Goddard Procedural Requirements (GPR)

DIRECTIVE NO.	GPR 8700.4F	**APPROVED BY Signature:**	*Original Signed by*
EFFECTIVE DATE:	June 2, 2005	**NAME:**	Edward J. Weiler
EXPIRATION DATE:	June 2, 2010	**TITLE:**	Director

COMPLIANCE IS MANDATORY

Responsible Office: 170 / Independent Technical Authority Governance and Systems Management Office

Title: Integrated Independent Reviews

PREFACE

P.1 PURPOSE

This procedure establishes the process for planning, conducting, and reporting Integrated Independent Reviews for Goddard Space Flight Center (GSFC) products.

The Goddard Integrated Independent Review (IIR) process fulfills the NASA imposed requirement within NPR 7120.5 for both Independent Reviews and Critical Milestone Reviews of projects.

P.2 APPLICABILITY

Except as noted below, the IIR process applies to all GSFC products within the scope of the GSFC Quality Management System. Typically, IIRs are used to evaluate the status of a flight project at the mission system level and at the major system element level (i.e., spacecraft, instrument(s), and ground system). IIRs are supported by project-conducted Engineering Peer Reviews (EPRs) which assess the status of subsystem or lower assembly levels. The results of the EPRs constitute a key input to the IIRs.

When the GSFC end-item product consists of a deliverable sub-system or instrument, this IIR process does apply. In that case, the review sequence described within this document may be modified as appropriate, subject to approval in the IIR Plan.

The IIR process does not apply to non-flight products, to sounding rockets and associated payloads, to balloons and associated payloads, or to deliverable aircraft instruments and payloads.

P.3 AUTHORITY

a. NPD 1280.1, NASA Management System Policy
b. NPR 7120.5, NASA Program and Project Management Processes and Requirements

P.4 REFERENCES

a. NPD 8610.24, Expendable Launch Vehicle (ELV) Launch Services Pre-launch Readiness Reviews
b. GPR 1060.2, Management Review and Reporting for Programs and Projects
c. GPR 1410.2, Configuration Management
d. GPR 8700.6, Engineering Peer Reviews
e. GSFC-STD-1000, GSFC Rules for the Design, Development, Verification, and Operation of Flight Systems
f. GSFC-STD-1001, Criteria for Flight Project Critical Milestone Reviews

P.5 CANCELLATION

GPG 8700.4E, Integrated Independent Reviews

P.6 SAFETY

Not applicable.

P.7 TRAINING

Not applicable.

P.8 RECORDS

Record Title	Record Custodian	Retention
IIRP (Initial and all Revisions); IIR Presentations and Supporting Material; IIR Reports (including RFAs); Project responses to RFAs; IIRT decisions on project responses.	Project Manager	*NRRS 8/5A1: Permanent Records may be retired to a Federal Records Center when 2 years old. Transfer to National Archives and Records Administration 15 years after completion of the project or when 25 years old, whichever is sooner.
IIRT Presentation Material to PMC for MCRR and MRR	Project Manager	*NRRS 8/5A1
Independent Flight Readiness Report (Red Book)	Chief, Systems Review Office	*NRRS 8/5A1

**NRRS – NASA Records Retention Schedules (NPR 1441.1)*

P.9 METRICS

The Independent Technical Authority Governance/Systems Management Office (ITA/SMO) shall:

a. Systematically solicit feedback on the perceived value of the review process to the success of Goddard projects. Feedback obtained from Program and Project Managers subsequent to each IIR and

periodically from the Goddard Program Management Council (PMC) shall be summarized, evaluated for improvement opportunities, and reported to the PMC annually.

b. Assess the composite set of RFA subject matter, responses, and closure statistics, as well as the evaluation results of the Key Project Management Practices for themes, trends, and the like. These results, along with identified improvement opportunities, shall be reported to the PMC annually.

P.10 DEFINITIONS

a. Integrated Independent Review (IIR) - One of the series of reviews imposed by this GPR which are conducted at critical product milestones in accordance with an approved IIR Plan. The purpose of an IIR is to add value and reduce risk through the infusion of expert knowledge that is not directly responsible for the subject product development activity. An IIR assesses the results of activity to date, including those from a robust set of engineering peer reviews, to systematically evaluate technical and programmatic status using applicable objectives and success criteria for the particular milestone, thereby providing independent findings and recommendations to the product team, as well as to Goddard and Agency management.

b. Gateway Reviews - A series of reviews chartered by the Goddard Center Director and conducted by the PMC to confirm readiness of a Goddard-managed project to proceed. As a minimum, this series includes the Mission Confirmation Readiness Review (MCRR) and the Mission Readiness Review (MRR) (See GPR 1060.2).

c. Pre-Launch Readiness Reviews – A series of reviews conducted by NASA-KSC to confirm readiness of the Expendable Launch Vehicle (ELV), all payload support hardware/software, and all launch site infrastructure to proceed with launch (See NPR 8610.24).

d. Engineering Peer Reviews (EPR) - A series of focused, in-depth technical reviews that support the evolving design and development of a product subsystem or discipline area. The purpose of EPRs is to add value and reduce risk through infusion of expert knowledge, to confirm the intended approach, and to engender specific recommendations for improvement. An EPR provides a penetrating examination of design, analysis, manufacturing, integration, test, and operations details through its scrutiny of drawings, processes, data, and other information. (See GPR 8700.6).

e. Request for Action (RFA) - A formal written request from the IIR Team (IIRT), through its co-chairs, that asks for additional information from or action by the development team. A specific due date is assigned for closure of each RFA. Closure with the concurrence of the IIR Team is required.

NOTE: An RFA is considered “critical” when the IIRT Co-Chairs deem that failure to satisfactorily resolve an RFA in a timely manner may create a significant safety or mission success issue, or when closure of an RFA may involve a significant programmatic impact.

PROCEDURES

In this document, a requirement is identified by "shall," a good practice by "should," permission by "may" or "can," expectation by "will," and descriptive material by "is."

The primary responsibility for successful execution of the IIR process on an individual product rests with the manager. Because in most instances, this process deals principally with flight project activity, this individual is hereafter referred to as the Project Manager.

The procedures defined in the following sections are directly applicable to all projects whose governance is delegated to the PMC. For projects that report to the Agency PMC and for which a separate and distinct NASA-Headquarters appointed independent review team is also appointed, then the Goddard IIR Team will work to minimize burden and maximize productivity for the Goddard Project Manager while fulfilling its responsibilities to the PMC. To the degree possible, common meetings that have common objectives, agendas, and RFA sets will be arranged.

The approved IIRP (see paragraph 1 below) documents and authorizes any deviations from these procedures.

1. Integrated Independent Review Plan (IIRP)

After consultation with the Chief of the Systems Review Office to ensure proper understanding of these procedures and their applicability to the specific project, the Project Manager shall submit an IIRP for approval at least four months prior to the anticipated date of the first IIR.

Contents of the IIRP shall include:

- the sequence and anticipated timeframe for each of the IIRs, as well as for the planned Gateway Reviews and Pre-Launch Readiness Reviews,
- a concise statement of the purpose and objectives of each IIR,
- the approach to be employed by the project for EPRs, and the EPR interface with the IIR process,
- the names of the IIRT co-chairs, and
- the IIR documentation and reporting process, including the process for closeout of RFAs.

The initial issue and all revisions to the IIRP shall be approved by the Director of ITA/SMO.

The IIRP shall be updated as needed to maintain consistency with current project planning and shall be controlled in accordance with GPR 1410.2 on Configuration Management.

2. Scope of Integrated Independent Reviews

The specific set of IIRs for a project may be tailored based on project scope, complexity, and acceptable risk. IIRs are usually conducted at the critical milestones illustrated in Figure 1. Attachment 1 provides a summary of the purpose, objectives, and typical timing for those IIRs.

In order to fully address additional appropriate detail, IIRs are often conducted at selected key milestones for the spacecraft and each instrument. Attachment 2 lists a complete set of IIRs for typical GSFC projects.

Detailed guidance for the content of each IIR delineated in Figure 1 is contained in GSFC-STD-1001. That guidance provides typical purpose, objectives, and success criteria that will be used by the IIRT to judge adequacy of project progress relative to expectations at each review. In addition, that guidance may be tailored appropriately for application to spacecraft and instrument reviews.

3. Integrated Independent Review Team (IIRT)

The projected availability of all IIRT members throughout the project life cycle to provide continuity is an important consideration in their selection. All members of the IIRT shall be independent of the project team, including all participating outside organizations, and the program of which it is a part. Accordingly, the immediate supervisors of those performing work on the project should not serve as members of the IIRT.

The IIRT shall be led by two co-chairs that are selected for their ability to span the full scope of project technical and programmatic considerations. One co-chair shall be from the GSFC SRO. The other co-chair shall be from outside of GSFC. Both are approved by the Director of ITA/SMO upon approval of the IIRP.

The remainder of the IIRT, typically an additional 4 to 10 people depending on the scope, complexity, and acceptable risk of the project, shall be selected based on their technical and systems management skills, with particular emphasis on the areas of highest risk for the project. These members should consist of experts from within and outside of GSFC in order to provide consideration of best practices and lessons learned from a broad spectrum of organizations.

Prior to the first IIR and after consultation with the co-chairs and the Project Manager, the Chief of the SRO shall appoint all IIRT members in a memo to the Project Manager that is approved by the Director of ITA/SMO. If there are changes to the IIRT membership for subsequent reviews, appointment of new members shall be similarly documented and approved.

4. Conduct of Individual Integrated Independent Reviews

Prior to each IIR, the Project Manager and the IIRT co-chairs shall review the objectives defined in the approved project IIRP and the applicable criteria for the upcoming review (contained in GSFC-STD-1001) as well as project status and issues in order to finalize timing of the review, determine adequacy of review team membership, and define applicable project documents needed to support the upcoming review. In addition, they shall jointly develop and document specific agenda and success criteria for the upcoming review.

Based on the agenda, the Project Manager shall finalize all presentation material and deliver it, along with the identified project documents, to the IIRT one week prior to start of the IIR.

Prior to each IIR, the IIRT co-chairs shall prepare the IIRT for the efficient and rigorous conduct of the review by distributing the applicable success criteria, all presentation material, all applicable documents, and whatever guidance is deemed appropriate.

At the review, the Project Manager presents review material and/or directs the presentations by other members of the project team, providing appropriate input to maximize information exchange between the project team and the IIRT. The Project Manager shall ensure discussion of risk, safety, and mission assurance topics within technical presentations to promote ownership of these overarching values by all members of the project team.

The co-chairs shall preside at the IIR, leading the meeting and keeping the participants (IIRT, customers, project team members, line management, etc.) focused during project presentations and associated discussion. The co-chairs shall moderate the interaction between the IIRT and the project team, and collect RFAs from IIRT members and other review participants if co-sponsored by an IIRT member.

If more detailed examination of technical or programmatic details is required, then subgroup or "splinter" sessions may be conducted and the results of such discussions subsequently summarized at the plenary session.

Throughout each review, the IIRT shall utilize the specific success criteria to evaluate project progress relative to expectations at the particular milestone in order to collectively judge whether or not the review objectives have been satisfied.

The IIRT shall observe project approaches relative to all applicable Key Project Management Practices identified in Attachment 3 in order to collectively rate project performance in accordance with the legend defined therein.

The IIRT shall assess project compliance with GSFC-STD-1000 as delineated in the Project Rules Compliance Matrix and as discussed during the review.

Project implementation of a sufficiently rigorous EPR process shall be assessed based on discussion of EPR activity and results during the review.

Finally, although the IIR process does not formally audit compliance with NPR 7120.5, the IIRT should note any observed project deficiencies with respect to its requirements.

At the conclusion of each IIR, the co-chairs shall summarize the IIRT's initial impressions and discuss the draft RFAs in order to correct misunderstandings, identify those deemed trivial or out-of-scope, clarify language, and determine reasonable due dates for responses.

5. Reporting the Results of Integrated Independent Reviews

For each IIR, the IIRT shall prepare a written narrative report to document its assessment within 21 days of completion of the review with copies to the Project Manager, the applicable Program Manager, the

SRO Chief, and the ITA/SMO Director. In cases where there is involvement of another NASA Field Center in implementing the project, a copy should also be sent to appropriate management of that center.

The report shall include, but is not limited to, the following:

- A conclusion as to whether or not project status represents successful achievement of the subject milestone, and if it does not, definition of the steps considered necessary to accomplish such (e.g., a delta-review, closure of specific RFAs),
- findings and attendant rationale regarding attainment of each technical and programmatic review objective, along with identification of any areas where project progress fell notably below expectations identified in the success criteria,
- observations regarding project compliance with the current issue of GSFC-STD-1000, with emphasis on areas of potential non-compliance,
- an evaluation of the current project risk list along with identification of and rationale for any risk rating with which the IIRT takes exception,
- any additional medium-to-high risks foreseen by the IIRT that have not been identified by the project along with recommended mitigation approaches,
- all RFAs, identifying a date by which the project response is due, and as appropriate, a notation that the RFA is deemed "critical" by the IIRT,
- a copy of the review specific agenda, objectives, and success criteria as well as a list of all review participants and attendees that includes their organization and contact information, and
- for those IIRs identified in Attachment 3, an evaluation of project status with regard to each of the Key Project Management Practices (KPMP), along with recommended corrective action for any practice rated as other than "Green". In General, the KPMP assessments over the life of the project should be collectively evaluated by the IIRT after the Pre-Ship review and an assessment of mission success related residual risk, if any, determined and presented at the MRR.

The Project Manager shall report the summary result of each IIR to the PMC during the Monthly Status Review following each IIR.

The ITA/SMO Director shall report major issues, if any, resulting from an IIR to the PMC during the Monthly Status Review following each IIR. In addition, on a monthly basis, the ITA/SMO Director shall report the status of all open RFAs for all IIRs on all projects with emphasis on those overdue and those for which closure is considered to be critical.

The IIRT co-chairs shall formally present an IIRT assessment of the project's readiness to proceed to the PMC as part of the Mission Confirmation Readiness Review and the Mission Readiness Review. The IIRT co-chairs shall provide additional briefings as requested by the PMC, Center Director, or the Associate Administrator for the mission.

Prior to launch, the IIRT co-chairs shall prepare and submit to the PMC Chair and Center Director a Flight Readiness Report (known as a "Redbook") that includes a summary of the project IIR process and results along with an assessment of the acceptability of all residual risks.

6. Closed Loop Disposition of Requests for Action

Closure of all RFAs is required as part of the IIR process.

Upon issuance, all RFAs shall define a date by which the project response is due. That date shall be determined by the IIRT Co-Chairs after consultation with the Project Manager and should require timely action while allowing a reasonable period to prepare a meaningful response.

The IIRT Co-Chairs shall denote those RFAs which are considered “critical.”

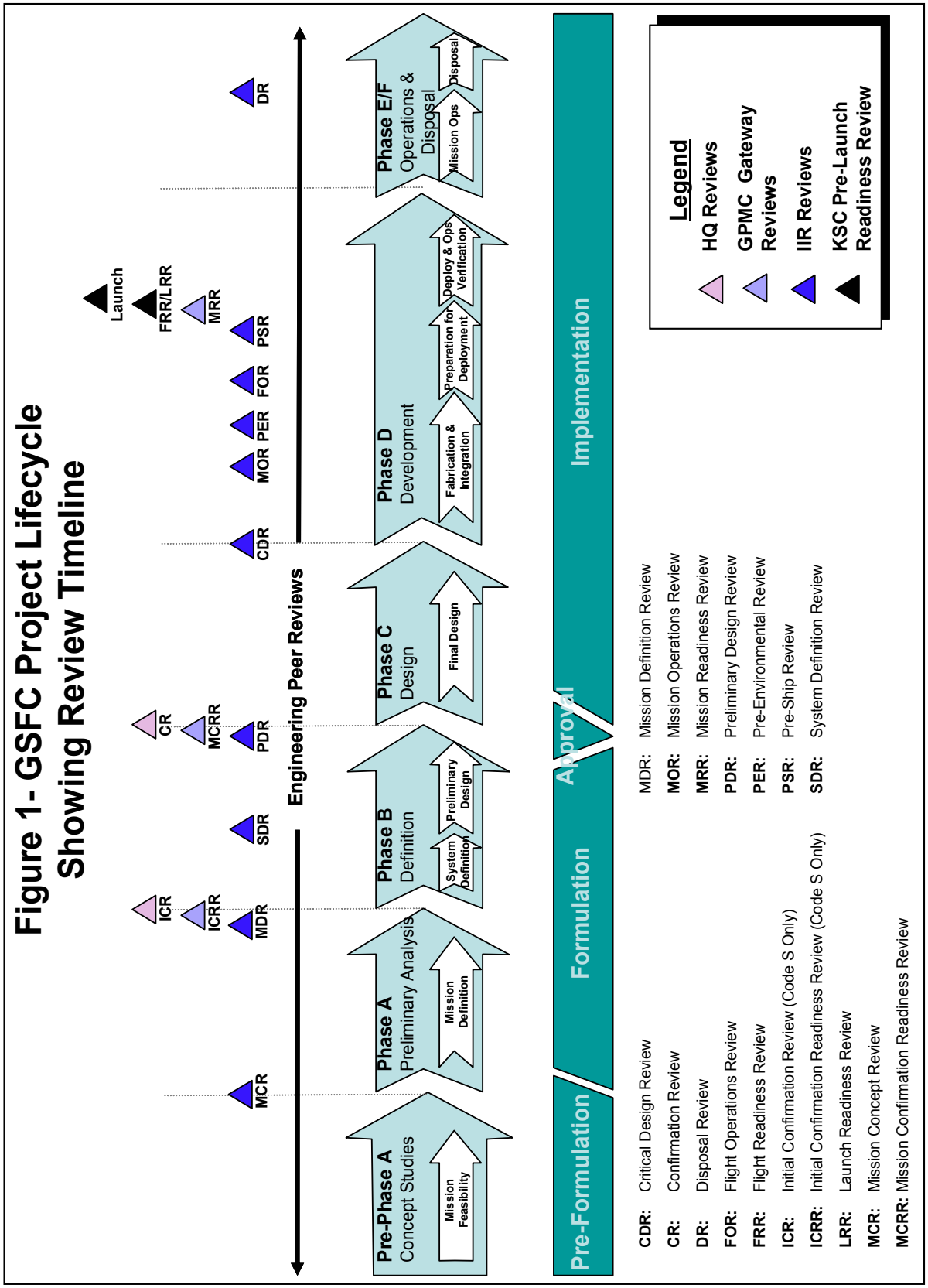
The Project Manager shall respond to the RFAs contained within each IIR report in a comprehensive manner by the defined due date. Responses shall be in writing and directed to the IIR co-chairs.

The IIRT co-chairs, the RFA originator**s,** and others that the IIR may deem necessary shall review RFA responses for acceptability within 2 weeks of receipt. The co-chairs shall notify the Project Manager in writing of their approval or rejection of the responses. In the case of incomplete or unacceptable responses, the IIRT shall provide rationale and supporting information to clarify the issue and guide the project as it reconsiders its response. Dialog is encouraged between the Project Manager and the IIRT to attempt to resolve any differences of opinion as part of an iterative process to close all RFAs.

If unable to evolve a mutually acceptable approach to closure of the RFA, either party may elevate the issue to the ITA/SMO Director for resolution. If the Project Manager is dissatisfied with the resolution proposed by the ITA/SMO Director, the Project Manager may appeal to the PMC through the Director of Flight Programs and Projects.

IIRT co-chairs shall utilize the ITA / SMO database to record all RFAs as well as to track progress toward and achievement of closure.

Figure 1- GSFC Project Lifecycle Showing Review Timeline



Attachment 1
Summary Description of IIRs *

Mission Concept Review (MCR) – The MCR affirms the mission need and examines proposed mission objectives and the concept for satisfying them. The MCR is normally held at the end of mission feasibility assessment after concept studies are complete.

Mission Definition Review (MDR) – The MDR establishes that the baseline mission requirements are clearly understood, that the requirements for each independent system element have been determined, and that the currently envisioned system design will fully satisfy those requirements in order to justify that it is ready to complete system definition and to flow down requirements to lower levels of the system. It also confirms that planning for remaining project activities is adequate and that there are reasonable expectations that the project will accommodate any imposed constraints and meet its success criteria within the allocated resources. The MDR is normally held very early in the definition phase upon completion of a feasible mission definition and while system concept changes can be accommodated with minimal impact. Because of shortened development cycles or other considerations, the MDR may be combined with the SDR.

System Definition Review (SDR) – The SDR establishes that the baseline mission requirements are clearly understood, that system definition is complete, that the allocation of requirements to each independent system element and their respective subsystems is complete and verifiable, and that those lower level requirements are traceable to the mission level. In so doing, the project justifies readiness to proceed with preliminary design. In addition, the SDR establishes that planning for remaining project activities is adequate and that there are reasonable expectations that the project will accommodate any imposed constraints and meet its success criteria within the allocated resources. The SDR occurs at the end of system definition upon completion of a feasible design that will satisfy all system requirements. When appropriate, because of shortened development cycles or other considerations, the SDR can be combined with the MDR.

Preliminary Design Review (PDR) – By illustrating a credible and tractable design solution that meets all mission requirements, the PDR establishes that the project has completed a credible and acceptable mission formulation, is prepared to proceed with the detailed design, and is on track to complete the flight and ground system development and mission operations within the identified cost and schedule constraints. The PDR is conducted at the end of formulation (end of the definition phase).

*** Consult GSFC-STD-1001 for complete description of purpose, objectives, timing, content, and success criteria for each review.**

Critical Design Review (CDR) – The CDR establishes that the maturity of the design and development effort is appropriate to support proceeding with full scale fabrication activities, and that the project is on track to complete the flight and ground system development and mission operations in order to meet mission performance requirements within the identified cost and schedule constraints. The CDR is conducted near the completion of final design and after completion of engineering model evaluations and breadboard development and test.

Mission Operations Review (MOR) – The MOR establishes the adequacy of plans and schedules for ground systems and flight operations preparation in order to justify readiness to proceed to implement the remaining required activities. The MOR is the first of two IIRT reviews held to examine mission operations status. It is typically held subsequent to completion of detail design and fabrication activity but prior to initiation of major integration activities of flight or ground system elements.

Pre-Environmental Review (PER) – Through the complete and comprehensive evaluation of project status, the PER establishes readiness to proceed with environmental testing of the integrated flight system and to demonstrate that the project is on track to complete the flight and ground system development and mission operations in order to fully meet mission performance requirements within allocated cost and schedule resources. The PER is held after completion of the initial successful comprehensive systems test of the fully-integrated flight system and prior to initiation of the system level environmental test sequence.

Flight Operations Review (FOR) – The FOR reviews the progress of ground system development and mission operations planning activities and establishes readiness to proceed with final preparations of ground system elements to support successful launch and mission operations. The FOR is held late in the test flow of the flight system but prior to the last major interactive test between the flight and ground system elements. The review is conducted before shipment of flight system elements to the launch site.

Pre-Ship Review (PSR) – The PSR establishes that all flight and ground system verification activities have been successfully completed and that the system is ready for final processing prior to launch and mission operations. The PSR is conducted prior to shipment of flight system elements to the launch site and after successful completion of all verification activities, including environmental and functional performance testing as well as ground system and network compatibility testing.

Disposal Review (DR) – The DR establishes readiness to proceed with de-commissioning and end-of-life operations. The DR is normally conducted at the end of routine mission operations upon accomplishment of planned mission objectives. It may be advanced if some unplanned event gives rise to a need to pre-maturely terminate the mission, or delayed if operational life is extended to allow additional investigations.

Attachment 2
Typical IIR Sequence for GSFC Projects

- Mission Concept Review (MCR)[1]
- Mission Definition Review (MDR)[2]
- System Definition Review (SDR)[2]
  - ♦ Instrument "X" Preliminary Design Review[3]
  - ♦ Spacecraft Preliminary Design Review[3]
- System Preliminary Design Review (PDR)
  - ♦ Instrument "X" Critical Design Review[3]
  - ♦ Spacecraft Critical Design Review[3]
- System Critical Design Review (CDR)
- Mission Operations Review (MOR)
  - ♦ Instrument "X" Pre-Environmental Review[3]
  - ♦ Spacecraft Pre-Environmental Review [3]
  - ♦ Instrument "X" Pre-Ship Review[3]
  - ♦ Spacecraft Pre-Ship Review[3]
- System Pre-Environmental Review (PER)
- Flight Operations Review (FOR)
- System Pre-Shipment Review (PSR)
- Disposal Review (DR)

Notes:
1. Depending on the approach used for project approval, the MCR may be a Goddard management review rather than an IIR.
2. The MDR and the SDR are sometimes combined for projects with compressed development timelines. See Attachment 1 for additional information.
3. Specific reviews such as these should be tailored based on project scope, complexity, acceptable risk, system configuration, and integration/test approach.

Attachment 3
GSFC Key Project Management Practices

IIRT Assessment of Key Systems Management Practices						
Evaluation Criteria	***Review Milestone***					
	MDR	***SDR***	***PDR***	***CDR***	***PER***	**PSR**
Organization and Communication: A suitable and workable organizational structure is in place that facilitates clear and open communication (internally and externally). Roles and responsibilities are clearly defined. The current and planned number, capability, and experience of people assigned are sufficient. The project team actively learns from the past and contributes to future scientific, technical, and management knowledge.						
Systems Management: Thorough processes have been planned and implemented for functions such as: requirements management (derivation and functional allocation), systems engineering, risk management, configuration management, documentation and technical record keeping, conduct of analyses, workmanship, and verification process management.						
Safety: Personnel, facility, launch range, and mission safety considerations are thoroughly considered. Hazards are defined. Controls and verifications are implemented. Documentation is approved.						
Risk Management: A rigorous risk management process has been rigorously applied. Appropriate mitigations have been undertaken. Adequate Failure Mode and Effects Analysis (FMEA), Fault Tree Analysis (FTA), and, where indicated, Probabilistic Risk Assessment (PRA) has supported the effort. Appropriate design changes have been undertaken as a result of such analyses. Single point failures, where retained, have reasonable supporting rationale. Risk implications of test failures have been considered.						
Mission Assurance: The planning and execution of mission assurance requirements, including EEE parts, materials, workmanship standards, and software assurance (including IV&V) has been rigorous. A comprehensive, closed-loop problem reporting and corrective action system is utilized.						

Evaluation Criteria	*Review Milestone*					
	MDR	***SDR***	***PDR***	***CDR***	***PER***	**PSR**
Integration: Physical and analytic integration activities for all hardware and software elements of the mission, including ground equipment and the launch vehicle, have been well planned and executed. Appropriate assessment of all applicable discrepancies and confirmation of adequate closeout has preceded each integration step.						
Verification: Verification and validation activities (analysis, inspection, and test) associated with software and hardware elements at all levels of assembly have been well planned and executed. A verification matrix is utilized to track and confirm results and compliance with requirements. Trend analysis of key parameters is utilized. Total and failure-free run times of primary and redundant elements are adequate.						
Operations: Operations considerations have been adequately planned and implemented. A mission timeline, from launch through disposal, exists and defines corrective actions needed for mission events that fail to occur as planned. The fidelity of simulations has been comprehensive and thorough and has included contingency and emergency actions by the operations team.						
Peer Reviews: A comprehensive and thorough set of engineering peer reviews has been planned and conducted on appropriate hardware and software elements of the project by competent and independent people. Results and actions have been documented and communicated to the project manager and Integrated Independent Review Team.						
Integrated Independent Reviews: Planning and presentation of information at critical mission and major element milestone reviews has been rigorous; peer review results have been included in briefings; review success criteria have been met; closeout of all review actions has been timely and thorough.						

Legend: **Green** - To date, activities are fully compatible with good practice for similar successful projects.
Yellow - To date, activities exhibit weakness that warrants change to better control risk.
Red - To date, activities are deficient and immediate corrective action is essential to reduce risk.

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	08/12/98	
A	10/06/98	• Header and footer format changes. New title for GPG 1310.1 reference. • Deleted Center Director approval of SRPs. • Identified responsibilities for maintenance of quality records.
A	03/31/99	• Footer format changes. • Moved paragraph 3. Records to P6 in order to comply with GPG 1410.1.
A	04/02/99	• Deleted Product Verification/Audit Records, Peer Review Plan, and System Review and Peer Packages from Records table • Added System Review Summary and System Review Program Summary to Records Table
B	08/17/99	• Substituted GPG 7120.2 for GPG 8730.4 as a reference. • Re-defined P2 Applicability of this GPG to GSFC product to eliminate Systems Reviews for certain classes of products • Clarified responsibility of Product Manager to initiate Systems Review Plan.
C	11/02/99	• Added requirement for SRP control by Product Manager. • Added requirement for PRP control by PDL. • Added requirement for Peer Review chairperson to submit a summary within 30 calendar days. • Added clarification that the System Review Summary is submitted to Code 100 for information. • Revised flowcharts to reflect changed processes.

CHANGE HISTORY LOG (continued)

Revision	Effective Date	Description of Changes
D	09/28/01	• Title and terminology changed to reflect new review process that consolidates the objectives of several Center and HQ reviews. • Updated wording for applicability, retained original scope. • Changed record custodian for all quality records to Project Manager. Quality records updated to reflect new process. • Deleted specific requirements for peer reviews and added references to new GPG 8700.6, Engineering Peer Reviews. • Incorporated the scope and requirements of Red Team Reviews and HQ independent assessments, as appropriate, to enable the consolidation of the review process to reduce the burden on projects and improve the value to the Agency. • Reflected the newly established role of the Systems Management Office in the independent assessment process. • Incorporated lessons learned requirements. • Deleted requirement for the System Review Program • Summary to be submitted to Code 100 for information • Revised flowcharts to reflect changed processes.
E	04/11/03	• Clarified applicability to exclude products not intended for space flight. • Added metrics to measure value to projects and trend performance against the 13 system management processes. • Corrected title, custodian and references to records and controlled documents. • Provided for approved deviations from this procedure. • Provided for a transitional review process for projects that completed CDR prior to September 28, 2001. • Deleted process flow figures. • Added guidance for integrating safety and mission assurance topics in reviews. • Clarified expectations for IIRT assessment of compliance with NPG 7120.5, Program and Project Plans. • Added requirement for IIRT to confirm proper level of software IV&V per PMC action item closure. • Clarified IIRT report content and requirements for assessing the 13 systems management process areas and residual risk.

CHANGE HISTORY LOG (continued)

Revision	Effective Date	Description of Changes
F	06/02/05	General: • Converted to GPR series from GPG • Completely rewrote GPR for clarification • Reflected authority of and reference to ITA / SMO consistent with GSFC re-organization of 9/19/2004 • Defined usage of "shall", "will", etc. consistent with NPR7120.5B • Updated reference to NASA Management Systems Policy • Deleted discussions related to Headquarters appointed IRTs • Deleted requirements for joint operation of IIR with HQ IRT (see intro to "Procedures" saying IIR will work to minimize burden) • Incorporated Org Title Change for ITA/SMO • Incorporated Review Effectiveness Products: – IIR Review Timeline Chart – 10 Key Project Management Practices – "Open RFA" Status Reporting – Summary of IIR Reviews – Reference to Web-Based Review Criteria • Deleted "Lessons Learned" Discussions (Requirement is in Success Criteria) Applicability: • Added reference to GSFC IIR Process satisfying NPR 7120.5 Independent and CMR review requirements Authority: • Added NPR 7120.5 (Deleted same from references) References: • Added GSFC-STD-1000 • Added GSFC-STD-1001 Metrics: • Added PMC Feedback to Existing PM Feedback Definitions: • Deleted repetitive forms of IIR This or That • Deleted "IRT" • Added "ELV Launch Readiness Reviews"

CHANGE HISTORY LOG (continued)

Revision	Effective Date	Description of Changes
F(cont.)		Conduct of IIRs: • Expanded discussion of planning phase • Added requirement for IIR Presentation and Applicable Document Availability 1 Week Prior to Review • Added IIRT requirement for rating of Key Project Management Practices, assessment of compliance with GSFC-STD-1000, and assessment of EPR implementation IIR Reporting: • Bulletized Required IIR Report Contents (Deleted Attachment) RFA Closeout: • Added Requirement for RFA Due Date and, when appropriate, Criticality Designation