science software to be inserted to the SDSRV may include these items and much more, or be only one of the items in an update package Concepts for SSI&T and associated interfaces are described in "Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS" Document No. 205-CD-002-002.	
PGS-0970#B	8386	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1344A	The PGS shall provide file access subroutines that enforce compliance with the adopted standard ECS formats.		
PGS-0970#TK5b	7769	NA	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-0303D	The PGS shall provide the access subroutines that enforce compliance with the adopted standard ECS formats.		
PGS-0980#B	8888	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall provide job control routines that provide all required task parameters to the Standard Product software.		
PGS-0980#T	7770	NA	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-0303D	The PGS shall provide job control routines that provide all		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_status	a_verif_method	a_verif_status	CCR	text	interpretation	clarification
K5b							ed		ed		required task parameters to the Standard Product software.		
PGS-0990#B	8891	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall provide error logging subroutines for use by Standard Product software in notifying the system operators of conditions requiring their attention.		
PGS-0990#TK5b	7771	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide error logging subroutines for use by Standard Product software in notifying the system operators of conditions requiring their attention.		
PGS-1000#B	8892	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall provide error logging subroutines for use by Standard Product software in notifying users of conditions requiring their attention.		
PGS-1000#TK5b	7772	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide error logging subroutines for use by Standard Product software in notifying users of conditions requiring their attention.		
PGS-1010#B	8895	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall provide mass storage allocation subroutines that provide algorithms with a means for dynamic allocation of storage for temporary files.		
PGS-1010#TK5b	7773	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall provide mass storage allocation subroutines that provide algorithms with a means for dynamic allocation		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
											of storage for temporary files.		
PGS-1015#B	8896	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall provide ancillary data access subroutines that provide Standard Product software access to ephemeris data (e.g., solar, lunar, and satellite ephemeris), Earth rotation data, and time and position measurement data. These subroutines shall perform operations such as: a. Interpolation b. Extrapolation c. Coordinate system conversion		
PGS-1015#TK5b	7774	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide ancillary data access subroutines that provide Standard Product software access to ephemeris data (e.g., solar, lunar, and satellite ephemeris), Earth rotation data, and time and position measurement data. These subroutines shall perform operations such as: a. Interpolation b. Extrapolation c. Coordinate system conversion		
PGS-1020#B	8929	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall provide mathematical libraries including: a. Linear algebra and analysis		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_status	a_verif_method	a_verif_status	CCR	text	interpretation	clarification
											(e.g., LINPAC, IMSL) b. Statistical calculations (e.g., SAS, SPSS)		
PGS-1020#TK5b	7775	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide mathematical libraries including: a. Linear algebra and analysis (e.g., LINPAC, IMSL) b. Statistical calculations (e.g., SAS, SPSS)		
PGS-1025#B	8930	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall provide a Science Processing Library containing routines such as: a. Image processing routines b. Data visualization routines c. Graphics routines		Storage for Metadata associated with Special Data Products is done in B1.
PGS-1025#TK5b	7776	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide a Science Processing Library containing routines such as: a. Image processing routines b. Data visualization routines c. Graphics routines		
PGS-1030#B	8931	<u>B0</u>	mission essential	SDPS	functional operational procedural	test	unverified	test	unverified	97-0419A	The PGS shall provide a toolkit to the SCF containing versions of the routines specified in requirements PGS-0970 to PGS-1020.		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_status	a_verif_method	a_verif_status	CCR	text	interpretation	clarification
PGS-1030#TK5b	7777	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide a toolkit to the SCF containing versions of the routines specified in requirements PGS-0970 to PGS-1020.		
PGS-1050#B	8932	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall provide the capability to perform both automatic and manual QA of generated products.		<u>Non-Science QA (e.g. check number and size of outputs) functions are done in B1.</u>
PGS-1050#TK5b	7778	<u>NA</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-0303D	The PGS shall provide the capability to perform both automatic and manual QA of generated products.		
PGS-1060#B	8933	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to perform automatic QA of generated products utilizing algorithms provided by the scientists.		
PGS-1080#B	9061	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall have the capability to provide an inventory and review copy of generated products to the data product quality staff before the		<u>QA Monitor Enhancement</u>

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
											product is sent to the DADS for storage.		<u>ents are done in B1.</u>
PGS-1090#B	7497	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	97-0379A	The PGS shall have the capability to provide the data product quality staff with the algorithms, calibration coefficient tables, input data sets, or other information related to product processing for the purpose of reviewing and analyzing the quality of production.		
PGS-1100#B	8935	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall have the capability to accept product quality data input.	This requirement supports manual and automatic QA.	
PGS-1100#TK5b	7779	NA	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-0303D	The PGS shall have the capability to accept product quality data input.		
PGS-1110#B	8936	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall have the capability to associate data quality with a generated product.		
PGS-1120#B	8937	B0	mission essential	SDPS	functional	test	un-verified	test	un-verified	96-1466A	The PGS shall send the DADS updated metadata provided by the data product quality staff relating to product QA review. This QA review metadata shall contain the following information at a minimum. a. Product ID b. QA Approval field		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_status	a_verif_method	a_verif_status	CCR	text	interpretation	clarification
											c. Other metadata		
PGS-1130#B	8938	B0	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall receive product QA from the SCF which shall describe the results of the scientist's product quality review at an SCF. Product QA shall contain the following information at a minimum: a. Identification of product b. QA results c. Product storage and processing instructions	PGS accesses data products from DADS by providing a UR that defines the product. Metadata is included in the product headers. No other information is required SCF QA is intended to describe scientific quality of data. Item c. is implemented by allowing for processing instructions that will include a QA pass/fail results indicator in the metadata. Storage instructions are not implemented since all products will be stored automatically.	Metadata = Product ID, QA results, Product Storage and Processing Instructions
PGS-1140#B	8939	B0	mission essential	SDPS	functional	test	unverified	test	unverified	97-0419A	The PGS shall have the capability to provide the data product quality staff with the Product QA data from the SCF.	The QA Metadata Update interface will allow SCF staff to peruse and modify the Science Quality Flag. The Automatic and Operational Quality Flags will also be displayed along with expository text.	
PGS-1150#B	9062	B0B1	mission essential	SDPS	functional	test	unverified	test	unverified	97-0182A	The PGS shall have the capability to accept the identification of products that are not to be stored in the DADS due to inferior quality or other reasons. The reason for all such actions shall also	All data successfully produced by a PGS will be stored to DADS.	Only full Science QA function is done in B0.

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verification_method	s_verification_status	a_verification_method	a_verification_status	CCR	text	interpretation	clarification
											be specified.		
PGS-1160#B	9063	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0182A	The PGS shall have the capability to accept from the product quality staff commands to suspend specified production processing due to inferior quality or other reasons in line with SMC guidelines. The reasons for all such actions shall also be specified.		
PGS-1170#B	8942	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to identify data products awaiting QA that have not been reviewed within the amount of time allocated for QA.		
PGS-1175#B	8943	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall maintain a list of products requiring QA by SCF or the PGS.		
PGS-1180#B	8944	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to update the processing status of a given product as a result of a QA timeout.		
PGS-1190#B	8945	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall have the capability to log the identification of all non-stored products or suspended processing directed by the data product quality staff to support the maintenance of performance statistics.	All data successfully produced by a PGS will be stored to DADS. Normal production reports will provide the required identification.	

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verification_method	s_verification_status	a_verification_method	a_verification_status	CCR	text	interpretation	clarification
PGS-1200#B	8946	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to generate a data quality assessment report including a description of the quality of each processed product as well as the quality of each of the product's input data sets.	Reporting concept is to provide key data in the databases and let M&O define and develop needed reports using COTS report writing tools. All products can have quality indicator metadata. All standard products also contain references to products used in their generation.	
PGS-1210#B	8947	<u>B0</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall coordinate the disposition of PGS data stored temporarily in the DADS.		
PGS-1220#B	8948	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall have the capability to receive GFE databases and associated tools, including COTS and public domain databases, and maintain them as required as inputs to product generation: Example databases are: a. Digital terrain map databases b. Land/sea databases c. Climatology databases d. Digital political map databases		
PGS-1230#B	8949	<u>B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	97-0379A	The PGS shall accept special data sets from the DADS. Received information shall contain at a minimum:	B: SCF non-standard data sets	

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
											a. Product identification b. Special data set c. Metadata required for processing d. Current date and time e. DADS identification		
PGS-1240#B	8950	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall send the generated Level 1 to Level 4 Standard Products to the DADS. These products shall contain the following information at a minimum: a. Product identification b. L1-L4 data set c. Product processing priority d. Current date and time e. Associated metadata	PGS accesses data products from DADS by providing a UR that defines the product. Metadata is included in the product headers.	<u>Inter-DAAC Processing and Staging is done in B1.</u>
PGS-1250#B	8951	<u>B0B1</u>	mission essential	SDPS	functional	test	unverified	test	unverified	96-1466A	The PGS shall send the DADS the calibrated ancillary data.	Calibrated ancillary data products are like any data product and can be stored to the Data Server	<u>Inter-DAAC Processing and Staging is done in B1.</u>
PGS-1270#B	7188	<u>B0</u>	mission fulfillment	SDPS	evolvable	analysis	unverified	analysis	unverified	96-0947A	The PGS design and implementation shall have the flexibility to accommodate PGS expansion up to a factor of 3 in the processing capacity with no changes to the processing design, and up to a factor of 10 without major changes to the processing design. Such		

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verification_method	s_verification_status	a_verification_method	a_verification_status	CCR	text	interpretation	clarification
											expansion in capacity or capability shall be transparent to existing algorithms or product specifications. This requirement shall apply to the system at all phases of contract performance, including the final system, as well as the at-launch system.		
PGS-1300#B	8238	<u>B0</u>	mission critical	SDPS	performance	analysis	unverified	analysis	unverified	97-0419A	Each PGS shall provide a processing capacity as shown in Table C-5 of Appendix C. It shall be possible to effectively utilize the entire reprocessing capacity at each site on computers with similar architectural design (e.g., parallel processors), for a single algorithm or any mix of algorithms normally run at that site. The four times processing capacity accounts for: a. normal processing demands b. reprocessing demands c. algorithm integration and test demands, production of prototype products, and ad hoc processing for "dynamic browse" or new search and access techniques developed by science users.	Release A Processing capacity provided is equal to 1.2X normal processing AM-1 instruments and SAGE III. This will be provided only at the GSFC, LaRC, EDC and NSDIC DAACs. Totals provided as derived from the Feb., 1996 Technical Baseline (Release B0 procurement baseline) in MFLOPS is @ GSFC: 228, @ LaRC: 24966, @ EDC: 7581 and @ NSDIC: 71. These capacities include the 25% efficiency required by PGS-1301#A.	
PGS-1301#B	8520	<u>B0</u>	mission essential	SDPS	performance	analysis	unverified	analysis	unverified	97-0019	The effective CPU processing rates used for sizing purposes in PGS-1300 shall not be greater than 25% of peak-related CPU capacity.	B: AM-1, COLOR	

Table 1. PGS Attribute Changes (RTM 04/18/97)

RBR_id	req_key	Rel	Req_Category	segment	req_type	s_verif_method	s_verif_stat	a_verif_method	a_verif_stat	CCR	text	interpretation	clarification
PGS-1315#B	5045	B0	mission essential	SDPS	performance	analysis	unverified	analysis	unverified	97-0419A	Each PGS shall have the capacity to support I/O to temporary and intermediate storage or multiple passes over input products as required by individual science algorithms.	B: AM-1, COLOR	
PGS-1315#TK5b	7780	NA	mission essential	SDPS	performance	analysis	unverified	analysis	unverified	97-0419A	Each PGS shall have the capacity to support I/O to temporary and intermediate storage or multiple passes over input products as required by individual science algorithms.		
PGS-1400#B	5047	B0	mission fulfillment	SDPS	functional	test	unverified	test			The PGS shall be developed with configuration-controlled application programming interfaces (APIs) that will be capable of supporting development and integration of new algorithms developed at each DAAC to support DAAC value-added production.		
PGS-1410#B	5049	B0	mission fulfillment	SDPS	functional	test	unverified	test			The PGS shall provide the capability for each DAAC to add to the data production environment toolkit DAAC-developed software required to support discipline specific needs.		