



**NOAA NESDIS
CENTER for SATELLITE APPLICATIONS
and RESEARCH**

PEER REVIEW GUIDELINE

**PRG-5
GATE 3 REVIEW
PEER REVIEW GUIDELINE
Version 3.0**

NOAA NESDIS STAR

PEER REVIEW GUIDELINE PRG-5

Version: 3.0

Date: November 30, 2009

TITLE: Gate 3 Review Peer Review Guideline

Page 2 of 2

TITLE: PRG-5: GATE 3 REVIEW PEER REVIEW GUIDELINE VERSION 3.0

AUTHORS:

Ken Jensen (Raytheon Information Solutions)

GATE 3 REVIEW PEER REVIEW GUIDELINE VERSION HISTORY SUMMARY

Version	Description	Revised Sections	Date
1.0	No version 1	N/A	N/A
2.0	No version 2	N/A	N/A
3.0	New Peer Review Guideline (PRG-5) by Ken Jensen (Raytheon Information Solutions)	New	11/30/2009

TABLE OF CONTENTS

	<u>Page</u>
LIST OF ACRONYMS	5
1. INTRODUCTION	6
1.1. Objective.....	6
1.2. Overview.....	6
2. REFERENCE DOCUMENTS.....	7
3. PREPARING FOR THE REVIEW	8
3.1. Background – The STAR EPL Process	8
3.2. The Gate 3 Review	9
3.3. Review Team.....	9
3.4. Process Assets.....	10
3.4.1 Recommended Process Assets	11
3.4.2 Optional Process Assets.....	11
3.5. Project Artifacts	12
3.5.1 Gate 3 Document.....	13
3.5.2 Development Project Plan	13
3.5.3 Project Status Report.....	14
3.5.4 Project Baseline Report	14
3.6. Entry Criteria.....	14
3.7. Review Team Preparation	15
4. CONDUCTING THE REVIEW	18
4.1. Review Objectives	18
4.2. The Gate 3 Document	18
4.2.1 Section 1 – Introduction	19
4.2.2 Section 2 – Project Plan.....	21
4.2.3 Section 3 – Development Project Status.....	24
4.2.4 Section 4 – Project Baseline	28

4.2.5 Section 5 – Summary and Conclusions	28
5. CLOSING THE REVIEW	30
5.1. Exit Criteria	30
5.2. G3R Check List	30
5.3. G3R Report	32

LIST OF ACRONYMS

CICS	Cooperative Institute for Climate Studies
CIMSS	Cooperative Institute for Meteorological Satellite Studies
CIOSS	Cooperative Institute for Oceanographic Satellite Studies
CIRA	Cooperative Institute for Research in the Atmosphere
CL	Check List
CLI	Check List Item
CM	Configuration Management
CREST	Cooperative Remote Sensing and Technology Center
DG	Document Guideline
DPP	Development Project Plan
EPG	Enterprise Process Group
EPL	Enterprise Product Lifecycle
G3D	Gate 3 Document
G3R	Gate 3 Review
G3RR	Gate 3 Review Report
IPT	Integrated Product Team
NESDIS	National Environmental Satellite, Data, and Information Service
NOAA	National Oceanic and Atmospheric Administration
OSDPD	Office of Satellite Data Processing and Distribution
PAR	Process Asset Repository
PBR	Project Baseline Report
PRG	Peer Review Guideline
PSR	Project Status Report
QA	Quality Assurance
SG	Stakeholder Guideline
SPSRB	Satellite Products and Services Review Board
STAR	Center for Satellite Applications and Research
TD	Training Document
TG	Task Guideline

1. INTRODUCTION

The NOAA/NESDIS Center for Satellite Applications and Research (STAR) develops a diverse spectrum of complex, often interrelated, environmental algorithms and software systems. These systems are developed through extensive research programs, and transitioned from research to operations when a sufficient level of maturity and end-user acceptance is achieved. Progress is often iterative, with subsequent deliveries providing additional robustness and functionality. Development and deployment is distributed, involving STAR, the Cooperative Institutes (CICS, CIMSS, CIOSS, CIRA, CREST) distributed throughout the US, multiple support contractors, and NESDIS Operations.

NESDIS/STAR is implementing an increased level of process maturity to support the exchange of these software systems from one location or platform to another. Gate 3 Review (G3R) standards and guidelines are a part of this process improvement.

1.1. Objective

The objective of this Peer Review Guideline (PRG) is to provide STAR standards and guidelines for reviewing a project's compliance with requirements at a project G3R¹. This PRG defines standards and guidelines for participation on a G3R review team. It contains all information needed to prepare for, conduct, and close the G3R.

The intended users of this PRG are the G3R reviewers.

1.2. Overview

This PRG contains the following sections:

- Section 1.0 - Introduction
- Section 2.0 - References
- Section 3.0 - Preparing For The Review
- Section 4.0 - Conducting The Review
- Section 5.0 - Closing The Review

¹ Refer to the STAR EPL Process Guidelines (PG-1 and PG-1.A) for a description of the STAR EPL gates and reviews.

TITLE: Gate 3 Review Peer Review Guideline

Page 7 of 7

2. REFERENCE DOCUMENTS

The reference documents for the G3R include the recommended and optional process assets (c.f. Section 3.4) and the G3R artifacts (c.f. Section 3.5).

3. PREPARING FOR THE REVIEW

This section is concerned with how the G3R review team is selected and how the review team members should prepare for the G3R.

3.1. Background – The STAR EPL Process

The G3R is a standard review that occurs at a well-defined stage in the STAR EPL process. It is important that the G3R reviewers understand this process well enough to be able to evaluate the project's status with respect to the G3R entry criteria, objectives and exit criteria.

The STAR EPL consists of 11 process steps that take a product from initial conception through development, operations, maintenance, and retirement. In this lifecycle, project stakeholders work together to enable a product to predictably mature as it progresses through the lifecycle steps.

The process steps are organized into nine project phases:

- Basic (step 1)
- Exploratory (steps 2 – 3)
- Plan (steps 4 – 5)
- Design (steps 6 – 8)
- Build (steps 9 – 11)

The implementation of the process steps can be tailored to be appropriate for the characteristics of a given project, but all steps must be followed to ensure that the products are developed from research to operations by a standard, repeatable process. Tailoring details for a given project should be documented in the project artifacts (c.f. Section 3.5).

The G3R reviewer is referred to the STAR EPL Process Guidelines (PG-1) and Appendix (PG-1.A) for a thorough treatment of the entire process.

The STAR EPL standards and process assets are managed by a STAR Enterprise Process Group (EPG). The EPG is responsible for maintaining the STAR EPL process standards, managing changes, and providing training and guidance to help stakeholders implement the standards. The G3R reviewers for a project are encouraged to contact the EPG with any questions or concerns as they prepare for and close the G3R. Use the following contact:

Ken Jensen
Ken.Jensen@noaa.gov

3.2. The Gate 3 Review

The G3R is a Plan Phase Management Review that occurs during step 5 (Project Plan) of the STAR EPL process.

The objectives of this phase are to identify needed and available resources for the project, develop a project plan, make an initial assessment of project risks, and determine whether the project is ready to proceed to requirements development and system design.

The primary purpose of the G3R is to evaluate the project plan and project status. To achieve this purpose, the development team will produce project artifacts (c.f. Section 3.5) that should demonstrate readiness for requirements and design development to the satisfaction of the G3R reviewers.

In addition, the G3R should evaluate risks and proposed actions to mitigate risks.

3.3. Review Team

Responsibility for development will have previously been assigned to a STAR Division and a specific STAR Branch within the Division.

The G3R Review Lead is nominally the STAR Branch Chief. The Review Lead selects the G3R review team. It is recommended that the following guidelines be followed for selecting the team:

Personnel who are on the project development team are excluded from the review team. There are no exceptions to this rule. The review is intended to be a dialogue between the developers and the reviewers, with the reviewers providing an objective evaluation of the project's requirements. The membership of the project development team should be clearly documented in the project's Development Project Plan (DPP).

Include one or more representatives from STAR QA who are familiar with the project's QA history and the STAR EPL standards for QA, or can familiarize themselves quickly.

Invite a representative from the intended operational organization (e.g. Office of Satellite Data Processing and Distribution - OSDPD). Consult with that organization's management for the selection of its representative. Ideally, this person will become the project's Operations Lead.

Invite one or more representatives from the Satellite Products and Services Review Board (SPSRB). The Review Lead should consult with SPSRB management for the selection of SPSRB representatives.

The review team members will provide a diversity of skills and experience that can be usefully applied to the various aspects of the review. This will be detailed in Section 4.

The Review Lead should meet with the review team as soon as possible to plan the review preparation, including the assignment and scheduling of review preparation tasks (e.g. selection and study of process assets, review of specific Gate 3 artifacts, delivery dates of G3R artifacts, and review of specific G3R artifacts) and should subsequently monitor progress against the review preparation plan.

3.4. Process Assets

STAR EPL process assets are a set of process guidelines, stakeholder guidelines, peer review guidelines, review check lists, task guidelines, document guidelines and training documents that define the enterprise standards and best practices. They are established and maintained under Configuration Management (CM) by an EPG under the direction of a Steering Committee. They are contained in a STAR Process Asset Repository (PAR) on the STAR website:

http://www.star.nesdis.noaa.gov/star/EPL_index.php

Process assets that are relevant for G3R preparation are briefly described in this section. There are separate subsections for recommended process assets and optional process assets.

The process assets described in this section should be available to the G3R reviewers in the STAR EPL PAR.

3.4.1 Recommended Process Assets

It is very important that the G3R reviewers be familiar with these process assets before conducting the G3R.

CL-5: Gate 3 Review Check List contains the standard G3R Check List Items (CLIs) that the G3R reviewers are required to complete, unless the list has been tailored for the specific project. Refer to the DPP to determine whether the G3R Check List has been tailored. In that case, use the tailored Check List in the DPP Appendix.

SG-18: Technical Reviewer Guidelines contains the stakeholder guidelines for Technical Review reviewers. The G3R reviewer will find general guidelines for conducting technical reviews. These complement the specific G3R guidelines contained in this PRG.

TG-5: Project Plan Task Guideline contains the task guidelines for the “Project Plan” step (5) of the STAR EPL process. The G3R reviewer will find guidelines for interaction between the G3R review team and other project stakeholders.

DG-5.5: Gate 3 Review Report Guidelines contains the standards and guidelines for writing the Gate 3 Review Report (G3RR, c.f. Section 5.3 of this PRG.). The G3R reviewers, who are responsible for writing this report, will find it highly useful to know the required report content in advance of the review, so they can ensure that the review content will provide them with the information they need for the report.

3.4.2 Optional Process Assets

The process assets designated as optional will be helpful to the G3R reviewers, but are not required. Typically, a G3R reviewer will refer to some of these, depending on the division of responsibilities within the review team.

DG-5.1: Development Project Plan Guideline contains standards and guidelines for the DPP. The DPP is a standard project artifact for the G3R (c.f. Section 3.5.2 of this PRG). The G3R reviewers who are responsible for ensuring that the project's DPP complies with STAR standards should use DG-5.1 as a resource.

DG-5.2: Project Status Report Guideline contains standards and guidelines for the PSR. The PSR is a standard project artifact for the G3R (c.f. Section 3.5.3 of this PRG). The G3R reviewers who are responsible for ensuring that the project's PSR complies with STAR standards should use DG-5.2 as a resource.

DG-5.3: Gate 3 Document Guideline contains standards and guidelines for the G3D. The G3R reviewer can use this document to become familiar with the expected content and format of the review.

DG-5.3.A: Gate 3 Document Appendix Guideline contains Microsoft PowerPoint slide templates for the standard G3D slides. The G3R reviewer can use this document to become familiar with the expected content and format of the review.

DG-5.4: Project Baseline Report Guideline contains standards and guidelines for the Project Baseline Report (PBR). The PBR is a standard project artifact for the G3R (c.f. Section 3.5.4 of this PRG). The G3R reviewers who are responsible for ensuring that the project's PBR complies with STAR standards should use DG-5.4 as a resource.

PG-1: STAR EPL Process Guidelines provides a description of each process step, the roles and functions of stakeholders for each step, and the relevant process assets and artifacts for each step. The G3R reviewer who wishes to become thoroughly familiar with the process can use this document.

3.5. Project Artifacts

Project artifacts are a set of items that are produced by the appropriate stakeholders during the product life cycle to support the reviews. They are maintained under CM in a project artifact repository.

The following G3R artifacts should be established in the project artifact repository via Baseline Build 1.0:

- Gate 3 Document
- Development Project Plan v1.0

- Project Status Report v1.0
- Project Baseline Report v1.0

The G3R artifacts should be available to the G3R reviewers at least one week in advance of the date scheduled for the G3R. The project plan for some projects may call for some or all of these artifacts to be available to the reviewers earlier than one week in advance of the G3R. Consult the DPP for this information. If an artifact is not available on schedule, contact the Development Lead to resolve any problems that may be caused by late access to the artifacts.

3.5.1 Gate 3 Document

The Gate 3 Document (G3D) consists of the G3R presentation slides. The G3D is described in detail in Section 4.2.

3.5.2 Development Project Plan

The Development Project Plan (DPP) v1.0 documents the plan for the development, testing, review, and transition to operations for the project, including stakeholders, tasks, work breakdown structure (WBS), schedule and resources. It contains the project objectives, tasks, milestones, stakeholders, and schedule. This information will be useful for the G3R reviewer in reviewing Section 2 of the G3D, and will be needed by the review team for determining a review preparation schedule (c.f. Section 3.7 of this PRG).

The DPP includes the G3R review objectives, which may or may not be tailored from the standard STAR EPL objectives for a G3R (c.f. Section 4.1 of this PRG). This information will be useful for the G3R reviewer in reviewing Section 1 of the G3D.

The DPP includes the G3R review entry criteria, which may or may not be tailored from the standard STAR EPL entry criteria for a G3R (c.f. Section 3.6 of this PRG). This information will be useful for the G3R reviewer in reviewing Section 1 of the G3D.

The DPP includes the G3R review exit criteria, which may or may not be tailored from the standard STAR EPL exit criteria for a G3R (c.f. Section 5.1 of this PRG). This information will be useful for the G3R reviewer in reviewing Section 1 of the G3D.

3.5.3 Project Status Report

The Project Status Report (PSR) v1.0 includes the development team's assessment of the current status of stakeholder involvement, technical progress, milestones, schedule, and budget. A PSR Appendix describes the status of project risks and associated risk mitigation actions. The PSR will be useful for the G3R reviewer in reviewing Section 3 of the G3D.

3.5.4 Project Baseline Report

The Project Baseline Report (PBR) v1.0 includes the change history, approval status, and location of every Configuration Item in the project's baseline for Baseline Build 1.0. This information will be useful for the G3R reviewer in reviewing Section 4 of the G3D.

3.6. Entry Criteria

The G3R reviewers should ensure that all G3R entry criteria have been met before commencing the review. The G3R entry criteria should have been documented in the Development Project Plan (DPP). Note that entry criteria may be tailored from the standard STAR EPL set of G3R entry criteria. In that case, the DPP should provide a rationale for deviations from the standard set.

The standard STAR EPL set of G3R entry criteria, listed in the standard G3R check list (CL-5), includes:

- Entry # 1 - A Development Project Plan (DPP) has been written. The G3R reviewers have access to the current baseline version of the DPP.
- Entry # 2 - A Project Status Report (PSR) has been written. The G3R reviewers have access to the current baseline version of the PSR.
- Entry # 3 - A Gate 3 Document (G3D) has been written. The G3R reviewers have access to the current baseline version of the G3D.
- Entry # 4 - A Project Baseline Report (PBR) has been written. The G3R reviewers have access to the current baseline version of the PBR.

The standard set of entry criteria calls for the availability of the standard set of project artifacts without reference to the quality of these artifacts. Assessment of the quality of the artifacts is the main business of the G3R itself.

It is the responsibility of both the development team and the review team to ensure that G3R entry criteria have been met prior to the G3R. The G3R Review Lead and the Development Lead should be in communication during the entire step 5 process to identify and resolve issues affecting the G3R entry criteria well in advance of the scheduled G3R date.

3.7. Review Team Preparation

The sequence of steps that should be taken by the G3R review team in preparing for the G3R is as follows:

- The STAR Branch Chief selects the Review Lead
- The Review Lead selects the Review Team, following the guidelines in Section 3.3 of this PRG.
- The Review team meets to plan review preparation. The initial meeting should accomplish the following:
 - Assemble the necessary review tasks and assign them to review team members. These tasks include:
 - Review PRG-5 (this document), focusing on the sections that pertain to the areas you have been assigned to review. All team members should do this.
 - Review the project's G3R check list. This will be available as a DPP Appendix or, if there has been no tailoring, as the process asset CL-5. Note CLIs, focusing on the sections that pertain to the areas you have been assigned to review. Refer to these CLIs when reviewing the project artifacts. All team members should do this.
 - Review the project plan and DPP. Guidelines for the DPP review are in Section 4.2.2 of this PRG.
 - Review the project status and PSR. Guidelines for the PSR review are in Section 4.2.3 of this PRG.
 - Review the project's quality assurance (QA) plan and baseline of configuration items. Guidelines are in Section 4.2.4 of this PRG.
 - Begin to identify contacts with the development team and with other stakeholders. Assign the relevant contacts to the review team members, based on their assigned tasks.

- Draw up an initial draft review preparation schedule. The initial schedule should include all of the identified tasks, with resource loading based on the task assignments. One task on the draft schedule should be to refine and finalize the schedule, in consultation with the identified stakeholders.
- Identify contacts with the development team and with other stakeholders, using the DPP to identify the relevant stakeholders. Assign the relevant contacts to the review team members, based on their assigned tasks.
- Determine the time, place, frequency, required attendees and optional attendees of G3R review team meetings.
 - The time should be based on the convenience to the review team.
 - The place usually should be at the site of the Review Lead. For cases where a majority of the required attendees are located at a different site than the Review Lead, this site can be selected as an alternative place. The selected site should have the infrastructure for hosting video and/or teleconferencing for off-site attendees.
 - The frequency should be determined by the project timeline, the size of the project, and the size of the review team. Short project timelines large-size projects and large review teams typically require more frequent review team meetings. Also, decide whether G3R review team meetings will be held on a regular basis or on an “as needed” basis. It is recommended that meetings initially be held on a regular basis until it is determined that “as needed” meetings will suffice.
 - The required attendees should be determined by the Review Lead on a meeting-by-meeting basis, depending on the meeting’s agenda and current issues. Usually, all review team members are required attendees, though some may be designated as optional attendees for a meeting whose agenda and issues are not relevant to their role and responsibilities. The Review Lead may designate members of the development IPT as invited attendees for a meeting whose agenda and issues will benefit from their involvement.
- Review preparation plan is iterated, finalized, communicated to stakeholders.

- The review preparation schedule and risks are finalized, in consultation with the relevant stakeholders. The schedule should include a schedule of deliveries of project artifacts, drawn up in consultation with the Development Lead. It is recommended that informal deliveries of project artifacts in draft condition be included in the schedule. It should be understood that informally delivered “as is” draft artifacts are solely for the purpose of helping the reviewers prepare for the review and are not reviewable items. Reviewers are encouraged to provide feedback to the development team to assist them in improving the artifacts prior to their final pre-review delivery.
- The schedule for closing the review is finalized. This involves the writing and delivery of a G3R Report (G3RR, c.f. Section 5.3 of this PRG).
- Review Lead communicates the proposed review schedule and risks to project management (e.g., STAR Division Chief) and to the Development Lead.
- Review Lead communicates requests for deliveries to the Development Lead, according to the review preparation schedule.
- Review tasks and schedule are finalized, in consultation with project management, and are folded into the DPP.
- Review team members, and relevant stakeholders identified on the review preparation schedule, work their assigned tasks according to the schedule.
- Review Lead monitors the status of the review preparation schedule and risks, and communicates issues to program management and the Development Lead. Review Lead, Development Lead, and program management collaborate in resolving any issues that arise. If necessary, the project plan may be modified to accommodate the resolution of issues.

4. CONDUCTING THE REVIEW

4.1. Review Objectives

The G3R objectives should be established in the DPP. Nominally, these will be the STAR EPL standard objectives for a G3R. The G3R objectives may be tailored for a specific project, in which case the DPP should document the tailored objectives. If there is no tailoring, it is sufficient for the DPP to state that the standard objectives apply, and note that these are specified in this PRG, as follows:

The STAR EPL standard objectives for a G3R are:

- Identify relevant stakeholders and their planned involvement according to the project plan.
- Review the planned work tasks and Work Breakdown Structure (WBS)
- Review the planned project lifecycle
- Review the planned review objectives, entry criteria, exit criteria, and check lists
- Review the planned work products and project artifacts
- Review the Integrated Master Plan (IMP) and Integrated Master Schedule (IMS)
- Review the expected costs and funding
- Provide an initial assessment of project risks

4.2. The Gate 3 Document

The Gate 3 Document (G3D), a Microsoft PowerPoint file, is the presentation document for a project's G3R. This document should be made available to the G3R reviewers in the project artifact repository.

The G3D should accomplish the G3R objectives stated in Section 4.1 of this PRG.

The intended target audience is the G3R reviewers. Typically, the G3D is prepared by the project's development team under the direction of the Development Lead.

The G3D presentation slides are organized into five sections. These sections, described in DG-5.3 and illustrated in DG-5.3.A., are:

- Introduction
- Development Project Plan
- Development Project Status
- Project Baseline
- Summary and Conclusions

A description of these sections is provided in the following five subsections, taken from the G3D Document Guidelines (DG-5.3), for the benefit of G3R Reviewers who have been assigned the task of reviewing the corresponding G3D section.

4.2.1 Section 1 – Introduction

The G3D shall include an Introduction Section. This section should be organized as follows:

1.0 INTRODUCTION

- 1.1 G3R Guidelines and Check List
- 1.2 G3R Report
- 1.3 G3R Entry Criteria
- 1.4 G3R Exit Criteria
- 1.5 Review Objectives

- **Section 1.1: G3R Guidelines and Check List**
 - This section should provide pointers to the G3R Peer Review Guidelines (PRG-5, this document) and G3R Check List (CL-5).
- **Section 1.2: G3R Report**
 - This section should provide a pointer to the G3R Report Document Guidelines (DG-5.5).

- **Section 1.3: G3R Entry Criteria**

- Confirm that the entry criteria (c.f. Section 3.6 of this PRG) listed in this section are complete and correct.
- Look for examples where the entry criteria listed in this section differ from the set that is documented in the DPP. For these examples, the G3D should provide a convincing rationale for deviations, including tailored entry criteria and waived entry criteria. The G3R reviewers must approve any deviations. It is the responsibility of the Development Lead to consult with the G3R reviewers well enough in advance of the review to obtain reviewer buy-in for the deviation. If approved, the modified entry criteria should be documented in the G3RR with the modifications and rationale explicitly noted.
- Confirm that each G3R entry criteria item is satisfied. Use the G3R artifacts as references for deciding on the status of each entry criteria item.

- **Section 1.4: G3R Exit Criteria**

- Confirm that the exit criteria (c.f. Section 5.1 of this PRG) listed in this section are complete and correct. The G3R exit criteria should be documented in the DPP. Note that exit criteria may be tailored from the standard STAR EPL set of G3R exit criteria. In that case, the DPP should provide a rationale for deviations from the standard set.
- Look for examples where the exit criteria listed in this section differ from the set that is documented in the DPP. For these examples, the G3D should provide a convincing rationale for deviations, including tailored exit criteria and waived exit criteria. The G3R reviewers must approve any deviations. It is the responsibility of the Development Lead to consult with the G3R reviewers well enough in advance of the review to obtain reviewer buy-in for the deviation. If approved, the modified exit criteria should be documented in the G3RR with the modifications and rationale explicitly noted.
- For cases where advance reviewer buy-in for exit criteria deviations has not been obtained, the reviewers must decide whether the review should be delayed until the discrepancy is resolved or can continue with an action to resolve the discrepancy after the review.
- Confirm that each G3R exit criteria item is satisfied. Use the G3R artifacts as references for deciding on the status of each exit criteria item.

- **Section 1.5: Review Objectives**

- Ensure that the stated review objectives are satisfactory. Nominally, these objectives will be the STAR EPL standard objectives for a G3R. The standard objectives capture the standard sections of the review (c.f. Section 3).
- Tailoring of review objectives is permissible. If the development team wishes to drop standard objectives or add other objectives, it is the responsibility of the Development Lead to consult with the G3R reviewers well enough in advance of the review to obtain reviewer buy-in for deviations. In that case, the G3D should note all deviations and note any impacts on exit criteria. Impacts on exit criteria will be common, since the standard objectives are designed to meet the standard exit criteria.

4.2.2 Section 2 – Project Plan

The G3D shall include a “Development Project Plan” Section. Most of the content for this section should be obtained directly from DPP v1r0. This section should be organized as follows:

2.0 DEVELOPMENT PROJECT PLAN

- 2.1 Development Project Plan
- 2.2 Project Objectives
- 2.3 Project Stakeholders
- 2.4 Statement of Work
- 2.5 Project Lifecycle
- 2.6 Technical
- 2.7 Integrated Master Plan
- 2.8 Integrated Master Schedule
- 2.9 Budget

- **Section 2.1: Development Project Plan**

- The DPP is a standard artifact for the G3R. The G3D should provide a pointer to the DPP. Access to this document is part of the G3R entry criteria. If the G3R reviewer cannot obtain access to the DPP by using this pointer, and cannot otherwise obtain access to the current baseline version of the DPP,

the reviewer should notify an appropriate person (e.g. Review Lead, Development Lead, Program Manager, STAR Web Developer) to obtain access.

- **Section 2.2: Project Objectives**
 - Confirm that the project objectives are identified.
 - Confirm that the G3D provides an initial description of the operations concept, based on user and operator needs.

- **Section 2.3: Project Stakeholders**
 - Confirm that stakeholder roles have been identified, including suppliers, developers, operators, users, reviewers, management, and support. Stakeholders should be named when known. There may be more than one name for a stakeholder role. Unspecified stakeholders should be identified by role with a TBD. The ensemble of roles and named personnel constitute the Integrated Product Team (IPT).

- **Section 2.4: Statement of Work**
 - Confirm that the work tasks are consistently identified in the G3D, DPP, and SPSRB Plan. Work tasks are the tasks to be completed by the project stakeholders, from the point of view of the customers and end users.
 - Confirm that the elements of the Work Breakdown Structure (WBS) are listed in the G3D and DPP.
 - Confirm that deliverable items to be received from suppliers are consistently listed in the G3D and DPP.
 - Confirm that deliverable items to be provided to customers and end users are consistently listed in the G3D and DPP.

- **Section 2.5: Project Lifecycle**
 - Confirm that the project lifecycle steps are consistently identified in the G3D and DPP. Usually, a project will follow the 11 standard STAR EPL steps, as described in PG-1. Under some conditions, a project may tailor its lifecycle. A tailoring rationale should be provided to explain why this tailoring is justified.
 - Confirm that the planned reviews are consistently and satisfactorily listed in the DPP and G3D. Review objectives, entry criteria, and exit criteria should be consistently and satisfactorily stated in the DPP and G3D. Any deviations from standard review objectives, entry criteria, and exit criteria should be explained in the G3D.

- **Section 2.6: Technical**

- Confirm that the project requirements are consistently and satisfactorily stated in the DPP and G3D. These include:
 - Process requirements. These should be tailored from the STAR EPL set of standard practices (PG-1), using tailoring guidelines (PG-2).
 - Product requirements. These should be based on customer/user needs and expectations, as stated in a User Request and/or ConOps.
 - Environment requirements. These are requirements on the development, test, and operational environments.
 - Staffing requirements.
- Confirm that technical constraints are consistently and satisfactorily listed in the DPP and G3D. Technical constraints include any factors that may jeopardize the successful technical execution of the project plan.
- Confirm that stakeholder tasks are consistently and satisfactorily listed in the DPP and G3D. Stakeholder tasks are the major tasks to be performed to meet the requirements.
- Confirm that the planned work products are consistently and satisfactorily described in the DPP and G3D. Work products are the tangible items that are produced as a result of performing the planned tasks.
- Confirm that the resources needed to execute the project plan are consistently and satisfactorily described in the DPP and G3D. Resources include hardware/computers, software/tools, data, personnel, and training.
- Confirm that potential risks to the successful technical execution of the project plan are consistently and satisfactorily described in the DPP and G3D.
- Confirm that criteria for initiating corrections to the project plan are consistently and satisfactorily described in the DPP and G3D.

- **Section 2.7: Integrated Master Plan.** The Integrated Master Plan (IMP) organizes the project lifecycle into a sequence of activities (process steps, tasks, reviews) that provide the roadmap for meeting project requirements.
 - Confirm that project milestones and project tasks are satisfactorily identified in the IMP.
 - Confirm that stakeholder commitment to the IMP is satisfactorily demonstrated.

- **Section 2.8: Integrated Master Schedule**

- Confirm that the IMP tasks and milestones have been satisfactorily mapped to a calendar-based Integrated Master Schedule (IMS). Milestones should include the STAR EPL standard reviews (with the G3R highlighted) and associated review dates.
- Confirm that the G3D illustrates the task/milestone schedule for each of the development phases (Plan, Design, and Build).
- Confirm that assumptions about the duration of IMP tasks have been consistently and satisfactorily described in the DPP and G3D.
- Confirm that the DPP includes an Appendix that satisfactorily provides a resource-loaded schedule that captures all of the IMP tasks and milestones.

- **Section 2.9: Budget**

- Confirm that project cost estimates are consistently and satisfactorily described in the DPP and G3D.
- Confirm that funding sources are consistently and satisfactorily described in the DPP and G3D.
- Confirm that a cost schedule and associated funding schedule are consistently and satisfactorily presented in the DPP and G3D.
- Confirm that budget risks and risk mitigation plan are consistently and satisfactorily presented in the DPP and G3D.
- Confirm that the plan for earned value management is consistently and satisfactorily presented in the DPP and G3D.

4.2.3 Section 3 – Development Project Status

The G3D shall include a "Development Project Status" Section. Most of the content for this section should be obtained directly from PSR v1r0. This section should be organized as follows:

3.0 DEVELOPMENT PROJECT STATUS

- 3.1 Project Status Report
- 3.2 Stakeholder Involvement
- 3.3 Project Lifecycle Status
- 3.4 Technical Status
- 3.5 IMP Status

- 3.6 Budget Status
- 3.7 Status of Project Risks

- **Section 3.1: Project Status Report**

- The PSR is a standard artifact for the G3R. The G3D should provide a pointer to the PSR. Access to this document is part of the G3R entry criteria.
- Confirm that the G3D introduces the PSR and provides pointers to the current baseline version of the PSR, PSR Appendix, and PSR Document Guidelines (DG-5.2 and DG-5.2.A).
- If the G3R reviewer cannot obtain access to the PSR and DGs by using these pointers, and cannot otherwise obtain access to the current baseline version of these documents, the reviewer should notify an appropriate person (e.g. Review Lead, Development Lead, Program Manager, STAR Web Developer) to obtain access.

- **Section 3.2: Stakeholder Involvement**

- The G3D should describe how the stakeholders are involved in the project, compared with their planned involvement.
- Confirm that stakeholders are involved in the project as planned, or that the G3D and PSR Appendix capture any issues with stakeholder involvement as project risks.
- Confirm that stakeholder agreements are sufficient to ensure commitment and involvement, or that the G3D and PSR Appendix capture any issues with stakeholder agreements as project risks.

- **Section 3.3: Project Lifecycle Status**

- Confirm that the project has compensated for missing lifecycle steps according to plan, or that the G3D and PSR Appendix capture any issues with lifecycle implementation as project risks.
- Confirm that project reviews have been conducted as planned, or that the G3D and PSR Appendix capture any issues with reviews as project risks.

- **Section 3.4: Technical Status**

- Confirm that the G3D and PSR satisfactorily report the status of the identified project requirements, including process, product, environment, and staffing

requirements. Confirm that requirements are being met on schedule, or that the G3D and PSR Appendix capture any issues with requirements as project risks.

- Confirm that the G3D and PSR satisfactorily report the status of the identified work products. Confirm that work products are being produced on schedule, or that the G3D and PSR Appendix capture any issues with the work products as project risks.
- Confirm that the G3D and PSR satisfactorily report the status of the needed resources. Confirm that resources are being produced on schedule, or that the G3D and PSR Appendix capture any issues with the resources as project risks.
- **Section 3.5: IMP Status**
 - Confirm that the G3D and PSR satisfactorily report the status of progress on the IMP major tasks. Confirm that tasks are being performed on schedule, or that the G3D and PSR Appendix capture any technical and/or schedule issues with task performance as project risks.
 - Confirm that the G3D and PSR satisfactorily report the status of progress on the deliverable items. Confirm that items are being received on schedule, or that the G3D and PSR Appendix capture any technical and/or schedule issues with deliverable items as project risks.
 - Confirm that the G3D and PSR satisfactorily report the status of achieving project milestones. Confirm that milestones are being achieved on schedule, or that the G3D and PSR Appendix capture any failure to achieve milestones as project risks.
- **Section 3.6: Budget Status**
 - Confirm that the G3D and PSR satisfactorily report the status of the cost schedule. Confirm that costs are being incurred as planned, or that the G3D and PSR Appendix capture any significant deviations as project risks.
 - Confirm that the G3D and PSR satisfactorily report the status of the funding schedule. Confirm that funding is being provided as planned, or that the G3D and PSR Appendix capture any significant deviations as project risks.
 - Confirm that the G3D and PSR satisfactorily report the status of the project's earned value. Confirm that earned value indices are within an acceptable range, or that the G3D and PSR Appendix capture any significant deviations as project risks.

- **Section 3.7: Status of Project Risks**

- Confirm that the G3D and PSR Appendix satisfactorily summarize the status of project technical risks and risk mitigation actions. Technical risks include risks associated with stakeholder involvement, process compliance, the quality of work products, needed resources, and training. Each risk should be reported as follows:
 - Risk Statement – the description of the risk
 - Assessment – the results from analysis of the risk. The assessment should include quantitative evaluation of Severity and Likelihood of Occurrence
 - Mitigation – the plan to mitigate the risk
 - Actions to implement the mitigation plan. Each action should be reported as follows:
 - Action statement
 - Closure Criteria
 - Closure Plan
 - Status – status of the action, with respect to the closure plan
- Confirm that the G3D and PSR Appendix satisfactorily summarize the status of project schedule risks and risk mitigation actions. Schedule risks are risks that result in the project being behind schedule, independent of technical factors. Schedule risks include delays in expected deliveries from suppliers, disruptions in stakeholder involvement due to illness or contract issues, and delays in predecessor tasks due to non-technical factors. Schedule risks should be reported in the same way as technical risks.
- Confirm that the G3D and PSR Appendix satisfactorily summarize the status of project budget risks and risk mitigation actions. Budget risks are risks that impact the ability of the project to pay for the needed resources. Budget risks include disruptions in the planned funding schedule, unexpected need for additional resources, and unexpected cost of planned resources independent of technical and schedule factors. Budget risks should be reported in the same way as technical risks and schedule risks.
- Confirm that the G3D provides a summary of project risks. Ensure that project risks are sufficiently manageable for the project to proceed to the Design phase. If this is not the case, re-planning and a delta Gate 3 Review may be needed.

4.2.4 Section 4 – Project Baseline

The G3D shall include a "Project Baseline" Section. The purpose of this section is to describe how the project baseline has been established and will be maintained throughout the development lifecycle.

This section should be organized as follows:

4.0 PROJECT BASELINE

4.1 Development Baseline

4.2 Project Baseline Report

- **Section 4.1: Development Baseline.** The project's development baseline consists of every tangible item that is produced during the development stage of the product lifecycle. Typically, these are the work products identified in the project plan.
 - Confirm that the G3D explains the concept of a development baseline.
 - Confirm that the G3D explains the concept of Baseline Builds (BB).
 - Confirm that the G3D lists the contents of BB 1.0.
 - Confirm that the G3D explains how the development baseline will be maintained.

- **Section 4.2: Project Baseline Report.** The project's baseline and change history are documented in the PBR.
 - Confirm that the G3D introduces the PBR and provides a pointer to PBR v1r0, a G3R artifact. Access to this document is part of the G3R entry criteria. If the G3R reviewer cannot obtain access to the PBR by using this pointer, and cannot otherwise obtain access to the current baseline version of the PBR, the reviewer should notify an appropriate person (e.g. Review Lead, Development Lead, Program Manager, STAR Web Developer) to obtain access.
 - Confirm that the current status of the project baseline is correctly described by the PBR.

4.2.5 Section 5 – Summary and Conclusions

The G3D shall include a "Summary and Conclusions" Section. This section is organized as follows:

5.0 SUMMARY AND CONCLUSIONS

5.1 Review Objectives Status

5.2 Next Steps

5.3 Open Discussion

- **Section 9.1: Review Objectives Status**

- Confirm that all review objectives have been addressed by the G3D. Look for notable conclusions from each G3D section to be summarized here.

- **Section 9.2: Next Steps**

- Confirm that the G3D lists the recommendations of the development team for the next steps after the G3R, including preparation for Project Requirements Review and the Project requirements step (step 6) of the STAR EPL.

- **Section 9.3: Open Discussion**

- The G3D states here that the review is open for free discussion. Note: If the development team has prepared for and conducted the review in accordance with standards and if the reviewers have prepared for the review in accordance with standards, there should be no need for additional discussion.

5. CLOSING THE REVIEW

5.1. Exit Criteria

The G3R reviewers should ensure that all G3R exit criteria have been met before closing the review. The G3R exit criteria should be documented in the DPP. Note that exit criteria may be tailored from the standard STAR EPL set of G3R exit criteria. In that case, the DPP or PSR should provide a rationale for deviations from the standard set. The standard STAR EPL set of G3R exit criteria, listed in the standard G3R check list (CL-5), includes the following 6 items:

- Exit # 1 – Project plan and DPP are satisfactory
- Exit # 2 - Project status and PSR are satisfactory.
- Exit # 3 - Project baseline and PBR are satisfactory.
- Exit # 4 - Project risks are acceptable.
- Exit # 5 – Status of risk mitigation actions is acceptable
- Exit # 6 – Project is ready for the Design phase

The interpretation of the terms “satisfactory” and “acceptable” in the exit criteria is subjective. That is, an item is “satisfactory” or “acceptable” if the reviewers find it satisfactory or acceptable to them. The reviewers are encouraged to refer to the set of relevant process assets (c.f. Section 3.4 of this PRG) to assist them in determining what their criteria for “satisfactory” and “acceptable” should be.

5.2. G3R Check List

The G3R check list is an essential item that must be completed to close the review. It contains the CLIs that must be checked off by the G3R reviewers. Checking off a CLI involves recording one of the following dispositions for each item:

- Pass – The item is approved.
- Conditional Pass – The item is approved conditionally. The condition or conditions typically involve one or more specific actions that must be closed to pass the item. Conditional Pass items are typically reconsidered at a delta G3R.

- **Defer** – The item is deferred for consideration at a later review (e.g. Project Requirements Review), often with recommended actions to be addressed prior to that review.
- **Waive** – The item has been excused for this project’s lifecycle. It is expected that a rationale for waiving an item be provided in the G3RR.
- **Not Applicable (N/A)** – The item is not applicable to this project’s lifecycle. This disposition will only occur if the item was mistakenly included in the project’s G3R check list. The distinction between this disposition and the “Waive” disposition is that “Waive” items are applicable to the project’s lifecycle, though they have been excused for some reason.

In addition, the check list includes the following Columns to be filled in for each CLI:

- **Risk** – A risk evaluation pertaining to the item (e.g. Red/Yellow/Green/Blue or High/Medium/Low/None). An item with a risk evaluation of Medium or worse should generate at least one action. Low risk items may also generate actions, at the discretion of the reviewers.
- **Actions (Y/N)** – Note (Yes or No) whether there are open actions pertaining to this item.
- **Comments** – Include any explanatory comments (e.g. rationales for the designation of the item, rationales for the risk evaluation, description of open actions, identification of the review that should address the actions).

The G3R reviewers can use the standard check list provided in the G3R Check List spreadsheet (STAR EPL process asset CL-5) to record their disposition of the CLIs, if the check list for this project’s G3R has not been modified. If there has been a modification, the G3R reviewers should use a modified spreadsheet that includes the G3R CLIs that have been agreed to. The G3R CLIs that have been approved for a specific project should be included in the DPP.

Typically, each member of the review team is assigned a subset of the check list to check off, and some items may be assigned to more than one review team member. The Review Lead is responsible for collecting the finished check lists from each review team member, resolving conflicts between team members, and producing a unified check list with all items checked off. The G3RR (c.f. Section 5.3 of this PRG) typically includes a copy of this unified G3R check list.

5.3. G3R Report

The G3RR is the one project artifact that is the responsibility of the G3R review team. Responsibilities for writing parts of the G3RR should be assigned to review team members by the Review Lead. These should be agreed upon well in advance of the review, during review preparation meetings.

Standards and guidelines for the G3RR can be found in STAR EPL process asset DG-5.5 (Gate 3 Review Report Guidelines). The G3R review team should follow the standards and guidelines in DG-5.5, unless there are tailored standards and guidelines specific to this project. In that case, the DPP should either note the tailored standards and guidelines or should provide a reference to a document where these are noted.

The G3RR should be updated to record the closing of “Conditional Pass” and “Defer” items after the G3R. G3RR updates should include a change history. Details can be found in DG-5.5.

END OF DOCUMENT