



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

PEER REVIEW GUIDELINE

**PRG-11.1
SYSTEM READINESS REVIEW
PEER REVIEW GUIDELINE**

Version 3.0

NOAA NESDIS STAR

PEER REVIEW GUIDELINE PRG-11.1

Version: 3.0

Date: October 1, 2009

TITLE: System Readiness Review Peer Review Guideline

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TITLE: PRG-11.1: SYSTEM READINESS REVIEW PEER REVIEW GUIDELINE VERSION 3.0

AUTHORS:

Ken Jensen (Raytheon Information Solutions)

SYSTEM READINESS REVIEW PEER REVIEW GUIDELINE VERSION HISTORY SUMMARY

Version	Description	Revised Sections	Date
1.0	No version 1		
2.0	New Peer Review Guideline (PRG-11.1) by Ken Jensen (Raytheon Information Solutions)	New Document	11/16/2007
3.0	Renamed PRG-11.1 and revised by Ken Jensen (RIS) for version 3.		10/1/2009

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LIST OF ACRONYMS

ATBD	Algorithm Theoretical Basis Document
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/DM	Configuration Management/Data Management
CREST	Cooperative Remote Sensing and Technology Center
CTR	Code Test Review
CTRR	Code Test Review Report
DG	Document Guideline
DPP	Development Project Plan
EPG	Enterprise Process Group
EPL	Enterprise Product Lifecycle
ICD	Interface Control Document
IPT	Integrated Product Team
MDD	Metadata Document
N/A	Not Applicable
NESDIS	National Environmental Satellite, Data, and Information Service
NOAA	National Oceanic and Atmospheric Administration
OCD	Operations Concept Document
OM	Operations Manual
OSDPD	Office of Satellite Data Processing and Distribution
PAL	Process Asset Library
PBR	Project Baseline Report
PRG	Peer Review Guideline
QA	Quality Assurance
RAD	Requirements Allocation Document

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SDD	System Description Document
SMM	System Maintenance Manual
SOW	Statement of Work
SPSRB	Satellite Products and Services Review Board
SRR	System Readiness Review
SRRR	System Readiness Review Report
STAR	Center for Satellite Applications and Research
STP	System Test Plan
TBD	To Be Determined
TD	Training Document
TRR	Test Readiness Review
UM	Users Manual
UTP	Unit Test Plan
UTR	Unit Test Report
VVP	Verification and Validation Plan
VVR	Verification and Validation Report

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. System Readiness Review (SRR) 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 SRR¹. This PRG defines standards and guidelines for participation on an SRR review team. It contains all information needed to prepare for, conduct, and close the SRR.

The intended users of this PRG are the SRR 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.

2. REFERENCE DOCUMENTS

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

3. PREPARING FOR THE REVIEW

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

3.1. Background – The STAR EPL Process

The SRR is a standard review that occurs at a well-defined stage in the STAR EPL process. It is important that the SRR reviewers understand this process well enough to be able to evaluate the project's status with respect to the SRR 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 SRR 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 SRR reviewers for a project are encouraged to contact the EPG with any questions or concerns as they prepare for and close the SRR. Use the following contact:

Ken Jensen
Ken.Jensen@noaa.gov

3.2. The System Readiness Review

The SRR is a Build Phase Technical Review that occurs during step 11 (System Integration and Test) of the STAR EPL process.

The Build phase of the STAR EPL consists of process steps 9 – 11. The objectives of this phase are to develop, test, refine, and integrate pre-operational code to implement the algorithm design, develop operations documentation, determine whether the system performance meets project requirements and confirm that all required documentation is ready for operations and maintenance.

Step 9 (Code and Test Data Development) culminates with a TRR. The unit test plan and its supporting artifacts are established in step 9 and approved at the TRR.

Step 10 (Code Test and Refinement) culminates with a CTR. The unit test results, system test plan, and refined pre-operational code are established in step 10 and approved at the CTR.

Step 11 includes a System Readiness Review (SRR) and culminates with a Gate 5 Review. The integrated pre-operational product processing system is established in step 11 and approved at the SRR. The Gate 5 Review approves the system for delivery to operations.

The primary purpose of the SRR is to review the project's readiness for installation in the operations environment. To achieve this purpose, the development team will produce project artifacts (c.f. Section 3.5) that should demonstrate readiness for operational installation to the satisfaction of the SRR reviewers.

The SRR should:

- Review the project status after its CTR
- Review the system requirements
- Review the system's readiness to meet its requirements
- Evaluate risks and proposed actions to mitigate risks
- Review the status of previous actions and new actions

The SRR review activities should focus on closing risks and actions coming out of the CTR, evaluating changes to requirements, solutions, design, and requirements allocation since the CTR, and evaluating the results of system testing.

3.3. Review Team

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

The SRR Review Lead is nominally the STAR Branch Chief, but the Branch Chief may designate an alternative Lead, especially for relatively small projects). In deciding whether to lead or delegate, the Branch Chief should consider that the SRR is a technical review. Management issues (e.g., recommended modifications to the plan, resources, budget, and schedule) may be raised at the SRR, driven by risks that have developed since the CTR, but are not considered part of the normal technical review content and are not reflected in the review exit criteria except as they contribute to risk factors.

The Review Lead selects the SRR 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 system readiness. The membership of the project development team should be clearly documented in the project's DPP. Any additions to the development team since the CTR should be noted in Section 1 of the SRD (c.f. Section 4.2.1 of this PRG).

It is highly desirable to include the CTR reviewers on the SRR review team. They will already be familiar with the project, the actions that came out of the CTR, the SRR entry and exit criteria, and many of the reference artifacts that were CTR artifacts. The addition of new review team members is also recommended to provide "fresh eyes" and an operations and maintenance perspective.

Include a systems engineer who is familiar with the STAR EPL process, especially with regard to the iterative development of requirements, requirements allocation, design and coding. It is highly desirable that the same systems engineer who was a CTR reviewer be maintained on the SRR review team.

Include one or more software engineers who are familiar with the project's software architecture and the STAR EPL standards for code detailed design, or can familiarize themselves quickly. It is highly desirable that the same software engineers who were CTR reviewers be maintained on the SRR review team. If there has been some contention or controversy about the software architecture coming out of CTR, or if substantial new actions have been placed upon the software architecture as a result of the CTR, it is recommended that at least one new software engineer be added to the review team.

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. It is highly desirable that the same QA personnel who were CTR reviewers be maintained on the SRR review team. If there has been some contention or controversy about QA coming out of CTR, or if substantial new actions have been placed upon QA as a result of the CTR, it is recommended that at least one new QA person be added to the review team.

Include one or more representatives from STAR CM/DM who are familiar with the project's CM/DM baseline and the STAR EPL standards for CM/DM, or can familiarize themselves quickly. It is highly desirable that the same CM/DM personnel who were CTR reviewers be maintained on the SRR review team. If there has been some contention or controversy about CM/DM coming out of CTR, or if substantial new actions have been placed upon CM/DM as a result of the CTR, it is recommended that at least one new CM/DM person be added to the review team.

Invite a technical 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 SPSRB. The STAR Division Chief 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 reference artifacts, delivery dates of SRR artifacts, and review of specific SRR 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 CTR 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 CTR reviewers in the STAR EPL PAR.

The SRR reviewer is encouraged to refer to each process asset for a more detailed description as soon as possible. Any problems (e.g., lack of access, missing process assets, questions about content, inconsistencies between process assets) should be brought to the attention of the STAR EPG (c.f. Section 3.1) as soon as possible.

3.4.1 Recommended Process Assets

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

CL-11.1: System Readiness Review Check List contains the standard SRR Check List Items (CLIs) that the SRR reviewers are required to complete, unless the list has been tailored for the specific project. Refer to the DPP to determine whether the SRR 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 SRR reviewer will find general guidelines for conducting technical reviews. These complement the specific SRR guidelines contained in this PRG.

TG-11: System Integration and Test Task Guideline contains the task guidelines for the System Integration and Test step (11) of the STAR EPL process. The SRR reviewer will find guidelines for interaction between the SRR review team and other project stakeholders.

DG-11.6: System Readiness Review Report Guidelines contains the standards and guidelines for writing the System Readiness Review Report (SRRR). The SRR 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 SRR reviewers, but are not required. Typically, an SRR reviewer will refer to some of these, depending on the division of responsibilities within the review team.

DG-1.1: Algorithm Theoretical Basis Document Guideline is a STAR EPL process asset. It contains guidelines for the preparation of the ATBD, which is a standard project artifact for the SRR (c.f. Section 3.5.14 of this PRG). The SRR reviewers who are responsible for ensuring that the project's algorithm and ATBD are satisfactory should use DG-1.1 as a resource.

DG-1.2: Software Architecture Document Guideline contains standards and guidelines for the Software Architecture Document (SWA). The SWA is a standard project artifact for

the CTR (c.f. Section 3.5.15 of this PRG). The SRR reviewers who are responsible for ensuring that the project's SWA v2r1 complies with STAR standards should use DG-1.2 as a resource.

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

DG-5.4: Project Baseline Report Guideline contains standards and guidelines for the Project Baseline Report (PBR). The PBR is a standard project artifact for the SRR (c.f. Section 3.5.17 of this PRG). The SRR reviewers who are responsible for ensuring that the project's PBR complies with STAR standards should use DG-5.4 as a resource.

DG-6.1: Operations Concept Document Guideline contains standards and guidelines for the Operations Concept Document (OCD). The OCD is a standard project artifact for the SRR (c.f. Section 3.5.4 of this PRG). The SRR reviewers who are responsible for ensuring that the project's OCD complies with STAR standards should use DG-6.1 as a resource.

DG-6.2: Requirements Allocation Document Guideline contains standards and guidelines for the Requirements Allocation Document (RAD). The RAD is a standard project artifact for the SRR (c.f. Section 3.5.5 of this PRG). The SRR reviewers who are responsible for ensuring that the project's RAD complies with STAR standards should use DG-6.2 as a resource.

DG-6.3: Verification and Validation Plan Guideline contains standards and guidelines for the Verification and Validation Plan (VVP). The VVP is a standard project artifact for the SRR (c.f. Section 3.5.6 of this PRG). The SRR reviewers who are responsible for ensuring that the project's VVP complies with STAR standards should use DG-6.3 as a resource.

DG-8.1: Detailed Design Document Guideline contains standards and guidelines for the Detailed Design Document (DDD). The DDD is standard a project artifact for the SRR (c.f. Section 3.5.16 of this PRG). The SRR reviewers who are responsible for ensuring that the project's DDD complies with STAR standards should use DG-8.1 as a resource.

DG-10.2: System Test Plan Guideline is a STAR EPL process asset that contains standards and guidelines for the preparation of the STP. The STP is a project artifact for the SRR (c.f. Section 3.5.9 of this PRG). The SRR reviewers who are responsible for ensuring that the project's STP complies with STAR standards should use DG-10.2 as a resource.

DG-10.4: Code Test Review Report Guideline is a STAR EPL process asset. It contains guidelines for the preparation of the Code Test Review Report (CTRR). The CTRR is a standard project artifact for the SRR (c.f. Section 3.5.3 of this PRG). The SRR reviewers who are responsible for reviewing the CTRR should use DG-10.4 as a resource.

DG-11.1: Internal Users Manual Guideline contains standards and guidelines for the Internal Users Manual (IUM). The IUM is a standard project artifact for the SRR (c.f. Section 3.5.12 of this PRG). The SRR reviewers who are responsible for ensuring that the IUM is satisfactory should use DG-11.1 as a resource.

DG-11.2: External Users Manual Guideline contains standards and guidelines for the External Users Manual (EUM). The EUM is a standard project artifact for the SRR (c.f. Section 3.5.13 of this PRG). The SRR reviewers who are responsible for ensuring that the EUM is satisfactory should use DG-11.2 as a resource.

DG-11.3: Metadata Document Guideline contains standards and guidelines for the Metadata Document (MDD). The MDD is a standard project artifact for the SRR (c.f. Section 3.5.11 of this PRG). The SRR reviewers who are responsible for ensuring that the metadata and MDD are satisfactory should use DG-11.3 as a resource.

DG-11.4: Verification and Validation Report Guideline is a STAR EPL process asset. It contains guidelines for the preparation of the Verification and Validation Report (VVR). The VVR is a standard project artifact for the SRR (c.f. Section 3.5.10 of this PRG). The SRR reviewers who are responsible for ensuring that the system test results and VVR are satisfactory should use DG-11.4 as a resource.

DG-11.5.A: System Readiness Document Appendix Guideline contains Microsoft PowerPoint slide templates for the standard SRD presentation slides. The SRR reviewer can use this document to become familiar with the expected content and format of the review.

TD-11.1: FORTRAN Coding Standards is a STAR EPL process asset that contains the STAR EPL standards and guidelines for FORTRAN programming. The SRR reviewers who are responsible for ensuring that the project's pre-operational FORTRAN code complies with STAR standards should use TD-11.1 as a resource.

TD-11.2: C Coding Standards is a STAR EPL process asset that contains the STAR EPL standards and guidelines for C programming. The SRR reviewers who are responsible for

ensuring that the project's pre-operational C code complies with STAR standards should use TD-11.2 as a resource.

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 SRR artifacts should be established in the project artifact repository via Baseline Build 3.4:

- System Readiness Document
- Development Project Plan v3.x
- Code Test Review Report
- Operations Concept Document v1.2
- Requirements Allocation Document v1.4
- Verification and Validation Plan v1.4
- Integrated Pre-Operational Code
- Integrated Pre-Operational Test Data
- System Test Plan v1.1
- Verification and Validation Report v1.0
- Metadata Document v1.0
- Internal Users Manual v1.0
- External Users Manual v1.0
- Algorithm Theoretical Basis Document v2.2
- Software Architecture Document v2.3
- Detailed Design Document v1.2
- Project Baseline Report v3.4

The SRR artifacts should be available to the SRR reviewers at least one week in advance of the date scheduled for the SRR in the project artifact repository. 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 SRR. Consult the project plan 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 System Readiness Document

The System Readiness Document (SRD) consists of the SRR presentation slides. The SRD is described in detail in Section 4.2.

3.5.2 Development Project Plan

The Development Project Plan (DPP) 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 SRR reviewer in reviewing Section 1 of the SRD, 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 SRR review objectives, which may or may not be tailored from the standard STAR EPL objectives for an SRR (c.f. Section 4.1 of this PRG). This information will be useful for the SRR reviewer in reviewing Section 1 of the SRD.

3.5.3 Code Test Review Report

The CTRR is the approved report of the CTR reviewers. This artifact will be useful for the SRR reviewer in reviewing Section 2 of the SRD.

The CTRR should include the approval status for each CTR requirement, in the form of a check list where each CLI has a disposition status (Pass, Conditional Pass, Defer, Waive, or Not Applicable (N/A)).

CLIs with “Conditional Pass” status must have associated actions that should be closed prior to Gate 5 Review. CLIs with “Defer” status also must have associated actions. Most items with “Defer” status at CTR will have been deferred to the SRR, though some items may be deferred to later in the product lifecycle. The actions associated with items deferred to the SRR must be addressed at the SRR.

The CTRR should also include an assessment of risk items, with recommendations for risk mitigation. In most cases, these recommendations will result in actions.

The CTRR should summarize the CLIs and risks with a list of actions. Each action item should include a description, an association with a CLI and/or a risk, an assignment, and an intended closure date. The SRR reviewers are responsible for ensuring that the status of all CTRR actions is reviewed and disposed of at the SRR.

The CTRR should include the SRR entry criteria and SRR exit criteria. The SRR reviewers are responsible for ensuring that SRR entry and exit criteria are met.

3.5.4 Operations Concept Document

The Operations Concept Document (OCD) contains the development team's concept for how the product should be produced and used, capturing user and operator needs and expectations. This information will be useful for the SRR reviewer in reviewing Section 3 of the SRD.

The OCD should define the environment the product will operate in, including boundaries and constraints. OCD v1.2, produced for the CDR, is the final planned version of the OCD, but additional revisions may be produced if the operations concept is refined during the Build phase.

3.5.5 Requirements Allocation Document

The RAD, a project artifact, contains the basic and derived requirements for the work products and the allocation of the requirements to system components and product components. This information will be useful to the SRR reviewer in reviewing Section 3 of the SRD. Although the RAD is not a standard SRR artifact, it may be necessary to review this document if it has been revised since the CTR.

3.5.6 Verification and Validation Plan

The Verification and Validation Plan (VVP) describes the work products to be verified and validated, the requirements for each selected work product and the verification and validation methods for each selected work product. This information will be useful for the SRR reviewer in reviewing the results of system testing.

3.5.7 Integrated Pre-Operational Code

The Integrated Pre-Operational Code consists of all software components of the detailed design that was approved at the CDR (step 8), unit tested in step 10, integrated into an end-to-end pre-operational product processing system, and system tested.

3.5.8 Integrated Pre-Operational Test Data

Pre-Operational Test Data are the data files used for system testing of the Integrated Pre-Operational Code, These files may be revised and/or upgraded during unit testing and system testing.

3.5.9 System Test Plan

The System Test Plan (STP) contains the plan for testing to ensure that the requirements specified for the product processing system are satisfied by the completed system (Verification) and that the final developed system will satisfy the users' needs and expectations (Validation). This information will be useful for the SRR reviewer in reviewing Section 4 of the SRD.

The STP should list the identified product users and state the identified needs for each user. The STP should state the organizations that will operate and maintain the product processing system and state the identified operations and maintenance needs.

The STP should describe the algorithm that is implemented by the product processing system and identify all items that have been selected for the system test. Test items include system components, product components, test data, and truth data.

The STP should describe the system test methods, test environments, and the planned sequence of test actions to verify that the system will satisfy requirements and validate the needs of users and operators.

STP v1.0 is produced for the CTR. Typically, the STP is updated to v1.1 to reflect revisions to the plan that were made after the commencement of system testing.

3.5.10 Verification and Validation Report

The Verification and Validation Report (VVR) documents the results of unit testing and system testing to ensure that the requirements specified for the product processing system

are satisfied by the completed system (Verification) and that the final developed system will satisfy the users' needs and expectations (Validation). This information will be useful for the SRR reviewer in reviewing Section 5 of the SRD.

3.5.11 Metadata Document

The Metadata Document (MDD) provides information that addresses NESDIS (ISO) guidelines for data providers to describe the content, quality, condition and characteristics of data generated by the product application system.

3.5.12 Internal Users Manual

The Internal Users Manual (IUM) is intended for OSDPD/SAB analysts of a product processing system such as an interactive tool/GUI. The IUM provides information on the system that is necessary to ensure the effective and reliable operation of the application.

3.5.13 External Users Manual

The External Users Manual (EUM) is intended for users of one or more of the products delivered by the system, including end users (customers) and testers (V&V teams). The EUM provides product users with information that will enable them to acquire the product, understand its features, and use the data.

3.5.14 Algorithm Theoretical Basis Document

The ATBD, an artifact for the SRR, provides a theoretical description (scientific and mathematical) of the algorithm that is used to create a product that meets user requirements. This information will be useful to the SRR reviewer in reviewing Sections 3 and 4 of the SRD. ATBD v2.2 is typically updated from the CDR version (v2.1), revising the performance estimates as a result of unit testing and system testing. The purpose of ATBD v2.2 is to help demonstrate to the SRR reviewers that the algorithm is ready for transition to operations.

3.5.15 Software Architecture Document

The SWA, a project artifact, contains the software architecture and data flows for the project algorithm. This information will be useful for the SRR reviewer in reviewing Section 4 of the SRD.

At the detailed design level of maturity, the software architecture should describe four layers of data flows:

- Layer 0 (Context-Layer) consists of the external interfaces to the software system.
- Layer 1 (System-Layer) consists of the flows between the software units that comprise the software system
- Layer 2 (Unit-Layer) consists of the flows within each software unit
- Layer 3 (Sub-Unit-Layer) consists of the flows within sub-units

The SWA should document all of these data flows with figures (data flow diagrams) and tables that provide a complete description of all software components and their input, internal, and output data flows.

3.5.16 Detailed Design Document

The Detailed Design Document (DDD) describes the product design and the design components at a level of detail that is sufficient for the development programmers to be able to use as a reference for writing fully functional pre-operational code. This information will be useful for the SRR reviewer in reviewing Section 4 of the SRD. A separate DDD is produced for each software unit that is part of the product processing system. The software units are the Layer-2 elements that are defined in the system layer product software architecture, as described in the SWA.

DDD v1r0, produced for the CDR, should have described the detailed design as it exists at the completion of the Design Phase of the STAR EPL. Often, the DDD must be revised for TRR (v1r1) and CTR (v1r2) to document revisions to the detailed design that occur during pre-operational code development and unit testing.

3.5.17 Project Baseline Report

The Project Baseline Report (PBR) v3r4 includes the change history, approval status, and location of every Configuration Item in the project's baseline for Baseline Build 3.4.

3.6. Entry Criteria

The SRR reviewers should ensure that all SRR entry criteria have been met before commencing the review. The SRR entry criteria should have been established at the CTR and documented in the CTRR. Note that entry criteria may be tailored from the standard STAR EPL set of SRR entry criteria. In that case, the CTRR should provide a rationale for deviations from the standard set.

The standard STAR EPL set of SRR entry criteria, listed in the standard SRR check list (CL-11.1), includes:

- Entry # 1 - A Code Test Review Report (CTRR) has been written. The SRR reviewers have access to the current baseline version of the CTRR.
- Entry # 2 - A Development Project Plan (DPP) has been written. The SRR reviewers have access to the current baseline version of the DPP.
- Entry # 3 - An Operations Concept Document (OCD) has been written. The SRR reviewers have access to the current baseline version of the OCD.
- Entry # 4 - A Requirements Allocation Document (RAD) has been written. The SRR reviewers have access to the current baseline version of the RAD.
- Entry # 5 - An Algorithm Theoretical Basis Document (ATBD) has been written. The SRR reviewers have access to the current baseline version of the ATBD.
- Entry # 6 - A Software Architecture Document (SWA) has been written. The SRR reviewers have access to the current baseline version of the SWA.
- Entry # 7 - A Detailed Design Document (DDD) for each software unit has been written. The SRR reviewers have access to the current baseline version of the DDDs.
- Entry # 8 - An Internal Users Manual (IUM) has been written. The SRR reviewers have access to the current baseline version of the IUM.
- Entry # 9 - An External Users Manual (EUM) has been written. The SRR reviewers have access to the current baseline version of the EUM.
- Entry # 10 - A Metadata Document (MDD) has been written. The SRR reviewers have access to the current baseline version of the MDD.
- Entry # 11 - Pre-operational code units, external interfaces, ancillary data, and system test data have been integrated into a product processing system in the

development test environment. The SRR reviewers have access to the product processing system.

- Entry # 12 – A Verification and Validation Plan (VVP) has been written. The SRR reviewers have access to the current baseline version of the VVP.
- Entry # 13 - A System Test Plan (STP) has been written. The SRR reviewers have access to the current baseline version of the STP.
- Entry # 14 - A Verification and Validation Report (VVR) has been written. The SRR reviewers have access to the current baseline version of the VVR.
- Entry # 15 - A System Readiness Document (SRD) has been written. The SRR reviewers have access to the current baseline version of the SRD.
- Entry # 16 - A Project Baseline Report (PBR) has been written. The SRR reviewers have access to the current baseline version of the PBR.

Project documents DPP, OCD, RAD, VVP, ATBD, SWA, DDD, and STP were reviewed and approved at previous reviews, though risks and actions concerning them may still be carried to the SRR and changes to these documents since the CTR must be reviewed and approved. Assessment of the quality of the new documents (CTRR, VVR, MDD, IUM, EUM) and approval of refinements to code and test data is the main business of the CTR.

It is the responsibility of both the development team and the review team to ensure that SRR entry criteria have been met prior to the SRR. The SRR Review Lead and the Development Lead should be in communication during the entire step 11 process to identify and resolve issues affecting the SRR entry criteria well in advance of the scheduled SRR date.

3.7. Review Team Preparation

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

- The STAR Branch Chief selects the Review Lead, in consultation with the Division Chief
- 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-11.1 (this document), focusing on the sections that pertain to the areas you have been assigned to review.
 - Review CL-11.1. Note CLIs, focusing on the sections that pertain to the areas you have been assigned to review. Ensure that these are consistent with the CLIs described in this PRG. Refer to the CLIs when reviewing the project artifacts.
 - Review the project's DPP. Guidelines for the DPP review are in Section 4.2.1 of this PRG.
 - Review the project's CTRR for the project. Guidelines for the CTRR review are in Section 4.2.2 of this PRG.
 - Review the project's system requirements, documented in the RAD. Guidelines for the review are in Section 4.2.3 of this PRG.
 - Review the project's system description, including external interfaces, software architecture, metadata, detailed design and baseline of configuration items, as documented in the SWA, MDD, DDD and PBR. Guidelines for the system description review are in Section 4.2.5 of this PRG.
 - Review the project's system readiness, as documented in the IUM, EUM, ATBD, STP, VVP, and VVR. Guidelines for the system readiness review are in Section 4.2.5 of this PRG.
 - Review the status of project risks. Guidelines for the review of project risks are in Section 4.2.6 of this PRG.
 - Review the status of project actions. Guidelines for the review of project actions are in Section 4.2.6 of this PRG.
 - 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 SRR 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 SRR 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 invite members of the development team to 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 an SRRR (c.f. Section 5.3 of this PRG).
 - Review Lead communicates the proposed review schedule and risks to project management and to the Development Lead.
 - Review Lead communicates requests for deliveries to the Development Lead, according to the review preparation schedule.

NOAA NESDIS STAR

PEER REVIEW GUIDELINE PRG-11.1

Version: 3.0

Date: October 1, 2009

TITLE: System Readiness Review Peer Review Guideline

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- 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 SRR objectives should be established in the DPP. Nominally, these will be the STAR EPL standard objectives for an SRR. The SRR 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 SRR are:

- Identify relevant stakeholders and document their involvement according to the project plan.
- Review the CTRR, identifying risks and actions to be addressed
- Review the system requirements, identifying requirements and requirements allocation changes since CTR.
- Review the system description, including external interfaces, software architecture and detailed design, identifying changes since CTR.
- Review and confirm the system readiness for operations and maintenance, based on the results of system testing and the availability of required code and operations documentation.
- Review and confirm the system readiness for users, based on the results of system testing and the availability of required user documentation.
- Identify and evaluate risks. Recommend risk mitigation activities.
- Review the status of all actions identified to mitigate risks. Make recommendations for open actions and new actions.

4.2. The System Readiness Document

The SRD, a Microsoft PowerPoint file, is the presentation document for a project's SRR.

The SRD and its accompanying artifacts should accomplish the SRR objectives stated in Section 4.1 of this PRG.

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

The SRD presentation slides are organized into six sections. These sections, described in DG-11.5 and illustrated in DG-11.5.A., are:

- Introduction
- Code Test Review Report
- System Requirements
- System Readiness
- Risks and Actions
- Summary and Conclusions

A description of these sections is provided in the following six subsections, taken from the SRD Document Guidelines (DG-11.5), for the benefit of SRR Reviewers who have been assigned the task of reviewing the corresponding SRD section.

4.2.1 Section 1 – Introduction

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

- 1.0 INTRODUCTION
 - 1.1 Development Project Plan
 - 1.2 Project Objectives
 - 1.3 Project Stakeholders
 - 1.4 Project Timeline
 - 1.5 Project Plan Changes
 - 1.6 Stakeholder Involvement
 - 1.7 SRR Guidelines and Check List
 - 1.8 SRR Report
 - 1.9 Review Objectives

- **Section 1.1: Development Project Plan**
 - Confirm that the SRD provides a pointer to the DPP. SRR reviewers should be able to obtain the DPP by using this pointer. A pointer to the DPP Document Guidelines should also be provided.

- **Section 1.2: Project Objectives.**
 - Confirm that the project objectives are consistently identified in the SRD and the DPP.

- **Section 1.2: Project Stakeholders.**
 - Confirm that stakeholder roles have been identified. Stakeholder roles are identified in Section 4.2.1 of the STAR EPL Process Guidelines (PG-1). 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. Unspecified stakeholders constitute a project risk that should be addressed in Section 5 of the SRD. The ensemble of roles and named personnel constitute the Integrated Product Team (IPT).
 - Confirm that a description of the tasks expected for each stakeholder is documented at a level of detail sufficient to give you a good sense of the IPT. This can be done explicitly in the SRR presentation slides and/or by reference to other project artifacts (e.g. DPP).

- **Section 1.4: Project Timeline**
 - Confirm that project milestones have been identified in the SRD and the DPP. Milestones should include the STAR EPL standard reviews (with the SRR highlighted) and associated review dates.
 - Confirm that a timeline of project tasks and schedule of milestones has been included in the SRD and the DPP. It is recommended that an illustration of the project tasks and schedule be shown (e.g. a Gantt chart taken from a Microsoft Project file of the project plan). In particular, the tasks and schedule for the Build phase and the System Integration and Test step should be clearly illustrated, with the SRR milestone indicated.

- **Section 1.5: Project Plan Changes**
 - Confirm that any modifications to the Project Plan since the CTR are clearly explained, including the rationale and documentation of management concurrence.

- **Section 1.6: Stakeholder Involvement**
 - Confirm stakeholder involvement according to the project plan. Stakeholder involvement should be described in a way that shows the project plan is being followed.

- **Section 1.7: SRR Guidelines and Check List**
 - This section should provide pointers to the SRR Peer Review Guidelines (PRG-11.1, this document) and SRR Check List (CL-11.1).

- **Section 1.8: SRR Report**
 - This section should provide a pointer to the SRR Report Document Guidelines (DG-11.6).

- **Section 1.9: Review Objectives**
 - Ensure that the stated review objectives are satisfactory. Nominally, these objectives will be the STAR EPL standard objectives for an SRR. 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 SRR reviewers well enough in advance of the review to obtain reviewer buy-in for deviations. In that case, the SRD 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 – Code Test Review Report

The SRD shall include a Code Test Review Report Section. This section should be organized as follows:

2.0 CODE TEST REVIEW REPORT

2.1 Code Test Review Report

2.2 CTR Check List Items

2.3 CTR Exit Criteria

2.4 CTRR Risks and Actions

2.5 SRR Entry Criteria

2.6 SRR Exit Criteria

- **Section 2.1: Code Test Review Report**

- The CTRR is an essential artifact for the SRR, because it documents the baseline from which to assess project progress since the last review.
- Confirm that the SRD provides a pointer to the CTRR and explains its purpose. Access to this document is part of the SRR entry criteria. If the SRR reviewer cannot obtain access to the CTRR by using this pointer, and cannot otherwise obtain access to the current baseline version of the report, the reviewer should notify an appropriate person (e.g. Review Lead, Development Lead, Program Manager, STAR Web Developer) to obtain access.

- **Section 2.2: CTR Check List Items**

- The status of the project coming out of CTR is described by the status of the CTR CLIs.
- Confirm that the SRD summarizes the status of the CTR CLIs and provides a rationale and risk assessment for all CTR items that have been waived.

- **Section 2.3: CTR Exit Criteria**

- It is important that the exit criteria for the previous review, the CTR, have been properly disposed of. Confirm that this section of the SRD reviews the status of the CTR exit criteria, noting any open actions associated with

deferred exit criteria. These actions must be addressed in Section 5 of the SRD.

- **Section 2.4: CTR Risks and Actions**

- If there are any risks and actions that are still open after CTR, these should be documented in the CTRR and should be addressed at the SRR.
- Confirm that the SRD states the number of open risks and actions from the CTRR and notes that these will be addressed in Section 5 of the SRD.

- **Section 2.5: SRR Entry Criteria**

- The CTRR establishes the entry criteria for the SRR. These may be the standard STAR EPL entry criteria (c.f. Section 3.6 of this PRG), documented in CL-11.1, or they may be tailored for this project. In either case, they should be listed in the CTRR.
- Confirm that the SRR entry criteria are listed completely and correctly in the SRD.
- Look for examples where the entry criteria listed in this section differ from the set that was established at the CTR, as documented in the CTRR. For these examples, the SRD should provide a convincing rationale for tailored entry criteria or waived entry criteria. The SRR reviewers must approve any deviations. It is the responsibility of the Development Lead to consult with the SRR 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 SRRR with the modifications and rationale explicitly noted.
- For cases where advance reviewer buy-in for entry 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 SRR entry criteria item is satisfied. Use the SRR artifacts as references for deciding on the status of each entry criteria item.

- **Section 2.6: SRR Exit Criteria**

- The CTRR establishes the exit criteria for the SRR. These may be the standard STAR EPL exit criteria (c.f. Section 5.1 of this PRG), documented in CL-11.1, or they may be tailored for this project. In either case, they should be listed in the CTRR.
- Confirm that the SRR exit criteria are listed completely and correctly in the SRD.
- Look for examples where the entry criteria listed in this section differ from the set that was documented in the CTRR. For these examples, the SRD should provide a convincing rationale for tailored exit criteria or waived exit criteria. The SRR reviewers must approve any deviations. It is the responsibility of the Development Lead to consult with the SRR 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 SRRR 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 SRR exit criteria item is satisfied. Use the SRR artifacts as references for deciding on the status of each exit criteria item.

4.2.3 Section 3 – System Requirements

The SRD shall include a System Requirements Section. The purpose of this section is to provide the requirements context for the System Readiness section to follow. Most of the content for this section should be obtained directly from the RAD. This section should be organized as follows:

- 3.0 SYSTEM REQUIREMENTS
 - 3.1 System Requirements Overview
 - 3.2 Customer/User Needs and Expectations
 - 3.3 Operator Needs and Expectations
 - 3.4 Requirements Changes

- **Section 3.1: System Requirements Overview**
 - Requirements are derived from the documented needs and expectations of approved customers, users, and operators of the product processing system and its end products.
 - Requirements identification is a process of turning these needs and expectations into a specific set of requirements on the product processing system that balances needs and expectations with practical constraints.
 - Confirm that the SRD provides an overview of system requirements identification.
 - Confirm that the SRD provides an overview of the OCD and a pointer to the project OCD.
 - Confirm that the SRD provides an overview of the RAD and a pointer to the project RAD.

- **Section 3.2: Customer/User Needs and Expectations**
 - Confirm that user needs and expectations are adequately and consistently described in the SRD, OCD, and RAD.
 - Confirm that the SRD lists the product users and the product components to be delivered to each user, consistent with the RAD.

- **Section 3.3: Operator Needs and Expectations**
 - Confirm that operator needs and expectations are adequately and consistently described in the SRD, OCD, and RAD.
 - Confirm that the SRD and OCD describe an operations concept for the product that balances user needs and expectations with operational constraints.

- **Section 3.4: Requirements Changes**
 - The purpose of requirements allocation is to identify product and system components and trace each component to one or more requirement so that a system architecture that will meet all project requirements can be designed. System readiness cannot be demonstrated unless the function of system components can be traced to system requirements, which are in turn derived from user needs and expectations. It is important that the trace of system design components to user needs and expectations be clearly and consistently documented in the RAD.

- The requirements and their allocation may change during the product lifecycle. Change may be driven by customer/user requests or by design constraints that occur after the requirements allocation has been established. Because requirements creep is a project risk, it is important that requirements allocation changes be reviewed and approved at each review.
- Confirm that the SRD describes new requirements since CTR, consistent with the RAD, and provides a convincing rationale for any new requirements that need approval.
- Approve new requirements or recommend an alternative disposition.
- Confirm that the SRD describes requirements changes since CTR, consistent with the RAD, and provides a convincing rationale for any requirements changes that need approval.
- Approve requirements changes or recommend an alternative disposition.
- Confirm that the SRD describes requirements allocation changes since CTR, consistent with the RAD, and provides a convincing rationale for any requirements allocation changes that need approval.
- Approve requirements allocation changes or recommend an alternative disposition.

4.2.4 Section 4 – System Readiness

The SRD shall address the readiness of the product processing system for installation in the operations environment. The purpose is to demonstrate that the system meets all system functional and product requirements.

This section should be organized as follows:

4.0 SYSTEM READINESS

4.1 System Test Overview

4.1.1 System Test Description

4.1.2 Test Documentation

4.2 Readiness For Users

4.2.1 Product Users

4.2.2 User Needs

4.2.3 Validation of User Needs

4.2.4 User Documentation

4.3 Readiness for Operations

4.3.1 Operations

4.3.2 Operator Needs

4.3.3 Validation of Operator Needs

- **Section 4.1: System Test Overview**

- The purpose of this section is to describe the system test and introduce the documents that demonstrate system readiness for operations. These documents include the plans for and results of the system test.
- Confirm that the SRD explains the concepts of verification and validation.
- Confirm that the SRD provides an overview of the Verification and Validation Plan (VVP) and provides a pointer to the project VVP,
- Confirm that the SRD provides an overview of the System Test Plan (STP), and provides a pointer to the project STP.
- Confirm that the SRD describes the system test sequence, consistent with the STP.
- Confirm that the SRD provides an overview of the Verification and Validation Report (VVR) and provides a pointer to the project VVR.

- **Section 4.2: Readiness for Users**

- This section should demonstrate that the system meets all requirements derived from user needs and expectations.
- Confirm that the SRD and STP explain how the system test will validate each user need, including product-related needs.
- Confirm that system test results that validate each user need are consistently and satisfactorily presented in the SRD and the VVR.
- Confirm that the SRD describes the purpose and function of the Internal Users Manual (IUM) and provides a pointer to the project IUM.
- Confirm that the SRD describes the purpose and function of the External Users Manual (EUM) and provides a pointer to the project EUM.
- Confirm that the SRD describes the purpose and function of the Algorithm Theoretical Basis Document (ATBD) and provides a pointer to the project ATBD.

- **Section 4.3: Readiness for Operations**

- This section should demonstrate that the system meets all requirements derived from operator needs and expectations.
- Confirm that the SRD identifies the organization and personnel that will operate and maintain the operational product processing system.
- Confirm that the SRD and STP explain how the system test will validate each operator need.
- Confirm that system test results that validate each operator need are consistently and satisfactorily presented in the SRD and the VVR.
- Confirm that the SRD provides pointers to the project SWA and DDD.
- Confirm that the SRD demonstrates that the operations organization is prepared to receive the pre-operational system.

4.2.5 Section 5 – Risks and Actions

The SRD shall include a Risks and Actions Section. The purpose of this section is to provide an updated description of the status of identified project risks and associated actions for reviewer assessment and concurrence. Identified project risks are expected to result in a risk mitigation plan that will include identified actions.

This section should be organized as follows:

5.0 RISKS AND ACTIONS

5.1 CTR Risks and Actions

5.2 New Risks and Actions

5.3 Risk Summary

- **Section 5.1: CTR Risks and Actions**

- The status of project risks and associated actions at CTR should have been reported in the CTRR. The SRD should provide an updated assessment of the CTR risks and actions.
- Confirm that SRD correctly reports, in sufficient detail, the status of each risk identified in the CTR Report. 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 – actions to implement the mitigation plan
- Confirm that SRD correctly reports, in sufficient detail, the status of all actions identified in the CTR Report with sufficient detail to allow the SRR reviewers to assess the current status of the CTR risks and actions. Each action should be reported as follows:
 - Action statement
 - Closure Criteria
 - Closure Plan
 - Status – status of the action, with respect to the closure plan
- **Section 5.2: New Risks and Actions**
 - Confirm that the SRD reports the status of each risk that has been identified since CTR in sufficient detail for the reviewers to be able to assess the development team’s recommended actions to mitigate the risks. Each new risk should be described in the SRD as follows:
 - Risk Statement – the description of the risk
 - Assessment – the results from analysis of the risk. The assessment should include evaluation (e.g. High, Medium, Low) of Severity and Likelihood of Occurrence
 - Mitigation – the plan to mitigate the risk
 - Actions – actions to implement the mitigation plan
 - Confirm that SRD correctly reports, in sufficient detail, the status of all new actions with sufficient detail to allow the SRR reviewers to assess the current status of new risks and actions.
- **Section 5.3: Risk Summary**
 - Confirm that the SRD provides a summary of risks that can be closed because all associated actions have been completed.
 - Confirm that the SRD provides a list of outstanding risks, in priority order (HIGH, then MEDIUM, then LOW).

- Confirm that the SRD lists all actions that must be closed to reduce outstanding risk to an acceptable level, with closure plans and estimated closure dates.
- The SRR reviewers' assessment of outstanding risks and actions should be documented in the SRR Report.

4.2.6 Section 6 – Summary and Conclusions

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

6.0 SUMMARY AND CONCLUSIONS

- 6.1 Review Objectives Status
- 6.2 Issues, Actions and Risks
- 6.3 Next Steps
- 6.4 Open Discussion

- **Section 6.1: Review Objectives Status**
 - Confirm that all review objectives have been addressed by the SRD. Look for notable conclusions from each SRD section to be summarized here.
- **Section 6.2: Issues, Actions and Risks**
 - Confirm that the SRD lists all outstanding issues, actions and risks that require attention. Look for notable conclusions from each issue, action and risk to be summarized here.
- **Section 6.3: Next Steps**
 - Confirm that the SRD lists the recommendations of the development team for the next steps after the SRR, including preparation for Gate 5 Review.
- **Section 6.4: Open Discussion**
 - The SRD 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 SRR reviewers should ensure that all SRR exit criteria have been met before closing the review. The SRR exit criteria should have been established at the CTR and documented in the CTRR. Note that exit criteria may be tailored from the standard STAR EPL set of SRR exit criteria. In that case, the CTRR should provide a rationale for deviations from the standard set. The standard STAR EPL set of SRR exit criteria, listed in the standard SRR check list (CL-11.1), includes the following 12 items:

- Exit # 1 - CTR "Conditional Pass" items have been satisfactorily disposed of.
- Exit # 2 - CTR "Defer" items have been satisfactorily disposed of.
- Exit # 3 - The project plan and DPP are satisfactory
- Exit # 4 - The requirements allocation and RAD are satisfactory.
- Exit # 5 - The algorithm and ATBD are satisfactory.
- Exit # 6 - The design documents (SWA and DDDs) are satisfactory.
- Exit # 7 - The metadata and MDD are satisfactory.
- Exit # 8 - The delivery procedures, tools, training, support services, and documentation available to the users are satisfactory.
- Exit # 9 - System test results and VVR are satisfactory.
- Exit # 10 - The project baseline and PBR are satisfactory.
- Exit # 11 - The SRRR documents updated status of project risks and actions. The risk status is acceptable.
- Exit # 12 - The integrated product processing system is ready for delivery to operations.

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. SRR Check List

The SRR 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 SRR 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. If there are a sufficient number of Conditional Pass items, the SRR reviewers may require a delta SRR to approve the closure of these actions.
- Defer – The item is deferred for consideration at a later review (e.g. Gate 5 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 SRRR.
- 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 SRR check list or if the item refers to potential changes that do not occur. 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 SRR reviewers can use the standard check list provided in the SRR Check List spreadsheet (STAR EPL process asset CL-11.1) to record their disposition of the CLIs, if the check list for this project’s SRR has not been modified. If there has been a modification,

the SRR reviewers should use a modified spreadsheet that includes the SRR CLIs that have been agreed to. The SRR CLIs that have been approved for a specific project should be included in the project plan (DPP). Any modifications to the check list must be approved by project management and should be documented in a DPP revision and in the CTRR.

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 SRRR (c.f. Section 5.3 of this PRG) typically includes a copy of this unified SRR check list.

5.3. SRR Report

The SRRR is the one project artifact that is the responsibility of the SRR review team. Responsibilities for writing parts of the SRRR 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 SRRR can be found in STAR EPL process asset DG-11.6 (System Readiness Review Report Guidelines). The SRR review team should follow the standards and guidelines in DG-11.6, 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 SRRR should be updated to record the closing of “Conditional Pass” and “Defer” items after the SRR. SRRR updates should include a change history. Details can be found in DG-11.6.

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